

Communication Apprehension in the Pharmacy Student

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In recent years, the topic of communication by the pharmacist has received increasing attention. Personal communication by pharmacists has been suggested as a means to improve health care, improve the image of pharmacy, expand the pharmacist's role, and to improve patient compliance with drug therapy(1-4). In addition, possession of communication skills has been deemed essential to the development of the clinical role(5,6).

Patients have expressed a desire for pharmacists to communicate with them(7,8), and state laws have incorporated the requirement that pharmacists consult with the patient(9) or communicate with the patient when exercising drug product selection.¹

A variety of studies have reported that only a limited amount of pharmacist-patient communication actually takes place(7,10-14). One national study of prescription purchasers reported, "Only one-third (37.1 percent) have talked with the pharmacist where they get their prescribed (*sic*) filled about anything at all within the past six months. Of those 41.9 percent either cannot remember what the conversation was about or indicate it was not about drugs."² One reason advanced for failure of the pharmacist to communicate is the lack of communication skills of pharmacists(1,15). The unwillingness of pharmacy students to communicate and their inappropriate responses to questions in the clinical setting have been noted(1). Pharmacy educators have apparently perceived these as inadequacies and in response, a number of pharmacy schools have instituted coursework in communications in their curricula(2,5,6,16-19).

COMMUNICATION APPREHENSION

One of the primary elements found to be associated with poor communication skill development is a phenomenon known as "communication apprehension" (CA). Communication apprehension is "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons."⁽²⁰⁾ A person with a high level of CA tends to avoid communication much of the time in order to avoid experiencing the fear or anxiety associated with communication. Although the person will engage in communication at times, he or she will do so much less frequently than persons with lower levels of communication apprehension. People with high levels of communication apprehension are often labeled "shy" or "reticent." For such people, apprehension about participation in oral communication outweighs their projection of gain from many communication situations, thus they often choose not to communicate.

A considerable body of research points to the severe negative effects that result from a high level of CA; several of

which are directly relevant to the profession of pharmacy.³ People with high CA have not only been found to communicate less frequently, but also to be more likely to talk about irrelevant matters when they do talk. The pharmacist with high CA, therefore, would not only be expected to talk less with patients than other pharmacists do, but also to talk less about professional concerns. Of at least equal importance is the research that indicates that people with high CA are perceived negatively by others in their environment. They are perceived to be both less credible and less attractive. The pharmacist with high CA, therefore, would not be likely to be perceived as a credible source of information on drugs or an intelligent attractive person with whom to interact about either professional or non-professional matters. People with high CA are also rejected as opinion leaders, while one of the major roles today's practicing pharmacist is expected to fulfill is that of an opinion leader on drugs.

In short, all of the research evidence suggests that a pharmacist with high CA would not only be unwilling to perform a very significant portion of her or his professional role, but that even when attempts are made to fulfill that role, the probability of success is very low. The first concern of the present investigation, therefore, was to estimate whether it is likely that there are significant numbers of professional pharmacists who suffer from high CA. Since many nonprofessionals and pharmacy preprofessionals have little understanding of the contemporary role of the pharmacist, the traditional stereotype of the pharmacist as a person in the back of the pharmacy, hidden from view, putting things in little bottles(7) may attract individuals with high CA to the profession. On the surface, this stereotype portrays a profession which requires little communication while still promising a decent economic standing, precisely the type of occupation found to be most preferred by people with high CA(21).

A second concern of the present investigation was the possible interrelationship of CA with the education of the pharmacy student. Previous research has produced two important findings that are relevant here. *First*, students with high CA have been found to achieve less at all levels of instruction than students with lower levels of CA, even though there is no meaningful relationship between CA and intelligence. *Second*, traditional training in communication skills has been found to make the problems of students with high CA worse rather than

¹ "Generic Substitution An Overview," National Association of Chain Drug Stores, Mimeographed (7 November 1977).

² Market Facts Inc., *National Pharmacy Service Study*, conducted for The Upjohn Company, Kalamazoo MI (April 1976) p. 5.

³ For a summary of over 100 studies on communication apprehension, see McCroskey, J.C., *Hum. Commun. Res.*, 4, 78 (1977).

better. Overcoming high CA requires either clinical or quasi-clinical treatment(22).

The implications of these research findings are important to pharmacy education. First, if the instruction system employed in the pharmacy classroom depends on student-student or student-teacher interaction, we would expect the pharmacy student with high CA to achieve less than other students. Second, even if the pharmacy program attempts to help students improve their communication skills, the student with high CA is likely to develop a more severe problem rather than overcome her or his apprehension. Two questions posed for this investigation, therefore, were: (i) In a pharmacy class that depends on student-student interaction, are students with high CA evaluated differently than students with low or moderate CA?, and (ii) Do levels of CA change as a function of a pharmacy education program that attempts to improve communication skills?

METHODOLOGY

The subjects in this study included all students enrolled in the first, second, and third year in the School of Pharmacy at West Virginia University in 1976-77 (i.e. all three professional classes in a 2-3 curriculum configuration) and those enrolled in the first and second year in the same school in 1977-78. The sample sizes for each class are noted in Table I.

Combining the data from the students at all three levels from the 1976-77 group and from the first-year students in the 1977-78 group ($N=257$) permitted an estimation of the probable proportion of professional pharmacists who are likely to be highly communication apprehensive. If students in the WVU program are representative of pharmacy students generally, and assuming that pharmacy students are not meaningfully different from professional pharmacists (on the variable under study only; there are some obvious differences such as age and experience), the distribution of CA in the student sample should be similar to that which would be observed in a representative sample of pharmacists.

To generate an answer to the research question relating to the impact of pharmacy education on CA levels, the CA levels of the first year students in 1976-77 were compared with those of the same students in the second year class in 1977-78. The students in the first-year class of 1977-78 provided data related to the research question concerning whether students with high CA are evaluated differently in a pharmacy class than other students. These students were all enrolled in a required class entitled "The Pharmacist's Social Environment."

Two aspects of the course are relevant to this investigation. The course is taught primarily by the "guided-design" system of instruction.⁴ The operation of the guided-design teaching methodology involves small group discussion of printed material. In this course, the 71 students were randomly assigned to nine groups of seven students and one group of eight students. Material on the importance of pharmacist communications and certain communication concepts and techniques were included in the course.⁵

During the first class period, students were told how grades were allocated, specifically that part of their grade would be based on participation. At the time of the final exam, each student was presented a list of the members of his guided-design group, and given the following instruction: "You have 100 points to divide among the members of your group, including yourself. Give each person the number of points you feel he or she deserves, based on their contribution to the group's discussion. The total points you assign must equal 100." The availability of these evaluations permitted us to correlate com-

Table I. Mean communication apprehension levels by year and year-in-school.

Academic year	Mean (N)		
	First year	Second year	Third year
1976-77	54.1(70)	59.4(57)	58.3(59)
1977-78	57.8(71)	56.4(64)	—

munication apprehension level with the peer evaluation level of the 1977-78 first-year class.

The CA levels of the students were determined by the Personal Report of Communication Apprehension (PRCA),⁶ which was administered during the first day of class. The PRCA is the most widely used measure of CA and has been demonstrated to be highly reliable and valid(23,24). In the present study, the internal reliability of the PRCA was estimated to be 0.92, which is comparable to that found in previous research.

RESULTS

Table I reports the mean PRCA scores for each student sample. The combined mean for the four different groups (excluding the 1977-78 second-year students) was 57.3, with a standard deviation of 11.7. The possible range on this instrument is from 20 (low CA) to 100 (high CA). The obtained range in this sample was 20-97. The observed mean and standard deviation are comparable to those obtained in previous studies employing very large (over 10,000) samples of college students and other adults. These results indicate that pharmacy students are comparable to other college students and non-student adult populations with respect to distribution of CA. Previous research indicates that in the general population approximately 20 percent of the people suffer from high CA(24). The results of this study, therefore, suggest that approximately one of every five pharmacists may be a person with high CA.

To determine whether CA is correlated with peer evaluations, the linear (Pearson) correlation between the students' PRCA scores and their average peer evaluation was computed. The obtained correlation was -0.33 ($N=71$, $P<0.01$). This indicates that as level of CA went up, peer evaluations went down. Approximately 11 percent of the variance could be predicted by PRCA score alone. To illustrate this impact more clearly, the sample was divided into high, moderate, and low CA groups and the mean evaluations computed for each group. Students beyond one standard deviation from the mean were placed in the extreme groups, with the remainder being classified as moderate. Table II reports the results of this analysis. These results clearly indicate that students' CA levels were instrumental in producing very different peer evaluations.

An examination of the means reported in Table I provides some insight into the answer to the research question concerning the impact of pharmacy education on students' level of CA. Second- and third-year students are not lower in CA than first-year students. In fact the pattern appears to be in the opposite direction. An analysis of variance of the three levels

⁴ For a discussion of guided design, see the series of eight articles in *Eng. Educ.*, 62 (1972). See especially: Stager, R.A. and Wales, C.E., *Eng. Educ.*, 62, 539 (1972); Feldhusen, J.F., *ibid.*, 62, 541 (1972); and Wales, C.E., *ibid.*, 62, 905 (1972).

⁵ Within the West Virginia University pharmacy curriculum, communication skills are also a component during the second and third (clinical) years.

⁶ The PRCA questionnaire has been published previously. See McCroskey, J.C., *Commun. Monog.*, 45, 192 (1978). Interested readers may also contact the authors.

Table II. Mean peer evaluations by CA level.

CA level	N	Evaluation mean	F	P
Low	11	98.8	7.73	<0.01
Moderate	50	81.5		
High	10	69.0		

of students composing the 1976-77 groups yielded an F -ratio that did not meet the usual (0.05) criterion for significance ($F=2.93$, $0.05 > P < 0.10$). However, a correlated t -test involving the students for whom both first- and second-year scores were available indicated a significant effect ($N=64$, $t=2.25$, $P < 0.05$). Although the amount of variance attributable to pharmacy instruction (also confounded by time) is probably not meaningful, to the extent there is an impact, it is negative, rather than positive for this sample. Of particular note, however, is that correlation of PRCA scores between the two administrations, separated by approximately one year, was 0.76. This indicates the very stable, enduring nature of this phenomenon and suggests that a pharmacy student with high CA will become a pharmacy professional with high CA.

DISCUSSION AND IMPLICATIONS

The findings of this research are directly relevant to two dilemmas recently raised in the pharmacy literature.

The first dilemma is that raised by Smith(1). Pointing out that "the deficiencies of our educational programs in preparing graduates to be fully capable of all that is required of them in a clinical setting are more apparent now than they were in the conceptual stages," she raised the issue of "fairness" in evaluating the ability of pharmacy students to communicate their knowledge. Pharmacy students, she stated, "do not feel confident communicating with patients — let alone physicians. And the instructors did not feel confident in passing 50 percent of the students. However, the curriculum committee . . . would have been extremely upset if we had failed half of the senior class." This research would indicate the number of communication-apprehensive pharmacy students is in the area of 20 percent (similar to distribution of the trait in the population). But the dilemma itself is very real. Based upon the findings of both this study and of related research, it is apparent that students with high levels of communication apprehension are at a severe disadvantage in courses where grading is based, either wholly or in part, on the demonstrated ability to communicate. In addition, the evaluation of knowledge, synthesis, or application via the student's demonstrated communication skills will result in a lower than otherwise justified evaluation for high CA students. It is obvious that, if communication skills themselves are evaluated, students with high CA will perform poorly, even if communications skills are a curricular component.

The high CA student potentially becomes the high CA pharmacist who is likely to hide in the prescription department(7) and "return to the typewriter after graduation." (1) This second dilemma for pharmacy practice and education has been referred to by Rezler *et al.*(25). They state, "the profession of pharmacy is undergoing a consequential ideological change — that of directing its efforts from the distribution of drugs to a clinical approach which emphasizes patient care as related to the drug use process. As the profession engages in this change, it would seem likely that some persons will not be

comfortable with the expectations demanded of the clinical role because of their unique behavioral characteristics, i.e. persons choosing pharmacy as a professional career based upon their unique behavioral composition and its relationship to their perception of 'what the pharmacist does' may not readily move into the transition demanded of the clinical role. The phenomenon would most likely occur for those persons who chose pharmacy because of its perceived lack of patient involvement."

As the public perception of 'what the pharmacist does' changes, pharmacy is likely to become less attractive to the high CA individual. Until that occurs, the dilemma for pharmacy schools is very real. Unless pharmacy schools are willing to reassess their role, responsibilities, and tactics regarding the profession's ideological change, they should recognize that the teaching of communication skills will not resolve the dilemmas involving the high communication-apprehensive student. While the problem may be ignored, other alternatives are apparent. *First*, the level of communication apprehension may be used as an admissions criterion. *Second*, the high communication-apprehensive student may be identified and treated prior to required coursework involving either teaching or evaluation of communication skills. The high CA pharmacy student and the high CA pharmacy practitioner need help if the expectations for future pharmacy practice are to be met.

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