

# Lecture was more effective than role-play for patient education skill: an incomplete curriculum development in Saga Medical School

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## Objectives:

To compare role-playing with lecture to teach medical students patient education for chronic disease patients and to evaluate the curriculum in Saga Medical School for behavioral science.

## Methods:

From September to November 1999, 36 final-year medical students (5 groups) were consecutively enrolled into a randomized post-test only comparative study conducted in Saga Medical School, Japan. Groups were alternately allocated into role-playing or lecture concerning patient education; 21 students took lecture and others took role-playing of an asthmatic patient. A week later, all the students took objective structured clinical examination (OSCE) including interview with standardized patient (SP) suffering from type-2 diabetes mellitus. SP's patient satisfaction questionnaire (PSQ) scores of two educational methods were compared.

## Results

Average and standard deviation of PSQ scores on students who took lecture or role-playing were 26.0 +/- 2.5 vs 23.1 +/- 3.4 (p=0.014). Factor analysis divided eight items of PSQ into 'explanatory' and 'empathy' parts and the latter part by students who took lecture and role-playing were 13.3 +/- 1.5 and 10.6 +/- 2.3 (p=0.001).

## Conclusion

The results of OSCE indicated that lecture improved PSQ more than role-playing to teach patient education. Role-playing without enough knowledge base for medical interview in patient education might not work properly.

(202 words)

## Introduction

Patient education activities have been shown to improve health outcomes,<sup>1</sup> reduce risk behaviors and risk factors,<sup>2,3</sup> and reduce morbidity and mortality.<sup>3</sup> For medical students and house officers, learning patient education will be indispensable. To date in Japan, only limited educational opportunities to learn how to provide patient education have been offered, though no published data is available. In 1999, Working Group on the Education of General Medicine in Japan Society for Medical Education suggested curriculum on the general medicine. The curriculum includes objectives concerning medical interview but they merely mention that learners will be able to list three roles of medical interview: (1) to establish and maintain an effective physician-patient relationship; (2) to gather information to diagnose the patient's problems; and (3) to educate and motivate the patient to accept treatment recommendations.<sup>4</sup> In 2001, Japanese Ministry of Education, Culture, Sports, Science and Technology promulgated undergraduate model core curriculum, but all it addresses concerning patient education is that learners will be able to outline the importance of counseling. Ban pointed out that curriculum for behavioral science in Japan has been poorly organized.<sup>5</sup> To increase medical educators' concern with instruction for patient education, educational intervention and evaluation for the program is indispensable.

In 1999, a Japanese governmental committee announced that National Medical Licensure Examination would adopt OSCE including medical interview as soon as possible. After the announcement, most medical schools introduced an instructional program for medical interview but few medical schools attempted that for patient education. Department of General Medicine, Saga Medical School started OSCE as a formative assessment for medical interview instruction in 1996. In the spring of 1999, General Medicine Department implemented a curriculum for patient education for chronic diseases for final-year students in two-week clinical clerkship in the General Outpatient Clinics. One afternoon (1-2 hours) was assigned to the instructional session.

The objective of this study is to determine the better method to teach patient education, lecture or role-playing, on chronic condition for final-year students. Another undermined objective is to evaluate the curriculum for medical interview or behavioral science in Saga Medical School as a whole.

## Methods and participants

A post-test only design study was conducted at Saga Medical School in Saga, Japan. From September to November 1999, 5 groups (36 final-year medical students) in a two-week block of general medicine clerkship in General Outpatient Clinics were consecutively enrolled in the study. Students learned basic medical interview skills in the field of patient education for chronic diseases by either role-playing or lecture, according to the random allocation.

The instructional session used asthma as one of chronic diseases. The lecture was a one-hour ses-

sion addressing behavioral change process, non-adherence, health belief, and shared decision-making according to the printed material. The lecture chiefly conveyed knowledge, and the instructor was told to try to facilitate discussion among students. Role-playing was a two-hour session using ten-step approaches of role-play teaching<sup>6</sup> including four role-play encounters between patient and physician roles, and the review of videotaped sessions with small group discussion. After spending eight minutes for role-playing encounter, each student received feedbacks from other students and an instructor. Role-playing groups received a 10 minute mini-lecture and the same printed material as the one the instructor handed lecture groups.

A week after the instructional intervention, all the students took a 4-station OSCE including a patient education station. Only one case scenario with diagnosis of type-2 diabetes mellitus was used. Beforehand, students were announced that the OSCE for patient education would employ a type-2 diabetes case. The OSCE station used three blocks of eight minute time frames: the first block was for reading a case scenario and planning strategy for patient education; the second was for performing a physician's role face-to-face with an SP; and the last was for a chart to record the interaction between the SP and the student especially for self-care plans. Each student played the role of a consultant internist working in a clinic of a secondary hospital. After each encounter session, the SP assessed each student by PSQ developed by American Board of Internal Medicine.<sup>7</sup> The PSQ contains ten items and employs five ordinal-scale descriptors (from 1=poor to 5=excellent). For the purpose of this study, eight items were used because they seemed relevant to final-year students' context. A physician evaluator graded every medical chart for the OSCE by three-point scale from the viewpoint of patients' self-care, including diet and exercise plan (from 1=no record to 3=specified plan). Due to the lack of resources, no survey was conducted to check the background difference between comparative two groups or the success of the randomization.

Two-tailed Mann Whitney U test was used to identify PSQ score difference between role-playing groups and lecture groups. Factor analysis was conducted for an exploratory purpose. Factors with eigenvalues more than 1 were extracted by maximum likelihood method. Equamax method was selected as a rotation. Spearman rank correlation coefficient was used to evaluate association between PSQ and self-care plan scores. SPSS 10.0 was used for statistical analysis. Alpha level was 0.05.

## Results

Mean PSQ scores with standard deviation of lecture and role-playing groups were 26.0 +/- 2.5 vs 23.1 +/- 3.4 (p=0.014). Factor analysis divided the items into explanatory and empathy parts. Table 1 shows eight items of PSQ and how the two parts were divided. The explanatory part of lecture and role-playing groups was 12.6 +/- 1.6 vs 12.5 +/- 1.8 (p=0.96) and the empathy part was 13.3 +/- 1.5 vs 10.6 +/- 2.3 (p=0.001).

Scores on the plan for diet of lecture and role-playing groups were 2.29 +/- 0.64 vs 1.80 +/- 0.56

( $p=0.026$ ) and those on the plan for exercise were  $2.10 \pm 0.70$  vs  $1.47 \pm 0.64$  ( $p=0.010$ ). Correlation coefficient between PSQ score and diet plan score was  $0.072$  ( $p=0.55$ ), and that between PSQ score and exercise plan score was  $-0.047$  ( $p=0.79$ ).

## Discussion

Results indicate that lecture was better to teach patient education than role-playing in our setting. In role-playing groups, not only SP's satisfaction but also diet and exercise care plan was poorer. Although the result was unexpected, it could explain issues of curricular background of patient education or behavioral science in Saga Medical School or even in Japan, and methodology of assessment. To analyze problems of education for behavioral science, reviewing curricular structure, educational strategy, and the hidden curriculum of clinics in Japan may help analyze and improve current curriculum.

As for the curricular structure, educational programs for medical interview in Saga Medical School in 1999 were not so limited as other medical schools in Japan. There is 3 hour lecture about general principle, 1.5 hour lecture about psychiatric interview skill, 3 hour small group discussion including demonstrated role-play with SP, 1.5 hour lecture about general principle of informed consent, and 3 hour small group discussion for clinical ethics in the fourth year. In the fifth year, all the students do clerkship in the ward and in clinic, and have much experiences to observe attending physicians' patient education. In a university hospital in Japan, medical students generally do not offer information or opinion directly to the patients. There is also 1 hour small group discussion about clinical ethics, 1 hour small group lecture about medical interview skill, 4 hour role-playing of doctor-patient encounter with the review of videotaped sessions and small group discussion, and 1 hour OSCE in the final year. However, if the curriculum is evaluated from the viewpoint of three-function approach suggested by Working Group on the Education of General Medicine in Japan Society of Medical Education as well as by Cole,<sup>8</sup> the emphasis in the curriculum of Saga Medical School on the third approach, "to educate and motivate the patient to cooperate with treatment recommendations," was far less than the others. Such a curricular framework might make the students put less importance for patient education.

As an educational strategy, role-playing was used several times prior to the instruction for patient education. The students were relatively accustomed to this educational method so that they were able to get involved in the sessions. It is less likely for the students in role-playing group to get embarrassed by an inexperienced educational method. However, the content of the lecture might be more directly applicable to the OSCE than the role-playing session. Since the students have not had enough educational opportunity regarding patient education, students in role-play groups were not able to construct sufficient knowledge base to perform in OSCE as well as those in lecture groups.

The hidden curriculum of clinics in Japan may influence his/her perception about patient education. Tierney pointed out that the Japanese medical system of universal access to care and freedom

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to choose an institution led to large crowds of patients at training hospital clinics.<sup>9</sup> It is predicted that the majority of physicians in Japanese clinics spend little time for shared decision-making with patients suffering from ordinary chronic diseases. Such hidden curriculum may deeply influence students' perception about patient education. It is likely that most of students have observed a physician offering information to a patient in one-way and they thought that patient education means merely a provision of information. After the students in role-play groups experienced the time frame of eight minutes in the instructional session, they felt how short the time frame was to educate a patient properly. However, an ideal physician as a patient educator discussed after the role-playing sessions might be quite different from the physicians they have met in clinical training. This incompatibility of physician roles might confuse the students in role-play group.

Issue of consistency between educational intervention and assessment is important. Lecture chiefly addressed general principle about patient education for patients suffering from chronic diseases. In the role-play session, interaction between a physician's role and a patient's role was emphasized, but it is possible that students learned the difficulty to educate patients suffering from asthma because students do not seem to have enough experience to apply a patient education experience to a different context. If an educator expects students to reflect themselves to learn from the experiences, he/she should review how much experience students have obtained. In the setting of the present study, since the lecture addressed the general idea of how a patient should be educated, the content of the lecture might be easier to apply to the OSCE.

The assessment method used in this study has several points for consideration. The timing of educational assessment to compare two methods was decided arbitrarily. Knowledge about patient education conveyed by lecture stays for a week but may decay after a longer period. Experiences obtained in role-playing sessions are likely to remain in their long term memory. If the evaluation was performed long after the educational intervention, the result might be different.

Because only one station was allocated to patient education OSCE and only one SP scored all the students for only one diabetic case, the reliability of the assessment might not be sufficient. Moreover, for the self-care plan assessment, only one physician rated all the students. It was possible that the assessment by the SP or the physician was somewhat biased. These can be a limitation. The poor association of the SP's PSQ score with the self-care plan score may strengthen the threat of the assessor's bias.

In conclusion, the result of this comparative study was contrary to our expectation but it cast a new light on current curriculum for patient education. Balancing three-function approach of medical interview in the undergraduate curriculum, constructing sufficient knowledge base before role-play, and improving role-model physicians' performance for patient education should be addressed in Saga Medical School. This conclusion may also help other facilities in Japan that did not sufficiently address the optimal education for behavioral science.

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### Footnote

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(2,010 words)

Table 1. Patient Satisfaction Questionnaire

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1. Telling you everything; being truthful, upfront and frank; not keeping things from you that you should know.
  2. Greeting you warmly; calling you by the name you prefer; being friendly, never crabby or rude.
  3. Letting you tell your story; listening carefully; asking thoughtful questions; not interrupting you while you're talking.
  4. Showing interest in you as a person; not acting bored or ignoring what you have to say.
  5. Discussing options with you; asking your opinion; offering choices and letting you help decide what to do; asking what you think before telling you what to do.
  6. Encouraging you to ask questions; answering them clearly; never avoiding your questions or lecturing you.
  7. Explaining what you need to know about your problems, how and why they occurred, and what to expect next.
  8. Using words you can understand when explaining your problems and treatment; explaining any technical medical terms in plain language.
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Explanatory category: 1,2,7,8

Empathy category: 3,4,5,6

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