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Abstract

In order to clarify the effects of medical education on attitudes towards mental illness among medical students, a follow-up study was conducted. All 100 students entering Kochi Medical School in 1988 were subjects. The initial questionnaire survey was conducted in 1988, and followed up in 1993. Response rate was 69% in the initial survey, and 83% in the follow-up study. By the time of the follow-up, all of the students had completed their medical education, including courses in psychiatry and mental health. Results were as follows: At the follow-up study, 1) a significantly higher percentage of students replied that they accepted the mentally ill as co-workers; 2) significantly favorable changes were observed in attitudes towards psychiatric services; 3) optimism about the effectiveness of treatment for mental illness at an early stage and prevention of mental illness had decreased; and 4) no change was observed in attitudes toward human rights of the mentally ill, except in the case of one item stating that the mentally ill should not have children in order to avoid hereditary handicaps, with which a lower percentage agreed. Conclusively, medical education can play an important role in attitudes towards mental illness.

KEYWORDS: attitudes towards mental illness, medical education, medical students, follow-up study

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Effects of Medical Education on Attitudes towards Mental Illness among Medical Students: A Five-year Follow-up Study

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In order to clarify the effects of medical education on attitudes towards mental illness among medical students, a follow-up study was conducted. All 100 students entering Kochi Medical School in 1988 were subjects. The initial questionnaire survey was conducted in 1988, and followed up in 1993. Response rate was 69% in the initial survey, and 83% in the follow-up study. By the time of the follow-up, all of the students had completed their medical education, including courses in psychiatry and mental health. Results were as follows: At the follow-up study, 1) a significantly higher percentage of students replied that they accepted the mentally ill as co-workers; 2) significantly favorable changes were observed in attitudes towards psychiatric services; 3) optimism about the effectiveness of treatment for mental illness at an early stage and prevention of mental illness had decreased; and 4) no change was observed in attitudes toward human rights of the mentally ill, except in the case of one item stating that the mentally ill should not have children in order to avoid hereditary handicaps, with which a lower percentage agreed. Conclusively, medical education can play an important role in attitudes towards mental illness.

Key words: attitudes towards mental illness, medical education, medical students, follow-up study

Psychiatric services in Japan remain hospital-centered, despite the efforts of mental health workers to establish community-based services (1). This situation has been criticized not only in Japan but internationally (1), and, in response to this criticism, the

Japanese government amended the Mental Health Law (2) in 1987 and began to enforce it in 1988. Evaluation of the new law showed that it was more effective than the former law for developing community care for the mentally ill. Prevalent communal attitudes towards mental illness must be factored into planning community services. When the mentally ill are to live in the community, it is necessary for the inhabitants to accept and support them collectively. For example, Salokangas *et al.* (3) pointed out that attitudes towards mental illness were one possible explanation for differences in psychiatric services between countries. Indeed, in Japan's new Mental Health Law (2), there is a description of the duties of the nation, and Article 2-2 states that the nation shall endeavour to maintain and improve the collective mental health, to deepen its understanding of mentally disordered persons, *etc.*, and to cooperate with the efforts of those suffering from mental disorders, *etc.* in overcoming their problems and endeavouring towards social rehabilitation.

Medical doctors, including psychiatrists, play an important role in mental health services, and their attitudes towards mental illness are apt to influence those of the general population. Therefore, medical school education is crucial for developing favorable attitudes not only of students but, consequently, of the general population, and could contribute to better mental health services. In a previous study (4), we reported on acceptance of the mentally ill, and on general attitudes towards psychiatric services, human rights, and the daily life of the mentally ill. However, that was a cross-sectional investigation, in the aftermath of which we studied the same subjects using the follow-up method to clarify the effects of medical education on attitudes towards mental illness among medical students.

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Although some studies have appeared in which attitude changes among medical students educated in western institutions have been investigated (5-8), no such study has been reported from countries in which psychiatric services are still hospital-centered. Based on the assumption that Japanese people might be less tolerant than Europeans of the mentally ill (9), the effects of medical education on Japanese students might be different from those previously reported (5-8). The purpose of this study was to investigate the effects of medical education on attitudes towards mental illness among Japanese medical students.

Methods

The subjects were 100 students, all of whom entered Kochi Medical School in 1988. An initial questionnaire study was conducted in 1988, and a follow-up questionnaire study of the same subjects was conducted in 1993. All required courses related to psychiatry and mental health had been completed by the time of the follow-up study. The questionnaire consisted of questions divided into the following categories: 1) acceptance of the mentally ill as judged by social distance (10), 2) attitudes toward psychiatric services, 3) level of optimism about early stage treatment for mental illness and its prevention, 4) attitudes toward human rights of the mentally ill, 5) attitudes toward social independence of the mentally ill, and 6) attitudes toward characteristics and causes of mental illness. The questions in 2-6) were adopted from the report of Munakata (11). Both questionnaire studies were conducted after a lecture. The purpose of the study was explained beforehand and the subjects were asked to complete the questionnaire anonymously, by consent. The questionnaires were distributed and collected directly after completion.

The effects of medical education were evaluated by comparing responses to the questions at the follow-up study with those at the initial study. A 2-tailed chi-square test and 2-tailed Fisher's exact test were used to determine statistical significance. At the initial study, 69 (69%) out of 100 subjects satisfactorily completed the questionnaire; at the follow-up study, 83 (83%) out of 100 subjects satisfactorily completed it. Among the 100 initial subjects, 16 failed their examinations or left due to illness, and were therefore excluded from the follow-up study. Another 16 students, who had entered the school earlier than the initial subjects, were in the 6th grade in

1993, and they took part in the follow-up study.

Medical education in Kochi Medical School includes a curriculum in mental health and psychiatry, lectures (3 h) related to mental health in the students' 4th year, and lectures (33 h) of psychiatry conducted in the students' 4th and 5th year. Each student had clinical practices at the University Hospital or at a private mental hospital for a 2-week period in the 5th and the 6th year.

Results

Results of acceptance of the mentally ill by social distance are shown in Table 1 for comparison of initial and follow-up responses. On items concerning close relationships, *i.e.*, "children's marriage" and "rent a room", there were no differences between the initial and follow-up percentage of responses showing acceptance of mentally ill patients. However, on items such as "accept as co-workers" and "accept as members of your community club", more students at the follow-up study answered "yes", and a significant difference was observed between initial and follow-up responses to the item "accept them as co-workers" ($P = 0.026$).

Table 2 shows a comparison of initial and follow-up attitudes toward psychiatric services; and in the items "detainment of patients", "patients' violence or injuring others", and "training in mental hospitals", the percentage of responses understood to predict better psychiatric services was significantly higher in the 6th year than in the 1st year of medical school ($P = 0.002, 0.023, 0.012$, respectively). In addition, a tendency was observed for the percentage of responses understood to predict better psychiatric services to be higher in the 6th year than in the 1st year regarding the items "openness of mental hospitals" and "respect of patients' opinion", though the differences failed to reach a significant level ($P = 0.055, 0.061$).

Table 3 shows a comparison of initial and follow-up attitudes toward treatment at an early stage and prevention. For both items, the percentage of responses indicating optimism about the effectiveness of treatment and prevention were lower in the 6th year than in the 1st year.

The change of attitudes toward the human rights of mentally ill patients is shown in Table 4. For only one item, "mentally ill patients should not have children in order to avoid passing on hereditary handicaps", was the percentage of responses indicating respect for patients'

Table 1 Comparison of acceptance of former mentally ill patients on 5 social distance items

Social distance item	Proportion of acceptance		
	1 st year (n = 69)	6 th year (n = 83)	P*
Would you discourage your children from marrying former patients?	10.1%	12.0%	NS
If you had a room to rent in you home would you be willing to rent to former patients?	7.2	9.6	NS
Would you be willing to work on a job with former patients?	30.4	48.2	0.026
Would you object to having former patients as neighbors?	44.9	44.6	NS
Would you be willing to have former patients join a community club or organization?	73.9	81.9	NS

*by chi-square test (df = 1, 2-tailed); NS, not significant.

Table 2 Attitudes towards psychiatric services

Items	Response	1 st (n = 69)	6 th (n = 83)	P*
Mentally ill patients should be detained in a mental hospital which is remote from any place of habitation.	Disagree	60.9%	83.1%	0.002
Mental hospitals are needed to prevent mentally ill patients from committing violence and injuring others.	Disagree	49.3	67.5	0.023
Mental hospitals should be open.	Agree	36.2	51.8	NS (0.055)
Opinions of patients should not be respected in terms of going out or staying out of mental hospitals.	Disagree	27.5	42.2	NS (0.061)
Training for social life should be conducted in mental hospitals.	Agree	79.7	94.0	0.012**

*by chi-square test (df = 1, 2-tailed), **by Fisher's exact test (2-tailed).
NS, not significant.

Table 3 Attitudes towards early-stage treatment and prevention

Item	Response	1 st (n = 69)	6 th (n = 83)	P*
Mentally ill patients would recover if they had treatment at an early stage.	Agree	55.1%	33.7%	0.008
Mental illness can be prevented by consultation.	Agree	66.7	45.8	0.010

*by chi-square test (df = 1, 2-tailed); NS, not significant.

Table 4 Attitudes towards human rights of mentally ill patients

Item	Response	1 st (n = 69)	6 th (n = 83)	P*
When mentally ill patients are admitted to a mental hospital, their spouses should be permitted to divorce them unconditionally.	Disagree	50.7%	54.2%	NS
Mentally ill patients should not have children in order to avoid hereditary handicaps.	Disagree	36.2	55.4	0.018
Patients in a mental hospital should not have the right to vote.	Disagree	50.7	48.2	NS
Mentally ill patients would beigmatized all their life.	Disagree	42.0	34.9	NS
If you have a family member who is mentally ill, its becoming known is shameful.	Disagree	27.5	38.6	NS
Mentally ill patients could be reliable friends.	Agree	55.1	48.2	NS

*by chi-square test (df = 1, 2-tailed); NS, not significant.

human rights significantly higher in the 6 th year than in the 1 st year ($P = 0.018$).

Table 5 shows a comparison of initial and follow-up attitudes toward mentally ill patients' independence in social life. On the item "self-administration of drugs", no significant difference was observed in responses between the initial and follow-up groups. On the other hand, on the item "mentally ill patients can usually live in the community", the percentage of students in agreement was significantly higher in the 6 th year than in the 1 st year ($P = 0.009$).

Finally, Table 6 shows a comparison of initial and follow-up attitudes toward causes and characteristics of mental illness; no significant differences were observed between responses students in the 6 th year and those in the 1 st year.

Discussion

Attitudes towards mental illness have been studied intensively in Japan (11) as well as throughout the world (12-14), and considerable evidence has accumulated in the literature that variables such as age, sex and education are likely to have some influence on attitudes toward mental illness (11-14). How attitudes toward mental illness can be changed in a favorable direction is a topic of widespread interest. As stated in the Introduction, Japanese Mental Health Law 9 (2) states that the nation

should understand the mentally ill and co-operate with them, which goal is considered essential for developing community-care for the mentally ill in this country.

Several previous studies (5, 8) have reported successful changes in students' attitudes toward the mentally ill in a favorable direction through education, while other studies have reported the ineffectiveness of this approach (6, 7). The present study supports the findings of the former. Probably, results depend on students' attitudes before the education. Japanese society is overall thought to be less tolerant than western societies of the mentally ill (9). If students had less tolerant attitudes towards mental illness before education, attitudes might have been more influenced by education. Another explanation is the difference among subjects; medical students in the successful studies (5, 8), including ours, and the study of Malla and Shaw on nursing students (6), which failed to find a favorable change. However, given that one study of medical students which failed to find a favorable change through education, it is difficult to explain the discrepancy among results by differences among the subjects. Most of the previous studies evaluated the effects of short term teaching (8) or clerkship (5, 7) on medical students. Others evaluated the effects of a relatively short psychology course (15, 16) or a short-term educational program geared to the general population (17). In this study, we evaluated the effects of a 5-year medical school education, the curriculum of which included lectures and clinical

Table 5 Attitudes towards patients' independence in social life

Item	Response	1 st (n = 69)	6 th (n = 83)	P*
It is impossible for mentally ill patients to administer their own drugs.	Disagree	56.5%	51.8%	NS
Mentally ill patients attending out-patient clinics could live in a community, if there is an emergency unit.	Agree	37.7	59.0	0.009

*by chi-square test (2-tailed); NS, not significant.

Table 6 Attitudes towards cause and characteristics of mental illness

Item	Response	1 st (n = 69)	6 th (n = 83)	P*
Mentally ill patients' abnormal behavior is temporary.	Agree	34.8%	37.3%	NS
Mentally ill patients are alarming because of their unpredictable behavior.	Disagree	21.7	31.3	NS
Any one could become mentally ill in a conflicting society.	Agree	78.3	73.5	NS

*by chi-square test (2-tailed); NS, not significant.

experiences, and under these conditions, the effects of education might be more clearly observed.

The results of this study suggest that medical education has an influence on acceptance of the mentally ill, attitudes toward psychiatric services, and optimism about mental illness. With regard to acceptance of the mentally ill, on only one item, "accept as co-workers", did the attitude change significantly in a favorable direction, which result was consistent with findings in a previous cross-sectional study (4). Although in the previous cross-sectional study a significant change in a favorable direction was observed on the item "accept as neighbors", no significant change was observed on that item in this study. This difference might be explained by the difference in methodologies. Another explanation is that acceptance in professional life might be enhanced by medical education, while that in private life might be unchanged. In this case, "accept as co-workers" is interpreted as an attitude in professional life, while "accept as neighbors" is interpreted as an attitude in private life.

According to the results obtained, attitudes toward psychiatric services were changed dramatically, which finding suggests that medical education in this field was conducted effectively. The favorable change on the item, "mentally ill patients can live in the community" in Table 5 is clearly related to a change of attitudes toward psychiatric services. However, as shown in Table 4, no differences in attitudes toward the human rights of the mentally ill except for the item "patients should not have children" were observed. Considering various scandals involving the infringement of human rights of patients in mental hospitals in Japan, education in this field should be regarded as urgently needed.

Optimism about the effectiveness of treatment at an early stage and prevention decreased as a result of medical education. Optimism about mental illness has been related to acceptance of mentally ill patients (4). These results suggest that we should re-evaluate mental health education in medical school. For example, a course of clinical training might be too short to observe the clinical course of a mental illness and/or a recovery from mental illness; without this observation, pessimistic attitudes might be formed or sustained toward the effectiveness of treatment. Regarding prevention by consultation, the students were informed various, established risk factors for mental illnesses. Therefore, students who do not consider that mental illness can be simply prevented, solely by consultation, might increase through education.

This study has some limitations. First, although the purpose of this study was to evaluate the effects of medical education on the attitudes of medical students, the Mental Health Law was enforced during the follow-up period; there is a possibility that this enforcement influenced the subjects' attitudes toward mental illness (period effect). Second, the subjects of the initial study were 100 students who entered Kochi Medical School in 1988, and only 69 completed the initial questionnaire satisfactorily; this proportion of responses is relatively small. Although response proportion of the follow-up survey was relatively high, there were 16 students who dropped out of the survey and another 16 who did not complete the initial survey were added. This might distort the obtained results. Third, there was no control group. Thus, the findings of the current study might be interpreted as natural changes. Fourth, the question of the validity of the questionnaire still remains. Historically, studies in this field employed questionnaires to measure attitudes toward mental illness and we used that model. However, little evidence has suggested that results obtained by questionnaires are valid. Therefore, in order to obtain a true response, we conducted the survey anonymously. Fifth, we did not obtain information on possible confounding factors including experience of contact with the mentally ill patients, which could influence attitudes toward mental illness. Further study is required, in which the effects of potential confounding factors are controlled. Lastly, because we conducted the questionnaire study anonymously, it is impossible to compare among a favorably changed group, an unchanged group, and an unfavorably changed group. This kind of analysis in future study might contribute to improvements in medical education. These limitations of this follow-up study should be considered in conjunction with the results.

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