

DETERMINANTS OF MENTAL HEALTH STIGMA AMONG
PHARMACY STUDENTS IN AUSTRALIA, BELGIUM,
ESTONIA, FINLAND, INDIA AND LATVIA

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ABSTRACT

Background: Healthcare professionals commonly exhibit negative attitudes toward people with mental disorders. Few international studies have sought to investigate the determinants of stigma.

Objective: To conduct an international comparison of pharmacy students' stigma towards people with schizophrenia, and to determine whether stigma is consistently associated with stereotypical attributes of people with schizophrenia.

Method: Students ($n = 649$) at eight universities in Australia, Belgium, India, Finland, Estonia and Latvia completed a seven-item Social Distance Scale (SDS) and six items related to stereotypical attributes of people with schizophrenia.

Results: Mean SDS scores were 19.65 (± 3.97) in Australia, 19.61 (± 2.92) in Belgium, 18.75 (± 3.57) in India, 18.05 (± 3.12) in Finland, and 20.90 (± 4.04) in Estonia and Latvia. Unpredictability was most strongly associated with having a high social distance in Australia ($\beta = -1.285$), the perception that people will never recover in India ($\beta = -0.881$), dangerousness in Finland ($\beta = -1.473$) and the perception of being difficult to talk to in Estonia and Latvia ($\beta = -2.076$). Unpredictability was associated with lower social distance in Belgium ($\beta = 0.839$).

Conclusion: The extent to which students held stigmatizing attitudes was similar in each country, however, the determinants of stigma were different. Pharmacy education may need to be tailored to address the determinants of stigma in each country.

Key words: schizophrenia, social distance, pharmaceutical services

INTRODUCTION

The stigma attached to mental disorders is an increasingly researched topic that is relevant to help-seeking by consumers, provision of healthcare services, development of education curricula and policy development (Angermeyer *et al.*, 2003; Angermeyer *et al.*, 2004a; Angermeyer & Dietrich, 2006; Griffiths *et al.*, 2006; Lee, 2002; Sartorius, 2007; van 't Veer *et al.*, 2006). Stigma has been defined as a negative attitude, based on prejudice and misinformation, that is triggered

by a marker of an illness (Sartorius, 2007). The World Health Organization has described stigma as the greatest impediment to the provision of effective mental healthcare in the community setting (WHO, 2001).

Attitudes of healthcare professionals

Healthcare professionals often have sub-optimal attitudes toward people with mental disorders (Buchanan & Bhugra, 1992; Lauber *et al.*, 2006; Nordt *et al.*, 2006). Given the shift towards providing care in the community, the attitudes and competencies of primary healthcare professionals, including pharmacists, have attracted recent attention (Bell *et al.*, 2006a; Cates *et al.*, 2005; Phokeo *et al.*, 2004; Wilson *et al.*, 2007; Volmer *et al.*, 2008). Pharmacists are among the most accessible and frequently consulted health professionals within their communities (Jesson & Bissell, 2006). New pharmaceutical care services provided by community pharmacists are potentially well suited to optimizing the use of medications for mental disorders (Bell *et al.*, 2005). However, pharmacists have reported feeling less confident conducting medication counselling, and may provide less drug information, for people with mental disorders than for those with cardiovascular disease, diabetes or asthma (Maslen *et al.*, 1996; Phokeo *et al.*, 2004; Vainio *et al.*, 2002). Undergraduate pharmacy education is changing to reflect the new pharmaceutical care roles performed by pharmacists (Bell *et al.*, 2006b; Bell *et al.*, 2006c). In the USA all schools of pharmacy now include psychiatric topics as part of a therapeutics-based course, and over 75% employ a specialist psychiatric pharmacist (Cates *et al.*, 2007). However, few previous studies have investigated the determinants of sub-optimal attitudes toward people with mental disorders among pharmacy students (Volmer *et al.*, 2008).

Mental health stigma

Social distance from people with schizophrenia is a commonly used indicator of mental health stigma. Social distance has been defined as the willingness to engage in relationships of varying intimacy with a person (Lauber *et al.*, 2004). The stereotypes of people with mental disorders as being unpredictable, dangerous, untrustworthy, aggressive, having a poor prognosis and causing disturbance have been associated with a large social distance (Angermeyer *et al.*, 2003; Grausgruber *et al.*, 2007; van 't Veer *et al.*, 2006). If adopted, these stereotypes may lead to prejudice and discrimination (Corrigan & Watson, 2002). According to the attribution model, believing the causes of a mental disorder to be due to factors beyond an individual's control, such as genetic factors, is associated with low social distance (Angermeyer *et al.*, 2003; Corrigan *et al.*, 2000; Corrigan *et al.*, 2003). A conceptual model linking familiarity with mental disorders to low social distance has also been proposed (Corrigan *et al.*, 2001). This model has been replicated using data from a representative population survey in Germany (Angermeyer *et al.*, 2004b) and has been utilized to improve pharmacy students' attitudes toward people with mental disorders in Australia (Bell *et al.*, 2006b).

Culture may impact the way people with mental disorders seek and receive mental healthcare. The determinants of stigma may be culturally specific (Angermeyer & Dietrich, 2006; Kleinman, 2004). Understanding the cultural determinants of stigma is important so that education curricula and public-health campaigns can be customized accordingly (Angermeyer *et al.*, 2004a; Lauber *et al.*, 2004). There are cultural differences in the way that people experience mental disorders in Asian and Western societies (Griffiths *et al.*, 2006; Tsang *et al.*, 2007). Mental health stigma in India may be linked to specific beliefs about the causes of mental disorders (Charles *et al.*, 2007).

However, there are no established or widely accepted theoretical frameworks for assessing the cultural basis of stigma (Lee, 2002). No previous studies have examined the possible impact of culture or the country in which students study on the determinants of mental health stigma among pharmacy students.

Study objectives

The objectives of this study were: (1) to compare and contrast pharmacy students' social distance from people with schizophrenia in Australia, Belgium, Finland, India, Estonia and Latvia; and (2) to determine whether social distance is consistently associated with stereotypical attributes of people with schizophrenia.

METHODS

Participants

Data for this study were collected from third-year pharmacy students studying at eight universities in Australia, Belgium, Finland, India, Estonia and Latvia. Third-year students were selected as the target population because this is the final year of study for those students undertaking a Bachelor's of Pharmacy degree which is consistent with the structure outlined in the Bologna Declaration, an agreement to create a common framework for higher education across Europe (Confederation of EU Rectors' Conferences & Association of European Universities, 2000). All universities that participated in our study provided education related to schizophrenia and antipsychotic drugs, however, the format and duration of this education varied between universities.

The study was approved by the Human Research Ethics Committee at the University of Sydney and the Institutional Review Board at Riga Stradins University. All study procedures were conducted in accordance with the World Medical Association Declaration of Helsinki (World Medical Association, 2004).

Data collection

Data for this study were collected as part of the International Pharmacy Students' Health Survey (IPSHS) (Bell *et al.*, 2008). This census survey of 55-items aimed to assess respondents' attitudes and willingness to provide pharmaceutical care to people with mental disorders. All third-year pharmacy students at the participating universities were invited to voluntarily complete the survey instrument during a lecture or tutorial. The survey instrument was administered in English or in an official language of the respective country. All data were collected over the period February 2006 to May 2007.

Survey instrument

The survey instrument included the seven-item Social Distance Scale (SDS) (Link *et al.*, 1987), as well as six items related to common stereotypical beliefs about people with schizophrenia. The SDS has established validity and reliability, and requires respondents to indicate their willingness to engage into relationships of varying intimacy with a person previously hospitalized with schizophrenia (Corrigan *et al.*, 2001; Link *et al.*, 1987). The SDS was selected as a measure of mental health stigma because social distance has been used as an indicator of stigma in a

wide range of countries, cultures and study populations (Angermeyer *et al.*, 2003). The SDS was scored on four-point Likert scales, ranging from 1 (definitely willing) to 4 (definitely unwilling). Possible total SDS scores ranged from 7 to 28, with lower scores indicative of less social distance. The six stereotypical beliefs about schizophrenia that were included in the analyses were based on a review of stigma and mental health (Hayward & Bright, 1997), and surveys conducted in the UK (Crisp *et al.*, 2000; Mukherjee *et al.*, 2002). The beliefs were 'danger to others', 'unpredictable', 'difficult to talk to', 'will never recover', 'have themselves to blame' and 'will not improve without treatment'. Respondents were asked to indicate how strongly they endorsed each of the above stereotypes using five-point Likert scales ranging from 1 (strongly agree) to 5 (strongly disagree). The percentage of students who agreed or strongly agreed with each of the stereotypical beliefs has been reported previously (Bell *et al.*, 2008).

The English version of the survey instrument was used in Australia, Belgium, India and Latvia. The instrument was translated into Finnish for use in Finland and Estonian for use in Estonia. The translations were performed using a predefined protocol adapted from a procedure used by previous researchers (Angermeyer *et al.*, 2005). Two translators independently translated the original English version of the survey instrument into the target language. These translators then met to compare and resolve any differences in their translations. Their translation was then back-translated by a third translator, before a bilingual panel was formulated to compare the original and translated versions. Differences were discussed and some sentences reformulated until equivalence was achieved. The translated Finnish and Estonian versions of the survey instrument were pilot tested for face-validity prior to use.

Data analysis

Data were analysed using the Statistical Package for the Social Sciences version 14.0 (Chicago, IL). Demographic information was coded and tabulated. Frequencies for each item of the questionnaire were computed and tabulated. Due to the low number of students studying pharmacy in Estonia and Latvia, data from these two neighbouring Baltic countries were pooled. The total SDS scale score was calculated by summing the individual responses for each item. Cronbach's α was calculated to determine the internal consistency of the SDS at each study location. Standard linear regression analyses were performed for each country using the total SDS score as the dependent variable. The six stereotypical beliefs, as well as age, gender and family experience of mental disorder, were used as independent variables in all linear regression analyses. Cases with missing data were excluded from the linear regression analyses. The correlation matrix and squared multiple correlations were computed to test for multicollinearity. The level of significance was set at 0.05. To account for the possibility of Type I error caused by multiple significance testing, *p* values from the linear regression analyses were adjusted using the Holm Method (Aickin & Gensler, 1996).

RESULTS

Completed survey instruments were returned by students from Australia ($n = 241$, 98% response rate), Belgium ($n = 102$, 74% response rate), India ($n = 106$, 91% response rate), Finland ($n = 130$, 81% response rate), and Estonia and Latvia ($n = 70$, 86% response rate). The average age of respondents ranged from 20.0 years in India to 25.5 years in Finland (Table 1). The gender distribution ranged from 57.5% female respondents in India to 90.0% female respondents in

Table 1
Demographic characteristics of respondents

	India Bombay College of Pharmacy Dr L.H. Hiranandani College of Pharmacy (<i>n</i> = 106)		Australia University of Sydney (<i>n</i> = 241)		Finland University of Helsinki (<i>n</i> = 130)		Estonia & Latvia University of Tartu Riga Stradins University (<i>n</i> = 70)		Belgium Katholieke Universiteit Leuven (<i>n</i> = 102)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender										
Male	45	43	84	35	13	10	15	21	22	22
Female	61	57	157	65	117	90	55	79	80	78
Age (yrs)										
Mean	20		21		26		23		21	
Range	19–23		18–38		21–50		20–37		19–28	
Birthplace										
India	106	100								
Australia			125	52						
Finland					129	99				
Estonia/Latvia							67	96		
Belgium									101	99
Family experience of mental disorder^a										
Yes	12	11	44	18	44	34	9	13	29	28
No	93	89	195	82	86	66	61	87	73	72

a. One student from India and two from Australia did not respond to this item.

Finland. Fifty-two per cent of students studying in Australia were born in Australia, whereas over 90% of students studying at other universities were born in the country in which they studied. Students' desire for social distance was highest in Estonia and Latvia 20.90 (\pm 4.04) and lowest in Finland 18.05 (\pm 3.12) (Table 2). The range of the mean social distance scores was 2.85. The Cronbach's α value for the SDS was 0.87 in Australia, 0.78 in Belgium, 0.71 in India, 0.83 in Finland, and 0.93 in Estonia and Latvia.

Unpredictability was most strongly associated with having a high social distance in Australia ($\beta = -1.285$), the perception that people will never recover in India ($\beta = -0.881$), dangerousness in Finland ($\beta = -1.473$) and the perception of being difficult to talk to in Estonia and Latvia ($\beta = -2.076$) (Table 3). Unpredictability was associated with lower social distance in Belgium ($\beta = 0.839$). After adjusting the p values using the Holm Method, only unpredictability in Australia ($p < 0.009$), danger in Helsinki ($p < 0.009$) and being difficult to talk to in Estonia and Latvia ($p = 0.027$) remained statistically significant determinants of social distance.

DISCUSSION

The results of our study indicate that social distance may be associated with different stereotypical beliefs about people with schizophrenia in different countries. While a previous review concluded that unpredictability is most strongly associated with social distance (Angermeyer *et al.*, 2003), this was not true among all respondents in our study. Unpredictability was most strongly associated with social distance among students studying in Australia, a finding that has also been reported among members of the German general public (Angermeyer *et al.*, 2004a). However, in Belgium unpredictability was associated with desire for less social distance. This finding runs counter to most other empirical evidence (Angermeyer & Dietrich, 2006), but is consistent with results of a recent Estonian pharmacy student survey (Volmer *et al.*, 2008). Further research is needed to determine whether these counter-intuitive findings are replicated in other studies and groups of pharmacy students. Dangerousness was most strongly associated with social distance in Finland. The perception that people with schizophrenia will never recover was more closely associated with social distance than either unpredictability or dangerousness in India. Our results support the notion that stereotypical beliefs associated with social distance may differ by country and cultural group, a finding previously reported from a study conducted in Germany, Mongolia and Russia (Angermeyer *et al.*, 2004a).

The students' desire for social distance was similar in all countries in which the survey was conducted. The range of mean social distance scores between countries was comparable to the improvement of 1.91 in total social distance score observed after a short-term consumer-led education programme in Sydney (Bell *et al.*, 2006b). While there were small yet statistically significant differences in social distance between countries in our study, further research is needed to determine the importance of these differences in practice. Previous research has suggested that social distance is less in Africa and Asia than in 'Western' countries, although this finding has been challenged (Adewuya & Makanjuola, 2005). Our results lend weight to these findings, with mean social distance in India being less than in Australia, Belgium, Estonia or Latvia.

The fact that the regression models only explained between 12% and 24% of variance in social distance suggests that common stereotypical beliefs about people with schizophrenia may have a limited role in predicting social distance. The stereotypical attitudes presented in the study

Table 2
Total Social Distance Scale scores at respective study locations

	India		Australia		Finland		Estonia & Latvia		Belgium	
	SDS	SD	SDS	SD	SDS	SD	SDS	SD	SDS	SD
For a person previously hospitalized with schizophrenia ^a										
Share a flat with that person	2.54	0.84	3.05	0.70	2.84	0.58	3.08	0.78	3.27	0.62
Work alongside that person	2.08	0.74	2.24	0.78	1.88	0.54	2.55	0.87	2.28	0.61
Have that person as a neighbour	2.13	0.89	2.13	0.79	1.83	0.61	2.60	0.82	1.98	0.56
Have that person as a babysitter for child	3.53	0.71	3.63	0.59	3.43	0.66	3.55	0.85	3.70	0.63
Have one of your children marry that person	3.65	0.64	3.20	0.81	2.58	0.68	3.29	0.83	3.03	0.62
Introduce to friend as relationship partner	2.78	1.02	3.03	0.81	2.97	0.64	3.06	0.80	2.96	0.70
Recommend that person for a job	2.13	0.99	2.37	0.79	2.48	0.63	2.74	0.76	2.41	0.68
Total SDS^b	18.75	3.57	19.65	3.97	18.05	3.12	20.90	4.04	19.61	2.92
95% CI	(18.06–19.44)		(19.15–20.15)		(17.49–18.61)		(19.93–21.87)		(19.04–20.18)	
Cronbach's α	0.70		0.87		0.83		0.81		0.78	

SDS = Social Distance Scale; SD = standard deviation; CI = confidence interval

a. The Social Distance Scale items were scored on four-point Likert scales, ranging from 1 (definitely willing) to 4 (definitely unwilling). Possible total SDS scores ranged from 7 to 28, with lower scores indicative of less social distance.

b. Four cases with missing data were excluded from India, three from Australia, 10 from Finland and four from Estonia and Latvia when calculating the total SDS score.

Table 3
Determinants of total Social Distance Score

	India Bombay College of Pharmacy Dr L.H. Hiranandani College of Pharmacy (n = 94) ^a		Australia University of Sydney (n = 234) ^a		Finland University of Helsinki (n = 118) ^a		Estonia & Latvia University of Tartu University of Latvia Riga Stradins University (n = 65) ^a		Belgium Katholieke Universiteit Leuven (n = 101) ^a	
	β	p value ^b	β	p value ^b	β	p value ^b	β	p value ^b	β	p value ^b
Age	-0.303	0.501	-0.146	0.138	0.046	0.283	0.053	0.681	-0.636	0.019*
Gender	0.095	0.898	0.524	0.326	0.231	0.795	2.250	0.089	0.184	0.802
Family experience of mental disorder	0.417	0.704	1.253	0.050	0.676	0.248	-2.093	0.152	0.435	0.503
Danger to others	-0.595	0.135	-0.656	0.053	-1.473	<0.001**	-0.326	0.611	-0.780	0.053
Unpredictable	0.717	0.121	-1.285	<0.001**	0.042	0.916	0.298	0.674	0.839	0.037*
Difficult to talk to	-0.289	0.490	-0.179	0.638	-0.241	0.463	-2.076	0.003**	-0.356	0.356
Have themselves to blame	-0.180	0.687	-0.378	0.222	0.142	0.525	-0.367	0.582	-0.223	0.529
Will not improve without treatment	0.059	0.844	0.192	0.482	-0.621	0.131	-0.270	0.705	-0.339	0.295
Will never recover	-0.881	0.037*	-0.543	0.056	-0.272	0.295	-0.187	0.715	0.118	0.721
R²	0.121		0.196		0.242		0.218		0.186	

a. Twelve cases with missing data were excluded from India, seven from Australia, 12 from Finland, five from Estonia and Latvia, and one from Belgium.

* $p < 0.05$, ** $p < 0.01$

b. After adjustment using the Holm Method, only unpredictability in Australia ($p < 0.009$), danger in Helsinki ($p < 0.009$) and being difficult to talk to in Estonia and Latvia ($p = 0.027$) remained statistically significant determinants of social distance.

explained only 12% of the variance in social distance in India, compared to more than 18% at other study locations. This suggests that social distance may be associated with a range of different beliefs in India. This finding is consistent with the notion that people with mental disorders in developing countries may be less likely than those in developed countries to face exclusion due to loss of self-esteem, status and independence (Littlewood, 1998). The fact that the regression models explained less than 24% of variance cautions against over-emphasizing the role of stereotypical beliefs as determinants of social distance. Further research is needed to examine the impact of culture using alternative scales and constructs.

Demographic characteristics explained only a small amount of the variance in desire for social distance in our study. Previous research has demonstrated inconsistent results with respect to gender and social distance (Angermeyer & Dietrich, 2006). While several previous studies have reported a higher social distance among females than males (Gaebel *et al.*, 2002; Lauber *et al.*, 2004; Adewuya & Makanjuola, 2005), female gender was not a determinant of social distance at any of our study locations. Additionally, and contrary to previous research (Angermeyer *et al.*, 2004b), familiarity with mental illness did not appear to be strongly associated with lower social distance scores in any participating country other than Australia. Despite evidence from previous research suggesting age is negatively associated with positive attitudes, this was not evident in our study (Angermeyer *et al.*, 2004a). This may have been because the age range of the majority of students in our study was relatively small.

Pharmacy education and pharmacy practice in many countries remains predominantly focused on the pharmacological properties of medications rather than the needs and experiences of consumers (de Oliveira & Shoemaker, 2006). Having a medical understanding of schizophrenia has been associated with greater social distance than perceiving schizophrenia as a life-crisis (Lauber *et al.*, 2004). Paradoxically, increased knowledge about mental disorders corresponded to more negative attitudes in one study (Chou & Mak, 1998). Informing people about schizophrenia or depression may not be sufficient to change their attitudes (Angermeyer & Dietrich, 2006). Traditional forms of pharmacy education, including lectures and tutorials led by pharmacists, may not improve students' social distance from people with schizophrenia (Bell *et al.*, 2006a). New models of pharmacy education involving greater participation by consumers may be useful to improve students' attitudes (Bell *et al.*, 2006b; Bell *et al.*, 2006c).

Limitations

As with several previous studies (Crisp *et al.*, 2000; Mukherjee *et al.*, 2002), the survey instrument used in our study relied on students having a common understanding of schizophrenia. However, pharmacy curricula at all universities that participated in our study included lectures related to schizophrenia and antipsychotic drugs. Social distance is one indicator of mental health stigma, and the value of social distance as an indicator of stigma may vary between countries. Despite all data being collected anonymously, students may have under-reported family experience of mental illness. Students' willingness to self-report family experience of mental illness may have also varied between countries.

Data were not collected from all universities offering pharmacy education in Australia, Belgium, Finland and India and, therefore, the respondents' attitudes may not have been representative of all pharmacy students studying in these countries. Students studying pharmacy in Latvia and Estonia had different cultural backgrounds; however, data from these two neighbouring Baltic states

were pooled to perform the regression analyses. Future studies are needed to assess whether the determinants of social distance differ among students studying in Latvia and Estonia.

The Likert scales used in our study were ordinal scales; however, for the purpose of conducting the analyses all scales were treated as continuous variables. Further studies are needed to determine whether students' stereotypical beliefs about people with schizophrenia or their desire for social distance impact their attitudes or behaviours in relation to providing pharmaceutical services.

CONCLUSION

Social distance from people with schizophrenia was similar among students studying in Australia, Belgium, Estonia, Finland, India and Latvia. However, the stereotypical attributes associated with desire for social distance were different in each country. Pharmacy education may need to be tailored to address the determinants of stigma in each country. Models that seek to explain the determinants of social distance are culturally specific.

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CONFLICTS OF INTEREST

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