(C)

2013 2015

English Medical Educational Program(EMP) at our Division at the Graduate School of Medicine.

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3,800,000

(medical English courses: MEC) visual analogue scale(VAS) MEC
VAS VAS
(self-confidence)

English is an important instrument for communication. Developing communicative competence in English is becoming a prominent part of educational programs at medical schools in Japan. The aim of this prospective study was to evaluate the effect of medical English courses (MEC) on medical students' communication skills. Graduate medical students joining the doctoral program were invited to participate. Self-confidence scores to perform communicative tasks in English were rated using visual analogue scales before and after the MEC (intervention groups), or before and after the follow-up period (control groups). Significant improvements in self-confidence scores to perform communicative tasks in English were observed following participation in MEC. In the control group, no improvements were observed in any of the evaluated tasks. In conclusion, MEC contributed to enhancing confidence for communication.

medical education medical English communication skills research survey

Competency in communication and handling information is required for doctors to get success in their career. The world has changed dramatically as a result of rapid transport and improved telecommunications. English is the medium to introduce students to other cultures, other ways of thinking and broadens the horizons. English is clearly recognized as an important instrument of international communication in the medical field. In the globalized world, English is necessary for almost everything including for the development of efficient communication skills required to practice medicine.

Japan has a high scientific level, however, the flow of information from Japan to the international medical/scientific community is evidently insufficient, probably related to the reduced abilities in English communication among Japanese physicians and scientists.

An educational approach to improve the communication skills of medical students and young doctors might be the inclusion of English learning in the curriculum of undergraduate and postgraduate medical education. Therefore, the development of a medical English educational program is an innovative idea that might have significant impact in the education of young doctors.

Research in medical education seeks to deepen the knowledge and understanding of learning, teaching and education and will significantly contribute to the adaptation of the medical education to the new necessities of the society.

2.
This research project aimed to develop and medical English program and to evaluate the impact of this program on the improvement of communication skills.

Specifics aims:
(1) To develop and implement a new English medical program for undergraduate and graduate students at the Division of Rheumatology, Endocrinology and Nephrology, Graduate School of Medicine, Hokkaido University.
(2) To assess the impact of the English medical program on the improvement of communication skills of young doctors
(3) To evaluate the contribution of the new educational program to the knowledge about teaching and learning strategies at the medical school.

The first part of this study consisted in development an implementation of an English medical program. The second part consisted in a field investigation to evaluate the impact of the English medical courses in the improvement of the communication skills.

Subjects
Fifth-year medial students and graduate students joining the doctoral program Division of Rheumatology, Endocrinology and Nephrology, Graduate School of Medicine, Hokkaido University in Sapporo participated in the medical English program.

Japanese graduate students from the Division of Rheumatology, Endocrinology and Nephrology, and one graduate student from the Neurology department at the Graduate School of Medicine, Hokkaido University attended regularly to our medical English course, at least during one year, between 2013 and 2015, and were included in the research study as intervention group. Graduate students joining the doctoral program at other Departments in the Medical School during the same period whom did not attended to any medical English course were included in the research study as control group.

Methods
I) The educational context of the medical English program for graduate students consisted of small group working seminars (3 to 5 students/seminar). Participants attended 60-min English seminars twice/month during each academic year. At the seminars we had several activities such as oral presentation, role-playing, free discussions, and lectures. For undergraduate students, we have organized small-group problem-based learning seminar in English. Students attended once/year to the English seminar. All the seminars were developed in English and centered in learning/practicing communication skills. Our medical English program is focused in the promotion of English communication, therefore, we encourage active exchange of e-mails and notices in English, support manuscript publication and facilitate abstract submission to international journal and conferences.

II) To assess the impact of the English

medical program on communication skills we designed a research survey. Undergraduate students attended only once to the English seminars and it was difficult to evaluate the impact of one seminar on communication skills. Therefore, we centered the research study in the graduate students. The methodology of the study consisted in the completion of a survey at the beginning and the end of the MEC each academic year (intervention group). For the control group, participants were asked to complete a survey at baseline and other survey after 1 year observation period.

The initial research survey comprises of two documents: 1) a research questionnaire, and 2) a self-assessed confidence level report. The research questionnaire recorded demographic, educational background, language characteristics, and communication abilities of participants.

For assessment of students' self-confidence levels, we used visual analogue scales (VASs)(1). VASs are continuous graphic rating scales from 0 to 100 widely used in medical practice and also used to record self-confidence levels. High scores indicated high self-confidence levels (Figure 1).

Figure 1. Visual analogue scale
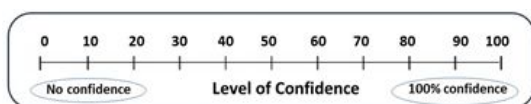
The self-assessment report contained twelve VASs to record student' self-assessed confidence levels to perform six communicative tasks in English and in Japanese (Table 1).

Table 1. Communicative tasks self-assessed using visual analogue scales

1. Give short oral presentation at scientific conferences ($\leq$10 min.)
2. Give long oral presentation at scientific conferences ($\geq$ 20 min)
3. Ask questions at scientific conferences
4. Answer questions at scientific conferences
5. Discuss about basic/clinical research topics
6. Write e-mails

Final surveys were recorded at the end of each academic year (intervention group) and after 1 year observation period (control group), and consisted of self-assessed confidence levels reports. Participation in this study was voluntary. The study was approved by the Hokkaido University Ethics Committee.

All data were tabulated. Descriptive and quantitative analysis were performed using appropriate statistical techniques. VASs scores were presented as median and interquartile range [Q25-Q75]. Wilcoxon matched-pairs signed rank test were used two compared the participants' communication tasks performance at baseline and after attending to the medical English course (intervention group) or after 1 year observation period (control group). Results were considered statistically significant if p values were less than 0.05.

The English medical program was established. Two-hundred and ninety six regular English seminars have been organized for graduate students. Fifty-nine seminars were organized for 5th year medical students, and a total of two-hundred eighty-three medical students attend once to the problem-based learning interactive English seminar.

In the regular English seminars for graduate students, the number of presentations delivered by participants was four hundred and seventy-three. In the discussion seminars, eleven lectures were given by international invited speakers, and three mini-workshops were organized with the participation of non-Japanese lecturers. The workshops were centered on English communication skills to favor the exchange of communication in English. We had organized a career lunch seminar in English and regular English lunch events.

Thirty–three graduate students attended regularly to English seminars during at least one academic year. Among them, 31 (97%) (7 females: 24 males, mean age 32 years, range [28-40]) fully completed initial/final research surveys and were included in the analysis. One-hundred and forty-four graduate students joining the doctoral program at other department at the medical school whom did not attend to the medical English course were invited to participate in this study as control group. Nine students (6%) (2 females: 7 males,

mean age 32 years, range [31-34]), completed baseline and 1-year follow-up surveys. Features of all the study' participants are shown in Table 2.

Table 2. Baseline characteristics of participants

|	Intervention (n=31)	Control (n= 9)
Male: Female n (Ratio)	24:7 (3.4)	7:2 (3.5)
Age mean years [range]	32 [28-40]	32 [31-34]
PhD course year n [%]]		
first	15 (48)	-
second	3 (10)	1 (22)
third	6 (19)	4 (45)
fourth	7 (23)	4 (33)
PhD course field n [%]		
Rheumatology	11 (34)	-
Endocrinology	10 (32)	-
Nephrology	9 (29)	-
Neurology	1 (1)	-
Digestive surgery	-	2 (22)
Gastroenterology	-	2 (22)
Orthopaedics	-	3 (33)
Pneumology	-	2 (22)
English abilities* mean [range]	3.2 [2-4]	3.3 [3-4]
Reading	2.5 [1-3]	2.9 [2-4]
Writing	2.0 [1-3]	2.7 [2-4]
Hearing	1.8 [1-3]	2.3 [1-4]
Speaking	15 (48) **	8 (89)
Other foreign languages n [%]		
German	9 (29)	6 (67)
French	3 (10)	2 (22)
Chinese	2 (6)	-
Korean	2 (6)	-
Italian	1 (3)	-

n: number *English abilities rated by 5-point Likert-scale (0:poor, 5:excellent) **One participant studied German, Korean and Italian; one participant studied German and Italian.

Statistically significant improvements in the self-assessed confidence level (VASs scores) to perform oral presentations, as well as, other communication tasks in English were observed in the graduate students following 1 year participation in medical English course (p< 0.0001). (Figure 2).

Furthermore, significant improvement in the self-confidence to perform long oral presentation in Japanese (p=0.01) was observed after 1 year participation in the English seminars.

In the control group, no improvement was observed in the self-assessed confidence scores rated for any of the evaluated communication tasks after 1 year observation period (Figure 3).

Figure 2. Intervention group self-assessed confidence for communication tasks in English
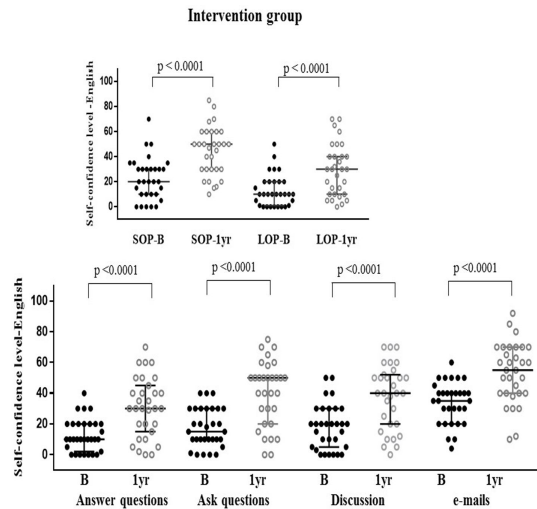
Self-assessed confidence is presented as individual students' scores at baseline (black circles) or after 1 year attending to medical English course (open circle). Lines represent median and interquartile range. Results of Wilcoxon matched pairs signed rank test. SOP: short oral presentations, LOP: long oral presentations. B; baseline, 1yr: after 1 year.

Figure 3. Control group self-assessed confidence scores for communication tasks in English
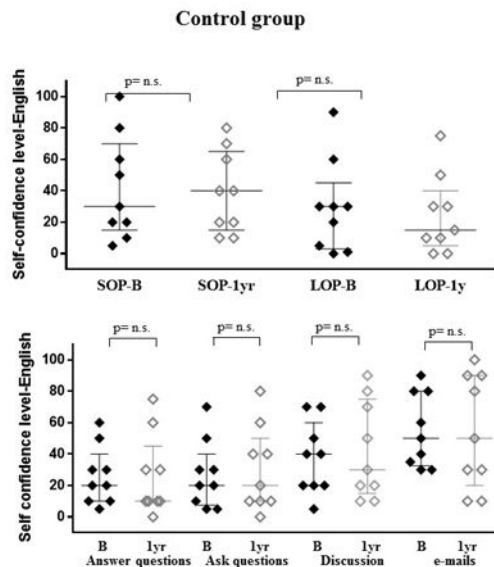
Self-assessed confidence is presented as individual students'scores at baseline (black diamond) or after 1 year observation period (open diamond). Lines represent median and interquartile range. Results of Wilcoxon matched pairs signed rank test. SOP: short oral presentations, LOP: long oral presentations. B; baseline, 1yr: after 1 year.

In conclusion, the incorporation of a medical English program in the curriculum of doctoral programs has an impact on the improvement of the communication skills, and might contribute to the enhancement of communications abilities of young medical doctors.

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