Results and Discussion

Table 1 presents the results of the analyses of the first and second interview ratings of applicants. As the *F* statistics demonstrate, all three blocks of predictors (interviewer rating tendencies, applicant characteristics, and applicant-interviewer dissimilarities) significantly add to prediction of ratings for both interviews. Results in the replication (second interview) are comparable with those from the first interview data.

The contribution of the dissimilarity variables to interviewer ratings might be expected to be significant for some groups of interviewers and not for others. Frank and Hackman (8) speculated that such differences might exist between experienced and inexperienced interviewers. In the present study, however, separate analyses of clinician versus nonclinician and experienced (more than two years' prior service on the admission committee) versus inexperienced interviewers failed to demonstrate any reliable differences between groups in the significance of applicant-interviewer dissimilarities.

Conclusion

Analyses using objectively coded data on the backgrounds of applicants and interviewers demonstrate that interviewers' ratings of applicants are not simply a reflection of the applicants' characteristics. Rather, there are additional contributions of the interviewer's general rating tendencies and of the dissimilarity between the interviewer and the applicant. Both of these latter contributions to the interviewer's ratings are aspects of the admission procedure which affect the applicant's chances for acceptance but are beyond his control.

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Teaching Drug Promotion Abuses to Health Profession Students

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Approximately 326,000 physicians are currently involved in patient care in the United States. It has been calculated that $1 billion per year are spent by some 60 pharmaceutical companies in order to influence the prescribing habits of this small group (1). Based on these figures, it can be estimated that over $3,000 per physician is spent each year in some form of drug promotion (for example, advertisements,

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detailing, symposia, free journals, gifts, and drug samples). This is 14 times as great as the $212 per person spent on health care per year for the population under 19 (2). Yet despite these intriguing statistics, controversy exists regarding the impact of such intense drug promotion on prescribing habits, patient health, and the cost of medical care (1, 3).

Over the past 10 years a series of seminars on prescription drug promotion have been conducted for medical students, dental students, and pediatric residents at the University of Alabama Medical Center by one of the authors (PP). More recently, these seminars have been incorporated into both the core curriculum and continuing education programs for family planning nurse practitioners in a California pilot program through which they are trained and certified to prescribe formulary drugs and devices.

The format is designed to dramatize the practitioner-media interaction with particular emphasis on potential conflicts of interest. A special attitude pretest was recently introduced as a teaching instrument. The purpose of this communication is to outline the seminar content with special stress on the remarkable results of the attitude pretest.

Seminar Objectives

The 90-minute presentation is intended to introduce student health professionals to drug industry strategies regarding prescription drug promotion. After participation in the seminar, the student is expected to be able to:

1. Recognize the effect of promotion on the consumption of prescription drugs, using this model: drug production leads to drug consumption with promotion acting as the driving force.
2. Assess and evaluate advertising copy using a graded scoring system as presented.
3. Identify individual drug advertising modalities.
4. Role-play interaction with a simulated pharmaceutical sales person and identify various sales techniques employed.
5. Determine the effects of drug promotion on the cost and ethics of medical care.

Methods and Materials

Visual aids include color slides of actual drug advertisements chosen to cover a spectrum of objectivity and contain examples of those which are seductive, deceptive, misleading, and/or illegal. Summary slides are used to reduce the salient points to a simple model system and to give current data on the distribution of national drug costs. Laboratory materials include brochures, booklets, mailing pieces, trinkets, and other paraphernalia commonly employed by detail men. The seminar utilizes actual simulation of the salesman's "pitch" in order to impress the participants with the strategies employed.

A series of simple one-statement attitude questionnaires were distributed to the students at the beginning of two seminars in 1979 (one for third-year medical students at the University of Alabama and one for family planning nurse practitioners at the University of California, San Francisco). Results of the survey were tabulated by a secretary during the session and were presented before the students left.

Each medical student was asked to complete the questionnaire and was requested not to consult with colleagues. In fact, two different questionnaires were distributed alternately to the 100 students present. The first stated that an elected public official who awards contracts accepts a $50 gift from a prospective bidder. Students were asked to choose one of three answers: this is proper; this is not proper; no opinion. The other statement asserted that a medical student, who will eventually prescribe drugs, accepts a $50 gift from a drug company. The three possible choices were the same as for the alternate questionnaire.

An all-female group of 100 family planning nurse practitioners was polled in a manner identical to that described for medical students, with the exception that three different questionnaires were used. The first stated that a public official who awards contracts is given a $50 gift by someone who will present a contract for funding. The next questionnaire said that a first-year resident is given a $50 stethoscope by a pharmaceutical representative. The third questionnaire asserted that a nurse practitioner, who will be prescribing, is given a $50 medical book by a pharmaceutical representative. The nurses could choose one of three answers to the questionnaire that they received, and the choices were the same as noted for medical students.

Results

All 100 medical student participants returned their questionnaires. Most (85.4 percent) thought that it was improper for a public official to accept a $50 gift, but only 46 percent believed that it was improper for a medical student to accept such a gift from a drug firm. This was highly significant (chi-square, $2df$, = 16.94; $p < .0001$).

Ninety-five nurse practitioners returned their questionnaires. Almost all (97 percent) thought that it was improper for a public official to accept a gift from a contractor, while only 64 percent believed that it was wrong for a resident to accept a gift from a drug salesman. Nine individuals (30 percent of those who received the third statement) thought that it would be improper for a nurse practitioner to accept a $50 book from a drug company. A highly significant difference was observed among these three groups (chi-square, $4df$, = 30.53; $p < .0001$).

Discussion

In view of the unusual market situation with regard to prescription drugs, students' attitudes concerning pharmaceutical promotion were explored in the course of an educational seminar. The findings in this study indicate that health practitioners may be influenced in viewing potential conflicts of interest, with a significant trend toward softer ethical values within their own profession. This leniency gradient progresses linearly from "them" to "us" to "me." Drug sales persons are also aware of the practitioners' vulnerability, as evidenced by the millions of corporate dollars expended on physician "perks."

The significant question raised by the results is how much of the practitioner's decision-making in prescribing is influenced by these nonscientific, seductive thrusts of the drug industry (4). Objective and candid sources of drug information, such as that which the *Medical Letter* (published by Medical Letter, Inc., New Rochelle, New York) provides, reach too few clinicians to be effective and appear to be no match for the barrage of slick, sensual, or misleading promotional modalities.

There is no doubt that the questionnaires, as designed, introduced some bias since it is difficult to compare public officials, practitioners, and students in all aspects. Indeed, consideration of bias involved the students in a very lively discussion. Nonetheless, this seminar, coupled with its attitude poll, has developed into an exceptionally efficient teaching tool for bringing issues of conflict-of-interest to the attention of future health professionals. Overall, the experience may contribute to a far wiser and more objective approach to prescribing, although the long-term effect of the seminar on attitudes has not been studied.

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