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Equipment

A. Hemoccult II test. Smith Kline Diagnostics, Inc., San Jose, CA 95134-1622.

Attitudes of Patients Toward Smoking by Health Professionals

KENNETH E. OLIVE, MD, FACP
JOHN A. BALLARD, PhD

Dr. Olive is Assistant Professor of Internal Medicine at the James H. Quillen College of Medicine at East Tennessee State University. Dr. Ballard, a social-organizational psychologist, is Visiting Assistant Professor of Business Administration at Wittenberg University, Springfield, OH.

Tearsheet requests to Kenneth E. Olive, MD, Department of Internal Medicine, East Tennessee State University, P.O. Box 70,622, Johnson City, TN 37614-0622, telephone 615-929-6282.

Synopsis

Do the smoking behaviors of physicians and nurses affect patients' perceptions of the trust and effectiveness of these health professionals? In this exploratory study, a 40-item questionnaire was given to patients discharged from an Air Force hospital during a 4-week period. The survey resulted in 116 usable questionnaires from 40 patients who had never smoked, 44 who no longer smoked, and 32 who still smoked.

Analyses of variance in the replies to the questionnaire indicated that nonsmokers felt strongly about health professionals not modeling unhealthy behaviors, while smokers indicated they had no opinion. Regarding the relationship between the smoking habits of physicians and nurses and patients' perceptions of trust and effectiveness, smokers felt strongly there was no relationship, whereas nonsmokers indicated no opinion.

A review of the literature suggested that, on the average, health professionals who smoke may not be as effective in counseling patients to quit smoking as health professionals who do not smoke. Health professionals who smoke have the potential to affect unintentionally the smoking behaviors of others through modeling.

SOCIAL ACCEPTABILITY of cigarette smoking has declined in the past decade. Increasingly, smoking is seen as an addiction with serious health risks, both for the smoker and for those repeatedly exposed passively to cigarette smoke (*1*). Yet contemporary data indicate that 17 percent of physicians and 23 percent of nurses are cigarette smokers (*2*).

Given changing attitudes toward smoking and growing negative effects associated with smoking, we wondered how patients feel about cigarette smoking by health professionals. Do patients feel physicians and nurses should set an example by avoiding unhealthy behaviors? Do the smoking behaviors of physicians and nurses affect how patients perceive the professional competence of health professionals? How does smoking affect the role of the health professional as seen by the patient? How are patients' perceptions moderated by their own smoking behavior?

Because effectiveness in communication is highly influenced by how the communicator is perceived,

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the issue has significance for the health professional. Our review of the literature found no reports on patients' attitudes regarding smoking by health professionals.

Method

A 40-item questionnaire was given to all patients, ages 18 and older, discharged from the U.S. Air Force Medical Center at Wright-Patterson Air Force Base in Ohio, a 325-bed military hospital, in June 1989. The questionnaire surveyed patients' attitudes toward the hospital's nonsmoking policy that restricted indoor smoking by both employees and patients to a small room near a loading dock area of the hospital (*3*).

The questionnaire included five items to assess patients' attitudes regarding smoking behaviors of health professionals. These are shown in table 1. Respondents indicated agreement-disagreement on a five-point Likert-like scale where 1 indicated strong disagreement with the item; 3, no opinions; and 5, strong agreement. Additionally, the questionnaire included two items to determine patients' knowledge of the smoking behaviors of their physicians and nurses.

Hospital personnel processing discharges gave questionnaires to patients as part of normal discharge actions. Patients were asked to complete and return the questionnaires while awaiting discharge. Completion of the questionnaire was voluntary.

Description of sample. During the 4-week period, the hospital discharged 752 patients. Of these, 609 patients received questionnaires. Only 134 patients answered the questionnaire, a response rate of 22 percent. Of these, 116 questionnaires were usable. Questionnaires that contained incomplete demographic information or did not contain answers to all of the attitudinal items addressed by this study were excluded from the analyses.

We had expected a higher response rate. In retrospect, we realized we had no firm basis for this expectation. We had assumed that patients would not mind cooperating with the study because it would be a way to pass the time waiting for discharge actions to be completed. We provided no additional incentive to encourage completion.

Because of the low response rate, it was important to assess the representativeness of the usable sample obtained. Respondents to the questionnaire were 70 men and 46 women, 84 percent of whom were white. Approximately one-third were active-duty military personnel; one-third, retired military personnel; and one-third, civilian dependents of military personnel. Hospital administrative personnel indicated that, based on their records, the demographic distribution of the sample appeared fairly typical, except that ethnic minorities were somewhat underrepresented.

The most important demographic factor was our independent variable, smoking status. Our sample contained 40 patients who had never smoked, 44 who were ex-smokers, and 32 who smoked cigarettes, cigars, or pipes. Thus, 28 percent of our sample were smokers. This percentage was consistent with the findings of a 1988 survey of Air Force personnel and their dependents that 28 percent of active duty Air Force personnel and 23 percent of their spouses were smokers (*4*). Likewise, it was consistent with the 1986 Surgeon General's report that indicated approximately 30 percent of the adults in the United States were smokers (*1*). Consequently, the percentage of smokers in our sample appeared to be typical of both the Air Force and U.S. populations.

Results

Table 1 summarizes the results of the analyses of variance for each item, with respondents' smoking status as the independent variable. Both those who had never smoked and those who no longer smoked agreed that health professionals should serve as role models of healthy behaviors. Smokers differed significantly from both never-smokers and ex-smokers ($P < .01$) by indicating no opinion.

Even though never- and ex-smokers felt physicians and nurses should avoid unhealthy behaviors, they did not feel the smoking habits of physicians or nurses affected the trust placed in the health professionals or affected the effectiveness of the health professional. Means for the four items addressing these concerns showed nonsmokers with no opinions on these matters. Smokers, on the other hand, expressed strong support for the premise that the smoking habits of physicians and nurses have nothing to do with trust or effective-

Table 1. Results of analyses of variance in patients' responses to questionnaire, Air Force Hospital, 1989

Item	Significant comparisons P<.01	Never smoked		Ex-smokers		Smokers		F[1]
		Mean	95 percent C.I.	Mean	95 percent C.I.	Mean	95 percent C.I.	
It is important for hospital employees to serve as examples for patients by avoiding unhealthy behaviors	Never smoked to smokers; Ex-smokers to smokers	4.52	4.29–4.77	4.43	4.25–4.63	3.22	2.73–3.62	20.35
I would trust a nurse who does not smoke more than I would trust a nurse who smokes	Never smoked to smokers; Ex-smokers to smokers	3.20	2.85–3.55	2.68	2.35–3.01	1.75	1.48–2.02	16.44
I would trust a physician who does not smoke more than I would trust a physician who smokes	Never smoked to smokers	3.12	2.74–3.50	2.84	2.49–3.19	2.25	1.86–2.64	4.67
The smoking habits of a nurse have no influence on the nurse's effectiveness. (Reversed item)	Never smoked to smokers; Ex-smokers to smokers	2.75	2.41–3.09	2.89	2.48–3.30	4.12	3.74–4.50	12.66
The smoking habits of a physician have no influence on the physician's effectiveness. (Reversed item)	Ex-smokers to smokers	3.08	2.66–3.47	2.95	2.57–3.33	3.78	3.43–4.13	4.45

[1]Degrees of freedom = 2, 113. NOTE: CI = Confidence interval.

ness. No significant relationships were found between the attitudes of patients and the following demographic variables: sex, age, race, military status, education, and whether the patient currently lived with a smoker.

Table 2 shows the Pearson product-moment correlations for the five items plus a summary variable, perceived effect of health professional's smoking, summed from the five items (alpha = .65). Analysis of variance using the summary variable yielded $F = 20.9$ (2,113), $P<.0001$. Means for those who had never smoked were 17.02, for ex-smokers, 16.11, and for smokers, 11.31, with smokers being significantly different from each of the other means, $P<.01$. This analysis strongly demonstrated that on the 5-item scale used in this study, smokers and nonsmokers (that is, never-smoked and ex-smokers) differed in how they perceived the smoking habits of health care professionals.

Post hoc analyses examined differences among respondents based on the patient's knowledge of the smoking habits of the attending physicians and nurses. Eight respondents (five of whom were smokers) reported knowing that their physicians smoked. For nurses, 21 respondents reported knowing that nurses were smokers. Because these respondents were nearly evenly divided, (11 nonsmokers, 10 smokers), item means based on knowledge of nurses' smoking behaviors were examined more closely. These analyses suggested patterns consistent with the overall results of table 1, suggesting that the patient's smoking status is a more important determinant of patient opinion than is patient knowledge of the smoking status of the nurse.

'The results we report suggest that patients responding to this survey felt health professionals should provide good examples by avoiding unhealthy behaviors, but that this attitude does not affect the patient's perception of the effectiveness of the health professional or the trust placed in the health professional.'

Discussion

The results we report suggest that patients responding to this survey felt health professionals should provide good examples by avoiding un-

Table 2. Correlations between items in questionnaires filled in by Air Force hospital patients with summary variable[1]

Item	1	2	3	4	5
1. It is important for hospital employees to serve as examples for patients by avoiding unhealthy behaviors	...	...	...	...	...
2. I would trust a nurse who does not smoke more than I would trust a nurse who smokes	.42	...	...	...	...
3. I would trust a physician who does not smoke more than I would trust a physician who smokes	.29	.69	...	...	...
4. The smoking habits of a nurse have no influence on the nurse's effectiveness (Reversed item)	.30	.50	.45	...	...
5. The smoking habits of a physician have no influence on the physician's effectiveness (Reversed item)	.30	.33	.36	.56	...
Summary variable: Perceived effect of health professional's smoking	.61	.80	.76	.78	.71

[1]All correlation coefficients significant, $P<.01$.

healthy behaviors, but that this attitude does not affect the patient's perception of the effectiveness of the health professional or the trust placed in the health professional. In this study, smoking did not render the health professional less effective or less trustworthy in the eyes of the patient. This does not mean, however, that the health professional who smokes is in actuality just as effective as the health professional who does not smoke, especially in counseling patients who smoke.

Several studies indicate that health professionals who smoke are less likely to counsel patients to stop smoking. In a study of hospital ward nurses, Goldstein and colleagues found that only 7 percent of the nurses who smoked counseled smoking patients to quit, whereas 44 percent of the nonsmoking nurses reportedly did so (*5*). Coe and Brehm found similar results from a nationwide study of physicians in the United States; 70 percent of non- smoking physicians advised all smoking patients to stop, but only 47 percent of smoking physicians provided such advice (*6*). In a survey of British general practitioners, Hallett found that physicians who smoked were less likely than their nonsmoking peers to ask patients about their smoking if not consulted about a smoking related complaint, less likely to advise smoking patients to stop smoking, and less likely to offer help with stopping smoking (*7*).

In addition to these studies suggesting that physicians and nurses who smoke are less likely to counsel patients to stop smoking, one study suggests that smoking by physicians encourages smoking among patients. Dawley and coworkers examined physician influence on smoking habits in the lobby of a Veterans Medical Center (*8*). With "no smoking" signs posted, a male model dressed as a physician entered the waiting room, stopped to speak with a female assistant, and began smoking. A total of 15 percent of those present smoked within 10 minutes. When the same person entered dressed in jeans and a t-shirt and smoked, only 10 percent smoked within 10 minutes ($P<.02$). This finding is consistent with research based on Albert Bandura's social learning theory that suggests a credible source modeling a suppressed behavior is more likely than a less credible source to disinhibit the suppressed behavior (*9*).

Although the research literature is limited, the available studies suggest that (*a*) on the average, health professionals who smoke may not be as effective in a few areas, such as counseling, as health professionals who do not smoke and (*b*) health professionals who smoke have the potential to affect unintentionally the smoking behaviors of others. Both of these hypotheses are consistent with the literature on human decision-making processes and with social learning theory. Both hypotheses merit additional research and are worthy topics for discussion in the education of health professionals.

In our study, smokers and the never- and ex-smokers differed significantly in their attitudes toward the trust and effectiveness of health professionals who smoke. Nonsmokers were fairly neutral, no real opinion expressed, whereas smokers clearly saw no relationship at all between trust and effectiveness of a health professional and that professional's smoking behavior. The attitudes of the smokers are not surprising and appear to be cognitively consistent with the expected pattern of beliefs that one might attribute to smokers.

Of more interest to the health professions, however, might be the overall neutral response of the nonsmokers concerning the relationship between smoking behavior and trust-effectiveness. Does the "no opinion" mean, "it doesn't matter," or is it, "I don't know?" Fundamental to being an effective health professional is the ability to persuade, to influence. Research on attitude formation and change has demonstrated that a credible source is most persuasive (*10*). Institutionally, health professionals have a high degree of credibility. What is

the impact of a health professional's smoking on that professional's credibility, or on the health professions in general? Does smoking by a health professional make that professional seem more human, perhaps less distant, and hence more effective? Or does smoking raise questions about the professional's judgement?

This study offers no definitive answers to these questions but suggests that they are worthy of research and discussion. The conclusions to be derived from our study must be considered limited. Our sample was one of convenience, and although reasonably representative of the population serviced by the hospital, the sample consisted of military members, active and retired, and their dependents, at one location in the Midwest. Consequently, the findings have limited generalizability.

Also questionnaire scale development is needed to refine and improve the items used to measure the attitudes of interest. For example, in item 1, "hospital employees" might be worded more appropriately "health professionals" or "doctors and nurses." Likewise, more definitive items could be developed to help refine and interpret the more general items we used. Because of these limitations, the findings of this study should be viewed as preliminary findings subject to confirmation by similar studies in different populations.

This study suggests that, as we begin the 1990s, physicians and nurses who smoke are risking little of their credibility in terms of patients' trust and perceptions of their effectiveness. The available research literature suggests, however, that health professionals who smoke may face other problematic issues, including modeling unhealthy behaviors and failing to encourage smoking cessation.

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