

Attitudes of Pharmacy Students Toward Mental Illness Across the Professional Curriculum

Marshall E. Cates, PharmD, BCPP, FASHP, Assistant Dean & Professor of Pharmacy Practice, McWhorter School of Pharmacy, Samford University, Birmingham, AL

Kelsey L. May, PharmD, Staff Pharmacist, Wal-Mart, Hattiesburg, MS

Thomas W. Woolley, PhD, Professor of Statistics, Brock School of Business, Samford University Birmingham, AL

Abstract

Objectives: The objectives of this study were to determine whether pharmacy students' attitudes toward mental illness varied throughout the 4 years of the professional curriculum and to determine whether attitudes changed specifically as a result of psychiatric therapeutics in the third year.

Methods: A survey composed of the Index of Attitudes Toward the Mentally Ill and Whatley's Social Distance Scale was administered to students at the Samford University McWhorter School of Pharmacy.

Results: The survey was completed by 411 students. Positive responses were seen on 15 of the 19 items on both scales combined. The only statistically significant finding between classes was that fourth-year students had more favorable responses than second-year students on the Index of Attitudes Toward the Mentally Ill. Exposure of third-year students to mental illness via psychiatric therapeutics did not result in statistically significant changes in scores on either scale. More favorable responses were seen for females and students with previous exposure to mental illness.

Conclusions: Attitudes of pharmacy students toward mental illness were generally positive and were relatively unaffected by their year in the curriculum. The attitudes of third-year students toward mental illness were unchanged by psychiatric therapeutics.

Keywords: pharmacy students, attitudes, mentally ill

Background

Mental illness or mental disorder is a clinically significant psychological or behavioral syndrome that occurs in an individual and results in distress, disability, or significant risks (e.g., loss of freedom).¹ Categories of mental disorders include psychotic disorders, mood disorders, anxiety disorders, personality disorders, eating disorders, and others. The stigma of mental illness is a powerful phenomenon that is challenging to overcome.² This stigma can have a negative effect on the course of mental illness and its treatment.³ For pharmacists, negative attitudes toward mental illness can influence delivery of essential pharmaceutical care services to mentally ill patients.^{4,5}

Only a handful of studies have examined the attitudes of pharmacy students toward mental illness. A survey of 250 undergraduate pharmacy students entering their first week of clinical rotations revealed that students accepted a medical model orientation of mental illness and generally held favorable attitudes toward people with mental illness.⁶ In a follow-up survey by the same research group, those students who completed psychiatric pharmacy rotations had an increased medical model orientation, but they did not have improved attitudes toward the mentally ill.⁷ Third-year Australian pharmacy students who received mental health tutorials with consumer participation (n=117) experienced significant improvements in attitudes relative to students who received standard mental health tutorials (n=94).⁸ In another study by the same research group, there were no significant differences in social distance or stigmatization of people with mental illness between pharmacy graduates (n=232) and third-year pharmacy students who had not yet received mental health instruction (n=216).⁹ A recently published study involving 642 pharmacy students from six countries (Australia, Belgium, Finland, India, Estonia, and Latvia) found sub-optimal attitudes toward people with mental illness.¹⁰ Finally, peer-level patient/family presentations resulted in decreased social distance scores of first-year pharmacy students (n=48).¹¹ We are unaware of any studies that have considered students' attitudes across all 4 years of the doctor of pharmacy curriculum.

The primary objective of this study was to document pharmacy students' attitudes toward mental illness and to determine whether differences in these attitudes existed between the 4 classes (P-1 through P-4). The secondary objective was to determine whether attitudes toward mental illness changed as a result of psychiatric therapeutics in the P-3 year.

Methods

The study was an anonymous survey of pharmacy students at the Samford University McWhorter School of Pharmacy. The study was approved by the Samford University Institutional Review Board.

The survey was composed of 3 sections. The first section was composed of the Index of Attitudes Toward the Mentally Ill.¹² This is an 11-item scale in which the response to each item is scored from 1 (strongly agree) to 5 (strongly disagree). Total scores range from 11 to 55, with higher scores representing more positive attitudes. Some items are positive statements and thus responses are reversed for scoring purposes. The second section was composed of the Whatley's Social Distance Scale.¹³ This is an 8-item scale in which respondents select one of three responses: agree, disagree, or not sure. Favorable responses are "agree" on some items and "disagree" on others. Individual items are scored according to the following method: favorable responses = 1; "not sure" responses = 2; and unfavorable responses = 3. Total scores range from 8 to 24, with lower scores representing more positive attitudes. The third section of the survey contained questions regarding gender, having visited a mental hospital, knowing a family member or friend that has experienced mental illness, and knowing a family member or friend that has been admitted to a mental hospital.

The survey was administered to the P-1, P-2, and P-3 students early in the fall semester. The survey was re-administered to the P-3 students after their psychiatric therapeutics lecture series in the spring semester. The survey was administered to the P-4 students at the spring class meeting approximately 4 months prior to graduation.

Published in:

The International Journal of Pharmacy

Education and Practice

Vol 5, Issue 1, Summer 2009

All analyses were conducted using Minitab (Release 15.1.30.0) and Stata/IC (Version 10.1). A complete array of descriptive statistics was computed on continuous variables and frequency distributions were constructed on discrete or qualitative variables. Both scales' mean composite scores and mean individual item responses were compared across groups using either a two-independent groups t-test (for two groups) or a one-way analysis of variance (for k groups) followed with the Tukey's multiple comparisons procedure. In all inferential analyses the Type I error rate (α) was maintained at 0.05. Post hoc power estimates for all inferential procedures, assuming $\alpha = 0.05$, a moderate effect size¹⁴ and given sample sizes, exceed 0.80.

Results

The survey was completed by 411 students, with a response rate of approximately 82%. Characteristics of respondents are shown in Table 1.

Table 1: Characteristics of Respondents (n=411)

Characteristic	Number (%)
Pharmacy school class:	
P-1	113 (27.5)
P-2	100 (24.3)
P-3	116 (28.2)
P-4	82 (20.0)
Gender:	
Female	283 (68.9)
Male	126 (30.7)
Not answered	2 (0.5)
Has visited a mental hospital:	
Yes	142 (34.5)
No	266 (64.7)
Not answered	3 (0.7)
Knows a family member/friend that has experienced a mental illness:	
Yes	243 (59.1)
No	166 (40.4)
Not answered	2 (0.5)
Knows a family member/friend that has been admitted to a mental hospital:	
Yes	154 (37.5)
No	252 (61.3)
Not answered	5 (1.2)

Mean responses to individual items on the 2 scales are shown in Tables 2 and 3. In general, responses revealed favorable attitudes toward mental illness; however, there was 1 item on the Index of Attitudes Toward the Mentally Ill and 3 items on the Whatley's Social Distance Scale that received overall negative responses.

The only statistically significant finding between classes was that P-4s had more favorable responses than P-2s on the Index of Attitudes Toward the Mentally Ill (Table 4).

Exposure of third-year students to mental illness via psychiatric therapeutics did not result in statistically significant changes in scores on either scale, although scores on both scales did numerically improve to a minor degree (Table 5).

Table 2: Responses on Index of Attitudes Toward the Mentally Ill (mean \pm standard deviation)

Question	P-1	P-2	P-3	P-4
Most patients in mental hospitals are not dangerous.	3.04 \pm 0.78	2.82 \pm 1.03	3.12 \pm 0.95	3.34 \pm 0.95
It is easy to recognize someone who once had a serious mental illness.	3.68 \pm 0.80	3.77 \pm 0.86	3.72 \pm 0.80	3.71 \pm 0.85
We cannot expect to understand the bizarre behavior of mentally ill persons.	3.32 \pm 0.98	3.01 \pm 1.07	3.35 \pm 0.96	3.16 \pm 1.00
Mentally ill people are not intelligent.	4.37 \pm 0.66	4.28 \pm 0.83	4.34 \pm 0.53	4.33 \pm 0.72
Most mentally ill persons haven't the ability to tell right from wrong.	3.56 \pm 0.88	3.48 \pm 0.82	3.59 \pm 0.85	3.52 \pm 0.83
Most mentally ill people don't care how they look.	3.72 \pm 0.80	3.61 \pm 0.75	3.65 \pm 0.73	3.46 \pm 0.91
Most people have mental and emotional problems.	3.32 \pm 0.95	3.16 \pm 0.98	3.50 \pm 0.96	3.13 \pm 0.94
Mental illness is nothing to be ashamed of.	3.89 \pm 0.71	3.89 \pm 0.76	3.86 \pm 0.84	4.07 \pm 0.66
Mentally ill people are ruled by their emotions; normal people by their reason.	3.42 \pm 0.88	3.36 \pm 0.99	3.34 \pm 0.94	3.60 \pm 0.95
A mentally ill person is in no position to make decisions about even everyday living problems.	3.50 \pm 0.80	3.35 \pm 0.97	3.55 \pm 0.85	3.66 \pm 0.76
There is nothing about mentally ill people that makes it easy to tell them from normal people.	2.99 \pm 0.87	2.88 \pm 1.01	2.95 \pm 0.88	3.23 \pm 0.97

Females had statistically significantly more favorable responses than males on Whatley's Social Distance Scale, and students with previous exposure to mental illness had statistically significantly more favorable responses on both scales (Table 6).

Discussion

Our study found that pharmacy students had generally favorable attitudes toward mental illness, but their attitudes did not improve throughout the 4 years of the curriculum. Of particular interest was the finding that concentrated exposure of students to mental illness in psychiatric therapeutics had little impact on their attitudes. During this segment of the therapeutics course, the students received over 20 contact hours of didactic lectures, case studies, and patient videos on a variety of psychiatric disorders, including schizophrenia, major depressive disorder, bipolar disorder, anxiety disorders, and others. These findings add to the growing body of evidence that the attitudes of pharmacy students toward mental illness are unaffected by traditional classroom instruction on mental illnesses and psychopharmacotherapeutics.^{8,9} Even clinical exposure of pharmacy students to mentally ill patients has failed to improve attitudes toward mental illness.^{7,9} Conversely, two studies have shown that pharmacy students' attitudes toward mental illness were positively impacted by interactions with patients who educated them about the effects of mental illness.^{8,11} It has been hypothesized that students need to understand patients' *experiences* with their illnesses in order to affect their attitudes.^{8,9}

Table 3: Responses on Whatley's Social Distance Scale (mean \pm standard deviation)

Question	P-1	P-2	P-3	P-4
It is best not to associate with people who have been in mental hospitals.	1.33 \pm 0.57	1.26 \pm 0.53	1.26 \pm 0.53	1.35 \pm 0.62
It is wrong to shy away from people who have mental disorders.	1.42 \pm 0.74	1.51 \pm 0.73	1.56 \pm 0.80	1.73 \pm 0.83
It would bother me to live near a person who has been in a mental hospital.	1.83 \pm 0.74	1.83 \pm 0.77	1.92 \pm 0.74	1.76 \pm 0.78
I would not ride in a taxi driven by someone who had been in a mental hospital.	2.04 \pm 0.84	2.06 \pm 0.83	2.15 \pm 0.79	1.87 \pm 0.77
I would rather not hire a person who had been in a mental hospital.	2.06 \pm 0.82	2.17 \pm 0.77	2.24 \pm 0.76	2.16 \pm 0.79
Schoolteachers who have been in mental hospitals should not be allowed to teach.	1.91 \pm 0.76	2.07 \pm 0.79	1.97 \pm 0.78	1.93 \pm 0.85
I would be against any daughter of mine marrying a man who had been to see a psychiatrist about mental problems.	1.77 \pm 0.77	1.93 \pm 0.80	1.82 \pm 0.77	1.72 \pm 0.81
If I needed a babysitter, I would be willing to hire a woman who had been going to see a psychiatrist.	2.07 \pm 0.79	2.16 \pm 0.79	2.22 \pm 0.76	2.15 \pm 0.80

Table 4: Differences Between Classes

Class	Index of Attitudes Toward the Mentally Ill	Whatley's Social Distance Scale
P-1	38.8 \pm 3.5	14.4 \pm 3.7
P-2	37.6 \pm 4.8 ^a	14.8 \pm 3.7
P-3	39.0 \pm 3.9	15.1 \pm 3.3
P-4	39.2 \pm 4.6 ^a	14.6 \pm 3.6

^a $p=0.038$ **Table 5:** Effect of Psychiatric Therapeutics

Group	Index of Attitudes Toward the Mentally Ill	Whatley's Social Distance Scale
P-3 before psychiatric therapeutics	39.0 \pm 3.9	15.1 \pm 3.3
P-3 after psychiatric therapeutics	39.2 \pm 3.5	14.2 \pm 3.5

As would be expected, nearly 70% of respondents were female, and nearly 60% acknowledged knowing a family member or friend who had experienced a mental illness. On the other hand, it was somewhat surprising that over one-third of respondents knew a family member or friend who had been admitted to a mental hospital. Our findings that female students and students with previous exposure to mental illness had more favorable responses on the attitudinal scales were consistent with findings from one previous

Published in:

*The International Journal of Pharmacy**Education and Practice*

Vol 5, Issue 1, Summer 2009

Table 6: Effects of Gender and Exposure to Mental Illness

Variable	Index of Attitudes Toward the Mentally Ill		Whatley's Social Distance Scale	
	Score	p value	Score	p value
Gender:		0.598		0.011
Female	38.7 +/- 4.2		14.5 +/- 3.5	
Male	38.6 +/- 4.4		15.4 +/- 3.6	
Has visited a mental hospital:		0.019		0.001
Yes	39.4 +/- 4.4		14.0 +/- 3.8	
No	38.3 +/- 4.1		15.2 +/- 3.3	
Knows a family member/friend that has experienced a mental illness:		<0.001		<0.001
Yes	39.6 +/- 4.2		14.1 +/- 3.5	
No	37.2 +/- 3.8		15.8 +/- 3.4	
Knows a family member/friend that has been admitted to a mental hospital:		0.024		<0.001
Yes	39.3 +/- 4.4		13.9 +/- 3.5	
No	38.3 +/- 4.1		15.3 +/- 3.5	

study⁶ but not another,⁷ although the latter study was hampered in this regard by a relatively limited sample size.⁷

Limitations

Because our school is a private institution that primarily admits students from the southeastern United States (especially Alabama, Tennessee, and Kentucky), generalizability of our results to dissimilar situations is unknown. Also, the scales used in the study do not distinguish between types of mental illness (e.g., schizophrenia vs. depression), so it is possible that different results might have been obtained had there been such delineation.

Conclusions

Attitudes of pharmacy students enrolled in the McWhorter School of Pharmacy toward mental illness were generally positive and were relatively unaffected by their year in the curriculum. The attitudes of P-3 students toward mental illness were unchanged by psychiatric therapeutics. Female students and those students with previous exposure to mental illness had more favorable attitudes toward mental illness.

Acknowledgements

Presented as a poster at College of Psychiatric and Neurologic Pharmacists Annual Meeting, Scottsdale, AZ, Apr. 13, 2008.

References

1. American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*. 4th ed. Text Revision. Washington, DC: American Psychiatric Association; 2000:xxx-xxxi.
2. Byrne P. Stigma of mental illness and ways of diminishing it. *Adv Psychiatr Treat*. 2000;6:65-72.
3. Byrne P. Psychiatric stigma: past, passing and to come. *J R Soc Med*. 1997;90:618-621.
4. Phokeo V, Sproule B, Raman-Wilms L. Community pharmacists' attitudes toward and professional interactions with users of psychiatric medication. *Psychiatr Serv*. 2004;55:1434-1436.
5. Cates ME, Burton AR, Woolley TW. Attitudes of pharmacists toward mental illness and providing pharmaceutical care to the mentally ill. *Ann Pharmacother*. 2005;39:1450-1455.
6. Crismon ML, Jermain DM, Torian SJ. Attitudes of pharmacy students toward mental illness. *Am J Hosp Pharm*. 1990;47:1369-1373.
7. Jermain DM, Crismon ML. Students' attitudes toward the mentally ill before and after clinical rotations. *Am J Pharm Educ*. 1991;55:45-48.
8. Bell JS, Johns R, Rose G, Chen TF. A comparative study of consumer participation in mental health pharmacy education. *Ann Pharmacother*. 2006;40:1759-1765.
9. Bell JS, Johns R, Chen TF. Pharmacy students' and graduates' attitudes towards people with schizophrenia and severe depression. *Am J Pharm Educ*. 2006;70:article 77. <http://www.ajpe.org/view.asp?art=aj700477&pdf=yes>. Accessed Feb. 12, 2009.
10. Bell JS, Aaltonen SE, Bronstein E, Desplenter FA, Foulon V, Vitola A, Muceniece R, Gharat MS, Volmer D, Airaksinen MS, Chen TF. Attitudes of pharmacy students toward people with mental disorders, a six country study. *Pharm World Sci*. 2008;30:595-599.
11. Buhler AV, Karimi RM. Peer-level patient presenters decrease pharmacy students' social distance from patients with schizophrenia and clinical depression. *Am J Pharm Educ*. 2008;72:article 106. <http://www.ajpe.org/view.asp?art=aj7205106&pdf=yes>. Accessed Feb. 12, 2009.
12. Hiday VA. Are lawyers enemies of psychiatrists? A survey of civil commitment counsel and judges. *Am J Psychiatry*. 1983;140:323-326.
13. Whatley CD. Social attitudes toward discharged mental patients. *Soc Probl*. 1958-59;6:313-320.
14. Cohen J. *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988:27-51,288-379.