Implementation of a Systematic Desensitization Program and Classroom Instruction to Reduce Communication Apprehension in Pharmacy Students[1]

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Data from a national study of communication apprehension (CA) in pharmacy students indicate that the proportion of high CA students in many of our pharmacy schools is higher than the general population average of one out of five people. High CA individuals will tend to avoid communication much of the time. Since projected new roles for pharmacies lean heavily on both communication ability *and* desire, having large numbers of high CA people going into practice may not be in the best interest of the profession. Systematic desensitization (SD) and cognitive restructuring (CR) are two methods that have been used to successfully "treat" CA. A formal SD and CR program, along with classroom instruction, was developed to alleviate the problem. Results indicate encouraging and substantial reductions in CA as a result of these interventions.

Previous studies have defined the concept and problems associated with communication apprehension (CA)(1-5). One out of five people in the population as a whole are severely communication apprehensive(3). Data from a national study of communication apprehension in pharmacy students indicate that the proportion of high CA students in many of our pharmacy schools is considerably higher.[3] The high apprehensive will tend to avoid communication much of the time. Since projected new roles for pharmacists lean heavily on both communication ability and a desire to communicate, having large numbers of high apprehensives going into practice may not be in the best interest of the profession.

In response to pharmacy's projected new roles, many schools of pharmacy have instituted, or are planning communication courses. These courses are primarily skills oriented. Having good skills does not necessarily reduce communication apprehension. Since CA is cognitive (and often irrational), skills training will not help the problem of the high CA student. In fact, "forcing" a student to demonstrate communication skills in the classroom can make the problem of the high apprehensive worse rather than better(6). Therefore, a dilemma exists. Pharmacy students certainly need to acquire certain communication skills and competencies before they enter the practice setting, yet the high CA student may actually suffer from this type of training alone. A solution is to employ methods in a classroom setting that will reduce or alleviate much of the anxiety of the high CA student before or during skills training. Systematic desensitization (SD) and cognitive restructuring (CR) have been used to treat other cognitive problems such as text anxiety, vaginismus, stress, and guilt(7-10). Since overcoming high CA requires either clinical or quasi-clinical methods(6), SD and CR have been used successfully to reduce communication apprehension(11-16).

Systematic desensitization involves a program of deep muscular relaxation paired with a communication apprehension hierarchy. The reason SD works is quite simple. As Goldberg points out, "Much of what we feel as anxiety is our reaction to body sensations caused by muscle tension and constricted blood flow. . .It is not possible for muscles to be both tense and relaxed at the same time. . .relaxation and tension are competing responses. Both can be learned, and the strength of one will inhibit the other as a response to a discrete set of stimuli."(9) Therefore, if a person can be taught to be cognitively aware of muscle tension, and relax muscles in the presence of anxiety producing stimuli, anxiety will be reduced as a result.

Cognitive restructuring, as well as SD, is based on learning theory. Cognitive restructuring involves getting people to realize that they have learned (been conditioned) to think negatively about themselves and teaching them to think positively. CR

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relies on making people aware of their own negative statements, behaviors, and cognitions and then asking these people to change these negative statements into positive ones(13). Finally CR also attempts to change a person's cognition about the communication process.

A pharmacy communication course employing SD, CR and skills training was developed in the Fall of 1981 at West Virginia University (WVU) and further modified at Auburn University in 1982. This paper describes an account of that course and implementation procedures for the SD program. In addition, the impact of the course and the programs are presented.

METHODOLOGY

The subjects in this study included all students enrolled in the WVU School of Pharmacy's required course entitled, "Professional Aspects of Pharmacy Practice."[4] It is a semester long (15 weeks), three credit hour course for second-year pharmacy students (fourth college year). A total of 60 students were enrolled. The class was divided in half alphabetically into Tuesday and Thursday sections. Each section was broken down further, later in the semester, when relaxation training and role-playing began. Each section was taught by the same instructor and met approximately two and one-half hours each week. Smaller sections were necessary to "personalize" the class. Students in each section were asked not to discuss the activities in their section with students in other sections. Attendance in the class was mandatory. Students were told that each unexcused absence would cost them a letter grade.

The CA levels of the students in the study were determined by the Personal Report of Communication Apprehension (PRCA) (see Appendix A), which is the most widely used measure of CA. The 24 item PRCA measures communication apprehension in four contexts: *(i)* group; *(ii)* meeting; *(iii)* dyadic; and *(iv)* public speaking. The population mean for the total score on the instrument (based on $N = 10{,}000$) is 65.6 with a standard deviation of 14.1. High CA is defined as a score of 79 and above or approximately one standard deviation above the mean. The PRCA has been demonstrated to the highly reliable and valid(2,3).[5] Internal reliability for this sample of pharmacy students was 0.92. Test-retest reliability in a previous study was 0.76, which indicated the stable enduring nature of CA(4).

The PRCA was administered in each section on the first day of class. All students completed the instrument. No explanation of the instrument or its purpose was given to the students. They were simply told that it would be explained to them at the end of the semester. At the end of the fifteen week semester, the same students filled out the PRCA again in order to estimate what effects, if any, the course had on reducing communication apprehension.

COURSE CONTENT AND EXPERIMENTAL INTERVENTION

Systematic desensitization, a nonclinical type of cognitive restructuring, and a form of assertiveness training were all employed. Along with these methods, actual communication skills and techniques were discussed, demonstrated and practiced.

Table I presents a week to week activity account of the course. In Week 6 each section was further divided into three subsections for the last hour of the class. Subsection I (in each section) consisted of students identified as highly communicaton apprehensive, those with a PRCA score of 79 and above ($N = 16$). Subsection II was composed of students with

Table I. Course activity account

Week(s)	First 90 minutes	Last 60 minutes
1	Fill out PRCA; Meyer-Briggs; Overview of Course; Read, discuss "Birth"; Meaning of words	
2	Student introductions	
3	Film, "What You are Is Where you Were When"	
4	Barriers to pharmacy communication	Meyer-Briggs groups
5	Transactional analysis	Intro to SD program
6	Transcript, Inference story	SD training, Role playing
7 8	Discussion of books	SD training, role playing
9	Exam	SD training, role playing
10	Medical interview	SD training, role playing
11-14	Speech presentations	View, discuss video tapes
15	Speech presentations	Nonverbal communication

PRCA scores of greater than 60 but less than 79 ($N = 24$). Students in Subsection III had PRCA scores of 59 or less ($N = 20$). Students in Subsection I and II were required to enter into a systematic desensitization (SD) program consisting of deep muscular relaxation combined with a communication anxiety hierarchy. The procedure employed was that outlined by McCroskey(15).

Two Speech Communication PhD candidates and a professor in behavioral pharmacy were trained simultaneously to administer the SD program.[6] One PhD candidate administered the SD program to the Tuesday Subsection I, the other PhD candidate worked with the Thursday Subsection I. The professor worked with both of the Subsection II groups.

The main course instructor took both Subsection III groups into videotaped role play situations (skills training) while the other subsections were in the SD program. All students in the SD program were told they could leave that program and enter into Subsection III where students were doing role plays at such time as they would feel comfortable doing so.

WEEKLY COURSE ACTIVITIES AND CONTENT AREAS

Week 1. During the first day of class, and before an overview of the course was given, the students completed the PRCA; followed by administration of the Meyer-Briggs Personality Inventory(17). After an introduction to the course was given, which included a discussion of communication apprehension, the students were asked to read a poem (Appendix B). Their reactions to the poem were sought. Students felt that the poem

[4]Within the WVU pharmacy curriculum, communication skills are a component during the second professional year.

[5]While this questionnaire is designed as a measure of the subjects' cognitive orientation toward communication and is not a measure of of actual behavior, numerous studies have indicated the high association of the scores on the PRCA with actual communication behavior. It is particularly highly associated with amount of talk in which the individual is willing to produce and the likelihood of an individual withdrawing from or avoiding communication situations(2,3,17).

[6]It takes approximately one hour to train an individual to be qualified (or competent) in administering a systematic desensitization program.

was very strange and somewhat sadistic. When told the title of the poem was "Birth," and the poem reread, their impression of the poem was quite different. The purpose of this exercise was to point out that words have no inherent meanings, and that people and context give words meaning. Additional examples and discussion of this concept provided a beginning to the cognitive restructuring process.

Week 2. The entire session was spent allowing the students to get to know each other better. The students were randomly paired in dyads and asked to interact with each other. Each student was asked to introduce the other to the class. They could stay seated or stand, whichever was more comfortable for them. Students could ask each other anything they wanted. However, each student had to identify what made them happy, angry, sad, and what they felt they could do better than most people.

The purpose of this session was to provide a dyadic interaction experience and personalize the class. Moreover, it forced all students to make at least one positive statement about themselves (cognitive restructuring). Students reported verbally that they enjoyed the session. In fact, the overwhelming response from the class was that it was unfortunate that they didn't get to know each other better before this.

Week 3. The film, "What You Are Is Where You Were When" was shown(18). The film deals with the formation of values. In particular, the film looks at what major events affected the values of people from the age of 10 through 60, when they were 10 years old. A discussion of the material in the film followed. The major conclusion of the film and the discussion was that values impact considerably on the behavior and communication of people. In addition, two people can have diametrically opposed values, yet they can both be correct in their views. Acceptance of this concept is part of the cognitive restructuring process.

Week 4. The first ninety minutes of class were spent on a discussion of barriers to effective communication in patient-pharmacist, pharmacist-physician relations. Topics included language barriers, jargon, ego battling, privacy, and so on.

The remaining time involved putting the students into groups according to their Meyer-Briggs profiles, although the students were unaware that the groups were not randomly selected. The students were told that all of them needed a kidney dialysis machine, but only one person per group would get it, the rest would die. The group, as a group, had to decide who would get the machine.

The groups composed of "emotional" processors laughed, never really got serious, and inevitably ended up drawing straws. They felt it was ridiculous to make this kind of a decision. The "rational" processors made lists of "worth to society" to decide who got the machine.

Based on the Meyer-Briggs profiles, the instructor accurately predicted what each group would do. The students were amazed that prior to group discussion, the instructor was able to accurately predict their behavior, and that the groups made decisions in such different ways. The "emotional" processors couldn't understand how anyone could make lists when evaluating human life. The "rational" processors could not understand why anyone would want to have their life decided by drawing straws.

This exercise was another important step in the cognitive restructuring process. The purpose was to point out that human behavior, under relatively controlled conditions, is quite predictable. It was pointed out that being "predictable," may be a positive attribute in that others expectations would then be consistent with behavior. Finally, and most importantly, this exercise effectively demonstrated to the students that people really do process information differently. It was stressed that there weren't right or wrong ways to resolve the problem with which they were confronted.

Week 5. Transactional analysis (TA) was the topic of discussion for this week. The lecture focused on game playing, manipulative behavior and the formation of the I'm Not OK—You're OK life position(19). Crossed, complementary and ulterior transactions were illustrated. The nonverbal behavior that accompanied parent, adult and child ego states was also demonstrated.

The purpose of teaching transactional analysis was to give the students a tool to help them understand how to communicate more effectively. They were told that TA was not at all a complete explanation of human behavior. Emphasis was placed on confronting game playing and identifying ego states.

The last hour was spent on an introduction to the systematic desensitization program. All students were exposed to a session of deep muscular relaxation paired with a few items on the anxiety hierarchy. The reasons for introducing the SD program to all students was to give them an idea what was involved. In addition, there is a tendency for students to be somewhat uncomfortable, and hence, "giggly" when they are exposed to a very different technique as this. The initial session was to help them get over this initial uncomfortable feeling. Moreover, it was pointed out to all students that communication apprehension is *not* an affliction. It is not good or bad; it just is. Therefore, skills training was not more important than anxiety reduction, or vice versa.

Week 6. The students were asked to read a transcription of a tape-recorded group discussion. They were asked to make sense out of it, even though the transcipt lacked punctuation. They found this task somewhat difficult, but did manage. The transcript involved a conversation between an instructor and pharmacy students about inappropriate prescribing. Communication constantly was ineffective in the transcript. This exercise was employed to identify why it was ineffective and what could be done to improve the situation. The class found the exercise to be quite useful. This exercise took one hour.

In the next half hour, students were read a four sentence story (see Appendix C). They were asked to respond to six statements about the story as either true, false, or "?" if the story did not provide the information asked. The story was repeated after the initial reading. The responses to each statement were quite varied, as predicted.

This exercise was used to reinforce the notion that words have no inherent meaning. The students constructed their own reality about the story from their values and past behavior. Hence, the outcomes were different in responding to the six statements. Again, this exercise employed the use of cognitive restructuring.

During the last class hour, the groups were divided into their subsections. Subsection I and II went into the SD program with their instructors and Subsection III went into role-playing with the course instructor. The last class hour of weeks 6 through 10 was handled in an identical manner.

The students involved in the role-playing sessions (low CA's) were taken to a videotape studio where a mock pharmacy was set up. Each of these students was required to do a role play as either a patient, physician or a pharmacist. They were videotaped and then the role play was constructively reviewed by the class and instructor. Transactional analysis, assertiveness training and other methods were incorporated into the role plays and their evaluations. Individual attention and some coaching

was given to each student. An attempt was made to deal with each student's apprehension on an individual basis. The role plays done in Tuesday's Subsection III were different than those of Thursday's Subsection III. Later in the semester, each section would view the other's role plays. A sample role play and its objectives is shown in Appendix D.

Weeks 7 and 8. Three books were required reading for the course: *(i) Your Erroneous Zones*(20); *(ii) I'm OK—You're OK*(19); and *(iii) When I Say No I Feel Guilty*(21). These two weeks were used to discuss the "philosophies" espoused in these books. As important as the content of these books was the vast differences among the students' opinions on the utilities of any given book. Students had especially strong and diverse reactions to Dyer's *Your Erroneous Zones*. It was important to emphasize to the students how their values affected their opinion of the book. It was also important to point out that all of them were equally "correct" in their opinions.

When I Say No I Feel Guilty formed the foundation of assertiveness training. Many of the techniques taught were used in the role plays. All of the books and subsequent discussions gave the students tools they could use to prevent others from manipulating them in order to obtain "equality" in communication with others. They helped provide a feeling that they had a right to equality in communication.

Week 9. An open book, open note essay exam was given during the first ninety minutes. The remaining hour involved the SD program and role playing as mentioned previously.

Week 10. Students read an interview between a physician and a new patient.[7] The physician was both condescending and manipulative. The patient was very nonassertive (see Appendix E). Techniques discussed in class and in the books were used to construct a more caring, empathetic communicative interaction between the patient and physician.

Weeks 11 through 15. Each student was required to present a talk to the students in their section. This assignment was described as the opening 5-10 minutes of a longer talk. Students could choose from a topic list provided by the instructor or have a topic of their own approved. In either case, students had to identify to what audience they would actually present the talk. For example, a talk on birth control to a PTA group might be quite different than the same topic given to high school students. Both the students (actual audience) and the instructor evaluated the presentations on a rating instrument. The instrument was given to the students at the beginning of the semester so they would know how they would be evaluated.

While some comments were made after each presentation, all students were required to see the instructor individually in order to find out their presentation score. In this manner, the instructor could privately discuss the presentation with the student in a calm, relaxed atmosphere.

For Weeks 11 through 14 the videotapes that the Thursday section made were shown to the Tuesday section (and vice versa) for the second half of the class. While many of the students did not physically participate in the role playing because they had been in the SD program, this allowed them to observe and discuss some necessary communication skills. Admittedly, their lack of actual role playing participation was a weakness of the course in that high CA students did not receive this opportunity for practicing their communication skills.[8] Time did not permit another arrangement. However, reducing communication apprehension was as important a course goal as skills training. In addition, the role playing group received additional skills training by viewing the other section's tapes. The last hour of Week 15 was spent on a formal lecture on nonverbal communication. Students also completed the PRCA post test.

During all phases of the course the students were constantly reminded by all instructors that what they were receiving were tools. In order to change their behavior and cognitions they needed to practice using these tools outside of the classroom. It was especially emphasized to the high and moderate CA groups that CA is learned and that the SD program and techniques had to be reinforced by them outside of the classroom.

The SD PROGRAM

Before pursuing a discussion of the results, a more complete explanation of the SD program is in order. To put a program into full operation, it is essential to first identify those individuals who need treatment. This can be done by using the PRCA. It is recommended that students with scores of 52-70 be included in one group and those with scores of 70 and above be included in another group. Because students will have to complete an anxiety hierarchy (see Appendix F), it will take students with higher CA scores longer. Therefore, it is not a good idea to have mixed groups. In the 52-70 group it has been found that it will take students two or three weeks (one 50 minute session per week) to complete the hierarchy and five or six weeks for the 70 and above group.

In general, administration of the SD program requires a small quiet room (per group), comfortable chairs, a tape recorder, and the relaxation tape.[9] Small groups of individuals are optimal. The most essential ingredient in the administration of the systematic desensitization program is comfortable seating. Individuals are asked to relax, and these are individuals for whom relaxation is not easy. Thus, the more comfortable the seating, the easier it will be to relax the people.

The general procedure for operating the program is rather straightforward. Subjects should be seated in comfortable chairs and told by the trainer to lean back, close their eyes and relax. Room lights should be either dimmed or turned off. Because subjects must keep their eyes closed during the training session, individuals wearing hard contact lenses should be prepared to take them out.

Trainees should be told that whenever they feel tension once the relaxation tape has been played, they should indicate that tension by raising the index finger of their right hand. In this way, responses are kept confidential between trainer and trainee.

After the trainer is certain that this instruction is clear, the relaxation tape should be played. When it is completed, the tape recorder should be quietly unplugged, and the trainer should continue to give relaxation instructions similar to those on the tape.

The trainer should check to make sure all subjects are awake, even though their eyes are to remain closed. Tell the trainees that when their name is called, they should indicate that they hear it by raising the index finger on their right hand. Because a deep state of relaxation can be achieved, some subjects may fall asleep. If a trainee does not respond when their name is called, quietly and gently tap the trainee on his/her ankle or foot. Then give another minute of so of relaxation instructions.

It is now time to begin administration of the communication

[7] Wilcox, E.M., paper presented at the Student American Pharmaceutical Association Regional Meeting, Columbus OH, February, 1981.

[8] In the course developed at Auburn University all students participated in role plays and other simulations after receiving the SD program.

[9] Copies of the relaxation tape are available from the author at $5.00 per copy. Make checks payable to Auburn University School of Pharmacy.

apprehension hierarchy. The first item on the hierarchy should be presented to the subjects by the trainer and then he should remain silent for a period of 15 seconds. If any trainee indicates anxiety during that 15 seconds, the trainer should ask all of the trainees to put the image of the anxiety stimulus out of their minds and concentrate on relaxation. He should continue to give relaxation instructions for a period of 15 to 30 seconds. After that time, he should again ask the subjects to visualize the anxiety stimulus. If the 15 second period elapses with no indication of anxiety from any trainee, the trainees should be asked to put the image out of their minds and go back to relaxing. The trainer again gives additional relaxational instructions for about 15 to 30 seconds. After that time the anxiety stimulus should again be administered with a pause of 30 seconds. If any trainee indicates anxiety during the 30 second period, the trainees should be asked to put the image out of their minds and go back to relaxing and receive more relaxation instructions. This procedure is continued until it is possible for all trainees in the group to visualize the anxiety stimulus for 15 seconds without indication of anxiety and for 30 seconds without indication of anxiety. When sequential 15 and 30 second intervals have been completed with no indication of anxiety, the trainer may then go on to the second anxiety stimulus in the communication apprehension hierarchy. This procedure is continued until the end of time for treatment at a given setting or until the hierarchy is completed.

Sessions should last no more than 50 minutes to an hour, including the time used in listening to the relaxation tape. As the time for completion nears, the trainer should go down the hierarchy to the last stimulus which the trainees successfully completed with no anxiety indication. This stimulus should be presented with a 60 second pause by the trainer. If no trainee indicates anxiety during this period, treatment may be terminated with the assurance that all subjects will leave the treatment session in a low state of arousal. If any trainee indicates anxiety during this period, the trainer should move back to still a less anxiety provoking stimulus that has been successfully completed and administer it for a 60 second period.

Treatments should be continued for a preset number of sessions, such as 5 to 7. This will normally permit the completion of the anxiety hierarchy by all trainees. At this point the trainees should be asked again to complete the PRCA. Those individuals with scores 60 or below should be considered cured and should be removed from treatment. Those individuals who still report moderate to high levels of communication apprehension should be formed in new groups and treatments should continue for another 5 to 7 sessions. At that time, the individual again should be asked to complete the PRCA. By this point, almost all trainees will have overcome their communication apprehension. However, some individuals do not respond to systematic desensitization. This small number (probably less than 5 percent) might be encouraged to seek professional assistance from a psychologist.

Although the research indicates that the effects of systematic desensitization are maintained for extended periods of time, if the program is an ongoing one, it would be useful to reinforce the effects of systematic desensitization on communication apprehension for those individuals who have been identified as cured by giving them single session treatments at 3 to 6 month intervals for the following year or two.

DETERMINING THE EFFECTS OF THE PROGRAM

Any program that involves the outlay of time or money by a school or business should be subjected to a systematic program evaluation. A program of systematic desensitization for communication apprehension should be no exception. Although there is no reason to believe that a program implemented in the manner discussed above would not be extremely successful, it still should be put to the test.

There are at least three ways of evaluating a program of systematic desensitization for communication apprehension that seem to be appropriate. The first method is analgous to the procedures which have been employed in the research on systematic desensitization. This procedure involves administration of the PRCA to people who have been treated and to people who have not been treated but who, on earlier tests, indicated that they were in need of treatment. Not everyone who is offered treatment accepts it. Thus, in any school or business there will be people who have volunteered for treatment who are in other ways comparable. If the scores on the PRCA are not substantially lower for those who receive treatment than those who have not, this would indicate that the treatment has been unsuccessful.

But systematic desensitization for communication apprehension is not merely designed to lower anxiety scores on the PRCA. Presumably, if communication apprehension is reduced, there should be other behavioral manifestations. In the school environment observations by the students' instructors could be usefully employed as an evaluation tool. In short, their instructors can simply be asked whether or not they have observed any difference in the behaviors of these people. In the business atmosphere, ratings by superiors or more district measures of productivity can serve as a useful evaluation tool.

RESULTS

As pointed out earlier, any student in Subsection I or II who felt that the SD program was not helping or had helped enough was permitted to join Subsection III. After three weeks of the SD program, some students did move to Subsection III. However, only students in Subsection II (PRCA scores greater than 60, but less than 79) did so ($N = 8$). Fourteen more Subsection II students dropped out after the fourth week when the hierarchy was completed. Two students returned for a fifth week. All students in Subsection I remained for the full six weeks.

Table II. Mean communication levels before and after exposure to course

	Mean (N)			Student's	Wilcoxon
	Before	After	△	*t*	T*
All Students[a]	69.15(60)	58.12(60)	11.03	5.46	5.46[c]
Hi CA Group[b]	89.06(16)	70.25(16)	18.81	7.24	3.29[d]

[a] $P < 0.001$.
[b] $P < 0.0001$.
[c] $P < 0.0002$.
[d] $P < 0.0005$.

Table II reports both "Before" and "After" mean PRCA scores for all students and the high CA group. The obtained range was 42-114. Since PRCA scores of 79 and above are considered high CA, 27 percent (16 out of 60) of the students in this study were classified as high CA. One out of four students was severely communication apprehensive before exposure to the course, and presumably would have become a high CA pharmacist if not treated. This proportion is in the normal range for pharmacy students, but higher than the general population portion of one out of five.

The student's *t*-test based upon paired dependent obser-

vations was used to determine if exposure to the course significantly reduced CA in all students and in the high CA group based upon the students' change scores. A reduction in CA would result in lower PRCA scores. Table II illustrates that exposure to the course did, indeed, reduce CA significantly for all students and for the high CA group alone.[10]

Since the PRCA scores are based on data collected from Likert scales, a non-parametric test also was used to analyze the data. The Wilcoxon Sign Rank procedure was felt to be appropriate since non-parametric procedures are not sensitive to outliers in the data. These results, like that of the student's *t*-test, also indicate that exposure to the course produced significant reductions in communication apprehension (See Table II).

It should be noted that 12 out of the 16 (75 percent) high CA students ended up with PRCA scores below 80 at the end of the course. In addition, the mean score for the group was well within the normal range at the end of the semester.

The lack of a control group raises the test-retest issue(15). In other words, could the observed reduction in CA be a result of simply readministering the PRCA? Previous studies have looked at this problem(2,3,13). Although in previous studies some reduction in PRCA scores did occur with no intervention (3.5 units), the reductions were significantly less than the reductions achieved through the use of intervention techniques. The present study had an average reduction in PRCA scores of approximately 11 units overall and 19 units for high CA students. Moreover, when the same instructor taught this course to the previous class without using the SD program, the change scores were substantially lower(5).

An observation was consistently made when students came in to find out their speech presentation scores. Those students with high CA, but good skills consistently expressed surprise when told their presentation was evaluated positively. In other words, they undervalued their own skills. These were people in the high CA, high skill group. Pharmacists in this group, that are not treated, will avoid communicating because they won't believe they have the skills, either. This condition is not conducive to the development of the profession or its clinical role.

CONCLUSIONS AND IMPLICATIONS

Communication apprehension is a very real problem. High CA people, if left untreated, could become tomorrow's pharmacists with severe CA, posing a problem for the profession.

Systematic desensitization, in conjunction with classroom instruction, cognitive modification and assertiveness training of the type outlined above, appears to be an effective method of reducing CA. The techniques employed in this study can be learned easily by instructors in colleges of pharmacy. This study demonstrated that a communication course based on these approaches could be developed to reduce communication apprehension in pharmacy students. All of these results are particularly pleasing in that optimal individual attention could not be given to each student, as the class sizes were still relatively large.

[10]It should be noted that mean PRCA scores for students in Subsection II dropped significantly ($P < 0.005$). The average change for this group was 7 units. Mean PRCA scores for students in Subsection III dropped 11 units ($P < 0.001$). Therefore, low CA students (Subsection III), who were not apprehensive in the first place benefited from skills training. Many students in the moderate group (Subsection III) received SD training and skills training. Therefore, their change scores may be a result of both. Many individuals in the moderate group would benefit from skills training. This is not necessarily true of high CA students. In fact, in a follow-up study of pharmacy students at Auburn University School of Pharmacy, high CA students received skills training in addition to the SD program. Their change scores were identical to those of the West Virginia University high CA pharmacy students. Therefore, it does not appear that skills training aided in the reduction of the high CA students anxiety. This does not mean that the high CA student did not acquire additional skills. Since low CA students *did* benefit from skills training, this certainly indicates the predictive ability of the instrument.

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(21) Smith, M.J., *When I Say No, I Feel Guilty*, Bantam, New York NY (1975).

APPENDIX A. PERSONAL REPORT OF COMMUNICATION APPREHENSION

Directions: Please indicate in the space provided the degree to which each statement applies to you by marking whether you: 1) Strongly Agree, 2) Agree, 3) Are Undecided, 4) Disagree, or 5) Strongly Disagree with each statement. There are no right or wrong answers. Many of the statements are quite similar to other statements. Do not be concerned about this. Work quickly, just record your first impression.

_____ 1. I dislike participating in group discussions.
_____ 2. Generally, I am comfortable while participating in a group discussion.
_____ 3. I am tense and nervous while participating in group discussions.
_____ 4. I like to get involved in group discussions.
_____ 5. Engaging in a group discussion with new people makes me tense and nervous.
_____ 6. I am calm and relaxed while participating in group discussions.
_____ 7. Generally, I am nervous when I have to participate in a meeting.
_____ 8. Usually I am calm and relaxed while participating in meetings.
_____ 9. I am very calm and relaxed when I am called upon to express an opinion at a meeting.
_____10. I am afraid to express myself at meetings.
_____11. Communicating at meetings usually makes me uncomfortable.
_____12. I am very relaxed when answering questions at a meeting.
_____13. While participating in a conversation with a new acquaintance, I feel very nervous.
_____14. I have no fear of speaking up in conversations.
_____15. Ordinarily, I am very tense and nervous in conversations.

_____16. Ordinarily, I am very calm and relaxed in conversations.
_____17. While conversing with a new acquaintance, I feel very relaxed.
_____18. I'm afraid to speak up in conversations.
_____19. I have no fear of giving a speech.
_____20. Certain parts of my body feel very tense and rigid while giving a speech.
_____21. I feel relaxed while giving a speech.
_____22. My thoughts become confused and jumbled when I am giving a speech.
_____23. I face the prospect of giving a speech with confidence.
_____24. While giving a speech I get so nervous, I forget facts I really know.

APPENDIX B.

"BIRTH"

Floating in darkness,
For what seemed like an eternity,
I am thrown upon a world
Of such light and intensity
That my head spins
And terror shakes my body.

I am suspended,
The whole world turned upside down,
Hanging on by something that totally controls my destiny.
Should it let go,
I will surely perish.
I have no control at all.

Then a violent eruption.
Pain pierces through my entire body.
I scream in pain to make
The world aware of my presence.
I look around,
And instead of compassion,
I see smiles spread across the faces
Of those that witnessed the torture I have just gone through.
Could it be?
Are these creatures really that sick?
Is it pleasurable for them see my anguish?
This must be a terribly sadistic world.
It is this that I shall learn first and remember always.

APPENDIX C.

INFERENCE

A business man had just turned off the lights in the store when a man appeared and demanded money. The owner opened the cash register. The contents of the cash register were scooped up, and the man ran away. A member of the police force was notified promptly.

* * * *

1. A man appeared after the owner had turned off his store lights. (?)
2. The robber was a man. (?)
3. The man did not demand money. (F)
4. The owner opened the cash register. (T)
5. After the man who demanded the money scooped up the contents of the cash register, he ran away. (?)
6. While the cash register contained money, the story does not state how much. (?)

Special features:
a) better educated, higher IQ group
b) some awareness that the subject involves communications
c) not emotionally involved in the story
d) only four sentences
e) told explicitly, repeated, copied, etc.
f) only requiring ability to specify true, false or ?

APPENDIX D.

B.C. Problem Female Patient

You have just finished your last month of Demulen and started your period. On day 5 of your cycle you are to start a new prescription for Ovral. Your gynecologist has switched you because he says that the Ovral is lower dosed and "you don't need as much of those hormones in your system." A few friends have told you that if you are going to switch that it probably would be a good idea to use a spermicidal foam. You go to the pharmacy and get a package of Emko foam from the shelf. You walk up to the pharmacist and say to him "Do I need to use this?"

Don't tell the pharmacist who recommended the use of the foam unless he asks.

The Pharmacist will start the conversation. . .

* * * *

B.C. Problem Pharmacist

A female customer walks up to the counter and puts down an Emko foam kit. You start the conversation by asking, "Is there anything else?"

* * * *

Role Play: B.C. Problem

Question(s): Does a patient switching from one birth control pill to another need to use another method of contraception? For how long? Under what conditions? What information might you want to give to a patient switching pills?

Problem(s): *As a pharmacist you have very little information. You just have a patient who asks "Do I need to use this?"
*Pharmacist needs to establish what exactly the patient means and under what conditions.
*Pharmacist must establish who gave the patient the information about the foam. If it was her gynecologist, should you dispute the information?
*Pharmacist must be careful not to insult the customer's friends whether they are right or not.
*You've got a worried patient who needs sound reassuring advice; not "iffy" information.

Solution(s): Since the patient is not stopping the pill (or has not stopped), she does not need to use the Emko foam. It is important to let the patient know that her period may not start at exactly the same time as it did when she was using Demulen. Therefore, she won't need to worry needlessly. The key to this situation is obtaining information in a concise, mature manner to establish that the patient does or does not need the foam (or another method of contraception). It is the pharmacist's job to objectively evaluate the information and make an informed, objective decision. There is no room for making emotional value judgments about where the patient obtained her information.

APPENDIX E. MEDICAL INTERVIEW

Imagine the following hypothetical situation: On the advice of a co-worker, Josephine Wilcox has decided to consult Dr. Smith. Both Josephine and Dr. Smith are new to the area and to date have not met

each other. Josephine plans to make a decision, based on what happens the first time she meets Dr. Smith, as to whether or not she will continue seeing Dr. Smith. She also hopes to get some help for a medical problem(s) she has.

Dr. Smith's patients are screened briefly by his nurse. The nurse has indicated the following on Josephine's new patient file: Josephine Wilcox, married, age 33, college professor, weight 145, height 5'4", BP 110/90, no known health problems. Stated reason for consulting MD: wants a reducing diet.

Further imagine that in advance of the scheduled office visit both Josephine and the doctor are having the following thoughts in anticipation.

Josephine: Darn, I wish this appointment were over! Normally I feel pretty intelligent and in control of things. But not so in a doctor's office. . .there I really feel uncomfortable. Logically I know a doctor is no different than anyone else, but at the gut level I still react like the doctor is really superior to me. I do hope this doctor is understanding, not only about my weight, but everything. I'm not sure I can tell him what my problem really is. . .we'll just have to wait and see.

Doctor: I'm happy that my practice is beginning to grow. I'm enjoying Littletown and its people very much. I'd like to make the best impression possible on this Josephine Wilcox. . .and hopefully help her solve her problem.

The Actual Encounter

Doctor: Hello. . .you're Josephine Wilcox?
Josephine: Nods "yes."
Doctor: Please sit down and make yourself comfortable and don't look so nervous. I won't bite. . .(smiles as he says this). I'm Dr. Smith and I'm very pleased to meet you, Josephine.
Josephine: Thank you, doctor.
Doctor: (Consults chart) Hmm. . .(very serious tone of voice) You want to lose weight?
Josephine: Yes, very much.
Doctor: Why? (without waiting for an answer) So you can look better for your husband, I suppose.
Josephine: Well, that's part of it, sure.
Doctor: You know, Josephine, there is generally only one way to lose weight. . .eat less and/or exercise more. You look as though you exercise. . .is that right?
Josephine: Oh, yes, I do.
Doctor: Glad to hear that; I wish more of my patients did. You realize that junk food will have to go if you're really serious about losing weight don't you?
Josephine: Yeah, but really doctor, I don't eat many junk foods.
Doctor: You know, Josephine, not that I don't believe you, but almost everybody who comes in here for weight control tells me that. . .I'm always suspicious of people who say they don't eat many junk foods. Junk foods are just too available and too convenient for most of us to [illegible]
Josephine: Well, maybe you're right, but I don't eat very much. I just can't understand why I'm not losing weight. My friend and I eat just about the same things and she lost six pounds last month.
Doctor: Well, I'm trying to find out why you haven't lost weight. Incidentally, your friend and you are not alike so I hope you understand why we won't make comparisons. Now tell me about your drinking habits.
Josephine: Well, I don't drink very much.
Doctor: Everybody thinks he or she is a moderate drinker. How much do you drink?
Josephine: At most, one or two drinks a week. . .and that's only when I go to the university faculty happy hour on Thursday evening.
Doctor: (looks at Josephine). . .Hmm. . .I hope you eat breakfast.
Josephine: Oh yes.
Doctor: Well, let's see. I'm going to give you a diet—it's pretty self-explanatory. You follow it and let's see what happens. Before you leave, make an appointment for two weeks from now and we'll check you then. (checks watch) Anything else?
Josephine: Uh, no, I guess not. Thanks doctor. . .I'll see you in two weeks.

APPENDIX F. COLLEGE HIERARCHY

1. (0.3) You are talking with your best friend.
2. (0.9) You are talking to a sales clerk in a department store.
3. (1.2) You are answering the telephone and do not know who is calling.
4. (1.7) You are talking to a member of another race.
5. (2.4) You are talking to a policeman in a restaurant.
6. (2.7) You are talking with a minister.
7. (3.2) You are about to talk with your academic advisor.
8. (3.9) You are trying to make conversation with your date whom you have not dated previously.
9. (4.2) You are trying to make a point at a bull session, and you notice that everyone is looking at you.
10. (4.5) Each person in a group discussion has given his opinion and it is your turn next.
11. (5.3) You are going in for an interview with a potential employer.
12. (5.7) You are scheduled to give a presentation in a panel discussion.
13. (6.1) You are to give a speech in class today.
14. (6.4) You are getting up to give a speech on a topic that the previous speaker just covered thoroughly.
15. (6.7) Your instructor has just called on you to give an impromptu speech.
16. (7.0) You are about to give your speech and you find that you have lost your notes.
17. (7.1) It is the night before an important speech and you are not yet prepared.
18. (7.1) You have been asked to give a speech on a local television show.