

# Changes in Attitudes of Japanese Pharmacy Students towards Mental Illness during the didactic portion of the Curriculum

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## Abstract

**Background:** Studies have demonstrated that significant stigma is attached to mental illness in Japan, but attitudes of pharmacy students have received very little study.

**Aims:** To examine the changes in the attitudes of pharmacy students during years 1-3 of their pharmaceutical education.

**Methods:** Pharmacy students were followed during years 1-3 of their pharmaceutical studies and completed the same questionnaire each academic year.

**Results:** The questionnaire was completed by 245, 215, and 174 students in the first, second, and third years, respectively (response rate: 100%). The mean total score for the Index of Attitudes Toward the Mentally Ill increased significantly from the first to third year, while that for the Whatley Social Distance Scale did not change.

**Conclusion:** The pharmacy students' stigmatization of mentally ill individuals improved from the first to third year, but their social distance did not. Pharmacy educators should explore ways of reducing this gap.

**Keywords:** *attitude, Japan, mentally ill individuals, pharmacy students, social distance*

## Introduction

Mentally ill patients encounter many barriers to recovery including stigma, a lack of personal recognition, and treatment side effects (Compton *et al.*, 2005). The stigma attached to mental illness remains a particularly strong barrier to effective mental healthcare as it can discourage psychiatric patients from seeking help and acts as an obstacle to their successful reintegration into society (Parcesepe & Cabassa, 2012). Such stigma is not restricted to members of the public and can also be displayed by healthcare professionals, including pharmacists (Crisp, 1999; Phokeo, Sproule & Raman-Wilms, 2004). Negative attitudes towards mental illness are particularly prevalent in Japan, where mental illness is often considered to be caused by a lack of willpower, which engenders a feeling of shame in the patient and their family (Ng, 1997; Desapriya & Nobutada, 2002). Indeed, several studies have revealed that higher levels of stigma exist in Japan than in other countries (Kurihara *et al.*, 2000; Griffiths *et al.*, 2006). Thus, the stigma surrounding mental health problems and a lack of knowledge about mental illness can interfere with the clinical practice of healthcare professionals. The lack of education about mental health issues in the curriculum used to train pharmacists has been described as a barrier to the successful provision of pharmaceutical services to patients with mental illnesses

(Scheerder *et al.*, 2008). Pharmacists provide valuable services to mentally ill patients; thus, the attitudes of pharmacists and pharmacy students towards the mentally ill are of vital importance (Bell *et al.*, 2006; Gable *et al.*, 2011). There have been a number of studies on attitudes towards mental illness in Japan. Most of these have focused on ways of improving attitudes towards the mentally ill, and some studies have investigated the effects of educational courses about mental illness on medical students (Ohtsu *et al.*, 2009), nursing students (Yamauchi *et al.*, 2011) and the general population (Hori *et al.*, 2011). Mino *et al.* (2000) surveyed the effects of medical education courses on attitudes towards mental illness using cross-sectional and five-year follow-up methods and concluded that the attitudes of medical students towards mental illness improved throughout their medical education. However, no longitudinal study has examined the attitudes of pharmacy students towards mental illness in Japan.

In 2006, the Japanese pharmacy education system began to change from a four-year system to a six-year system. This change was instituted in order to produce better trained pharmacists. The new curriculum is oriented more towards clinical pharmacy practice than basic science. Whereas the first three years of the curriculum are dedicated to didactic coursework, the final three years of the curriculum are

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focused on pre-clinical, clinical, and research training.

Furthermore, in 2011 the Japanese Ministry of Health, Labour, and Welfare declared mental disorders (in general) to be a very important issue. In effect, this has resulted in the highest priority being given to improving the services delivered to mentally ill patients in Japan. Medication is the primary form of treatment for most mental illnesses such as schizophrenia, mood disorders, and anxiety disorders. Consequently, pharmacists play an important role in the care of mentally ill patients. For example, the medication counselling provided by pharmacists improves adherence to medications for mental illness (Finley *et al.*, 2003). However, the stigma surrounding mental health issues and a lack of knowledge about them are barriers to the successful provision of pharmaceutical services for people with mental illnesses (Scheerder, De Coster & Van Audenhove, 2008).

We previously surveyed the attitudes of Japanese pharmacy students towards mental illness (Cates *et al.*, 2011). We found that the students held generally favourable attitudes that were comparable to those reported in previous studies of American pharmacy students (Cates *et al.*, 2011). Although it might seem intuitive that exposing pharmacy students to mentally ill patients and psychopharmacotherapeutics would sufficiently diminish any pre-existing social distance and/or stigma, the current evidence about this, which is based on attitudinal studies from other countries, is conflicting (Jermain & Crismon, 1991; Cates, May & Woolley, 2009; O'Reilly, Bell & Chen, 2010; Cates, Amanda & Woolley, 2012). The primary disadvantage of cross-sectional studies is that they compare different groups of subjects. Thus, we conducted a longitudinal study to determine whether a single cohort of students would exhibit changes in their attitudes towards mental illness as they progressed from the first to third year of their six-year pharmacy curriculum.

## Method

This study was a voluntary and anonymous survey of students who were studying at the Faculty of Pharmacy at Meijo University, Nagoya, Japan. The study was approved by the Meijo University institutional review board. A class of pharmacy students was followed for the first three years of their pharmaceutical studies. At the end of each academic year (in December or January), the students were asked to fill out a questionnaire (the same questionnaire was completed each year). The questionnaire included questions about the participants' characteristics, a translation of the Whatley Social Distance Scale, and a translation of the Index of Attitudes Toward the Mentally Ill. The section of the questionnaire examining the participants' characteristics investigated two issues: the participant's gender and their experience with mental illness.

Whatley's Social Distance Scale is an eight-item questionnaire that measures avoidance reactions towards mentally ill people (Whatley, 1958-59). For each question, there are 3 possible answers: "agree", "disagree", or "not sure". The items are scored as follows: favourable responses = 1, "not sure" responses = 2, and unfavourable responses = 3. Thus, the total score ranges from 8 to 24, with lower scores representing more positive attitudes. For some items, "agree" is the favourable response, whereas "disagree" is the favourable response for others. The Index of Attitudes Toward the Mentally Ill is an 11-item scale that measures the rejection of negative statements towards the mentally ill

(Hiday, 1983). Each item is scored on a five-point Likert scale, with one representing "strongly agree" and five representing "strongly disagree"; therefore, the total score ranges from 11 to 55. In this survey, higher scores indicate more positive attitudes. Some items are presented as positive statements; hence, the scoring systems for these statements are reversed. These two scales have been used in a number of previous studies examining the attitudes of pharmacists or pharmacy students towards mental illness (Jermain & Crismon, 1991; Cates, May & Woolley, 2009; Cates, Amanda & Woolley, 2012).

Both Whatley's Social Distance Scale and the Index of Attitudes Toward the Mentally Ill had to be translated from English to Japanese. Two independent bilingual translators were used to ensure the accuracy of the translation. The first translator converted both scales from English to Japanese, and then the second translator converted the scales from Japanese back into English. The English back-translation was then compared with the original survey by the investigators.

Data were analysed using the statistical software Minitab (Release 15.1.30.0). Descriptive statistics were calculated, and the mean composite scores and mean individual item scores were compared. Mann Whitney's U-test was used for comparisons between two groups. Statistical significance was set at  $p < 0.05$ .

## Results

The survey was completed by 245 first-year students (P-1), 215 second-year students (P-2), and 174 third-year students (P-3) (response rate: 100%). The respondents' characteristics are shown in Table I. Age was not surveyed; however, most of the P-1 students were 18-19-years-old, and the ages of the P-2 and P-3 students can be deduced from these figures. The majority of students were female (64.0-68.4%), and 9.8-12.7% of students reported having visited a mental hospital, 4.9-6.5% reported having experienced a mental illness, 24.5-27.0% reported that a family member or friend had experienced a mental illness, 0.8% reported having previously been admitted to a mental hospital, and 5.7-9.3% reported that a family member or friend had been admitted to a mental hospital.

**Table 1: Participants' characteristics**

Characteristic	Number (%)		
	P-1	P-2	P-3
Number of students in class	245	215	174
Gender:			
Female	157(64.0)	139(64.7)	119(68.4)
Male	88(36.0)	76(35.3)	55(31.6)
Has visited a mental hospital:			
Yes	31(12.7)	26(12.1)	17(9.8)
No	214(87.3)	189(87.9)	157(90.2)
Has experienced a mental illness:			
Yes	12(4.9)	14(6.5)	9(5.2)
No	233(95.1)	201(93.5)	165(94.8)
Knows a family member/ friend that has experienced a mental illness:			
Yes	60(24.5)	56(26.0)	47(27.0)
No	185(75.5)	159(74.0)	127(73.0)
Has been admitted to a mental hospital:			
Yes	2(0.8)	0(0)	0(0)
No	243(99.2)	215(100)	174(100)
Knows a family member/ friend that has been admitted to a mental hospital:			
Yes	14(5.7)	20(9.3)	12(6.9)
No	231(94.3)	195(90.7)	162(93.1)

The mean scores for the responses to individual items on the two scales are shown in Tables II and III. In general, the students' responses revealed favourable attitudes towards mental illness (*i.e.*, less than the midpoint score of 2.00 on the Whatley Social Distance Scale and greater than the midpoint score of 3.00 on the Index of Attitudes Toward the Mentally Ill). One item on the Whatley's Social Distance Scale ("If I needed a babysitter, I would be willing to hire a woman who had been going to see a psychiatrist") displayed a negative mean score in each year.

**Table II: The students' scores on Whatley's Social Distance Scale during the first 3 years of their pharmacy education**

	Questions	P-1	P-2	P-3	p-value
1	It is best not to associate with people who have been in mental hospitals.	1.53±0.04	1.57±0.04	1.37±0.04	P-1 vs. P-3: <i>p</i> < 0.01 P-2 vs. P-3: <i>p</i> < 0.001
2	It is wrong to shy away from people who	1.52±0.05	1.51±0.04	1.51±0.05	NS
3	It would bother me to live near a person who has been in a mental hospital.	1.67±0.04	1.69±0.05	1.72±0.05	NS
4	I would not ride in a taxi driven by someone who had been in a mental hospital.	1.92±0.05	1.90±0.05	1.92±0.05	NS
5	I would rather not hire a person who had been	1.79±0.04	1.81±0.05	1.76±0.05	NS
6	Schoolteachers who have been in mental hospitals should not be allowed to teach.	1.44±0.04	1.4±0.04	1.43±0.04	NS
7	I would be against any daughter of mine marrying a man who had been to see a psychiatrist about	1.87±0.04	1.98±0.05	1.98±0.06	NS
8	If I needed a babysitter, I would be willing to hire a woman who had been going to see a	2.38±0.04	2.36±0.04	2.40±0.04	NS
Total score		14.1±0.21	14.2±0.24	14.1±0.25	NS

NS: Not significant

The mean total score on the Whatley Social Distance Scale was 14.1±0.21 for the first year, 14.2±0.24 for the second year, and 14.1±0.25 for the third year (Table II). The differences in these scores were not statistically significant. One item ("It is best not to associate with people who have been in mental hospitals") displayed a significant improvement from the first to third year, as well as from the second to third year (P1 vs. P3; *p*<0.01, P2 vs. P3; *p*<0.001) (Table II).

The mean total score on the Index of Attitudes Toward the Mentally Ill was 38.4±0.32 for the first year and 39.4±0.38 for the third year. This change was statistically significant (P1 vs. P3; *p*<0.05) (Table III). The following five items displayed significant improvements from year one to year three: "It is easy to recognize someone who has had a serious mental illness" (P1 vs. P3; *p*<0.05), "We cannot expect to understand the bizarre behaviour of mentally ill people" (P1 vs. P3;

*p*<0.05), "Mentally ill people are not intelligent" (P1 vs. P3; *p*<0.05), "Most mentally ill people do not have the ability to tell right from wrong" (P1 vs. P3; *p*<0.05), and "Most mentally ill people do not care how they look" (P1 vs. P3; *p*<0.05, P2 vs. P3; *p*<0.05). The other six items did not improve significantly from the first to third years.

**Table III: The students' scores on the Index of Attitudes Toward the Mentally Ill during the first three years of their pharmacy education**

	Questions	P-1	P-2	P-3	p-value
1	Most patients in mental hospitals are not dangerous	3.16±0.06	3.11±0.06	3.07±0.06	NS
2	It is easy to recognize someone who has had a serious mental illness	3.54±0.06	3.71±0.05	3.72±0.06	P-1 vs. P-3: <i>p</i> < 0.05
3	We cannot expect to understand the bizarre behavior of mentally ill people	2.82±0.07	2.99±0.06	3.06±0.08	P-1 vs. P-3: <i>p</i> < 0.05
4	Mentally ill people are not intelligent	3.86±0.06	3.95±0.05	4.06±0.05	P-1 vs. P-3: <i>p</i> < 0.05
5	Most mentally ill people do not have the ability to tell right from wrong	3.57±0.06	3.66±0.06	3.74±0.06	P-1 vs. P-3: <i>p</i> < 0.05
6	Most mentally ill people do not care how they look	3.49±0.06	3.51±0.06	3.69±0.06	P-1 vs. P-3: <i>p</i> < 0.05 P-2 vs. P-3: <i>p</i> < 0.05
7	Most people have mental and emotional problems	4.02±0.05	4.01±0.05	3.99±0.06	NS
8	Mental illness is nothing to be ashamed of	3.53±0.05	3.53±0.06	3.60±0.06	NS
9	Mentally ill people are ruled by their emotions; normal people are ruled by reason	3.35±0.06	3.39±0.06	3.46±0.07	NS
10	A mentally ill person is in no position to make decisions about even everyday problems	3.45±0.05	3.45±0.06	3.60±0.06	NS
11	There is nothing about mentally ill people that makes it easy to tell them from normal people	3.52±0.06	3.51±0.06	3.45±0.07	NS
Mean total score		38.4±0.32	38.8±0.32	39.4±0.38	P-1 vs. P-3:

NS: Not significant

The female students scored more favourably than the male students on both scales during the second year (Table IV and V). Furthermore, the female students' scores for the Index of Attitudes Toward the Mentally Ill increased from the first to second year, and from the second to third year. The female students' scores on the Whatley Social Distance Scale did not display any significant improvement during the study period.

**Table IV: Effects of gender and exposure to mental illness on the students' Whatley's Social Distance Scale scores during the first three years of their pharmacy education**

Characteristic	P-1	P-2	P-3	p-value
Gender:				
Male	14.7±0.37	15.4±0.38	15.2±0.47	P-2: Male vs. Female, $p<0.05$
Female	13.8±0.24	13.6±0.29	13.6±0.29	
Has visited a mental hospital:				
Yes	14.1±0.60	14.2±0.73	14.0±0.80	NS
No	14.1±0.22	14.2±0.25	14.1±0.27	
Has experienced a mental illness:				
Yes	12.6±1.22	12.8±0.96	13.9±1.35	NS
No	14.2±0.21	14.3±0.24	14.1±0.26	
Knows a family member/friend that has experienced a mental illness:				
Yes	13.5±0.40	14.0±0.46	13.6±0.48	NS
No	14.4±0.24	14.3±0.28	14.3±0.30	
Knows a family member/friend that has been admitted to a mental hospital:				
Yes	15.6±0.91	13.8±0.75	14.6±0.80	NS
No	14.0±0.21	14.3±0.25	14.0±0.26	

NS: Not significant

**Table V: Effects of gender and exposure to mental illness on the students' scores on the Index of Attitudes Toward the Mentally Ill scale during the first three years of their pharmacy education**

	P-1	P-2	P-3	p-value
Gender:				
Male	37.5±0.52	37.7±0.57	37.4±0.54	P2: Male vs. Female, $p<0.05$
Female	38.8±0.39	39.4±0.39	40.4±0.47	
Female: P-1 vs. P-3 $p<0.05$				
Has visited a mental hospital:				
Yes	38.9±1.02	38.5±1.09	39.2±1.28	NS
No	38.3±0.33	38.9±0.34	39.5±0.39	
Has experienced a mental illness:				
Yes	40.5±1.73	40.4±1.21	40.6±1.23	NS
No	38.3±0.32	38.7±0.34	39.4±0.39	
Knows a family member/friend that has experienced a mental illness:				
Yes	39.6±0.67	39.8±0.68	40.8±0.71	NS
No	38.0±0.35	38.5±0.36	38.9±0.43	
Knows a family member/friend that has been admitted to a mental hospital:				
Yes	38.9±1.84	40.1±1.34	40.1±1.63	NS
No	38.3±0.32	38.7±0.33	39.4±0.39	

NS: Not significant

## Discussion

This is the first study to examine the changes in the views of a single cohort of pharmacy students towards mental illness during the first three years of the six-year pharmaceutical curriculum studied in Japan. According to the Index of Attitudes Toward the Mentally Ill, the attitudes of the pharmacy students that participated in this study towards mentally ill people had significantly improved by the end of the third year. However, the students' social distance from people with mental illness, as demonstrated by the Whatley Social Distance Scale, did not improve. The scores we obtained for the two abovementioned scales were similar to those obtained in our previous cross-sectional study (Cates *et al.*, 2011), which compared the views of three different classes of pharmacy students, a first year class, a second year class, and a third year class (three different classes were surveyed during the same academic year). The female students held more favourable mental illness attitudes than the male students (Cates *et al.*, 2011). However, the present study also showed that, according to the Index of Attitudes Toward the Mentally Ill, the female students' attitudes towards the mentally ill improved significantly as they progressed from the first to third years of their pharmacy education. A study involving American pharmacy students also found that females exhibited more favourable attitudes than males (Cates, May & Woolley, 2009).

Interestingly, the Japanese pharmacy students examined in the present study held moderately positive attitudes in terms of both the stigmatization of mentally ill patients and the social distance between them and the mentally ill. Namely, their mean scores on the Index of Attitudes Toward the Mentally Ill (38.4-39.4) were remarkably similar to the scores reported for American pharmacy students (37.6-39.2 across four classes) (Cates, May & Woolley, 2009). In addition, the mean Whatley Social Distance Scale scores (14.1-14.2) obtained in the present study were better than those reported in the abovementioned study of American pharmacy students (14.4-15.1 across 4 classes) (Cates, May & Woolley, 2009). Taking these results together, Japanese pharmacy students hold attitudes towards mental illness that are at least comparable to those reported for American pharmacy students. In the present study, the third-year students achieved more favourable scores on the Index of Attitudes Toward the Mentally Ill than the first- and second-year students, demonstrating that their perceptions of mental illness had improved over the course of their studies. This can be attributed to many factors including the different experiences of second and third-year students. For example, the second-year students were shown a video simulating a schizophrenic hallucination while the third-year students participated in role-plays based on real patient scenarios, in which a pharmacist interviewed a schizophrenic patient and the students were expected to play both roles. Through these experiences, the students gained a better understanding of the experiences of people with mental illness. In the present study, only one item of the Whatley Social Distance Scale improved from the first to third year. The reason for this is not clear. In a study in which clinical pharmacy students in the United States participated in a psychiatry rotation, it was found that the social distance between the students and mentally ill patients did not differ between before and after the rotation (Jermain & Crismon, 1991). However, clinical placement programs involving medical and nursing students have been demonstrated to

reduce the social distance between students and mentally ill patients (Mino *et al.*, 2001; Yamauchi *et al.*, 2011). One possible reason for the discrepancy between the findings of these studies is that although the American pharmacy students would have interacted with the psychiatric patients, their conversations might have been limited to medication-based advice and so the students would not have learned much about the patients' experiences. Similarly, the mental health courses delivered during pharmacy education programs tend to focus on the properties of medications. The social distance between health professionals and people with mental illness might mean that health professionals do not understand the experiences of mentally ill patients. In order to provide effective healthcare, pharmacists must learn more about the lives of the mentally ill and the challenges they face. Further research into new models of mental health education during pharmacy courses, including during the later years of the curriculum (the fourth to sixth years), is warranted. In previous studies, real patients have been introduced into the classroom to improve students' attitudes towards mentally ill patients and reduce their social distance from them, and studies examining the use of peer-level patient presenters and mental health consumer education have reported positive results (Buhler & Karimi, 2008; O'Reilly, Bell & Chen, 2010).

The strengths of our study include its perfect response rate and our use of standard attitudinal scales. However, as we only surveyed students at one pharmacy school the generalizability of our findings to other Japanese pharmacy schools is unknown. Another limitation is that the scales we used do not distinguish between different types of mental illness (*e.g.*, schizophrenia vs. depression), so it is possible that different results might have been obtained had such demarcation been performed. Finally, as this was only an exploratory study we did not use a control group.

### Conflicts of interest

All authors declare they have no conflicts of interest relevant to the preparation of the manuscript.

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