

ARTICLE ORIGINAL/ORIGINAL ARTICLE
**IMPACT OF A COMMUNICATION SKILLS AUDIOVISUAL PACKAGE
ON MEDICAL STUDENTS' KNOWLEDGE**

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ABSTRACT • INTRODUCTION : Over the last decade more emphasis is being put on teaching communication skills (CS). Use of videos and role-play was suggested to improve CS. This article will present the impact of an audiovisual package on promoting the knowledge of medical students in CS.

METHODS : Seventy-five second year medical students – distributed into eight groups led by four facilitators – critiqued a video clip immediately before and after the introduction of a communication skills audiovisual package. The skills taught included opening the interview, questioning, facilitation, clarification, reflection, confrontation, summarizing, and preparation of the patient for the physical exam. The students, also, role-played the reviewed scenario. The students' pre- and post-intervention responses were analyzed using a standardized grading form.

RESULTS : There was a significant improvement in students' knowledge ($p < 0.000$) after the introduction of the intervention in all the CS taught except closed ended questioning. This improvement was consistent among the four facilitators.

CONCLUSION : Reviewing video scenarios and role-playing improved the knowledge in core communication skills among second-year medical students assessed by a video-based written examination.

INTRODUCTION

The importance of communication skills (CS) in medical practice is well established. Good CS are related to better patient satisfaction [1], and less malpractice suits [2]. Ongoing research aims at finding the best model for teaching communication skills as well as assessment tools to measure both the acquired knowledge and practice of the students.

Though teaching CS is recommended as part of medical school curricula [3], it has not been fully integrated

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RÉSUMÉ • INTRODUCTION : Au cours de la dernière décennie, un regain d'importance a été accordé à l'enseignement des techniques de communication (TC). L'utilisation de vidéos et le jeu de rôle ont été proposés pour les améliorer. Cet article présente l'impact d'un module audiovisuel sur l'amélioration des compétences en TC des étudiants en médecine.

MÉTHODES : Soixante-quinze étudiants en 2^e année de médecine, répartis en 8 groupes et encadrés par 4 animateurs-formateurs, ont analysé et discuté un clip vidéo immédiatement avant et après l'introduction du module. Les séquences enseignées comportaient : le début de l'interview, l'interrogatoire, la facilitation, la clarification, la réflexion, la confrontation, la récapitulation et la préparation du patient pour l'examen physique. Les étudiants ont également reproduit le jeu de rôle du scénario considéré. Les réponses obtenues, avant et après la session audiovisuelle, ont été analysées et notées en utilisant une échelle standardisée.

RÉSULTATS : Une amélioration significative des connaissances des étudiants ($p < 0,000$) a été observée dans toutes les TC sauf les questions ciblées. Cette amélioration survenue après l'introduction du module a été constatée par les quatre animateurs-formateurs.

CONCLUSION : L'analyse critique de vidéos comportant des scénarios et les jeux de rôle ont amélioré les compétences en communication d'étudiants en 2^e année de médecine ; ceci a été démontré en utilisant un examen écrit basé sur ces vidéos.

into all medical schools programs worldwide due to many ambiguities : teaching method ; timing to introduce the course (whether in preclinical years or during clerkships) ; and training form (whether longitudinal or focused seminars and workshops). Students preferred experiential methods of learning such as role-playing with simulated patients or clinical encounters with real patients [4]. There is growing evidence about the efficacy of preclinical courses leading to higher levels of CS [5] and improvement in overall communication competence [6]. Van Dalen et al. [7] compared two Dutch medical schools and found that a longitudinal integrated approach throughout the whole medical years resulted in increase in the objective structured clinical examination (OSCE) scores.

Another problem facing the establishment of a CS course is how to assess the gain in knowledge and skills acquired

by the student. Some methods of assessment reported in the literature include written assessments, objective structured clinical examinations (OSCE), objective structured video exams (OSVE), and patient satisfaction questionnaires. Assessment tools where the faculty rates the encounter is better for evaluation of communication skills learned ; however, patients satisfaction and rating is dependent more on interpersonal relationships and overall ease with the encounter. Shirmer et al. [8] conducted a review of current tools of assessment of CS that included written examinations, simulated and standardized patients' encounters. They rated 15 assessment tools for their psychometric content and usability. No tool received high rating on all areas. OSCE has become the gold standard [9] ; yet it is costly [10]. Moreover, Chessman et al. [11] questioned the ability of OSCE to predict the performance of the students on Clinical Practice Examination (CPX). Humphris and Kaney [12] showed that OSVE is a quick and efficient method with moderate predictive value compared to OSCE.

A key point in any teaching model of CS is to be culture-specific. Third year Chinese medical students rated a videotape with Chinese role models as more useful than a western made videotape [13].

Teaching communication skills is established in two out of the five medical schools in Lebanon ; both schools use the audiovisual package that was produced by the American University of Beirut and the Lebanese National Council for Scientific Research in 2002. At the American University of Beirut, medical teaching of CS was initially limited to a one-hour lecture to the second year medical students. Since 2002, the second year medical students curriculum committee agreed to allocate more time towards teaching CS. The course description and students' feedback have already been reported [14].

This paper examines the impact of this CS audiovisual teaching package on students' knowledge of various components of the clinical interview pre- and post-intervention using a written based video examination.

METHODS

In January 2005, seventy-five second year medical students, in groups of 8 to 10 students, were introduced to a 3-hour communication skills audiovisual package. The content of the package and the feedback of students were described earlier [14] (Appendix).

A written companion was given to four facilitators which describes the objectives as well as the teaching format in order to insure standardization of the teaching module. The students were asked to comment on a four-minute and 10-second video clip immediately before and after the introduction of the audiovisual package. The video clip was stopped three times for 2-4 minutes. After each pause, the students were asked to comment, in their own words, on the statements and behavior of the doctor in the space provided in the video critique form which included the script. The content of the video critique is shown in Box 1.

BOX 1 VIDEO CRITIQUE SCRIPT

DR: Hello (*Stands and shakes hands with one and put hand to chest when he greets the veiled woman*). Please sit down.

Hope you did not have a problem in finding the clinic?

LADY: Not at all.

DR: What is the relation to one another?

LADY: I am his mother.

DR: How can I help you?

MOTHER: He has a low white blood cell count (*Gives the Dr the result*). I am worried about that and want to know if he needs other tests.

DR: (*Looking at the result*) Uhh (*Nods head*).

MOTHER: He also smokes heavily. Although my brother had lung cancer he and his father still smoke (*Deep sigh*). They are driving me crazy!

DR: Mrs. Hanna you are so worried. Relax.

SON: She is always like that (*Smiles*).

MOTHER: I have a brother who is dying from lung cancer, my husband and only child may have the same fate and you blame me for not being cool (*Puffs*).

DR: Any one is prone to cancer. (*Looking at the son*) Tell me, how do you feel?

SON: I am great, except for that minimal feeling of fatigability when I climb stairs.

DR: What do you mean by fatigability? [CLARIFICATION]

SON: If I climb two floors I feel short of breath!

DR: Short of breath? [FACILITATION]

SON: Yes. It even happens when I run for few minutes.

DR: Do you notice if this happens to friends climbing the stairs or running with you?

SON: No.

DR: Do you have any idea why do you get this shortness of breath?

SON: No.

DR: How many cigarettes do you smoke daily and for how many years?

SON: One and a half pack.

DR: For how many years have you been smoking?

SON: Ah, (*Thinking*) for 7 years.

DR: Do you know the effect of smoking on health?

SON: Yes, yes, it may lead to heart attack and lung cancer.

DR: You know that and you are still smoking?

SON: You know it is not easy to quit.

DR: It seems you do not have a strong will. Do you cough?

SON: No.

DR: Let me summarize the issues raised. Your mother is worried about your smoking habit and the leukopenia [MEDICAL JARGON]. The short breath on climbing two floors bothers you a little. Do you like to add anything?

SON: (*Son and mother smile*) No, that is all.

DR: Well now I like to examine you. I will take your height, weight, look in your mouth and listen to the heart and lungs. Please go there (*Show him the place*), remove your shirt and hang it on the hanger. I will be with you in a moment.

BOX 2
STANDARDIZED GRADING FORM
TO THE VIDEO CRITIQUE

I • The Opening	
- Stood up	1
- Greetings	1
- Smiled	1
- Shook hands	1
- Greeted mother in a culturally acceptable manner	1
- Informal chat	1
- Relation of presenters	1
II • History Taking	
- Open-ended statement	1
- Facilitation (Uhh)	1
- Reflection	1
- Did not legitimize mothers' worries	1
- Open-ended statement	1
- Facilitation	1
- Open-ended statement	1
- Closed question	1
- Exploring knowledge	1
- Combined 2 questions at a time	1
- Closed-ended question	1
- Exploring knowledge	1
- Accusative tone	1
- Judgmental statement	1
- Closed-ended question	1
- Summarizing	1
- Use of medical jargon	1
- Facilitation	1
- Prepared patient for the physical exam	1

After viewing the clips students were involved in role-playing the same scenario depicted in the film. The feelings and comments of the role players and the audience were solicited. Each facilitator made sure that the skill taught was mastered.

The students' comments pre- and post-intervention were analyzed using a standardized grading form (Box 2). The skills noted in the grading guide are comparable to many items included in well-established assessment tools such as the Kalamazoo consensus statement [15], and the

TABLE II
STUDENTS' TOTAL SCORE FOR EACH FACILITATOR'S
GROUP PRE AND POST INTRODUCTION
OF THE AUDIOVISUAL PACKAGE
(N = 75)

	Total score		Difference	p value
	Pre	Post		
Facilitator 1	8.3	11.4	3.1	0.01
Facilitator 2	3.7	7.8	4.1	0.00
Facilitator 3	5.1	7.6	2.5	0.03
Facilitator 4	8.6	10.1	1.6	0.03

Common Ground Assessment Instrument [16]. Each correct answer was given one point and a total score was calculated as the sum of the correct points.

One family physician, other than those involved in facilitating the workshop, reviewed the package and corrected the answers to the video critique. Data analysis was done through SPSS 12.0. Paired t test was used to compare pre- and post-intervention scores with a 95% confidence interval.

RESULTS

Seventy-five students completed the pre- and post-intervention evaluation forms. Fifty students (67%) were males and 25 (33%) were females.

Mean overall score was 6.3 (± 3.9 , 95% CI), and 9.2 (± 3.4 , 95% CI) for the pre- and post-evaluation forms respectively. This 2.9 increase was statistically significant ($p < 0.000$). Analysis for each area of CS showed a significant increase in the score in all the areas except for closed ended questions (Table I). Mean overall scores were not affected by the sex of the student ($p = 0.546$). There were statistically significant differences in the total score of pre- and post-intervention evaluation forms among the four facilitators (Table II). There was no difference in the improvement in performance in the four groups.

The students felt comfortable with the role-play and thought that it is a good teaching tool (score = 3.97 on a Likert scale of 1-5 where 1 is poor and 5 is excellent).

DISCUSSION

Several established teaching models for CS exist. This audiovisual package has significantly increased the total score of students critique to a video clip by 3 points. This trend was noted for almost all aspects of CS raised by the package mainly the opening, exploring the information using open-ended questions as well as confrontation. The improvement in knowledge was less than that expected by the authors. One possible explanation was the subjective nature of the comments given by the students : thus they might not know what it is expected of them to answer especially in the area of closed-ended questions. For instance, many responded that the physician is gathering information instead of choosing closed-ended question as specified by the grading guide.

Another limitation is that this paper assesses the knowledge of the students after introduction of this audiovisual package ; however, knowledge does not correlate with acquisition and usefulness of the various learned skills [17]. The teaching format of this package included role-playing which could give an idea about the utilization of the learned skills. Though students highly rated this teaching method and facilitators reported that the students role-played correctly the skills taught, we did not dwell on this as there was no objective method to measure performance.

Inconsistency in teaching among several tutors, even in

TABLE I
SCORES OF COMMUNICATION SKILLS TAUGHT PRE AND POST INTRODUCTION
OF THE AUDIOVISUAL PACKAGE
(N = 75)

	Pre Intervention Mean (SD)	Post Intervention Mean (SD)	Difference	<i>p value</i>
Opening	1.1 (± 1.0)	1.8 (± 1.2)	0.7	0.000
Facilitation	0.6 (± 0.7)	1.0 (± 0.9)	0.4	0.000
Closed-ended questions	0.6 (± 1.0)	0.5 (± 0.8)	-0.1	0.292
Open-ended questions	1.0 (± 1.2)	1.4 (± 1.2)	0.4	0.002
Confrontation	0.9 (± 0.9)	1.3 (0.8)	0.4	0.000
Summarizing	0.4 (± 0.5)	0.9 (± 0.4)	0.5	0.000
Preparation for physical exam	0.6 (± 0.5)	0.7 (± 0.4)	0.1	0.038
Use of medical jargon	0.4 (± 0.5)	0.6 (± 0.5)	0.2	0.022
Total scores	6.3 (± 3.9)	9.2 (± 3.4)	2.9	< 0.000

the same medical teaching system, explains some of the difficulties in acquiring interviewing skills [18]. All the teachers involved in teaching the CS course at AUB received formal training in CS, and regularly attended and presented at international workshops that addressed aspects of teaching and learning communication skills in the clinical setting. A written document was handed to the teachers describing the teaching format step by step. Despite the above two factors, this study showed variations in the pre-intervention scores of the students among different groups. This might reflect the diverse enthusiasm of the facilitators to encourage the students to fill the evaluation form as well as differences in the students' baseline knowledge in CS. It is also possible that some students did not make a serious effort to fill the critique form as this did not count in their final grade. However, this audiovisual package proved its efficacy among all facilitators by an increase in the scores with a range of 1.6 to 3 points. This adds to the importance of these video clips as they had an impact on the students despite the varied influence and input of different facilitators in the delivery of the information.

Hiring and training individuals to play the role of standardized patients (OSCE) is costly and may turn to be a tedious process. Videotaping real patients needs consent, a special setup and may jeopardize the openness of the patient. In some residency programs with limited resources, the availability of standardized patients is a tremendous burden.

Reviewing and commenting on a video critique may turn to be a cost-effective method of assessing the knowledge of learners in CS.

This audiovisual package stands out as it is comprehensive: both a teaching model and an assessment tool. Future research is needed to determine the reliability of the standardized grading guide for the used video critique. Follow-up of a cohort of students after 6-12 months to explore extent of the material retained is also recommended.

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CONFLICT OF INTEREST None

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APPENDIX • THE AUDIOVISUAL OBJECTIVES AND FORMAT

Objectives

After the session participants are expected to:

- State why communication skills are important.
- List barriers to good communication.
- Role play scenarios that demonstrate mastery of the following parts/skills:

Preparing the stage	The opening	Asking	Facilitation	Confrontation
Clarification	Reflection	Summarizing	Preparing the patient for the physical exam	
- Submit a pre- and post-video critique.

Format

- The 3-hr session starts with brain storming on the importance and barriers to teaching CS.
- The students will view 9 scenarios. Each scenario will deal with certain items in the CS and consists of 3 parts: 1st/ the students will watch a video clip that shows poor communication skill; the students will role-play a better version and discuss with the group suggestions for better interview; 2nd/ the students will watch the authors commenting on good CS involved in the scenario; 3rd/ the video clip will be repeated with a better version. The actors are speaking in the native (Arabic) language and the scenarios were tailored to certain cultural behaviors.
- Review 2 movie clips [highlight the importance of: active listening (Patch Adams), and mirroring (E.T)]

Evaluation

The students watched a video critique showing a complete interview between a physician and patient and his mother (Box 1). A written text of the script was handed to the students with spaces to comment. The video critique is stopped at different intervals asking the students to write their comments about CS. This video critique was played before and after the intervention.

Grading consisted of 1 point for each correct comment about CS: some examples are written in brackets in Box 1 such as clarification, closed ended question, etc. The total score is 26 points for each student.