

Medical licensure examination for the visually impaired in Japan

Naoki Aikawa, Shingo Kimura & Yoshio Namba

On August 7, 2003, the Ministry of Health, Labour and Welfare (MHLW) of Japan announced that a visually impaired individual had been granted a Medical Practitioner's Licence for the first time in the history of the Japanese medical licensure system. To obtain a licence to practise medicine in Japan, one must complete a 6-year medical curriculum at a medical university or medical college and pass the National Examination for Medical Practitioners (NEMP), which is held over 3 days in March each year by the MHLW. Each year for the past 5 years, 8511–9266 candidates have taken the NEMP, with a pass rate ranging from 79.1% to 90.4%. The NEMP, designed in an objective form with multiple-choice questions, is prepared by the Examination Committee of the MHLW. There are some 500 questions that reflect the modern medical care system, which is largely dependent on the use of sophisticated medical equipment. (About 76.6% of ordinary hospitals in Japan use CT, and about 31.5% own MRI apparatus). Thus, the questions in the NEMP are characteristically related to diverse pictorial material that must be visually analysed during the examination. Since its inception in 1946, visually or hearing impaired individuals have not been able to sit for the NEMP.

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However, with the increasing awareness of providing more opportunities for the disabled, several countries have taken steps toward basing the capabilities of physically or psychologically impaired individuals on relative, rather than absolute, disqualifying conditions when awarding medical licences. In fact, a visually impaired individual has acquired a licence to practise medicine in the United States.

A visually impaired individual has acquired a license to practise medicine in the United States

In acknowledgement of these changing circumstances, the Headquarters for the Promotion of the Handicapped in Japan's government announced a policy in September 1999, re-evaluating the regulations related to various official qualifications and licensures so that those conditions disqualifying certain individuals did not unfairly deter their participation in social activities. Subsequently, in 2001, the Medical Practitioners Law was updated so that the 'absolute disqualification' of a visually or hearing impaired person from acquiring a medical licence was changed to 'relative disqualification'. To comply with the change, in March 2002 the MHLW held the 'Conference to Study the New Form of the National Examinations for

Medical and Dental Practitioners' (Chair, Naoki Aikawa), to discuss the ideal form that the examinations should take. To promote these new policies, the committee proposed the following conditions:

- The number and content of the test questions must be the same as those for a 'nonimpaired' candidate.
- The test questions can either be read to a visually impaired candidate, or made available in Braille.
- The time allowed to complete the test should be 1.5 times that for a 'nonimpaired' candidate.
- Pictorial material requiring visual inspection should be clearly described by the qualified person in charge of reading the questions, who must also be able to respond to related questions.

The Medical Practitioners Law was updated

In March 2003, one of three visually impaired individuals who sat the NEMP passed. Subsequently, the MHLW arranged for a specialist to interview the candidate, confirming this person's professional capability of required cognition, judgement and communication. After successfully completing these procedures, the visually impaired person was granted a medical licence.

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In Japan, the population with some physical disability is estimated at around 3 245 000, among whom there are about 301 000 visually impaired individuals. To promote the social independence of these

individuals and remove unfair barriers, many public policies have been put in place. The fact that for the first time an individual with severe visual impairment has passed the NEMP is not only a significant

milestone in the history of the medical licensure examination in Japan, but it also represents a great contribution toward creating a society in which the disabled may have equal opportunities.

Health Science in South Africa

Athol Kent & Trevor Gibbs

South Africa is a fascinating mix of a developed and developing country.

Sometimes it is clumped with the rest of Africa and referred to as the Dark Continent, but at other times it is held up as an example of hope when the African Renaissance is spoken about.

To understand where medical education is in South Africa one has to bear in mind some important recent history. Until 1994 the majority of the people were treated as a second-class citizens. The tragic social experiment of grand apartheid still echoes in the corridors of every school and university in the country. It will take generations for substandard secondary schools to be brought up to speed.

The tragic social experiment of grand apartheid still echoes in the corridors of every school and university in the country

Disadvantaged schools with teachers from disadvantaged universities will take more than financial equity to compete with historically white, privileged schools and universities. Those with the highest reputations

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continue to attract quality staff, produce the best research and are naturally aspired to by the brightest students.

The present government has performed some social engineering of its own. Immediately post liberation, affirmative action was a powerful theme supporting appointments and selections at academic institutions. The initial surge of enthusiasm saw ill-prepared students admitted to courses above their level of competence, and this proved a problem, particularly in medicine. Academic Support Units were established to counter the situation but understaffing and unforeseen obstacles hampered their effectiveness.

Robbing the rich to assist the poor has never been a successful political ploy

These difficulties are being met and the face of the present intake of students – in all eight universities offering medical degrees – now reflects the demographics of the South African population. Whether this transformation will result in fewer graduates being lured to developed countries remains to be seen.

While these changes were taking place the healthcare system in the country was also changing – radically. Tertiary and secondary hospitals

were 'downsized', ostensibly to free-up funding to promote primary healthcare. There is nothing wrong with this principle but robbing the rich to assist the poor has never been a successful political ploy. The teaching hospitals lost 50% of their staff and those remaining had huge clinical loads with which to cope and teaching became less of a priority. This process is ongoing.

Against this background, the process of curriculum reform from traditional to problem-based and community-oriented learning was a challenge that seemed to have a low priority. However, in a milieu of change and hope, people are prepared to think the unthinkable and all eight Faculties of Medicine changed their names to Faculties of Health Science, reviewed their curricula and came up with some highly imaginative responses.

In a milieu of change and hope, people are prepared to think the unthinkable

These ranged from problem-based and problem-oriented learning to hybrids, spirals and even a postgraduate entry medical degree programme.

If one considers the huge advantages of rapid communication and combines these with the aspiration of the new South Africa one comes

Follow the patient: process and outcome evaluation of medical students' educational experiences accompanying outpatients

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BACKGROUND To instil patient-centred attitudes in medical students, several medical schools in Japan have recently started to offer educational experiences in which medical students accompany outpatients throughout entire visits to hospitals.

OBJECTIVE To evaluate the processes and outcomes of the educational experience of Year 5 medical students accompanying outpatients at Nagoya University Hospital.

METHODS An integrated, multimethod approach was adopted using a written survey with open-ended questions for students, focus groups with students, and a written evaluation survey for patients. In all, 99 students completed the survey, 19 students participated in 3 focus groups, and 46 patients participated in the evaluation.

RESULTS Many students were sceptical about the objectives of the exercise. We were able to gain insight into student perceptions about facets of the exercise such as the ratio of students to patients and whether or not students should wear white coats. In particular, there was consensus among students about the importance of the debriefing session after the experience. Students achieved different learning outcomes depending on their particular individual

experiences. In the student survey, 49% were satisfied with this experience, 6% were dissatisfied, and 43% were neither. In contrast, patients were highly satisfied with the experience (mean score 4.2 out of 5.0 on a Likert scale). Some students expressed concern about being a burden to patients, while many patients reported feeling emotionally supported by being accompanied by students.

CONCLUSION An integrated approach to programme evaluation, using quantitative and qualitative methods, was useful in the process and outcome evaluation of this new educational experience. The results have been taken into consideration for quality improvement of this curricular element.

KEYWORDS education, medical, undergraduate/*methods; clinical competence/*standards; patient care/*methods; students, medical; interpersonal relations; patient satisfaction; Japan.

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INTRODUCTION

The importance of teaching patient-centred care during undergraduate medical education has been emphasised by medical educators.^{1,2} As a method of engendering an understanding of 'the culture of patients',³ several medical schools in Japan have recently started to offer an educational experience in which medical students accompany outpatients throughout entire visits to the university hospital.^{4,5} Such 'students-following-outpatients' exercises allow students to experience what patients encounter at the hospital and to observe hospital outpatient systems 'through the patients' eyes'.⁶ It is hoped that such

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Overview

What is already known on this subject

To promote patient-centredness, several medical schools in Japan have initiated an exercise in which students accompany outpatients throughout their hospital visits. Previous research showed high patient and student satisfaction but did not evaluate the process and other important outcomes of the exercise.

What this study adds

An integrated approach to evaluation was useful in the process and outcome evaluation of the exercise. Students achieved different learning outcomes depending on their particular individual experiences. Patients rated this exercise highly. This study also provides evidence that patients' perspectives are often different from those of health professionals.

Suggestions for further research

The appropriate timing of this sort of exercise in undergraduate medical education needs further exploration. Whether such exercises inculcate student interest in quality improvement in health care systems is a potential research question.

exercises will help to inculcate patient-centred and humanistic attitudes that students will carry into their clinical clerkships, postgraduate training and professional medical practice.

However, few evaluative research studies have been published on this topic. Ueno *et al.* reported high patient and student satisfaction with this exercise, but did not evaluate the process of the exercise or other important learning outcomes for students.⁴ We were unable to find any other studies evaluating educational exercises in which medical students follow outpatients in the university hospital setting as part of early clinical exposure, in Japan or other parts of the world.

The objective of this study was to evaluate the process (the objectives and strategies of the curriculum) and outcomes (what was learned, student and patient

satisfaction) of an educational experience for Year 5 medical students accompanying outpatients at Nagoya University Hospital.

METHODS

Educational intervention

Medical school in Japan lasts 6 years, with the last 2 years consisting of clinical clerkships. This new educational exercise was conducted with Year 5 students in the specialty outpatient services at the Nagoya University Hospital, over 4 days in the first week of the 2001–02 academic year, immediately prior to the students starting clinical clerkship rotations. Students were instructed to go to the designated outpatient service in the morning on the day of the exercise. A faculty member at each outpatient service invited new and established patients to participate in this exercise. A total of 125 Year 5 medical students from Nagoya University School of Medicine participated. A total of 65 patients agreed to participate, of whom 60 were assigned to pairs of students, and 5 assigned to individual students. All participating patients gave written informed consent.

Students accompanied patients throughout their visits, from arrival at the outpatient service through discharge. The students were encouraged to talk with and listen to the patients in order to understand their thoughts, feelings and expectations. They were discouraged from merely taking medical histories from patients.

Evaluation methods

An integrated approach using quantitative and qualitative methods⁷ was used to evaluate this educational exercise. This involved:

- 1 a written survey with open-ended questions for all students;
- 2 focus groups with subsets of students, and
- 3 a brief structured questionnaire for all participating patients.

A written survey with open-ended questions for students

Immediately after the exercise, the written survey with open-ended questions was administered to students. This survey consisted of a standardised form used at Nagoya University School of Medicine for student evaluation of new educational programmes.

The anonymous survey consisted of the following 6 questions:

- 1 How satisfied were you with the exercise?
- 2 Which aspects of this exercise were enjoyable?
- 3 Which aspects of this exercise were disappointing?
- 4 What sort of questions arose for you during this exercise?
- 5 What have you learned from this exercise?
- 6 Do you think that the school should continue this exercise?

A total of 99 (79%) students completed and returned this survey. Two of the authors (KM, NB) independently reviewed the survey results to identify common themes. Consensus on the themes was arrived at via discussion among the authors.

Focus groups for subsets of students

Two of the authors (KM, NB) facilitated 3 focus groups with a total of 19 students (3 groups of 6 or 7 students) who rotated through the Department of General Medicine 1, 3, and 5 weeks after the exercise as part of clerkship rotations in the academic year 2001–02. These facilitators were staff members of the Department of General Medicine and were involved in a variety of educational activities at the medical school. Participants of the groups were students on their clerkship rotation, for which the sequential order was set by other medical school officials. After assurances that responses would be reported in an anonymous fashion, students gave oral consent to allow the discussion to be videotaped. The facilitators explained that the objectives of focus group were to gain an in-depth understanding of student experiences with the exercise, and to identify the strengths and weaknesses of the exercise. The facilitators encouraged interactions among students and ensured that all students had sufficient opportunity to express their views. Each focus group lasted 30–40 minutes. Videotaping, rather than audio-recording, was utilised because it aided the search for particular comments during subsequent review. The 2 facilitators (KM, NB) independently reviewed the videotapes and made partial transcriptions to identify key words and concepts and to develop a thematic framework. Interpretations of the data were agreed upon by consensus among the authors. Further, 6 self-selected students who participated in the focus group agreed to review the preliminary results of the data analysis in order to validate the researchers' interpretations.

A brief, structured questionnaire for patients

After the exercise, participating patients were asked to complete and return an evaluation form with space for free comments. The evaluation form, created by 2 of the authors (NB, GS) for this particular exercise, asked the following 5 questions:

- 1 How satisfied were you with the experience of being accompanied by students?
- 2 How did you feel about the students' attitudes?
- 3 Were the instructions given by the faculty understandable?
- 4 What is your preference for the ratio of students to patients?
- 5 Should the medical school pay patients for participating in this exercise?

A total of 46 (71%) patients completed and returned this evaluation form. Descriptive statistics were calculated for the analysis. Illustrative quotes were chosen to represent patient perspectives.

RESULTS

Two major themes were identified from the analysis of the written survey and 3 focus groups for students:

- 1 student perceptions of the strengths and weaknesses of the process of the exercise, such as the stated objectives and the learning strategies utilised, and
- 2 student perceptions of the outcome of the exercise, such as key learning points for students and potential benefit or harm to patients.

We also obtained data on student and patient satisfaction through the written surveys as part of the outcome evaluation of the exercise.

Process evaluation

Objectives/purpose of the exercise

Many students were sceptical about the goal of learning the perspectives of patients. This was evidenced by a number of comments in the focus groups. (All names attached to the following quotes have been changed.)

'I don't believe that we should have to go through this exercise just to learn that waiting times at our hospital are too long.' (Ryu, male student, Focus Group 2)

'I didn't get anything from this exercise, because I have had the personal experience of being a patient in a hospital myself.' (Ken, male student, FG 3)

One student commented on the survey:

'I thought that there is no point in accompanying patients even to the laboratory, the X-ray department, or the cashier.' (Appendix 1)

In contrast, most patients had a clear idea of the purpose of the exercise, and some expressed the hope that the exercise would help 'educate good doctors.' One patient commented:

'I would like medical students to gain more experiences like this so that they become considerate doctors.'

Learning strategies

Ratio of students to patients. In the focus groups, students were divided as to the preferred ratio of students to patients (2 : 1 versus 1 : 1). Some students were concerned that patients might feel burdened by the presence of 2 students. Others maintained that the presence of 2 students might make 1 : 1 communication difficult. Patients were also divided on this issue. Among 46 patients who returned the evaluation form, 37% ($n = 17$) stated that they would prefer a 2 : 1 student : patient ratio, 26% ($n = 12$) preferred a 1 : 1 ratio, 33% ($n = 15$) expressed no preference, and 4% ($n = 2$) left this question blank (Appendix 2).

Whether or not students should wear white coats. In the focus groups, some students expressed awkwardness about wearing a white coat when accompanying patients:

'I did not want to wear a white coat at all. Patients must have been uncomfortable being accompanied by students wearing white coats.' (Haruki, male student, FG 2)

'Other patients looked strangely at the 2 of us wearing white coats just standing in the waiting room.' (Yukihiro, male student, FG 2)

Other students did not mind wearing white coats, particularly those who accompanied patients on a 1 : 1 basis. We did not ask patients specifically about the need for students to wear white coats.

Need for debriefing sessions to share experiences. There was consensus among students in the focus groups

about the value of holding debriefing sessions immediately after the experience.

'Now that we are discussing our impressions in this way, we are learning that each of us had different experiences with different patients. The exercise would have been fruitless if we did not do this.' (Osamu, male student, FG 1)

Outcome evaluation

Key learning points for students

A variety of benefits in knowledge, skills and attitudes were gained through this experience, ranging from an appreciation of patients' perspectives, to an understanding of the complex nature of outpatient systems, to an opportunity to observe patient–doctor communication, to concrete clinical knowledge about patients' medical problems.

Patients' perspectives. In the open-ended surveys (Appendix 1) and in the focus groups, some students said they were able to gain an appreciation of patients' perspectives, the stated goal of this exercise. On the other hand, other students declared that the exercise did not help them achieve this goal:

'I was able to obtain more insight than I expected into the anxious feelings experienced by patients.' (Osamu, male student, FG 1)

'Well, I don't think I had the same experience as you had, because my patient was not anxious.' (Akiko, female student, FG 1)

'I have learned that we should never forget that patients have their own lives outside the hospital.' (Yoko, female student, FG 3)

'As for understanding the patient's world, I didn't gain anything that I didn't know before the exercise.' (Kiyoshi, male student, FG 2)

Complexity of the outpatient system. In the surveys, students commented that they learned something about the complexity of the outpatient system as follows:

'The system is too complex to understand.'

'I was sorry for the patient because she had to go through many different sections and departments during the visit.'

'There was lack of co-ordination among the different outpatient services, making the patient confused.'

'The waiting time was too long.'

'There was lack of privacy; you could hear the conversation between the doctor and the patient in the next cubicle.' (Appendix 1)

During the second focus group, 1 student expressed her frustration with the system as well as her desire for quality improvement:

'While we might learn something about the unfriendliness of the hospital system, it would be meaningless if we did not do something about it.' (Naomi, female student, FG 2)

Patient-doctor communication. During this exercise, some students learned about the need for effective patient-doctor communication from the perspective of the patient. In the survey, 1 student commented on the importance of giving clear, easy-to-understand instructions to patients (Appendix 1). In the focus groups, students pointed out the importance of learning communication skills such as gathering information, being respectful to patients, and using language that patients understand.

Clinical knowledge. In the focus groups, some students said they gained some clinical knowledge, as illustrated by the following quote:

'I learned first hand that it is not uncommon for patients to have multiple, chronic, complex diseases while listening to the doctors' explanation to the patient.' (Takuya, male student, FG 3)

Student satisfaction

In the surveys, half (49%, $n = 49$) the students were satisfied with this experience and 6% ($n = 6$) were dissatisfied (Appendix 1). The rest reported that they were neither satisfied nor dissatisfied. The majority of students (59%, $n = 58$) thought that the school should continue this exercise, while 10% ($n = 10$) thought that the exercise was not worth continuing.

Patient satisfaction and related outcomes

In contrast to students, patients were highly satisfied with the exercise overall (mean score 4.2 out of 5.0) (Appendix 2). Patients also rated the students' attitudes highly (mean score 4.3 out of 5.0) and were satisfied with clarity of the faculty's instructions regarding the exercise (mean score 4.2 out of 5.0). The vast majority of patients (91%, $n = 42$) said that the medical school did not have to pay them for participating in this exercise.

The possible harm to patients

In the surveys and focus groups, many students expressed their concerns about being burdensome to patients. However, there was no evidence from the patient evaluations indicating any discomfort on the part of the patients. Many patients reported feeling emotionally supported by students.

DISCUSSION

An integrated approach to evaluation, using both quantitative and qualitative methods, was effective in identifying the strengths and weaknesses of the processes and in evaluating outcomes of our new educational students-following-outpatients exercise. The combination of quantitative and qualitative methods should be considered for evaluation of new educational interventions for continuous quality improvement.

We found that debriefing sessions allowed students to learn from the experiences and learning outcomes of their fellow students, for each student's experience was, inevitably, unique. This finding was not evident from the written questionnaire but was revealed during the focus groups. Subsequently, we have instituted small group debriefing sessions for all students during their rotations in the Department of General Medicine throughout the year to share, reflect upon and discuss their experiences with the exercise. We have observed that the debriefing sessions are particularly useful for students who had thought that their experience was less meaningful. These sessions help students reframe their own experiences so that they gain more insight than they did at first.

In the previous work by Ueno *et al.*,⁴ the majority of students (79%) thought that the medical school should continue this sort of exercise. In our study, only 59% approved the exercise and only half were satisfied. It is uncertain why our students were less

enthusiastic. However, we speculate that the timing of the evaluation might have influenced this contrasting finding; Ueno *et al.*⁴ evaluated this exercise in its second year of implementation, whereas we performed our evaluation during the first year. In addition, differences in the curricula of the 2 institutions may have contributed to the differential in student reception of the new curricular element.

We also believe that the relatively low levels of student approval of and satisfaction with the exercise in our study could be at least partially accounted for by student attitudes towards the objectives of the exercise, although we did not specifically ask students in the focus groups why they were not as satisfied as we had expected. To address this scepticism, we have modified the stated objective of the exercise. Rather than simply stating that the goal of this exercise is 'to understand patient perspectives', we have changed it to: 'to experience outpatient services at the university hospital from the patient perspective', in order to emphasise the inevitable diversity of students' experiences and learning outcomes.

Some students expressed concerns about being burdensome to patients. However, the results of the survey showed that many patients felt emotionally supported by being accompanied by students and were highly satisfied with the experience. Subsequently, we have found it useful to note this finding to students in order to emphasise that patients often have different perspectives from our own and to reassure those who are concerned about the possible psychological harm of the exercise.

Limitations of our study are as follows: firstly, we had lower response rates for both students (79%) and patients (71%) than expected. We did not make further attempts to improve the student response rate because the questionnaire was anonymous. We also did not attempt to remind the patients to respond out of concern that those who had not bothered to evaluate the programme might be offended by repeated requests. The opinions of the non-respondents might have differed. For example, the patient satisfaction score would have been lower if those who had been dissatisfied with the experience had evaluated the programme. Nevertheless, our findings of patients' positive views on being involved in undergraduate education are consistent with those of other studies.⁸⁻¹⁰ Secondly, the results might not have been as favourable to the programme if independent non-faculty members had facilitated the focus groups, in which case students might have expressed negative opinions more candidly.¹¹ Because of limited

resources, we did not recruit other trained focus group facilitators or train other staff who were not involved in this particular project. We also believed our familiarity with the process and structure of the exercise was an advantage. Thirdly, we used questionnaires with different formats for students and patients. Asking the same questions of students and patients would have allowed a comparison of their responses. Fourthly, the opinions of the 19 students in the focus groups might not have been representative of all students who participated in the exercise.

There are several unanswered questions that should be addressed in future research. For example, the appropriate timing of this exercise in undergraduate medical education might be examined. The impact of such an exercise on students' future interest in quality improvement in health care systems¹² is another potential research question.

In conclusion, an integrated approach to programme evaluation, using quantitative and qualitative methods, was useful in the process and outcome evaluation of our students-following-outpatients exercise. We suggest that the combination of quantitative and qualitative methods should be considered for evaluation of new educational interventions for continuous quality improvement.

Contributors: NB conceived this educational exercise. NB, GS and YS designed and implemented the exercise. NB and KM conceived the evaluation of the exercise, designed the evaluation form, and collected and analysed the data. GS collected and analysed the open questionnaire for the students. SY and TO contributed to the design, implementation and analysis of focus group interviews. All authors contributed to the writing of this paper.

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APPENDIX 1

Students' responses to the written survey ($n = 99$)

1 How satisfied were you with the exercise?

- Satisfied 49% ($n = 49$)
- Dissatisfied 6% ($n = 6$)
- Neither 43% ($n = 43$)
- Missing data 1% ($n = 1$)

2 What aspects of this exercise were enjoyable?

- Talking to the patient
- Understanding the patient's feelings
- Being accepted by the patient
- Observing the care processes through the eyes of the patient

3 Which aspects of this exercise did you find disappointing?

- The system is too complex to understand
- Communicating with the patient only about 'non-medical' matters
- Lack of co-ordination among the different specialties
- Long waiting times
- The number of departments that the patient had to go through
- Lack of patient privacy

4 What sorts of questions arose for you during this exercise?

- Don't patients become tired of being with students?
- Isn't it meaningless to accompany patients to departments such as the laboratory, radiology, or the cashier?
- Do patients understand the purpose of the exercise?

5 What have you learned from this exercise?

- Understanding the patient's perspectives
- Understanding the system of outpatient care at the university hospital
- Understanding the importance of giving clear instruction to patients

6 Do you think that the school should continue this exercise?

- | | | |
|--------------------------|-----|--------------|
| • Yes | 59% | ($n = 58$) |
| • No | 10% | ($n = 10$) |
| • Equivocal or no answer | 31% | ($n = 31$) |

If you answered 'No', please indicate the reason below.

- Potential emotional burden to patients
- Could not understand the purpose/objective of the exercise
- Having already been a patient myself

APPENDIX 2
Patients' responses to the questionnaire (*n* = 46)

1 How satisfied were you with the experience of being accompanied by students?

Mean score: 4.2 (SD 0.74)

- 1 = very unsatisfied
- 2 = somewhat unsatisfied
- 3 = neutral
- 4 = somewhat satisfied
- 5 = very satisfied

2 How did you feel about the students' attitudes?

Mean score 4.3 (SD 0.76)

- 1 = very poor
- 2 = poor
- 3 = acceptable
- 4 = good
- 5 = excellent

3 Were the instructions given by the faculty understandable?

Mean score 4.2 (SD 0.73)

- 1 = very difficult to understand
- 2 = somewhat difficult to understand
- 3 = neutral
- 4 = somewhat easy to understand
- 5 = very easy to understand

4 What is your preference for the ratio of students to patients?

- 2 : 1 37% (*n* = 17)
- 1 : 1 26% (*n* = 12)
- No preference 33% (*n* = 15)

5 Should the medical school pay patients for participating in this exercise?

- Yes, perhaps a small gift such as a ballpoint pen 7% (*n* = 3)
- No 91% (*n* = 42)

Poor English skills as a barrier for Japanese health care professionals in learning and practising evidence-based medicine

Kunihiko Matsui, Nobutaro Ban, Shunichi Fukuhara, Takuro Shimbo, Hiroshi Koyama, Seigo Nakamura, Naoki Nago, Toshio Fukuoka & Tsuguya Fukui

Editor – Evidence-based medicine (EBM) is becoming widely known among health care professionals in Japan. As in North America and Europe,^{1,2} there are several impediments to teaching and practising EBM in Japan. We held 2-day workshops to introduce Japanese health care professionals to some basic components of EBM, namely, searching for and critically appraising medical literature.

The participants were doctors (30%), dentists (5%), nurses (1%), pharmacists (38%), and others (26%); $n = 280$. Tutors assisted the participants in small-group tasks. There were 89 tutors, all of whom were health care professionals, and had experience in teaching EBM. The workshops were conducted in Japanese, although most of the medical literature used was in English. To investigate obstacles to learning and practising EBM, we surveyed the workshop participants. Before and after each session, they were asked to rate perceived obstacles to disseminating or applying EBM in their clinical practice.

The participants did not need to write in English, speak in English or understand spoken English. Nonetheless, 185 of them (66%)

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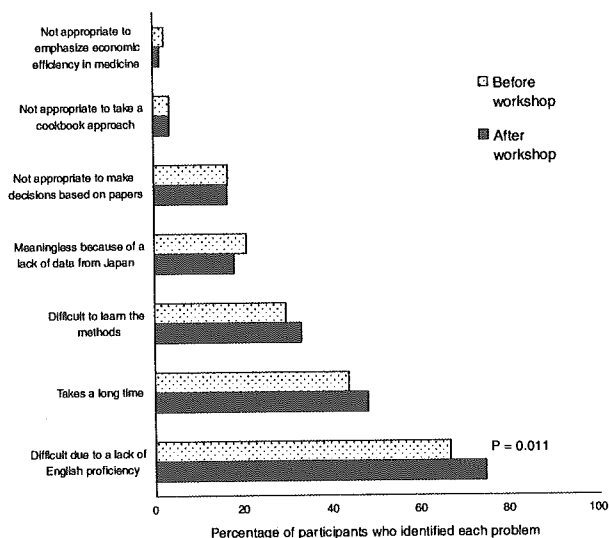


Figure 1 Problems with learning and practising EBM, as identified by workshop participants ($n = 280$).

reported that their lack of English skills caused problems; this figure was higher after the workshop (210; 75%), and it was the only problem identified by significantly more participants after the workshop than before it (Fig. 1). Other problems identified by at least a third of the participants were difficulty in learning EBM methods and the time needed to practise EBM.

We found several impediments to learning and practising EBM for Japanese health care professionals. Most reported that a lack of English (reading) proficiency was a major obstacle. As most medical research is published in English, medical professionals need good reading skills to keep up with the latest developments in their fields. The English language skills needed to learn and apply EBM have been given inadequate attention.

We should not be surprised if the resulting language barrier fosters misunderstandings of evidence-based approaches and scepticism about their value.

Japanese health care professionals and their patients might benefit from EBM, but only if their comprehension of written English is improved. Accomplishing that task will probably require changing the methods used to teach English during pre-collegiate schooling.

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Research article

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Evaluation of a communication skills seminar for students in a Japanese medical school: a non-randomized controlled study

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Abstract

Background: Little data exist for the effectiveness of communication skills teaching for medical students in non-English speaking countries. We conducted a non-randomized controlled study to examine if a short intensive seminar for Japanese medical students had any impact on communication skills with patients.

Methods: Throughout the academic year 2001–2002, a total of 105 fifth-year students (18 groups of 5 to 7 students) participated, one group at a time, in a two-day, small group seminar on medical interviewing. Half way through the year, a five-station objective structured clinical examination (OSCE) was conducted for all fifth-year students. We videotaped all the students' interaction with a standardized patient in one OSCE station that was focused on communication skills. Two independent observers rated the videotapes of 50 students who had attended the seminar and 47 who had not. Sixteen core communication skills were measured. Disagreements between raters were resolved by a third observer's rating.

Results: There was a statistically significant difference in proportions of students who were judged as 'acceptable' in one particular skill related to understanding patient's perspectives: asking how the illness or problems affected the patient's life, (53% in the experimental group and 30% in the control group, $p = .02$). No differences were observed in the other 15 core communication skills, although there was a trend for improvement in the skill for asking the patient's ideas about the illness or problems (60% vs. 40%, $p = .054$) and one of the relationship building skills; being attentive and empathic nonverbally (87% vs. 72%, $p = .064$).

Conclusion: The results of this study suggest that a short, intensive small group seminar for Japanese medical students may have had a short-term impact on specific communication skills, pertaining to understanding patient's perspectives.

Background

The literature from English-speaking countries indicates

that teaching communication skills is effective in improving learners' communication skills with patients [1].

However, the evidence from non-English speaking countries is sparse [1]. In addition, the conceptual frameworks for communication skills teaching are based on research evidence from English-speaking countries [2]. There is an ongoing debate about whether the principles and methods for teaching communication skills developed in English-speaking countries could be applied to other places with different languages and cultures [2-4].

Teaching communication skills is gaining popularity and proliferating for Japanese health professional students [5]. Yoshida et al. conducted a controlled study to examine the effects of such training with 16 Japanese dental students and had a positive result [6]. A few reports have been published on Japanese medical students [7-9]. However, to our best knowledge, no controlled studies for communication skills teaching have been conducted for that population.

In many traditional medical schools in Japan, communication skills teaching is limited in time and scope, and isolated from other formal curricula. Thus it is important to know whether such type of training make a difference, at least in the short run. This should also be of interest to educators elsewhere who similarly work in settings where there is not enough formal curricular time for communication skills teaching.

The objective of this study was to evaluate the impact of a short, intensive small group seminar, which was based on Western educational principles, on Japanese medical students' communication skills with patients.

Methods

Participants

Medical schools in Japan last six years with the last two years consisting of clerkships. Before the fifth-year, Japanese students typically have few direct interactions with patients. Throughout the academic year 2001-2002, a total of 105 fifth-year students from the Nagoya University School of Medicine rotated through the various clinical services of the Nagoya University Hospital. Students divided themselves into 18 groups of 5 to 7, but the sequential order of rotations is set by the medical school officials.

Educational intervention

As part of a 1-week clerkship rotation at the Department of General Medicine, students participated in a two-day, small group seminar on the medical interview and communication skills. Typically either or both of two of the authors (KM, NB) facilitated the seminar. Both facilitators had had an experience in learning and teaching the medical interview and communication skills in the United States. The seminar utilized learner-centered, skills-oriented, experiential, and interactive learning methods. To

guide the teaching of communication skills, we created a conceptual model for patient-physician communication referring to 3 existing models [2,10,11]. Although our main teaching focus is on communication process skills, we also addressed the content aspects of the medical interview (e.g., discussion of differential diagnosis). The learning activities during the seminar are summarized in Figure 1.

Outcome measures

In September 2001, half way through the academic year, a five-station objective structured clinical examination (OSCE) was conducted for all fifth-year students. The primary purpose of the OSCE was to provide trainees with the opportunity to receive feedback on their clinical skills from the faculty in a safe and structured environment. One OSCE station focused on the medical interview. Students engaged in a 5-minute interaction with a standardized patient presenting with cough. A total of 10 fourth-year students were trained to serve as standardized patients in a series of 3 small group sessions, each lasting 60 minutes [12]. During the interview, the fifth-year students were observed by faculty and evaluated for both station-specific and general communication skills on the pre-defined rating scale. The faculty gave students a 3-minute feedback immediately after the encounter. Standardized patients did not give feedback. All interactions were videotaped and subsequently reviewed by faculty members to provide students with additional written feedback.

Placed at the mid point of the academic year, the OSCE provided us with the opportunity to evaluate the short-term effectiveness of the small group seminar on students' communication skills. We reviewed the videotapes of 52 students who had attended the seminar (the experimental group) and 53 students who had not at the time of the OSCE (the control group). The group assignment was based on the sequential order of clinical rotations, arbitrarily set by the medical school officials. The time intervals between the seminar and the OSCE ranged from 1 week to 5 months. Students were asked to provide informed consent using a form that had been approved by the Institutional Review Board at the Nagoya University Hospital.

The interview rating form was created by one of the authors (KM) and includes 16 essential communication skills items. They are grouped into 6 communication tasks that should be accomplished during the initial 5 minutes of an encounter (*establish initial rapport, survey patient's reason(s) for the visit, determine the patient's chief concern, elicit and understand the patient's perspective, manage flow - provide the structure for the interview, and use of relationship*

Day 1: Trigger videotape critique: 1 hour

- By reviewing a trigger videotape of the doctor-patient encounter, students identify and discuss effective/ineffective communication behaviours

Day 2: Skills practice - Role-play and videotape review: 6 hours

- Pairs of students take turns role playing a doctor-patient encounter
- When students act as simulated patients they create the clinical scenario themselves in advance of the session
- During the seminar, all role plays are videotaped and reviewed by the group.
- All students receive feedback on their communication skills from peers and facilitator(s) using a checklist
- Discussion of differential diagnoses for each clinical scenario

Figure 1

Learning activities during a two-day seminar on medical interviewing and communication skills.

building skills). The performance was rated on a 4-point scale labelled as good, satisfactory, insufficient and poor. The skills items were selected for their association with improved patient outcomes. They were derived from evidence-based communication assessment tools (i.e., *the Calgary-Cambridge observation guide, the SEGUE framework, and the checklist developed by the investigators of the Macy Initiative in Health Communication*) [2,10,11]. These instruments are based on the same conceptual models for patient-physician communication we referred to during our teaching seminar.

Two staff members (KK, HW) were trained to serve as raters. The tapes were independently reviewed and scored using the students' communication skills rating scale. Ten arbitrarily selected videotapes of students' role-plays of a doctor-patient encounter during the small group seminar were used to ensure accuracy and inter-rater reliability. At the time of the research the raters primarily worked outside the University and did not participate in the teaching

seminars. Thus they were blinded to the students' group assignments.

From the 105 students who attended the OSCE, 2 did not return the consent form, 5 did not give permission for the video review, for 1 the videotape quality was too poor to be analyzed. Thus, a total of 97 videotapes were available for the analysis.

A skill item was considered 'acceptable' if both raters scored the students' performance as 'good' or 'satisfactory.' It was labeled as 'unacceptable' if both raters scored the performance as 'insufficient' or 'poor.' When these two raters disagreed over the judgment about the students' performance (e.g., one rater scored the performance of a skill item as 'acceptable' and the other scored the performance of the same item as 'unacceptable'), a communication educator and researcher (KA) served as the tiebreaker. The overall disagreement rate between the two raters (KK, HW) was 21%. The raters disagreed more often on

Table 1: Baseline characteristics of the students

	Intervention Group (N = 47)	Control Group (N = 50)	P-value
Mean age (SD)	23.6 (1.5)	23.4 (1.5)	0.48
Women	36% (N = 17)	40% (N = 20)	0.70
Did a self-study preparing for OSCE	34% (N = 16)	56% (N = 28)	0.03
Took an elective on communication in medicine at the 4 th year	43% (N = 20)	54% (N = 27)	0.26
Interested in becoming a generalist	13% (N = 6)	26% (N = 13)	0.10

inviting the patient to tell the story chronologically (41%), actively responding to the patient's concerns and nonverbal cues (34%), and being attentive and empathic nonverbally (31%).

Statistical analysis

We compared baseline characteristics of the two groups using t-tests for a continuous variable (age) and chi-square tests for categorical variables. To evaluate the effect of the educational intervention, the proportion of students with 'acceptable' performance was compared with those whose performance was unacceptable using chi-square tests for all 16 skills items. All statistical analyses were done by JS using Stat View Version 5.0 (SAS Institute Inc. North Carolina).

Results

Student characteristics including gender did not differ between the groups except that more students in the control group engaged in self study as a preparation for the OSCE ($p < .05$) (Table 1). There were trends that more students in the control group took an elective on communication skills at the 4th year and were interested in a future generalist career. For both groups combined, the mean age was 23.5 years and 38 % were women.

The proportions of students who were judged to have performed as 'acceptable' for each of the 16 items are shown in Table 2. There was a statistically significant difference for one particular skill related to understanding patient's perspectives: "exploring how the illness or problem affected the patient's life" (53% in the intervention group vs. 30% in the control group, $p = .02$). No significant differences were observed for the other 15 skills, although there was a trend favouring the intervention in the skill for "asking the patient about ideas concerning the illness or problem (60% vs. 40%, $p = .054$) and one of the relationship building skills: "being attentive and empathic nonverbally (87% vs. 72%, $p = .064$)."

Discussion

A short, intensive small group seminar on medical interviewing appeared to have had an impact on some specific skills, pertaining to "eliciting and understanding the

patient's perspectives." It did not seem to have improved the skills associated with the other tasks: establishing initial rapport, surveying the patient's reason(s) for the visit, determining the patient's chief concern, and managing flow – providing the structure for the interview, and the skills for building relationships.

There are several strengths of our study. First, this is one of the few empirical, controlled studies from a non-English speaking country. Even though the students were not strictly randomized into intervention and control groups, the assignment occurred arbitrarily by the administration, without regard to students' preferences or interests in medical interviewing. Thus, it is unlikely that the higher scores in the intervention group are attributable to self-selection. Although there was a significant difference between the groups in proportions of students who did a self-study for the OSCE, which might have caused the results of no difference in most of the skills, the other characteristics such as age and gender were similarly distributed (Table 1). Second, interventions and evaluations were guided by the conceptual framework, modelled after the 3 widely used theoretical models that are based on rigorous, empirical research in the field of patient-physician communication [2,10,11]. Third, the communication skills evaluation instrument was matched with the competencies taught in the small group sessions [13]. By carefully delineating and defining specific communication skills that should be addressed in the teaching session and by evaluating the effect of the teaching intervention on these individual skills, we sought to examine whether some skills were more teachable than others in such a brief, small group sessions.

Our study also has weaknesses that should be addressed. First, our teaching method was based on the research findings in Western world, and this is based on the untested assumption that these findings are equally valid in Japan. There is evidence that patient-physician communication patterns in Japan are different from those in the West. Previous research by Ohtaki and colleagues compared patient-physician communication patterns in Japan and the USA [14]. It included 20 outpatient consultations of four physicians in Japan and 20 outpatient consultations

Table 2: Student performance of the skill judged as 'acceptable'

Communication Tasks and Related Skills	Intervention Group (N = 47)	Control Group (N = 50)	P-value
<i>Establish Initial Rapport</i>			
Greet patient and obtain patient's name	92%	94%	0.43
Introduce self and clarify the role	100%	98%	1.0
<i>Survey Patient's Reason(s) for the Visit</i>			
Allow the patient to complete his/her opening statement	9%	6%	0.71
Invite the patient to tell the story chronologically	49%	46%	0.77
Actively listen, using verbal and nonverbal techniques	66%	58%	0.42
Summarize. Check for understanding. Invite more questions?	70%	60%	0.29
<i>Determine the Patient's Chief Concern</i>			
Ask closed-questions that are non-leading, one at a time	100%	100%	1.0
Define the concern completely	96%	94%	1.0
<i>Elicit and Understand the Patient's Perspective</i>			
Explore contextual factors (e.g., job, family, hobbies)	66 %	62%	0.69
Ask the patient's ideas about the illness or problems	60%	40%	0.054
Explore how the problem affects the patient's life	53%	30.0%	0.02
<i>Manage Flow – Provide the Structure to the Interview</i>			
Summarize periodically throughout the interview	81%	76%	0.56
Use signposting	40%	30%	0.28
<i>Use of Relationship Building Skills</i>			
Be attentive and empathic nonverbally	87%	72%	0.064
Actively respond to patient's concerns and nonverbal cues	38%	40%	0.8637
Use appropriate language	100%	100%	1.0

of five physicians in the USA. Japanese physicians spent less time on social talk than the USA counterparts (5% vs. 12%). Japanese patient-physician encounters included more pauses than those in the USA (30% vs. 8.2% of the total consultation length). There is a need for more empirical studies linking physicians' communication skills to patient outcomes specifically for Japanese population. Second, our assessment of students' communication skills was based on observations of a single, five-minute OSCE station. The reliability of which as a measure of communication skills is known to be low [15]. Third, because we assessed the students' skills at only one time, we could not assess the change in students' performance before and after the intervention. Fourth, the use of junior students as standardized patients may have influenced the performance of the examinees. The accuracy of student-standardized-patients' (student-SPs') portrayal would be a critical issue especially when the OSCE is used to grade students. Although we did not objectively investigate the consistencies of the portrayal by student-SPs, our examinees rated highly the fidelity of student-SPs, i.e., the degree to which they were acting as if they were real patients (mean score, 3.9 on a 5-point Likert scale) [12]. Fifth, our study might have only shown that the intervention was effective in improving students' skills for eliciting 'expert' observations of patient perspectives, not actual patient perspectives. We did not ask student-SPs whether examinees elicited their perspectives. Rather, we judged examinees'

ability to elicit patient perspectives through their 'observable' behaviours from the experts' point of view. The role of student-SPs in evaluating fellow students' communication skills, particularly skills for eliciting patient perspectives should be addressed in future studies. Finally, the statistically significant difference observed for only 1 skill among a total of 16 skills could be due to chance alone. It is certainly possible that our intervention was too weak to influence any of the 16 communication skills.

One can hypothesize the reasons why the intervention appeared to make a difference to some communication skills competencies but not to others. One could speculate that the competencies that were not influenced by the intervention were either very easy in general or too difficult to acquire in such a short teaching session. For example, the skills for establishing initial rapport (greet patient and obtain the patient's name, introduce self and clarify roles) and skills for determining the patient's chief concern (ask closed-ended questions that are non-leading and one at a time, define the concern completely) may be already present from the outset or so easy to acquire that a self-study just before the OSCE would make no differences in scores between the groups regardless of the intervention. On the other hand, the skills for surveying the patient's reason(s) for the visit, which requires being open at the beginning of the interview, may be too difficult for students to demonstrate, with or without the interven-

tion. In particular, only 9% in the intervention group and 6% in the control group demonstrated an acceptable performance for the skills of allowing patients to complete their opening statements. These very low scores may also indicate that during small group sessions, we did not emphasize enough the importance of not interrupting patients at the beginning of the interview. Another explanation is that 'content' skills (i.e., what we communicate) are easier for students to acquire than 'process' skills (i.e., how we communicate). Kurtz et al. noted that the skills for understanding patient's perspectives, which our intervention made a difference, are actually 'content' skills, not 'process' skills [16]. One could argue that the intervention was just too short to influence other 'process' skills. These interesting hypotheses should require further investigations.

Conclusions

The results of this study suggest that a short, intensive small group seminar for Japanese medical students may have had an impact on specific communication skills, namely, skills for exploring how the illness or problem affected the patient's life, asking the patient about ideas concerning the illness or problem, and being attentive and empathic nonverbally at least in the short term. Further studies should be done to confirm this preliminary finding and to clarify the skills for which educational interventions could make a difference.

Competing interests

The author(s) declare that they have no competing interests.

Authors' contributions

KM contributed to the conception and design of the study, design and implementation of the educational intervention, interpretation of the data, and drafting of the manuscript.

KK and KW contributed to the collection of the data and reviewing of the manuscript.

KA contributed to the collection of the data and reviewing of the manuscript.

JS contributed to the conception and design of the study, analysis and interpretation of the data and reviewing of the manuscript.

NB contributed to the conception and design of the study, design and implementation of the educational intervention, interpretation of the data, and reviewing of the manuscript.

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Preconception care by family physicians and general practitioners in Japan

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Abstract

Background: Preconception care provided by family physicians/general practitioners (FP/GPs) can provide predictable benefits to mothers and infants. The objective of this study was to elucidate knowledge of, attitudes about, and practices of preconception care by FP/GPs in Japan.

Methods: A survey was distributed to physician members of the Japanese Academy of Family Medicine. The questionnaire addressed experiences of preconception education in medical school and residency, frequency of preconception care in clinical practice, attitudes about providing preconception care, and perceived need for preconception education to medical students and residents.

Results: Two hundred and sixty-eight of 347 (77%) eligible physicians responded. The most common education they reported receiving was about smoking cessation (71%), and the least was about folic acid supplementation (12%). Many participants reported providing smoking cessation in their practice (60%), though only about one third of respondents advise restricting alcohol intake. Few reported advising calcium supplementation (10%) or folic acid supplementation (4%). About 70% reported their willingness to provide preconception care. Almost all participants believe medical students and residents should have education about preconception care.

Conclusion: FP/GPs in Japan report little training in preconception care and few currently provide it. With training, most participants are willing to provide preconception care themselves and think medical students and residents should receive this education.

Background

Appropriate preconception care provided by family physician/general practitioners (FP/GPs) can provide great benefits to mothers and infants. [1-4] In spite of many potentially helpful interventions prior to conception, there is little literature illustrating the effectiveness of preconception services delivery through primary care settings. Muchowski and Paladine present the evidence of

effectiveness for components of preconception care that could be provided in primary care settings.[4] Korenbrot and colleagues conducted a systematic review and found no RCTs of prepregnancy interventions, though one RCT was conducted among women who had a negative pregnancy test.[5] Despite recent research demonstrating the importance of assessing primary care workers views on preconception care,[6] we found no published research

on Japanese FP/GPs' approaches to the provision of preconception care to women of reproductive age.

Such research is needed because obstetricians in Japan usually cannot provide preconception counseling. Women infrequently present to OB/GYN physicians prior to conception unless they have gynecological problems. Many of our primary care colleagues consider women's health issues to be outside the realm of their practice, and they lack systematic education in preventive care during family/general medicine training. Despite a longstanding call for family physicians to provide preventive care in Japan,[7] we hypothesized that few FP/GPs are providing preconception counseling.

The best proven preconception intervention, taking folic acid supplements one to two months prior to conception, has been shown to prevent neural tube defects.[8] Unfortunately, many pregnant women do not have their first visit for prenatal care until eight weeks of pregnancy or later, even though fetal development is most vulnerable to development of neural tube defects during this time.[1] Epidemiological studies published over the last fifteen years document that prenatal supplementation with folic acid reduces the risk of neural tube defects, such as spina bifida and anencephaly. [9-11] In many countries, daily consumption of 0.4 mg of folic acid is recommended for reproductive-aged women, and 4 mg is recommended for those who previously had an affected fetus/infant.[12,13] The World Health Organization (WHO) recommends preconception care, including folic acid supplementation, for primary prevention of birth defects in developing and developed countries alike.[14]

Until recently, there has been no recommendation for Japanese women to take a folic acid supplement prior to conception. In December 2000, the Ministry of Health, Labour and Welfare (MHLW) formally recognized the importance of reproductive-aged women taking folic acid supplementation for the prevention of neural tube defects.[15] This recommendation was based on research showing that the rate of neural tube defects is reduced by about 72% when women take folic acid supplementation one to three months prior to conception. The MHLW recommended to the Japan Medical Association, Japan Society of Obstetrics and Gynecology, and Japan Pediatric Society that these organizations should provide their membership with adequate information about the value of taking folic acid to reproductive-aged women.[15]

In addition, there are other compelling topics to cover during preconception counseling based on theoretical considerations and indirect evidence. A particularly important topic in Japan is screening for immunity to rubella. The prevalence of rubella vaccination in Japan is

only about 70%.[16] Rubella vaccination is not mandatory due in part to serious side effects that resulted from an MMR vaccination manufactured in Japan several years ago.[16] Antibody negative women can be safely vaccinated prior to pregnancy during preconception care.[17]

Excessive alcohol intake during pregnancy causes fetal alcohol syndrome.[18] Smoking during pregnancy is associated with low birth rate infants.[19] As post-partum hemorrhage is the most important cause of preventable maternal mortality in Japan,[20] prevention of anemia through early detection and treatment with iron supplementation merits consideration. As the average intake of calcium, especially in reproductive women in Japan, is lower than recommended in general, calcium intake is a particularly salient issue for Japanese women of childbearing age. Though controversial, exercise, and mechanisms to optimize pregnancy are among other potentially beneficial effects of preconception counseling. [1-4] Based on clinical experience with a large population of Japanese couples desiring pregnancy, but having difficulty conceiving and not willing to see an infertility specialist, we consider brief counseling on basal body temperature monitoring and timing of intercourse as topics relevant in Japan.

Given the importance of these issues in maternal child health, the purpose of this research was to elucidate the knowledge of, attitudes about, and practices of preconception care for reproductive-aged women by FP/GPs in Japan.

Methods

In this survey research, we distributed a structured questionnaire to physicians who were registered members of the Japanese Academy of Family Medicine (JAFM). The JAFM has membership based on interest, not criteria such as board certification or completion of family medicine residency training. As family medicine is still a young discipline in Japan, most members have trained in non-family medicine programs. The physician members include a diverse group: those trained in a family medicine training program in the US or Japan, those trained in another specialty or multiple specialties and became a general practitioner after entering practice, and those who trained in a general internal medicine program in Japan or the US.

The JAFM was established in 1986 and has taken a leadership role in establishing family medicine in Japan.[21] The academy had a membership of 460 during the research period. Most members of the JAFM are practicing physicians and/or teachers of family medicine. The membership also includes medical students, residents and paramedical staff who are interested in family medicine. We excluded from the analysis non-physician members,

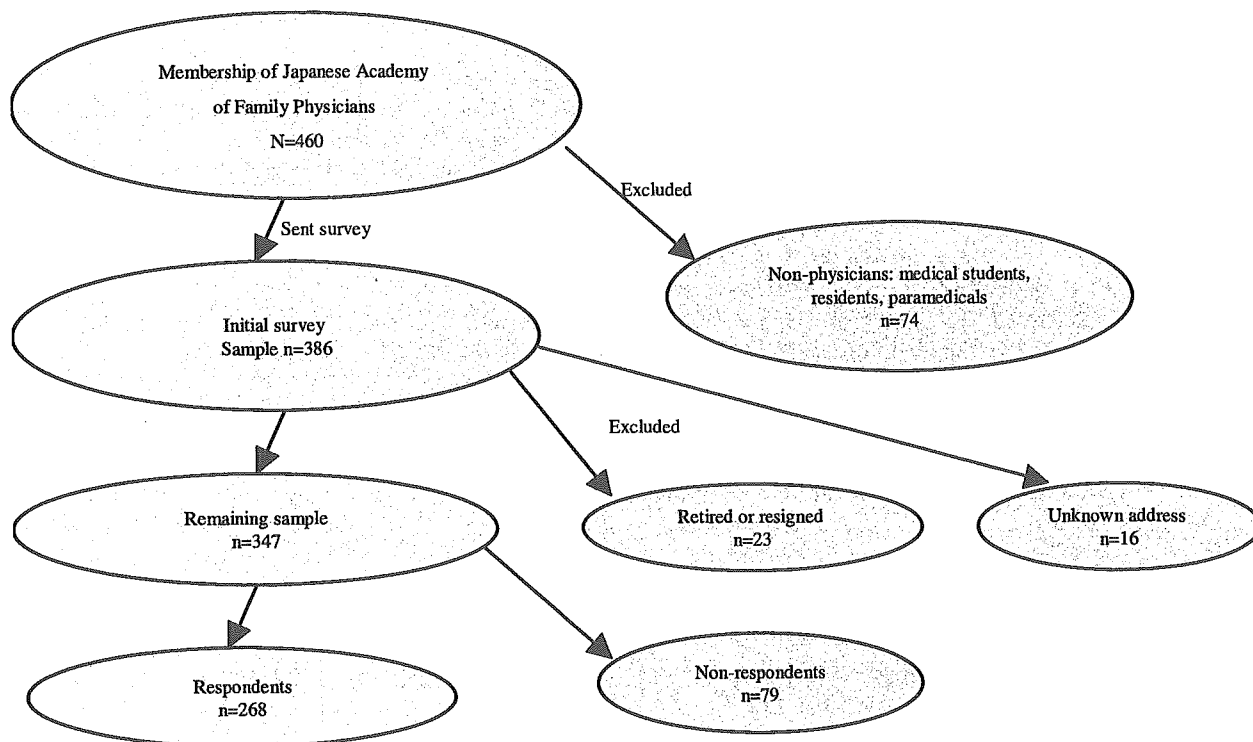


Figure 1
Selection of survey participants.

medical students, physicians not in active practice, and those who had resigned from the JAFM (Figure 1).

All participants were asked to complete a questionnaire with items addressing: 1) experiences in preconception education during medical school and residency training; 2) the frequency of providing preconception care in their practice; 3) their attitudes about providing preconception care; and 4) their perceptions of the need for preconception education for medical students and residents. The instrument was distributed with a cover letter requesting their participation. A reminder was sent to non-respondents twice at two-week intervals. A fourth mailing included the final request and a second copy of the instrument.

The components of preconception care we investigated are depicted in Table 1. Some are compelling based on best evidence (such as folic acid supplementation, smoking cessation),[5] while others were chosen based on circumstances particular to Japan as presented above.

We analyzed the data using SPSS (Statistical Package for Social Sciences). Simple statistics were calculated on the demographics data. Statistical significance of continuous measures was tested by two-tailed student t-test, and categorical data were tested by the chi-square test where appropriate. Physicians who reported their specialty as family medicine were compared for differences with physicians who reported their specialty as general internal medicine.

Results

Of the 460 members of the JAFM during the study period, we excluded the 74 non-physician and medical student members from the survey. Of the 386 physicians to whom we distributed instruments, 291 physician members responded. Sixteen letters were returned because of unknown addresses. We dropped 23 physicians from the analysis who reported that they were retired or had resigned from the academy. Thus, 268 of 347 eligible physicians (response rate 77.2%) were included in the analysis (Figure 1). The demographics of the participants are