Impact of a Pharmacist on the Educational Value of Pharmaceutical Industry Film Showings

Charles D. Bayliff, Robert D. Edington, Laureen J. Johnston, Philip W. Shaw and David G. Bailey

ABSTRACT

A controlled trial was performed to assess the impact of drug information provided by a pharmacist on the educational value to physicians of pharmaceutical manufacturers' film showings. The trial consisted of two teams of physicians who attended pharmaceutical manufacturers' films and who afterward answered multiple choice questions on the drug being promoted. In one group, the liaison pharmacist, who had no knowledge of the content of the questionnaire, presented information on the drug being featured prior to the film showing while the control group did not have a pharmacist presentation. Out of a perfect score of five, there was a higher test score in the group of physicians who attended the pharmacist presentation/film showing (n = 75) than in the group which only attended the film (n = 65) (3.3 ± 1.1 versus 2.8 ± 1.2, respectively (p = 0.017)). While there was no difference in the scores obtained by the clerks, interns and residents (3.2 ± 1.1, 3.3. ± 0.9, 3.4 ± 1.2 respectively) when a pharmacist was present, in his or her absence the scores for clerks, interns and residents were 2.5 ± 1.3, 2.8 ± 1.0, 3.6 ± 1.2 respectively with residents scoring higher than clerks (p = 0.047). A pharmacist can enhance the educational value of a pharmaceutical manufacturer's film showing.

Key Words: *drug information, education, pharmaceutical industry*

RÉSUMÉ

Des projections de films de compagnies pharmaceutiques concernant leurs produits ont fait l'objet d'un examen contrôlé pour évaluer l'échange de renseignements de drogues founi par le pharmacien aux médecins et son impact sur les valeurs éducationnelles. L'évaluation a consisté à séparer des médecins en deux équipes qui visionnaient des films des compagnies pharmaceutiques sur leurs produits et ces médecins devaient répondre à un questionnaire à choix multiples sur le produit en promotion. Sans connaître le contenu du questionnaire et le contenu du film au sujet du médicament, un pharmacien de liaison a fait une présentation à l'une des équipes sur ce médicament. Cependant, l'autre équipe de médecins (contrôle), n'a pas reçu cette présentation. L'examen étant basé sur un score parfait de cinq, le groupe de médecins qui a reçu la présentation et qui a visionné le film (n = 75) a présenté des résultats supérieurs à celui qui a visionné le film seulement (n = 65) (3,3 ± 1,1 versus 2,8 ± 1,2; respectivement (p = 0,017)). Par contre, les résultats obtenus des commis, internes et résidents ne démontrent aucune différence lors de la présence du pharmacien (3,2 ± 1,1; 3,3 ± 0,9; 3,4 ± 1,2; respectivement), mais lors de certaines absences les résultats des commis, internes et résidents furent 2,5 ± 1,3; 2,8 ± 1,0; 3,6 ± 1,2 respectivement, démontrant effectivement des résultats supérieurs pour les résidents en comparaison avec les commis (p = 0,047). Par conséquent, un pharmacien peut rehausser les valeurs éducationnelles d'une projection de film de compagnies pharmaceutiques concernant leurs produits.

Mots clés: *éducation, industrie pharmaceutique, renseignement de médicaments*

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INTRODUCTION

Film showings are presently offered by pharmaceutical companies to physicians. These film showings have a dual purpose — the first being an educational tool, the second being a promotional one. It is, however, important that the educational component provide an unbiased overview of the drug but unfortunately, on occasion, this is not accomplished.[1,2]

Enhancement of the learning process of pharmacology may be augmented by pharmacists as they become more involved in clinical practice settings.[3] Because of their background and the resources available to them, pharmacists are well suited to evaluate the literature and make comparisons on the individual agents and groups of drugs.[4]

The study had two specific objectives: a) to determine whether information provided by a pharmacist could enhance the educational experience of physicians who attended a pharmaceutical manufacturer's film showing; and b) if such an effect was seen whether there was a difference amongst certain physician groups, specifically residents, interns and clerks in the knowledge attained.

METHOD

The study which took place at Victoria Hospital, a major teaching hospital, in London, Ontario, assessed the knowledge attained by two groups of house staff physicians consisting of residents, interns, and clerks. For our purposes the following definitions were applied to the three levels of physicians. A resident was defined as a licensed physician who was receiving additional training in a subspecialty practice. An intern was defined as a physician involved in a one year internship program which followed four years of medical school and a clerk was defined as a student in the third year of medical school.

Two chief residents in medicine each responsible for a team were contacted and asked for their cooperation in the project. When contacted by a representative from a pharmaceutical industry company regarding a film showing, the chief resident requested that the representative contact the coordinator of clinical services in the pharmacy department regarding the time, location and topic of the film. The coordinator prepared a multiple choice test (see Appendix A for example of test) after consulting principally the Compendium of Pharmaceuticals and Specialties (CPS) (1987 and 1988 editions). Other sources such as review articles and adverse drug reaction reports were also used. The test was devised so as to contain information pertinent to patient care (ie indications, contraindications, adverse effects, dosage, etc.) and specifically to exclude information that was felt not to be directly related to patient care (ie mechanisms of action, pharmacokinetic parameters etc.). These tests were not formally assessed for validity or reliability. The three general medicine liaison pharmacists who discussed the drug with the group were unaware of the test contents and the information sources.

Film presentations were performed at two sites. One site served as the pharmacist group for three months with the second site serving as the control. Control and pharmacist group sites were then switched every three months over the one year period.

In the control group a film was shown and then a test was circulated to each member in attendance. The completed test was then collected and returned to the clinical coordinator. In the pharmacist group, the liaison pharmacist prepared a handout on the subject and spent approximately ten minutes presenting the topic. This was followed by the film and then the test. Upon completing the test and handing in the completed questionnaire, the prepared handout was distributed to those in attendance. In no instance was the liaison pharmacist aware of the contents of the test and only saw the test after completing his or her talk and after the film showing. Only data from film presentations which had both a pharmacist group and a control group were analyzed.

The difference between the control group and pharmacist group were analyzed by unpaired 't' test. Differences amongst the test scores of residents, interns and clerks were analyzed by ANOVA; those with $p < .05$ were then assessed by Scheffe's test. Results are presented as mean $\pm$ standard deviation.

RESULTS

From July 1987 to June 1988, 32 pharmaceutical manufacturer film showings were conducted on the two sites. Of these, ten were shown at only one site and hence were not analyzed. One further test (and its control) was excluded from analysis as the pharmacist handout was distributed prior to completing the test. That left ten film showings which were shown to both the control group and the pharmacist group for analysis.

There were 83 tests completed by the control group and 91 tests completed by the pharmacist group. Eighteen tests from the control group and 16 tests from the pharmacist group were excluded because the level of physician education status was not identified. Of the remaining tests, the breakdown with regard to the three levels of physician education status is shown in Table I.

The mean score out of five in the control group was 2.8 ± 1.2 versus 3.3 ± 1.1 in the pharmacist group. This was statistically significant ($p = 0.017$) (Figure 1).

In the control group the mean scores for residents, interns and clerks were 3.6 ± 1.2, 2.8 ± 1.0 and 2.5 ±1.3 respectively. There was a difference in the scores between the resident and clerk group ($p = 0.047$) but not between any other groups (Figure 2).

In the pharmacist group the mean scores for residents, interns and clerks were 3.4 ± 1.2, 3.3 ± 0.9 and 3.2 ± 1.1. Unlike the control group there was no difference amongst the scores obtained by different education level physicians in the pharmacist group (Figure 3).

DISCUSSION

Studies pertaining to pharmaceutical promotion have identified that the more doctors rely on commercial sources for their information about drugs the less rational they are as prescribers.[5] Even when information is offered by pharmaceutical companies, the educational value of pharmaceutical films may suffer considerably due, in part, to time constraints and incomplete content. To maintain interest, the film usually highlights the attractive properties of the drug using colourful diagrams, simulated artists' conceptions of the drug or disease and dialogues with noted physicians while minimizing or excluding the deleterious effects or limitations of the therapy. In many cases, important but somewhat mundane drug information including indications, contraindications, adverse effects, dosage, etc. is not presented due to time constraints (most films run approximately 20 minutes). Unfortunately, this information is necessary if optimal therapeutic outcomes are to be achieved with the agents.

Table I: Physician Status in Control and Pharmacist Groups

Physician Status	Control Group	Pharmacist Group
Residents	13	13
Interns	18	31
Clerks	34	31
Total	65	75

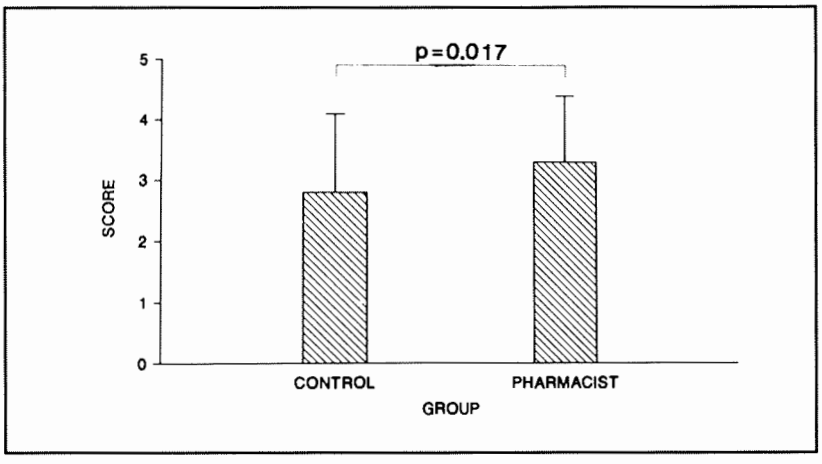

Figure 1: Test Scores for Control and Pharmacist Groups.

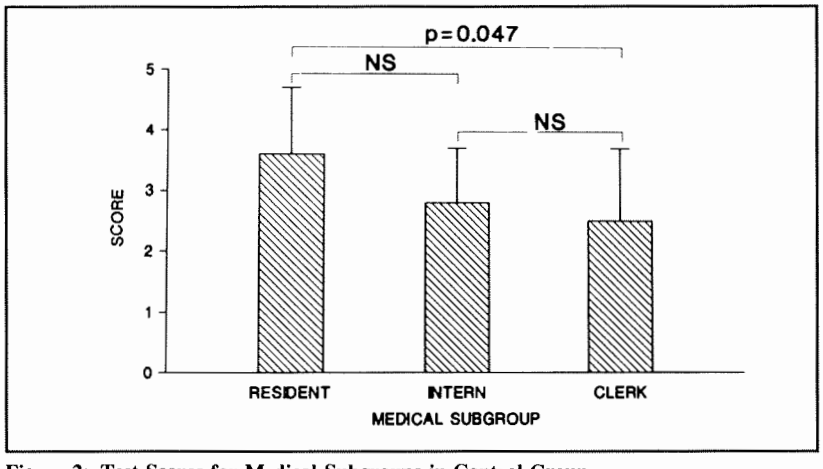

Figure 2: Test Scores for Medical Subgroups in Control Group.

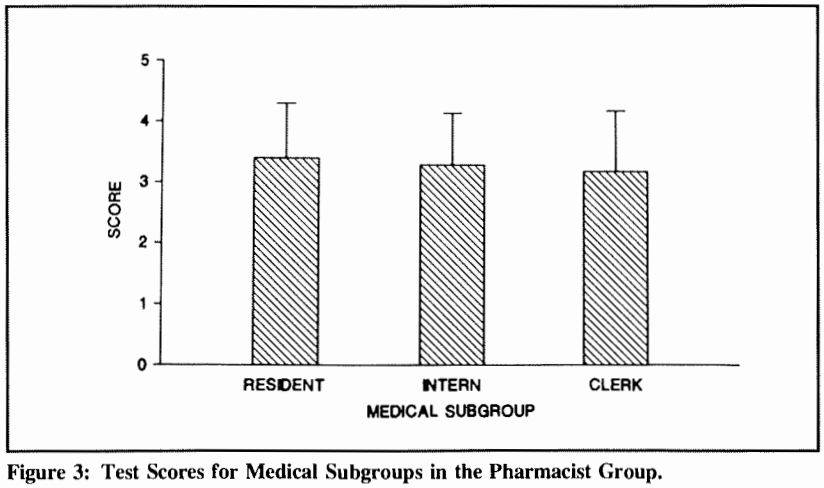

Figure 3: Test Scores for Medical Subgroups in the Pharmacist Group.

The study was successful in demonstrating the positive influence of information provided by a pharmacist on enhancing the educational value of pharmaceutical industry film showings. While the overall increase in terms of test scores was small from a mean of 2.8 to 3.3 this was statistically significant. We would view the overall increase of approximately 18% being also of considerable practical significance.

Although the pharmacist was successful in this role, the test scores were relatively low even in the pharmacist group. This may have been due to the degree of test difficulty or a relatively poor basic knowledge of pharmacology. Another possible cause for the poor results may have been failure of the physician to read the question correctly. For example, one of the questions asked which of the following side effects had not been reported with a drug and some of the physicians checked off all those that had been reported.

The scores of interns and clerks in the control group were considerably lower than those of residents although this was only statistically different for the residents versus the clerks. The test scores of the residents, interns and clerks in the pharmacist group were very similar. Interestingly, the resident group did as well whether the pharmacist was present or not. That residents as a whole had the highest scores whether a pharmacist was present or not, likely reflects greater clinical familiarity with the drugs as the test questions were of a practical nature. In light of recent cutbacks in physician residency positions in Ontario, this finding of a greater contribution to the learning process of junior housestaff may be increasingly important.

There were several limitations to the trial; one of which was the design. As this trial was not randomized and baseline knowledge not assessed it may be argued that the physicians in the pharmacist group may have been more knowledgeable about the drug being presented. This could have been overcome by using a design that assessed knowledge before and after the test (ie pre and post test format). For our purposes this was not practical. Firstly, if the pre-test was given before the film, the physicians could have asked specific questions of the presenter; or the pharmacist being aware of the content of the test, could have focused his/her presentation on specific issues. Secondly, as patient care responsibilities are the prime responsibility and rounds took place on the patient care areas the time available to do the assessment was constrained. Finally, we wished to assess the effect of information provision and not the effect of repeating the test. Had we chosen to use two different tests for pre and post assessment, we would have had to ensure that they were of similar difficulty adding another confounding factor. In an attempt to control for possible differences in baseline knowledge, we used a crossover design in which the control and the pharmacist groups rotated every three months. While this may not have been optimal, this was the format chosen, given the above constraints.

Another limitation was that the tests contained only five questions and were not assessed for validity and reliability. To increase the number of questions to be answered would likely reduce the number of physicians participating given the already cited time limitations. To ensure validity and reliability, several hundred tests of considerably greater length would need to be administered to physicians. Again, for practical purposes, this was not done and for this reason we have included a sample of the test for the readership (Appendix A) which shows types of questions posed.

Because the medical team members rotate through different services the potential existed that a physician may have participated in both the control and pharmacist group. Unfortunately, since no specific identification was required, we do not know if this did or did not occur. If this did occur this would likely have minimized the differences in the groups.

In pooling our data we assumed that all the tests were of similar difficulty. While this may be a source of error we assumed, nonetheless, that the tests were indeed of similar difficulty. It could also be argued that the test scores should have been higher in the pharmacist group since the content of the film may not have contained the information required to answer the questions. The questions asked on the test were of a practical nature and we felt that this information should be provided by the pharmaceutical manufacturer if the film was to be educational, and not merely promotional.

Finally, since the time spent in the educational process was longer in the pharmacist group, the increased scores may simply have been due to this factor. Nonetheless, we felt the additional time (approximately five - ten minutes) resulting in an 18% increase in test scores was useful although other educational programs may also be so.

In addition to enhancing the educational experience of physicians there were other benefits of having the pharmacist present at these sessions. The pharmacist was able to inform the physicians on issues such as formulary status. This potentially had an impact on drug

distribution workload and the need for time consuming order clarification. As well, information on drug costs, although not assessed during the trial period, has since been added to the pharmacist's handout as the literature has identified that physicians would benefit from increased knowledge regarding the cost of drug therapy.[6]

A recent editorial identified the need for further medical student education in clinical pharmacology and therapeutics.[7] The authors suggested that correcting the problems in therapeutics education will obviously require a coordinated team approach. Further, the Lowy Inquiry in Ontario has identified the need for unbiased detailing in Ontario.[8] On the basis of this and other studies[9,10] a pharmacist may become a valuable individual in this effort.

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Appendix A

Check one: [ ] attending physician
[ ] resident
[ ] intern
[ ] clerk

Pharmaceutical Industry Film Showing — Mexiletine (Mexitil-Boehringer-Ingelheim)

Overall, I found the information was of educational value to me.

_____ [ ] agree [ ] disagree

Please answer each question.

1. Mexiletine is indicated in treatment of:
   [ ] Supraventricular arrhythmias resistant to conventional agents.
   [ ] Ventricular arrhythmias.
   [ ] Supra — and ventricular arrhythmias.

2. Mexiletine has the following electrophysiologic properties.
   [ ] depresses LV function and shortens the duration of the action potential.
   [ ] depresses sinus node and prolongs conduction time.
   [ ] depresses normal conduction but has little effect on LV function.
   [ ] has little effect of LV function and shortens the duration of the action potential.

3. The usual starting dose of mexiletine is:
   [ ] 100 mg tid increasing by 100 mg tid every 3 days.
   [ ] 200 mg tid increasing by 100 mg tid every 3 days.
   [ ] 300 mg tid increasing by 200 mg bid each week.
   [ ] 50% of current lidocaine dose q 12 h.

4. Toxicities are similar to lidocaine and most commonly include:
   [ ] gastrointestinal intolerance, tremor, dizziness and other CNS effects.
   [ ] gastrointestinal intolerance, congestive heart failure, hyperglycaemia.
   [ ] gastrointestinal intolerance, pulmonary fibrosis and hallucinations.
   [ ] CNS depressant effects, rashes and intraventricular conduction delays.

5. The half-life of the drug is prolonged in all the following cases except:
   [ ] patients with congestive heart failure.
   [ ] patients with hepatic disease.
   [ ] patients with urinary acidosis.
   [ ] patients with renal failure.