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Tadahiro Ohtsu, *Department of Public Health, School of Medicine, Showa University*
Yoshitaka Kaneita, *Department of Public Health, School of Medicine, Nihon University*
Takashi Ohida, *Department of Public Health, School of Medicine, Nihon University*
Yoneatsu Osaki, *Division of Environmental and Preventive Medicine, Department of Social Medicine, Faculty of Medicine, Tottori University*
Hideyuki Kanda, *Department of Hygiene and Preventive Medicine, Fukushima Medical University*
Tetsuo Tamaki, *Department of Public Health, School of Medicine, Nihon University*
Takako Shirasawa, *Department of Public Health, School of Medicine, Showa University*
Yahiro Haseba, *Department of Public Health, School of Medicine, Showa University*
Akatsuki Kokaze, *Department of Public Health, School of Medicine, Showa University*
Kenji Hayashi, *National Institute of Public Health*

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Abstract

In this study we investigated the attitudes of Japanese medical students toward being informed of a diagnosis of life-threatening illness. Fourth-year medical students from 20 randomly sampled universities were administered questionnaires that examined their opinion about whether they would welcome disclosure of medical information if they were diagnosed as having an ultimately fatal disease. Data from 1,619 students (male 1,074, female 545, effective collection rate 90.6%) were analyzed. With regard to attitudes about disclosure of a diagnosis of life-threatening illness, 87.7% of the students stated that they would wish to be informed even if there was little chance of recovery, and 11.6% expressed a wish to be informed of their condition only if there was a chance of recovery. Students who did not wish to be informed even if there was a chance of recovery accounted for 0.7% of those surveyed. Our study reveals that medical students are more positive than are members of the general population with regard to being informed of the truth. The proportion of those who wished to be informed even if there was little chance of recovery was higher among students from national and public universities than among those from private universities, and the inter-group difference was statistically significant. Among male students, answers to the survey were significantly correlated with 12-item General Health Questionnaire scores and mental health status, suggesting that mental health status may have affected how this study population viewed being informed of their diagnosis.

KEYWORDS: medical students, life-threatening illness, medical condition disclosure, 12-item General Health Questionnaire (GHQ-12)

Original Article

Attitudes of Japanese Medical Students towards Disclosure of a Diagnosis of Life-threatening Illness

Tadahiro Ohtsu^a, Yoshitaka Kaneita^{b*}, Takashi Ohida^b, Yoneatsu Osaki^c,
Hideyuki Kanda^d, Tetsuo Tamaki^b, Takako Shirasawa^a, Yahiro Haseba^a,
Akatsuki Kokaze^a, and Kenji Hayashi^e

^aDepartment of Public Health, School of Medicine, Showa University, Shinagawa-ku, Tokyo 142-8555, Japan,

^bDepartment of Public Health, School of Medicine, Nihon University, Itabashi-ku, Tokyo 173-8610, Japan,

^cDivision of Environmental and Preventive Medicine, Department of Social Medicine, Faculty of Medicine,
Tottori University, Yonago, Tottori 683-8503, Japan,

^dDepartment of Hygiene and Preventive Medicine, Fukushima Medical University, Fukushima 960-1295, Japan, and

^eNational Institute of Public Health, Wakou, Saitama 351-0197, Japan

In this study we investigated the attitudes of Japanese medical students toward being informed of a diagnosis of life-threatening illness. Fourth-year medical students from 20 randomly sampled universities were administered questionnaires that examined their opinion about whether they would welcome disclosure of medical information if they were diagnosed as having an ultimately fatal disease. Data from 1,619 students (male 1,074, female 545, effective collection rate 90.6%) were analyzed. With regard to attitudes about disclosure of a diagnosis of life-threatening illness, 87.7% of the students stated that they would wish to be informed even if there was little chance of recovery, and 11.6% expressed a wish to be informed of their condition only if there was a chance of recovery. Students who did not wish to be informed even if there was a chance of recovery accounted for 0.7% of those surveyed. Our study reveals that medical students are more positive than are members of the general population with regard to being informed of the truth. The proportion of those who wished to be informed even if there was little chance of recovery was higher among students from national and public universities than among those from private universities, and the inter-group difference was statistically significant. Among male students, answers to the survey were significantly correlated with 12-item General Health Questionnaire scores and mental health status, suggesting that mental health status may have affected how this study population viewed being informed of their diagnosis.

Key words: medical students, life-threatening illness, medical condition disclosure, 12-item General Health Questionnaire (GHQ-12)

To establish a good physician-patient relationship, close communication between the 2 parties

is essential. Ideally, physicians should be capable of delivering both good and bad news to their patients; in the case of bad news, full consideration of a patient's unique circumstances is required, and a plan should be formulated prior to disclosure.

In a recent nationwide survey conducted by Dai-ichi Life Research Institute, Inc., (Tokyo, Japan) in

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*Corresponding author. Phone:+81-3-3972-8111; Fax:+81-3-3972-5878

E-mail:kaneita@med.nihon-u.ac.jp (Y. Kaneita)

^bThis study was conducted in this institution.

October 2004 <http://group.dai-ichi-life.co.jp/cgi-bin/dlri/d_top.cgi accessed Sep. 9, 2008>, 900 men and women aged between 40 and 69 years were asked the question "If you were diagnosed as having a life-threatening illness, would you like to be informed?" Among the participants, 75.5% stated that they would wish to be informed regardless of their chances of recovery and 19.4% wished to be informed only if there was a chance of recovery; 3.3% of those who responded answered that they would not wish to be informed even if there was a chance of recovery. To the question "If you were diagnosed as having a fatal disease or had to undergo a major operation, what action would you consider necessary to help you accept your medical situation and ensure your satisfaction with the treatment options?" many responded that smooth communication with physicians and nursing staff and the gathering of accurate information were necessary.

Some studies have explored the attitudes of physicians toward the disclosure of medical conditions [1-4]. For instance, according to a study on general-practitioner members of a medical association in 2002, 83% of 110 physicians wished to be informed of their diagnosis if they suffered from terminal cancer [3]. To date, only one study has investigated the attitudes of medical students toward the disclosure of medical conditions [5]. Since the concept of "informed consent" has now been widely accepted in Japan [2-11], informing patients of their medical conditions is an important issue that has to be addressed during the course of medical study. In the present study, therefore, Japanese medical students were surveyed to investigate their attitudes toward the disclosure of a diagnosis of life-threatening illness.

Materials and Methods

The study was conducted on fourth-year medical students from 20 Japanese universities that had been randomly sampled from 80 universities nationwide, all of which had a school of medicine. Data obtained from an anonymous self-administered questionnaire were used. The study, conducted between December 2006 and March 2007, was approved beforehand by the Ethics Committee of the National Institute of Public Health.

The question focusing on disclosure of a medical

condition was: "If you were diagnosed as having a life-threatening illness, would you like to be informed of your condition?" The 3 options for answering this question were: (1) "I would wish to be informed even if there was little chance of recovery", (2) "I would wish to be informed if there was a chance of recovery", and (3) "I would not wish to be informed even if there was a chance of recovery".

To examine factors that might influence respondents' attitudes towards information about their medical condition, mental health status was measured using the 12-item General Health Questionnaire (GHQ-12) [12]. GHQ-12 scores were calculated by assigning point values of 0, 0, 1, and 1 to each of the 4 options for each item of the GHQ-12 according to their response. The total score was then calculated by adding the total number of points. Students with a GHQ-12 score of 4 or higher were considered to have a poor mental health status [13, 14].

The percentages of each response selected on the attitude questionnaire were calculated and organized by the gender of the respondents and the type of university (national/public or private) in which they were enrolled. The χ^2 test was performed to examine whether there was a significant difference between groups of students based on gender or university type. The Kruskal-Wallis test was used to determine whether there was a significant difference between the GHQ-12 scores with regard to gender and each option. The χ^2 test was then used to determine whether there was a significant difference between students with poor mental health status for both genders and for each questionnaire option. The significance level was determined at 5%, and SPSS14.0J for Windows was used for statistical analyses.

Results

The questionnaire survey was conducted at 15 national and public universities and 5 private universities. Of the 1,787 questionnaires delivered, 1,683 were collected (collection rate: 94.2%). After excluding blank questionnaires and those that did not specify either gender or age, the data from the remaining 1,619 questionnaires were analyzed (effective collection rate: 90.6%). Men accounted for 1,074 (66.3%) of the responses and women for 545 (33.7%). Since the subjects were fourth-year medical students,

81.9% of men and 88.8% of women were in the 21 to 24-year age range.

The percentages of student responses to the question relating to disclosure of medical condition were organized by gender and are shown in Table 1. In total, 87.7% of the respondents stated that they wished to be informed of their medical condition (1) even if there was little chance of recovery, while 11.6% wished to be informed (2) if there was a chance of recovery, and 0.7% (3) did not wish to be informed even if there was a chance of recovery. No significant difference in response was observed between men and women with regard to the percentage distribution per questionnaire option.

The percentages of student responses organized by type of university (national/public and private) are shown in Table 2. Subjects who responded that they wished to be informed (1) even if there was little chance of recovery accounted for 88.9% of national/public university students and 84.8% of private university students. The subjects who responded that they wished to be informed (2) if there was a chance of recovery accounted for 10.7% of national/public university students and 13.9% of private university students. A significant difference was observed in the percentage distribution per option between national/public and private university students.

Responses organized by gender for GHQ-12 scores and the percentage of students with poor mental status are shown in Table 3. Male students showed significant differences among responses with regard to GHQ-12 scores and mental health status. The mean values

of the GHQ-12 scores and the percentages of subjects with poor mental health status were highest among male students that responded that they (3) did not wish to be informed even if there was a chance of recovery. The GHQ-12 scores and the percentage of respondents with poor mental health status were lower among those who wished to be informed (2) if there was a chance of recovery, and low among those who wished to be informed (1) even if there was little chance of recovery. No significant difference was observed among the responses of women. With regard to GHQ-12 scores, a significant difference was observed between men and women (Mann-Whitney U test, $p < 0.001$): 3.00 ± 2.93 for men and 3.82 ± 3.10 for women.

Discussion

An important feature of this study was that data for representative samples were used for analysis. The effective collection rate for our study questionnaire was more than 90%. The percentage distribution of men and women was similar to that among 25,996 physicians aged 29 years or younger in Japan at the end of 2006 (men 64.2%, women 35.8%) [15]. Therefore, it can be concluded that the study samples were representative of current medical students in Japan.

Among our study subjects, 87.7% responded that they wished to be informed that they had a life-threatening illness even if there was little chance of recovery. This result is 10 points higher than that of

Table 1 Percentages of student responses per option organized by gender

	N ^b	Options ^a (%)			<i>p</i> value ^c
		(1)	(2)	(3)	
Men	1,066	86.7	12.6	0.8	0.186
Women	542	89.9	9.6	0.6	
Total	1,608	87.7	11.6	0.7	

^a(1) I would wish to be informed even if there was little chance of recovery.

(2) I would wish to be informed if there was a chance of recovery.

(3) I would not wish to be informed even if there was a chance of recovery.

^bMissing data were excluded from the analysis.

^c χ^2 test

Table 2 Percentages of student responses per option organized by type of university (national/public and private)

	N ^b	Options ^a (%)			<i>p</i> value ^c
		(1)	(2)	(3)	
National/Public	1,154	88.9	10.7	0.4	0.026
Private	454	84.8	13.9	1.3	
Total	1,608	87.7	11.6	0.7	

^a(1) I would wish to be informed even if there was little chance of recovery.

(2) I would wish to be informed if there was a chance of recovery.

(3) I would not wish to be informed even if there was a chance of recovery.

^bMissing data were excluded from the analysis.

^c χ^2 test

Table 3 Responses organized by gender for the 12-Item General Health Questionnaire (GHQ-12) scores and the percentage of students with poor mental status

	Options ^a	GHQ-12 scores			Mental health status (%)			
		N ^b	Mean	SD	<i>p</i> value ^c	Poor ^d	Not poor	<i>p</i> value ^e
Men	(1)	914	2.91	2.90	0.001	35.1	64.9	0.002
	(2)	133	3.38	2.87		43.6	56.4	
	(3)	8	7.50	4.11		87.5	12.5	
Total		1,055	3.00	2.93		36.6	63.4	
Women	(1)	483	3.82	3.10	0.659	48.4	51.6	0.718
	(2)	51	3.88	3.08		52.9	47.1	
	(3)	3	2.67	4.62		33.3	66.7	
Total		537	3.82	3.10		48.8	51.2	

^a(1) I would wish to be informed even if there was little chance of recovery.

(2) I would wish to be informed if there was a chance of recovery.

(3) I would not wish to be informed even if there was a chance of recovery.

^bMissing data were excluded from the analysis. ^cKruskal-Wallis test, ^dGHQ-12 score of 4 or higher, ^e χ^2 test

a survey conducted by Dai-ichi Life Research Institute, Inc., on the general population, thus indicating that medical students appear to have a more positive attitude toward being informed of the truth about their medical condition. This may be at least partly an age effect; it may have been difficult for medical students to imagine themselves having an ultimately fatal disease, as most were in their early 20s. It is also possible that, as would-be physicians, they wished to be informed of their condition for medical reasons. However, according to a study conducted on 50 physicians in a municipal hospital in 2004 that questioned whether they wished to be informed if they were diagnosed with cancer, 86% expressed a desire to be informed if the cancer was at an early stage, but the percentage decreased to 76% for advanced cancer and to 66% for terminal cancer [4]. After many years of clinical experience, physicians may come to realize that not all patients wish to be informed of the severity of their medical condition.

In the present study, more national/public university students than private university students wished to be informed of their condition even if there was little chance of recovery. A significant difference was observed between the percentage distributions for the three options. According to a study conducted from 2001 to 2003 by Hirakawa *et al.* on fifth-year medical students, 84.4%, 88.0%, and 83.4% of the subjects in each year, respectively, responded that they

wished to be informed if they suffered from incurable advanced cancer [5]. However, that study was conducted on medical students at a single national university [5] and did not examine the difference between attitudes of medical students attending national/public and private universities. Therefore, this is the first study to have addressed the difference in attitudes between these 2 groups. It is difficult to explain clearly the difference in attitudes between national/public and private university medical students based only on the results of this study. National/public university medical students may tend to follow rules stringently and believe that as future physicians, they should know their medical condition. Physicians inevitably encounter the important clinical situation wherein they have to notify each patient of his or her medical condition; hence this issue should be actively addressed as a part of the curriculum for medical students, and students should discuss this issue among themselves, including a consideration of how to deal with people who are not receptive to information about their health.

For men, a significant association was observed between poor mental health status in terms of GHQ-12 score and responses to the questionnaire items, suggesting that mental health status affected the attitudes of respondents toward being informed of their medical condition. Yasuda *et al.* studied patients with colon cancer who had undergone surgery and reported that

the percentage of those who wished to be informed of their medical condition if the disease recurred changed along with the number of years elapsed after the operation. They argued that such changes may be affected by mental status and could be attributed to feelings such as anxiety about recurrence [7]. This reflected the results of the present study in that individuals with poor mental health were less likely to want their diagnosis disclosed. With regard to women, significant differences were not observed between women's responses to the 3 options of response. This may be because slightly more women than men had indicated a desire to know their medical condition even if there was little chance of recovery, and because the GHQ-12 scores for women were higher than those for men. The significant difference in the GHQ-12 scores between men and women coincided with the results of a study examining men and women in their 20s in the general population [12], as well as the results of a study on junior high and high school students [14]. On the basis of the results of these previous studies, we conducted gender-based analyses in our study.

With regard to previous studies examining the viewpoint of patients, the authors of a survey conducted in 2001 during the first hospital visit of 39 patients scheduled for colon cancer surgery found that 85% of the subjects expressed a wish to be informed of their disease by name, even if it was a disease that was difficult to cure [16]. In a study conducted from 2000 to 2003 on 92 prostate cancer patients upon their first visit to the hospital, 88% responded that they wished to be informed of their condition even if it was cancer [8]. A questionnaire survey was conducted for 1,246 patients who visited 18 obstetrics and gynecology facilities located in six prefectures in the Kinki region in 2004, and the authors found that 89.7% of the subjects wished to receive detailed medical information and test results from their physicians, and that 87.4% wished to be informed of their condition if the diagnosis was cancer [9]. From these study results, it can be inferred that patients suffering from an identified illness prefer to be informed more often than do presumably healthy individuals. It is worth noting that the proportion of patients suffering from an identified illness and that of medical students who wished to be informed of their medical condition even if there was little chance of recovery (87.7%) were very similar.

The present study reveals that medical students are more positive than are members of the general population with regard to being informed of a diagnosis of a life-threatening illness. Affecting the attitude of an individual pertaining to a desire to be informed of his or her medical condition if diagnosed with a fatal disease is not an ethical issue in healthcare; in fact, the attitude of wanting or not wanting to be informed must be equally respected. Further investigation is required to determine how the attitudes of medical students with regard to knowing their medical details will affect their attitude pertaining to informing patients of their medical condition. However, a study on family members of terminal cancer patients revealed that the percentage of patients who were informed of their disease by name was 30% [10]. Another report found that the role of the physician in making medical decisions was greater in Japan than in the United States [17]. To ensure that physicians obtain informed consent from patients, communication skills for disclosing unpleasant diagnoses to patients are required [9, 11, 18]. For the undergraduate education of medical students, it will be necessary to promote the concept of active communication between physicians and patients in order to ensure that the wishes and desires of patients are respected, and that their medical condition is disclosed to them in a timely and professional manner [5, 19].

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