Attitudes of Internal Medicine Faculty and Residents Toward Professional Interaction With Pharmaceutical Sales Representatives

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We surveyed faculty and residents from seven hospitals affiliated with three academic internal medicine training programs about their perceptions of the informational and service benefits vs the risks of ethical compromise involved in interactions with pharmaceutical sales representatives. Questionnaires were returned by 467 (81%) of 575 physicians surveyed. Residents and faculty generally had somewhat negative attitudes toward the educational and informational value of detailing activities at their institutions but indicated that representatives supported important conferences and speakers. Residents were more likely than faculty to perceive contacts with sales representatives as potentially influencing physician decision making. Sixty-seven percent of faculty and 77% of residents indicated that physicians could be compromised by accepting gifts. More than half of the physicians who suggested that such compromise was possible indicated that acceptance of gifts worth more than $100 from drug companies would be likely to compromise a physician's independence and objectivity. A majority of both faculty and house staff favored eliminating presentations by pharmaceutical representatives at their hospitals. Only 10% thought they had had sufficient training during medical school and residency regarding professional interaction with sales representatives.

THE PHARMACEUTICAL industry employs sales representatives as the best and most efficient means of convincing practicing physicians to prescribe certain medications.1 In North America and Great Britain, more than one third of the industry's promotional budget is allotted to detailing, and there is approximately one pharmaceutical sales representative (PR) for every 15 physicians.2 American physicians responding to a recent survey gave PRs low ratings for extensiveness of knowledge and credibility,3 and general practitioners surveyed in Great Britain considered commercial drug information biased.4 Nevertheless, many physicians state that they would lose an important source of information if contacts with PRs were banned.1 Avorn et al5 reported that physicians who relied on scientific rather than pharmaceutical companies' promotional information about certain drugs were less likely to prescribe them and that those holding advertising-oriented beliefs were frequently unaware that they were influenced by nonscientific information sources. Other investigators also reported that contact with PRs may have considerable influence on the prescribing behavior of physicians.6,7

Recent editorial commentary has noted an increase in aggressive promotional efforts by sales representatives, particularly within medical educational settings.9 However, there is little information about the attitudes of academic physicians and house staff toward the potential for ethical compromise in physician-PR relationships. This information is of particular importance because faculty act as professional role models and influence the prescribing patterns of residents. If PRs can persuade "influential physicians" to prescribe their companies' products, they will succeed in reaching many more physicians within their sphere of influence.10 In a previous article,11 we reported on the relationship between physicians' contacts with PRs, including conversations and free meals, and reported changes in their medical practices. The purpose of this report is twofold: to examine the beliefs of "influen-
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Froedtert Memorial Lutheran Hospital, St Paul, Ramsey County (Minnesota); the Medical College of Wisconsin, Milwaukee, Wisconsin; and the Medical College of Wisconsin, Milwaukee VA.

RESULTS

Part 1 responses were tabulated and compared to determine if any differences between faculty and residents were present. Part 2 responses were first analyzed individually for residents and faculty. Next, a factor analysis was performed to identify underlying constructs addressed in the attitude survey. This analysis consisted of three parts: (1) development of a correlation matrix, (2) a principal component analysis to identify which groups of items contained a common theoretical construct, and (3) variance maximization (VARIMAX) rotation to improve the interpretability of the factors. Only factors that accounted for variances (eigenvalues) greater than unity were included. Responses found to have a common construct (factor) were summed, and a mean score for each factor was determined. Responses within each factor were weighted equally.

Between-group differences in proportions were assessed by the $\chi^2$ statistic, and means were compared using 95% confidence intervals (CIs). All analyses were performed with the use of the Statistical Package for the Social Sciences (SPSS-X), and reported $P$ values are all two tailed.

Analytic Methods

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RESULTS

Questionnaires were returned by 277 (88%) of 315 faculty members and 190 (79%) of 240 residents surveyed. The demographic profile of respondents is shown in Table 1. Results from the analysis of part 1 responses revealed that there was no difference in the mean number of PR contacts per month between faculty (3.1; 95% CI, 2.7 to 3.5) and residents (3.9; 95% CI, 3.4 to 4.4). However, the two groups differed with regard to their perception of the value of a gift that could lead to physician compromise. Sixty-three (23%) of 277 faculty members vs 28 (15%) of 190 residents believed that physicians could not be compromised, regardless of the value of a gift received ($\chi^2 = 3.8, P = 0.05$). Seventeen (10%) of 277 faculty members and 5 (8%) of 190 residents did not respond to this question. Overall, among the respondents who believed that compromise was possible, residents differed from faculty in their perception of the monetary value of a gift necessary for compromise ($\chi^2 = 23.1, P = 0.01$). These differences arose primarily from a larger percentage of faculty indicating the lowest ($0 to $5) and second highest ($101 to $1000) threshold values and a larger percentage of residents choosing intermediate threshold values ($21 to $50 and $51 to $100).

Results of responses to each of the nine individual survey items are found in Table 2.
in Table 3. Each item was answered by a minimum of 270 (97%) of 277 faculty members and 187 (88%) of 190 resident respondents. Faculty tended to view the teaching role of PRs and the usefulness and accuracy of their information about established drugs more negatively but tended to look more favorably on the importance of sponsored speakers than did residents; however, none of these attitudinal differences achieved statistical significance. One hundred forty-five (52%) of 277 faculty members and 126 (66%) of 190 residents agreed or strongly agreed that presentations by PRs should be eliminated at their institutions. Faculty members were statistically significantly more likely to dismiss a linkage between their frequency of PR contact and the receipt of promotional items, although both groups tended to discount a relationship between discussions with PRs or acceptance of promotional items from them and their own prescribing practices.

Factor analysis results were consistent with the presence of three primary factors. For factor 1 (education), items 1 through 4, and 9 loaded most strongly. For factor 2 (PR influence), items 6, 7, and 8 loaded most strongly. Factor 3 (adequacy of training) consisted of a single question, item 5, and concerned the extent of physician training about dealing with PRs. We refer to these as the education, influence, and training factors, respectively.

When the five items on the education factor were summed, the responses ranged from 5 to 25, with a midpoint of 15. Numerically lower response scores indicate more favorable attitudes toward the educational and informational services of PRs. The response range of the influence factor was 3 to 15, with a midpoint of 9; numerically lower response scores indicate perception of lower potential for PR influence on physician decisions. The response range of the training factor was 1 to 5, with a midpoint of 3; numerically lower responses indicated the perception of adequate training during medical school and residency regarding professional interactions with PRs.

With mean response scores of 14.6 (95% CI, 14.1 to 15.1) and 14.1 (95% CI, 13.6 to 14.6), respectively, faculty and residents did not differ in their assessment of the overall educational and informational value of interaction with PRs as measured by the education factor. While tending toward the midpoint of 15 on the attitude scale, these scores represented a composite of somewhat positive and negative attitudes expressed in individual item responses.

Mean scores of the faculty (5.8; 95% CI, 5.5 to 6.1) and residents (7.4; 95% CI, 7.1 to 7.7), as measured by the influence factor, indicated a tendency to dissociate their own contact with PRs from changes in personal prescribing practices. The difference between residents and faculty suggests that residents were more likely than faculty to perceive behavioral change occurring as a result of personal PR contacts. As shown in Table 4, these resident-faculty differences persisted after controlling for the opinion that physicians could not be compromised by acceptance of gifts.

Finally, mean scores of the faculty (3.9; 95% CI, 3.8 to 4.1) and residents (4.0; 95% CI, 3.9 to 4.1) indicated disagreement with the statement that they had had adequate training during medical school and residency about professional interactions with PRs.

**COMMENT**

Faculty and residents in our study had similar, although generally mixed, views about the educational and informational services provided by PRs. The results of our study are similar to those of other studies of physicians' attitudes toward PRs, which have documented professional skepticism toward their activities.
Our survey results do not provide simple answers to questions of appropriate physician-PR interaction. Most of our respondents believed that small gifts were not likely to influence physician prescribing behavior. Although residents tended to assign a somewhat lower dollar value to the threshold for potential compromise, a majority of both staff and residents who believed that compromise was possible agreed that gifts worth more than $100 would be likely to compromise a physician's objectivity and independence. The apparent difference in threshold amounts may be explained in part by differences in resident and faculty income. Almost one fifth of the physicians thought that no gift, however valuable, could compromise physician decision making, and 58% of our respondents agreed with banning presentations by PRs at their hospitals.

In Great Britain, two British Broadcasting Corp “Panorama” programs in the early 1980s alleged that physicians' normal skepticism regarding new drugs could be overridden by carefully organized marketing. The series featured key medical figures being extravagantly entertained at conferences about the drug held in attractive venues, including the Orient Express en route to Venice. An editorial in the *Lancet* concluded that the physicians portrayed were either oblivious to or unwilling to admit the ethical compromises involved in taking such gifts.6 Chren et al noted that the receipt of a personal gift establishes an implied social contract with a sense of obligation and an expectation for reciprocation. Although no definitive studies have yet proved an effect of these promotional items on prescription drug sales, such an effect is likely for three reasons. First, the expenditure of $5000 per physician per year suggests that pharmaceutical companies have little doubt about the effect of promotions on prescribing behavior. Second, we have shown that academic physicians have frequent contacts with PRs and that the contacts are related to reported changes in behavior. Third, there is evidence that physicians select heavily promoted medications despite the absence of scientific support for their efficacy.

The Royal College of Physicians formulated a position paper4 that outlined specific recommendations on appropriate behavior of physicians interacting with PRs. The major thesis of this white paper was that “any benefit in cash or kind, any hospitality or any subsidy received from a pharmaceutical company must leave the doctor's independence of judgment manifestly unimpaired.” In this country, the topic has been receiving increasing media attention in recent years and was the focus of a 1988 “Frontline” (Public Broadcasting Service) television documentary. The American College of Physicians position paper entitled “Physicians and the Pharmaceutical Industry”9 states:

*Gifts, hospitality, or subsidies offered to physicians by the pharmaceutical industry ought not to be accepted if acceptance might influence or appear to others to influence the objectivity of clinical judgment. A useful criterion in determining acceptable activities and relationships is: Would you be willing to have these arrangements generally known?*

Position papers by both the Royal College of Physicians and American College of Physicians label small gifts as acceptable. The American College of Physicians document specifically considers the following to be acceptable: trivial gifts, such as pens and calendars; inexpensive gifts of an educational nature, such as books; modest hospitality (dinners, other food and drink, receptions) that is clearly related to an educational purpose; honoraria for participation in studies; honoraria for presentations at symposia based on the time and reasonable travel expenses of the physician; and trips to educational sites that have been chosen for their convenience, not their recreational or other characteristics unrelated to the educational purpose of the meeting.10 The Royal College of Physicians goes further in labeling lavish refreshments and exotic trips as unacceptable.11

Our respondents' views were similar. Only 15% of residents and 24% of faculty indicated a potential for ethical compromise arising from accepting gifts worth $5 or less, which would include the majority of pens, pocket calendars, coffee mugs, flashlights, etc, dispensed by PRs. These attitudes are consistent with the tenor of faculty and resident views in our survey to discount any influence of receipt of promotional items on their prescribing practices. Elegant dinners and trips to exotic locations typically would be more valuable than the $100 that the majority of respondents thought might compromise a physician's independence and objectivity. Goldfinger4 echoed these views in sharing his earlier qualms about accepting free dinners and medical bags while in training, noting that these concerns seem trivial now given the current offerings of trips to push resorts paid for by drug companies in the name of medical education.

Only 10% of residents and staff in our study were satisfied with their previous training regarding professional interaction with PRs. Educational programs may help physicians to define further and recognize the potential for ethical compromise that may arise during professional activities. A university-affiliated family medicine training center found that promotional items were ubiquitous in examination rooms, nursing stations, hallways, and waiting rooms, with an average of 4.12 items per patient care area.2 Palmisano and Edelstein2 stressed the importance of teaching drug promotion practices early in the process of health professional training so that appropriate interactional skills can be fostered. One example of such an integrated program has been described at the University of Connecticut. Primary care residents receive a seminar series on pharmaceutical marketing strategies and the physician-PR interaction, including discussions of drug marketing, sampling, and ethical conflicts in accepting gifts.2 Although physicians rarely receive formal training about PR practices, PRs take classes to familiarize themselves with academic medical centers.24

A number of limitations must be considered when interpreting these results. Since we surveyed only academic internists and internal medicine house staff, we can make no inferences about the perceptions of other academic specialists or of internists in nonacademic practice. Other specialists and physicians in private practice may regard their relationships with PRs and the value of PR presentations differently. Furthermore, our respondents included a preponderance of junior faculty, whose attitudes may not reflect those of older academic physicians. Finally, it must be recognized that studies of perceptions and attitudes may not reflect actual behavior and that responses may be influenced by social desirability factors.

In summary, our survey of academic faculty and house staff shows that the majority perceive that physicians can be compromised by accepting gifts of high monetary value from PRs. More than half who believed that compromise was possible stated that acceptance of gifts worth more than $100 would be likely to compromise a physician's objectivity. Residents and faculty had mixed attitudes toward the informational services of PRs. Few faculty members and residents perceived an influence of PRs on their own decision making, with faculty even less likely to recognize such an influence. Finally, both groups believed they had had insufficient previous training about professional interactions with PRs, and a majority would favor banning PRs from presentations at their institutions. Ad-
ditional studies are needed to determine whether similar perceptions about professional interactions with PRs exist among other academic and practicing physicians. Such studies could assist professional bodies in the development of standards for the relationship between PRs and physicians.

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