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Special Article

A Public Speaking Course for Foreign Medical Graduates

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Nine residents in anesthesiology, all graduates of foreign medical schools, were given a six-week intensive course in public speaking in an attempt to improve their communication skills in the English language. Test audio- and videotapes of each resident were made before and after the course, numbered randomly, and graded by independent observers. A statistically significant improvement in the performance of the participants was found. (Key Word: Education.)

WITH MORE THAN 50 PER CENT of American residencies in anesthesiology currently filled by foreign medical graduates, the problems posed by difficulties in communication in English command attention from those responsible for the training of these physicians. Previous attempts to interest a few foreign residents at Northwestern University Medical School in attending commercial courses of English language instruction met with less than acceptable success. They felt such a course was demeaning and to be approached only as a duty, for which they had little, if any, enthusiasm. Even though we persuaded some to try at our expense, neither they nor we were satisfied.

Discussion with those who did complete commercial courses revealed that most of them had received several years of instruction in English in their native countries. There was, in their minds, little doubt that they were being sent through a course which was repetitious of previous instruction. They felt that they were being treated as children, as people of inferior intellect, or as "second-class citizens." They realized intellectually that such feelings were inappropriate, but these emotional responses were clearly important in detracting from their enthusiasm for participation in these courses. We decided that a fresh, more creative approach was warranted if we were to enlist the enthusiastic cooperation of residents who clearly needed to improve their ability to communicate verbally in the English language. This paper presents the results of a short course in public speaking designed for and administered to nine foreign medical graduates among 23 residents in anesthesiology at Northwestern University.

Methods

Four men and five women constituted the class. The countries of origin of these individuals, with the number from each, were: Egypt 1, Iran 1, Korea 5, Philippines 1, Taiwan 1. The instructor for the course (J.B.) had a Master of Fine Arts degree in speech, drama, and English, and experience both as a college speech instructor and as a commercial television announcer for several years. The course plan was designed and executed by her. An outline of it is given in Appendix 1.

In order to evaluate objectively the progress of the students in this instruction, three testing sessions were incorporated into its design: the first, two weeks before the first class; the second, just before the first class; and the third, immediately following completion of the last class. Each test was divided into audio and video recording sessions. The

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TABLE 1. Audio Test Scores, Per Cent, Mean of Four Evaluations

Student	Sex	Country	Before Course	After Course
1	F	Egypt	67	95
2	M	Iran	56	87
3	F	Korea	48	61
4	M	Korea	40	67
5	M	Korea	38	51
6	M	Korea	34	58
7	F	Korea	30	35
8	F	Philippines	72	91
9	F	Taiwan	42	77
Significance				$P < .005$

TABLE 2. Video Test Scores, Per Cent, Mean of Four Evaluations

Student	Sex	Country	Before Course	After Course
1	F	Egypt	52	83
2	M	Iran	52	65
3	F	Korea	58	75
4	M	Korea	61	71
5	M	Korea	47	57
6	M	Korea	40	50
7	F	Korea	54	58
8	F	Philippines	64	85
9	F	Taiwan	41	78
Significance				$P < .005$

resident was given a brief written description of a problem in anesthetic management, 5 minutes to think about it, and then was interviewed formally by one of us (D.B.) for about 5 minutes, recording the interview on tape. The following morning, the resident took his place at a podium in front of a television camera and a small audience to present a formal, 5-minute discussion of the case, which was recorded on videotape. The same routine was used for each of the three testing sessions. Each tape and each videotape was coded numerically from a table of random numbers, so that a person listening to, or watching, one of these would not know from which test session the material was derived. At the completion of the course, four individuals not in the medical profession were hired to evaluate tapes according to a list of criteria for both audio and video performances which we developed (Appendix 2, Appendix 3). All four "raters" were college graduates who had worked in some aspect of theater, radio or television. They listened to, and scored, each audiotape privately. For videotape grading, they viewed each on a television monitor, the order of presentation being randomized. Although they sat together at the television sessions, the raters were placed so they could not see or hear each other and thereby influence each other's reactions to the presentations. Scores tabulated from these grading sessions were converted to percentages and then submitted to statistical analysis using the Wilcoxon matched-pairs signed-ranks test.[1] A one-tailed test was used because of the advance prediction of improvement in score following the course.

Results

Prior to the first test sessions, the students were allowed a practice period to become familiar with the television camera, microphone, and tape recorder. Following this, a formal test session was held, and two weeks later, a second session was conducted, this time without prior practice. The resultant scores on both audio- and videotape tests did not differ significantly. Ideally, the first test would have been given six weeks before beginning instruction, but due to scheduling problems for these residents, this was not possible. All nine students had been in the United States, working as interns or residents, for at least 18 months prior to this project. It was not expected that much change would occur in two or six weks, but good experimental design dictated inclusion of a measure of improvement due to the mere passage of time.

The scores on tests given just before, and at the completion of, the course did show significant improvement. Table 1 lists the audio test results, and the scores from the videotape grading are given in table 2.

Discussion

Private conversations with many individuals concerned with the training of foreign medical graduates have often evoked the pessimistic opinion that the basic medical

background of foreign medical graduates is inadequate by United States standards and the ability to communicate so limited it is difficult, if not impossible, to teach them. Our experience in training residents selected very critically from a long list of applicants has shown, however, that capable clinicians are to be found among foreign physicians. Many of them are unable to perform optimally in American training programs, not because of inadequate medical knowledge, but rather due to deficiencies of serious proportion in communication skills. An additional problem is often encountered in the cultural differences between America and their native countries. Korean medical students are, according to our residents from that country, expected not to speak to their professors unless formally requested to do so. The relatively casual American approach to teaching is strange and somewhat frightening to them.

For this reason, medical staff responsible for clinical teaching are probably not the best choice to begin teaching verbal skills. The instructor for our course was able quickly to establish a warm, sympathetic relationship with her students. The atmosphere of the classroom was cheerful and enthusiastic, but immediately became stiff and formal when any medical staff member entered. After the second such occurrence, our instructor was given complete privacy with her class. She first explored with the students the reasons for their reluctance to relax in the presence of their professors, and then began to invite medical staff members to help with selected segments of class work. The students progressively became more comfortable in the presence of attending staff, both in the classroom and in the operating room.

Their relaxation in class was no doubt due to the instructor's efforts to make the atmosphere informal and the exercises relevant to their medical duties. In the first class they recorded their reactions to taking the course, listened to the playback of these tapes, and began the process of self-evaluation which was to persist throughout the period of instruction. They were then told to take the tape recorders on preoperative rounds and to record actual patient interviews. The next class was devoted to videotape recording, playback and evaluation of 5-minute, formal case presentations based on hypothetical problems in anesthetic management. Sessions on American slang were of great interest to the students, who had compiled lists of words or phrases they found troublesome. In the final class, they donned surgical masks and played the parlor game of "rumor passing," wherein a message was passed around a circle of participants and the content of the final message compared with the original. They enjoyed this and learned quickly that they must speak particularly clearly when wearing masks. These are but a few examples of how the course was tailored specifically to meet the needs and win the enthusiasm of these students.

The data show clearly that this course was successful in achieving significant improvement in language skills. If time, schedules of night call and vacations, and financial support had allowed a longer period of instruction, even more improvement might have been possible. Departmental staff members were impressed favorably by improvements in case conference presentations by these residents following the course and volunteered the opinion that teaching clinical anesthesia to them had become both easier and more pleasant.

Our approach to a prevalent problem of language difficulty among foreign medical graduates differs from the attempts in many centers simply to teach a course in English. Incorporating such instruction into a course in techniques of conversation and formal case presentation makes it more immediately relevant to a resident's daily activities. To be effective, an anesthesia resident must be able to communicate well with patients seen on rounds, with surgeons and nurses during an operation, with his teachers during clinical instruction, and with his audience during presentation of a paper or case discussion. The data from this study suggest improvement in the communication skills necessary for these functions. Faculty members responsible for their supervision uniformly felt that there was obvious improvement in their interpersonal interactions in the operating room.

Once we had dealt with the problem of *how* to communicate, we could deal realistically with *what* to communicate. No effort was made during this instruction to deal with deficiencies in basic medical knowledge. After the course was completed, we found it much easier to approach this problem. Our nine foreign graduates had been selected from

more than 200 applicants and were certainly of high intelligence. Once we could communicate well, they learned anesthesiology and general medicine as quickly as the average American graduate. Cultural factors still caused attitudinal differences, which occasionally served as a reminder that skills in communication are but one of many factors operative in the practice of medicine.

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References

1. Siegel S: Nonparametric Statistics for the Behavioral Sciences. New York, McGraw-Hill, 1956, pp 75–83

APPENDIX 1

Course Outline for Each of Six Three-hour Sessions

Week 1

I. Introduction

A. Course purpose
B. Overview of entire course content
C. Emphasis on informality and group interaction

II. Audiotape recording

A. Each student records his reactions to the course
B. Playback of each, for group reactions

III. Principles of constructive criticism

A. Instructor presentation of performance criteria
B. Group discussion of reactions to criticisms

IV. Assignments

A. Tape recorders issued for use during patient rounds
B. Hypothetical medical topics given for case presentation

Week 2

I. Videotape session

A. Repetition of performance criteria and principles of criticism
B. Five-minute taping of talks prepared from previous case assignments
C. Playback of each, all students taking notes
D. Group discussion of each student's performance

II. Assignments

A. Audiotapes to be made during actual preoperative interviews
B. Each to begin preparing a list of confusing slang terms

Week 3

I. Medical staff participation

A. Pronunciation of medical terms
B. Preoperative interview techniques

II. Audiotape evaluation

A. Review of evaluation criteria
B. Playback of tapes made during preoperative interview
C. Individual grading and discussion of each tape

Week 4

I. Completion of audiotape evaluation

II. Distribution of mimeographed material for study

A. Pronunciation principles and exercises
B. Articulation principles and exercises
C. Word lists for practice
D. Copy of Ruskin's "The Fly"

III. Exercises in and discussion of physical aspects of speaking

A. Facial expression
B. Gesturing

IV. Assignments

A. Hypothetical medical topics given for case presentation
B. "The Fly" assigned for home practice in pronunciation

Week 5

I. Videotape session

A. Medical staff members included in audience
B. Taping of talks done as in week 2
C. Replay, criticism and group discussion of tapes

II. Assignments

A. Study work sheets on pronunciation and articulation
B. Finish preparation of lists of troublesome slang terms
C. Bring tongue depressors and surgical masks to next class

Week 6

I. Pronunciation and articulation

A. Pronunciation drill, holding tongue depressor between teeth
B. Articulation exercises, conversing through masks
C. Dictionary drill in learning to pronounce new words

II. Slang terms

A. Explanation of meaning of terms on students' lists
B. Pronunciation of slang terms

III. Individual evaluation and suggested further study

Individual Tutoring

Private one-hour sessions with all students between weeks 4 and 6

APPENDIX 2

Audiotape Evaluation Criteria

Score	*Per Cent of Time Done*
4	76–100
3	51–75
2	26–50
1	1–25
0	Never

Score	
	I. Speaking
	A. Breath control
4 3 2 1 0	1. Breathed at appropriate times, not mid-sentence, etc.
*4 3 2 1 0	2. Speaker's delivery excessively breathy
	B. Projection
4 3 2 1 0	1. Could be easily heard—was speaking loudly enough
4 3 2 1 0	2. Tones were directed outward with mouth open
	C. Pitch
4 3 2 1 0	1. Used comfortable tone of voice without excessive strain
*4 3 2 1 0	2. Pitch was monotonous
4 3 2 1 0	3. Denoted beginning and end of sentences with rise and fall in pitch
	D. Timing
	1. Rate
*4 3 2 1 0	a. Spoke too slowly
*4 3 2 1 0	b. Spoke too rapidly to be understood
	2. Pauses
*4 3 2 1 0	a. Paused excessively as though unsure of what to say next
4 3 2 1 0	b. Injected pauses when necessary to punctuation and understanding of sentences
	E. Clarity of expression
4 3 2 1 0	1. Articulation–uttered clear and distinct syllables and consonant sounds
4 3 2 1 0	2. Put appropriate emphasis on correct syllables

*Assign negative value to these scores.

Directions: Circle the appropriate choice under "Per Cent of Time or Frequency."

	Frequency	*Score*
II. Listening		
A. Comprehension		
1. Needed question repeated more slowly in same words	Never	4
	Once	3
	Twice	2
	3 or more	1
2. Answered inappropriately to question or did not recognize that a question was asked	Never	4
	Once	3
	Twice	2
	3 or more	1
3. Had to have proper word explained	Never	4
	Once	3
	Twice	2
	3 or more	1
4. Had to have slang word explained	Never	4
	Once	3
	Twice	2
	3 or more	1
B. Conversational manner		
1. Inappropriate laughter, giggling, etc.	Never	4
	Once	3
	Twice	2
	3 or more	1
2. Impatience: interrupted the speaker	Never	4
	Once	3
	Twice	2
	3 or more	1
3. Flexibility: dealt with the unexpected (jokes, changes of subject, etc.) in a manner indicating ease and self-assurance	Always	4
	¾ of time	3
	½ of time	2
	Less than ½	1
4. Confidence: asked meaning of word or sentence when not understood, rather than simply pausing	Always	4
	¾ of time	3
	½ of time	2
	Less than ½	1
	Total (+)	
	Total (−)	
	Net Score	

$$\text{Maximum Score} = 64, \quad \frac{\text{Net Score}}{64} \times 100 = \_\_\_\_\_\ \%$$

APPENDIX 3

Videotape Evaluation Criteria

Score	*Per Cent of Time Done*
4	76–100
3	51–75
2	26–50
1	1–25
0	Never

Score	
	I. Nonverbal criteria
	A. Posture
4 3 2 1 0	1. Feet together
4 3 2 1 0	2. Weight evenly balanced on both feet—no one-legged sag or shifting
4 3 2 1 0	3. Body erect—shoulders back and relaxed
4 3 2 1 0	4. Head erect—chin parallel to the floor
4 3 2 1 0	5. Muscle tone flexible and relaxed—not frozen into position
	B. Use of speaker stand
4 3 2 1 0	1. Stood directly behind stand
4 3 2 1 0	2. Rested hands on stand without leaning
*4 3 2 1 0	3. Displayed distracting mannerisms in relation to stand (kicking, pulling, tapping, etc.)
	C. Eye contact
4 3 2 1 0	1. Looked directly at audience
*4 3 2 1 0	2. Looked at script, ceiling or floor
	D. Gesture and movement
4 3 2 1 0	1. Movements and gestures used to reinforce material
*4 3 2 1 0	2. Used inappropriate mannerisms
4 3 2 1 0	3. Head movement and facial expression were natural
4 3 2 1 0	4. Action was coordinated with entire body, not "added on"
4 3 2 1 0	5. Movements indicated definite beginning and end of presentation
	II. Verbal criteria
	A. Breath control
4 3 2 1 0	1. Breathed at appropriate times, not mid-sentence, etc.
4 3 2 1 0	2. Speaker's delivery excessively breathy
	B. Projection
4 3 2 1 0	1. Could be easily heard—was speaking loudly enough
4 3 2 1 0	2. Tones were directed outward with mouth open

*Assign negative values to these scores.

C. Pitch

4 3 2 1 0 1. Used comfortable tone of voice without excessive strain
4 3 2 1 0 2. Pitch was monotonous
4 3 2 1 0 3. Denoted beginning and end of sentences with rise and fall in pitch

D. Timing

1. Rate
4 3 2 1 0 a. Spoke too slowly
4 3 2 1 0 b. Spoke too rapidly to be understood
2. Pauses
4 3 2 1 0 a. Paused excessively as though unsure of what to say next
4 3 2 1 0 b. Injected pauses when necessary to punctuation and understanding of sentences

E. Clarity of expression

4 3 2 1 0 1. Articulation—uttered clear and distinct syllables and consonant sounds
4 3 2 1 0 2. Put appropriate emphasis on correct syllables

Total (+)
Total (−)

Net Score

$$\% = \frac{\text{Net Score}}{80} \times 100 \qquad \text{(Maximum Score = 80)}$$

Drugs and Their Actions

β-BLOCKADE IN MAN The pharmacodynamic activities of propranolol and practolol, two β-blockers with different peripheral actions, were compared in eight hypertensive patients. The activity of each antagonist was established in relation to its blood concentration at maximal and submaximal adrenergic blockade, as defined by inhibition of exercise tachycardia. The maximal inhibitions of exercise tachycardia were comparable with the two drugs, and achieved with blood concentrations of 2.5 μg/ml practolol and .10 μg/ml propranolol—a 25-fold difference. The dose of practolol necessary to achieve maximal blockade was only five times higher than the required dose of propranolol (1,050 mg/day *vs.* 200 ml/day). Propranolol demonstrated a much greater relative potency against adrenergic stimulation with isoproterenol. The antagonism of practolol during isoproterenol stimulation was equivalent for cardiac and vascular adrenergic receptors; antagonism by propranolol was greater at vascular than at cardiac receptors. Practolol did not reduce cardiac output at any dose level, and the effect on resting blood pressure was small. Both drugs had much greater hypotensive effects during exercise. *(Bodem, G., Brammell, H.L., Weil, J.V., and others: Pharmacodynamic Studies of Beta Adrenergic Antagonism Induced in Man by Propranolol and Practolol. J Clin Invest 52: 747–754, 1973.)*