

## Original Research

# Barriers to medication counselling for people with mental health disorders: a six country study

S. Elina AALTONEN, Niina P. LAINE, Daisy VOLMER, Manjiri S. GHARAT, Ruta MUCENIECE, Anna VITOLA, Veerle FOULON, Franciska A. DESPLENTER, Marja S. AIRAKSINEN, Timothy F. CHEN, J. Simon BELL.

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### ABSTRACT\*

Provision of medication information may improve adherence and prevent medication related problems. People with mental health disorders commonly receive less medication counselling from pharmacists than people with other common long term and persistent disorders.

**Objective:** The objective of this study was to compare and contrast barriers pharmacy students perceive toward providing medication counselling for people with mental health disorders in Australia, Belgium, Estonia, Finland, India and Latvia.

**Methods:** Barriers identified by third-year pharmacy students as part of the International Pharmacy Students' Health Survey were content analysed using a directed approach. Students' responses were categorised as pharmacist related, patient related, health-system related, or social or cultural related. Quantitative data were analysed using SPSS version 14.0.

**Results:** Survey instruments were returned by 649 students. Of the respondents, 480 identified one or more barriers to medication counselling for people with mental health disorders. Patient related factors accounted for between 25.3% and 36.2% of barriers

identified by the pharmacy students. Pharmacist related factors accounted for between 17.6% and 45.1% of the barriers identified by the pharmacy students. Students in India were more likely to attribute barriers to pharmacist and social and cultural related factors, and less likely to health-system related factors, than students studying in other countries.

**Conclusion:** The nature of barriers identified by pharmacy students differed according to the country in which they studied. Undergraduate and postgraduate pharmacy education programs may need to be amended to address common misconceptions among pharmacy students.

**Keywords:** Mental Disorders. Community Pharmacy Services. Attitude of Health Personnel. Australia. Belgium. Estonia. Finland. India. Latvia.

### BARRERAS AL CONSEJO SOBRE MEDICAMENTOS PARA PERSONAS CON DESORDENES MENTALES: UN ESTUDIO EN SEIS PAÍSES

#### RESUMEN

La provisión de información sobre medicamentos puede mejorar la adherencia y prevenir problemas relacionados con los medicamentos. Las personas con desordenes mentales normalmente reciben menos consejos sobre medicación de los farmacéuticos que la gente con otras enfermedades comunes de larga duración.

**Objetivo:** El objetivo de este estudio fue comparar y contrastar las barreras que los estudiantes de farmacia perciben hacia proporcionar consejos de medicación para personas con desordenes mentales en Australia, Bélgica, Estonia, Finlandia, India y Letonia.

**Métodos:** Se realizó un análisis de contenido de abordaje directo de las barreras identificadas por estudiantes de tercero de farmacia como parte de la Encuesta de Salud de los Estudiantes de Farmacia. Las respuestas de los estudiantes se categorizaron como relativas al farmacéutico, relativas al paciente, relativas al sistema de salud, o relativas a aspectos sociales o culturales. Los datos cuantitativos se analizaron utilizando un SPSS versión 14.0.

**Resultados:** Las encuestas fueron retornadas por 649 estudiantes. De los respondentes, 480 identificaron una o más barreras al consejo sobre medicación para personas con desordenes mentales. Los factores relativos al paciente representaron entre el 25,3% y el 36,2% de las barreras

\* S. Elina AALTONEN. M.Sc.(Pharm). Division of Social Pharmacy. Faculty of Pharmacy, University of Helsinki (Finland) [Now: Porvoon Uusi Apteekki, Porvoo (Finland)]. Niina P. LAINE. M.Sc.(Clin.Pharm.). Division of Social Pharmacy. Faculty of Pharmacy, University of Helsinki (Finland). [Now: Vihdin Apteekki, Helsinki (Finland)]. Daisy VOLMER. M.Sc.(Pharm.). Institute of Pharmacy. Faculty of Medicine, University of Tartu (Estonia). Manjiri S. GHARAT. M.Pharm. Community Pharmacy Division. Indian Pharmaceutical Association India; K.M. Kundnani Pharmacy Polytechnic. Ulhasnagar, Maharashtra (India). Ruta MUCENIECE. Ph.D. Faculty of Medicine, University of Latvia (Latvia). Anna VITOLA. Ph.D. Faculty of Pharmacy, Riga Stradins University (Latvia). Veerle FOULON. Ph.D. Research Centre for Pharmaceutical Care and Pharmacoeconomics. Faculty of Pharmacy, Katholieke Universiteit Leuven (Belgium). Franciska A. DESPLENTER. Ph.D. Research Centre for Pharmaceutical Care and Pharmacoeconomics. Faculty of Pharmacy, Katholieke Universiteit Leuven (Belgium). Marja S AIRAKSINEN. Ph.D. Division of Social Pharmacy. Faculty of Pharmacy, University of Helsinki (Finland). Timothy F CHEN, Ph.D. Faculty of Pharmacy, University of Sydney (Australia). J. Simon BELL. Ph.D. Division of Social Pharmacy. Faculty of Pharmacy, University of Helsinki (Finland). [Now: Kuopio Research Centre of Geriatric Care, and Clinical Pharmacology and Geriatric Pharmacotherapy Unit. School of Pharmacy, Faculty of Health Sciences, University of Eastern Finland (Finland)].

identificadas por los estudiantes. Los factores relativos al farmacéutico alcanzaron el 17,6% a 45,1% de las barreras identificadas. Los estudiantes de India eran más proclives a atribuir barreras al farmacéutico y a los aspectos sociales y culturales, y menos a los factores del sistema de salud que los estudiantes de otros países.

Conclusión: La naturaleza de las barreras identificadas por los estudiantes de farmacia difirió entre los países estudiados. Los programas de formación pre y postgraduados en farmacia podrían tener que corregirse para encarar los malos entendidos comunes entre los estudiantes de farmacia.

**Palabras clave:** Desordenes mentales. Servicios de farmacia comunitaria. Actitudes del personal sanitario. Australia. Bélgica. Estonia. Finlandia. India. Letonia.

## INTRODUCTION

Mental health disorders represent a major public health problem that is often neglected by clinicians and policy makers. Despite being responsible for a high level of disability, mental health disorders are often under-recognised and under-treated in high, middle and low income countries.<sup>1</sup> Mental and behavioural disorders are present in 10% of the adult population at any one point in time, and mental health disorders contribute more than 12% of global disease burden.<sup>2</sup> Mental health disorders account for 31% years lived with disability worldwide and 43% of years lived with disability in Europe and North America.<sup>3</sup> The Mental Health Action Plan for Europe recognises the importance of developing primary mental health care services, including the need to provide greater access to psychotropic medications in community settings.<sup>4</sup>

The development of community pharmacy services for people with mental health disorders is consistent with the need to improve models of primary mental health care. People experiencing psychiatric symptoms may seek help from community pharmacists without consulting other health care professionals.<sup>5</sup> Services provided by pharmacists are well suited to optimising the use of medications for mental health disorders.<sup>6-8</sup> Medications are often the patient and health care professional preferred treatments for severe or persistent major depressive and psychotic disorders. However, people taking psychotropic medications for mental health disorders are at high risk of experiencing medication related problems.<sup>9</sup> Estimates of medication non-adherence among Department of Veterans Affairs patients taking antipsychotics and mood stabilisers in the United States are greater than 40%.<sup>10,11</sup> Similarly high rates of treatment discontinuation have been reported during the acute and continuation phases of antidepressant treatment.<sup>12</sup> Provision of medication information has been identified as a key strategy to improve medication adherence and prevent adverse drug events.<sup>13,14</sup>

Medication counselling provided by community pharmacists is an important source of medication information for patients and their caregivers.<sup>15</sup> Community-pharmacy based medication counselling interventions have resulted in improved patient adherence to antidepressant and antipsychotic medications.<sup>16,17</sup>

People with mental health disorders may receive less medication information from pharmacists and physicians than people taking medications for other long-term and persistent conditions.<sup>18,19</sup> Pharmacists are required by law to offer medication counselling when dispensing medications in countries including Finland and the United States.<sup>20,21</sup> However, pharmacists have reported feeling less confident and may be less likely to provide medication information to people with mental health disorders than to those with cardiovascular conditions, diabetes or asthma.<sup>22,23</sup>

People with mental health disorders have reported their dissatisfaction with the quality and quantity of medication information provided by their health professionals.<sup>24</sup> Focus groups with pharmacists have suggested sub-optimal attitudes and poor communication with people with mental health disorders may limit service provision to this patient population.<sup>25</sup> In one study, people collecting prescriptions for fluoxetine were less likely to receive medication counselling when served by pharmacy staff aged over 50 years or when visiting a pharmacy with 10 or fewer employees.<sup>26</sup> Stigmatising attitudes toward people with schizophrenia have been associated with less positive attitudes toward providing concordant medication counselling.<sup>27</sup> The need for education to address the barriers to the provision of primary mental health care has been described.<sup>28</sup> However, few studies have assessed the barriers to pharmacists' medication counselling for people with mental health disorders.<sup>23,29</sup>

International diagnostic and treatment recommendations are primarily based on North American and Western European experiences of mental health disorders.<sup>30,31</sup> There is a lack of evidence pertaining to barriers and facilitators of mental health care in other countries. The importance of incorporating issues of race, culture and ethnicity into mental health services research, teaching and clinical practice is gaining recognition.<sup>32-34</sup> Culture may contribute to differences in help-seeking, diagnosis and treatment. The attitudes of pharmacy students toward people with mental health disorders may differ according to the country in which they study.<sup>35</sup>

The objective of this study was to investigate the barriers pharmacy students perceive toward providing medication counselling for people with mental health disorders in Australia, Belgium, Estonia, Finland, India and Latvia.

## METHODS

Study design and data collection

Data for the study were collected between February 2006 and May 2007 as part of the International

Pharmacy Students' Health Survey (IPSHS). This was a one-time census survey of third-year pharmacy students studying at eight universities in six countries. The aim of the survey was to assess respondents' attitudes and willingness to provide pharmaceutical care to people with mental health disorders.<sup>35</sup> The sample of universities that participated in the survey was a convenience sample, but comprised educational institutions that were diverse in their geographical location, teaching language, and the cultural backgrounds of the enrolled students. Third-year students were selected as the study population because under the Bologna Declaration, an agreement to create a common framework for higher education across Europe<sup>36</sup>, this is the final year of study for those students undertaking the Bachelor of Pharmacy degree. All universities that participated in our study provided education related to mental ill-health and psychiatric medications, however, the format and duration of this education varied between universities. All students were invited to voluntarily complete the survey instrument in hard copy during a lecture or tutorial held at their respective university.

#### Survey instrument

Overall the survey instrument comprised 55 items, including one open-ended question. In addition to items concerning the demographic characteristics of the respondents, the survey instrument included the seven-item Social Distance Scale (SDS), 14-item Leeds Attitudes Toward Concordance (LATCon) scale, two multiple choice items regarding causes of disability, seven-items about the provision of pharmaceutical services, and 16 items concerning mental health stigma. A copy of the survey instrument can be obtained by contacting the corresponding author. This paper reports the analysis of open-ended question of the IPSHS. The survey instrument was administered in English or in an official language of the respective country. The wording of the item was adapted from an earlier survey of pharmacists' attitudes toward providing pharmaceutical care to users of psychiatric medications.<sup>22</sup>

The wording of the item was:

- "In community pharmacy, what factors do you think make it more difficult to provide medication counselling to patients with mental health condition/s?"(in English)
- "Miksi avoapteekissa on vaikea antaa lääkeneuvontaa mielenterveyspotilaille?" (in Finnish)
- "Millised tegurid muudavad uldapteegis vaimsete häiretega patsientide raviminoustamise raskeks?" (in Estonian)

The English version of the survey instrument was used at The University of Sydney, Katholieke Universiteit Leuven, Bombay College of Pharmacy, Dr. L.H. Hiranandani College of Pharmacy, University of Latvia and Riga Stradins University. The survey instrument was translated into Finnish for use at the University of Helsinki and Estonian for

use at the University of Tartu. The translations were performed using a back-translation protocol.<sup>37</sup> The translated versions of the survey instrument were pilot tested for face-validity using a convenience sample of pharmacy students or graduates.

#### Data analyses

Students' responses to the open-ended question were content analysed using a directed approach.<sup>38,39</sup> A model related to cultural competency in healthcare published by the Commonwealth Fund<sup>40</sup>, and previous research about the role of the pharmacist in providing care for people with schizophrenia and depression<sup>23,29,41</sup>, were used to inform the design of the coding framework. The directed approach, which is more structured than conventional content analysis, was chosen due to the brevity of the students' responses and the opportunity to utilise previously published research literature to inform the development of the framework. This method facilitated quantitative comparisons between students' responses in each of the participating countries. The coding system was based on the principle that barriers to medication counselling could be classified as pharmacist related, patient related or health-system related. Once coding commenced, the need for an additional code related to social and cultural barriers became evident. Thus all students' responses were recoded using one of four mutually exclusive codes (pharmacist related, patient related, health-system related, and social or cultural related).

Due to the low numbers of third year pharmacy students studying in Estonia and Latvia, data from these two Baltic States were pooled to facilitate comparisons to responses obtained from students studying in Finland, Australia and India. All quantitative data were analysed using SPSS version 14.0 (Chicago, IL). The demographic information was tabulated. Demographic characteristics (gender, birthplace, work experience in a pharmacy and the percentage of students who self-reported that they themselves had suffered a mental illness) of the responders and non-responders to the open-ended were compared using chi-squared tests (except where one cell had a value of less than 5, in which case a Fisher's Exact Test was used). The mean ages of the responders and non-responders were compared using Mann-Whitney U tests for each country. The level of significance was set at 0.05.

#### Ethical considerations

The study was approved by the Human Research Ethics Committee at the University of Sydney and the Institutional Review Board at Riga Stradins University. The study was deemed exempt from requiring ethics approval by the Katholieke Universiteit Leuven, University of Helsinki, Bombay College of Pharmacy, Dr. L.H. Hiranandani College of Pharmacy, University of Latvia and the University of Tartu. All study procedures were conducted in accordance with the World Medical Association Declaration of Helsinki.

## RESULTS

Survey instruments were returned by students from Australia (n=241, 98% response rate), Belgium (n=102, 74%), Estonia and Latvia (n=70, 86% response rate), Finland (n=130, 81% response rate) and India (n=106, 91% response rate). However, not all students who returned the survey instrument responded to the open-ended question. Responses to the open-ended question were received from students in Australia (n=188), Belgium (n=40), Estonia and Latvia (n=39), Finland (n=114) and India (n=85). There were no significant differences in terms of gender, age, birthplace, previous work experience in pharmacy or the percentages of students who reported that they themselves had suffered a mental illness, between the responders and non responders to the open-ended question. Respondents from Finland were older, more likely to be female, to have worked in a pharmacy and to report personal experience of mental illness than students studying in other countries (Table 1). With the exception of respondents from Australia, more than 98% of students were born in the country in which they studied.

45.1% of the barriers identified by the pharmacy students. Barriers coded as pharmacist related included the pharmacists' lack of knowledge or confidence, and the attitudes of pharmacists toward people with mental health disorders. Health-system related factors accounted for between 4.6% and 36.8% of the barriers identified by the pharmacy students. Health-system related barriers included lack of time and privacy in community pharmacies, community pharmacists not having access to patients' medical and/or medication records, and the perception it is the role of the physician to provide information about medications. Social and cultural barriers accounted for between 8.9% and 21.6% of the barriers identified by the pharmacy students. Social and cultural barriers included language barriers between the pharmacist and patient. Students studying in India were more likely than students studying in Australia, Belgium, Finland or Estonia and Latvia to attribute barriers to pharmacist related factors and social or cultural factors (Table 3). Patient related factors were most frequently identified by Finnish students and health-system related factors by Australian students.

	Australia <sup>d</sup> (n=188)		Belgium <sup>e</sup> (n=40)		Estonia and Latvia <sup>f</sup> (n=39)		Finland <sup>g</sup> (n=114)		India <sup>h</sup> (n=85)	
	N	Valid %	N	Valid %	N	Valid %	N	Valid %	N	Valid %
Gender										
Male	67	36	10	25	10	26	11	10	36	42
Female	121	64	30	75	29	74	103	90	49	58
Age (yrs)										
Mean	21		21		23		25		20	
Range	18-38		20-28		20-37		21-50		19-23	
Birthplace										
Australia	98	52								
Belgium			39	98						
Estonia					15	38				
Finland							114	100		
India									85	100
Latvia					24	62				
Other	90	48	1	2						
Work experience in a pharmacy										
Yes	138	73	2	5	24	62	114	100	7 <sup>c</sup>	8
No	50	27	38	95	15	38	0	0	76	92
Students self-reporting they had suffered a mental illness										
Yes	12 <sup>a</sup>	7	4	10	1	3	14 <sup>b</sup>	12	2	2
No	173	94	36	90	38	97	99	88	83	98

- a. 3 students did not respond to this item  
 b. 1 student did not respond to this item  
 c. 2 students did not respond to this item  
 d. University of Sydney  
 e. Katholieke Universiteit Leuven  
 f. University of Tartu; University of Latvia; Riga Stradins University  
 g. University of Helsinki  
 h. Bombay College of Pharmacy; Dr. L.H. Hiranandani College of Pharmacy

Patient related factors accounted for between 25.3% and 36.2% of barriers identified by the pharmacy students (Table 2). Examples of barriers coded as patient related included the belief that people with mental health disorders would not be willing to receive or incapable of understanding medication information (Table 3). Pharmacist related factors accounted for between 17.6% and

## DISCUSSION

Barriers perceived by pharmacy students in our study were broadly consistent with those identified by practising pharmacists in Canada and the United Kingdom.<sup>23,29,41</sup> These common issues, such as lack of adequate knowledge about mental health disorders were recognised at each study site.

Table 2. Percentage of patient-related, pharmacist-related, health-system related and social and cultural related barriers identified by the pharmacy students<sup>a</sup>

	Australia <sup>b</sup> (n=188)	Belgium <sup>c</sup> (n=40)	Estonia & Latvia <sup>d</sup> (n=39)	Finland <sup>e</sup> (n=114)	India <sup>f</sup> (n=85)
<b>Patient-related factors</b>	33.1	25.3	33.9	36.2	28.8
Patients not willing to communicate					
Patient perception about the role of pharmacists					
Not interested to receive medication counselling					
Symptoms of disorder means not able to understand information					
Side-effects of medication means patient not able to understand information					
Medication already familiar to the patient					
<b>Pharmacist-related factors</b>	17.6	36.0	30.4	29.3	45.1
Lack of confidence, knowledge or skill					
Attitudes and beliefs of the pharmacist					
Business motives of pharmacists					
Uncertainty about conducting counselling for family members and caregivers					
Need to provide counselling to family members and caregivers only					
<b>Health-system related factors</b>	36.8	28.0	26.8	22.9	4.6
Lack of privacy in community pharmacies					
Lack of time					
Role of physician to provide information about medications					
Pharmacists not having access to medical histories					
Poor communication between pharmacists and physicians					
Poor communication between physicians and patients					
The high cost of medications means patients not able to follow advice					
Lack of mental health education available for healthcare professionals					
<b>Social or cultural related factors</b>	12.5	10.7	8.9	11.7	21.6
Stigma surrounding mental disorders					
Language barriers					
Cultural barriers					
Different interpretations about causes and prognosis of mental disorders					

- a. Some students identified more than one barrier.  
 b University of Sydney  
 c Katholieke Universiteit Leuven  
 d University of Tartu; University of Latvia; Riga Stradins University  
 e University of Helsinki  
 f Bombay College of Pharmacy; Dr.L.H.Hiranandani College of Pharmacy

Nevertheless, there were also differences in barriers perceived by pharmacy students in each country.

A common patient related barrier in all countries was the belief that symptoms of the mental health disorders and/or side effects of medication treatments would mean that people would not understand the information provided by pharmacists. While some psychotropic medications may impair cognitive function, this barrier may reflect a misconception on behalf of the students. This is consistent with previous research that suggested many pharmacy students may not understand the nature of mental health disorders.<sup>35</sup> A proportion of Australian pharmacy students and graduates indicated in a previous study that people with severe depression and schizophrenia are hard to talk to or that they should 'pull themselves together'.<sup>42</sup> Another patient related barrier was the perception that people with mental health disorders would not be interested to receive medication information. This finding has also been reported in a study of Dutch pharmacists who believed that people with schizophrenia would be disinterested to

receive medication information.<sup>43</sup> This belief is at odds with the unmet need for medication information commonly reported among this patient population.<sup>24,25,43</sup> Frustration with the lack of information provided by health professionals may be a reason people with mental health disorders frequently seek information using the internet and from telephone-based information services.<sup>44-46</sup>

Previous research has suggested that people from non-western ethnic backgrounds are more likely blame people with mental health disorders for having their condition.<sup>47</sup> This was not; however, reflected in higher number patient related barriers being identified by students from non-western backgrounds. People with mental health disorders in non-western societies may attract community support.<sup>48</sup> Respondents from India emphasised the role of family members and caregivers as recipients of medication counselling. In contrast, people from western societies may prioritise the autonomy of individuals.

Table 3. Examples of patient-related, pharmacist-related, health-system related and social and cultural related barriers to medication counselling

Patient-related factors
<ul style="list-style-type: none"> <li>• "Patients are unwilling/uncomfortable talking about their condition" (Australia)</li> <li>• "Patients and their family members not willing to talk about medications" (India)</li> <li>• "Any patient with a mental health condition is not in a stable condition, so he won't percept any changes in his treatment if he is informed about his condition" (India)</li> <li>• "Patients who suffer from a mental health condition may not understand when a normal person speaks" (India)</li> <li>• "Patients with mental illness know themselves what they need or at least they think so" (Belgium)</li> <li>• "These patients would not listen to or believe the pharmacist" (Estonia)</li> </ul>
Pharmacist-related factors
<p>"Pharmacists need more education about the psychology of mental illness rather than just knowing about the D2 antagonist" (Australia)</p> <ul style="list-style-type: none"> <li>• "A pharmacist must first understand the psychology of the patient" (India)</li> <li>• "Hesitation of the pharmacist towards people with mental health conditions..." (India)</li> <li>• "Pharmacists are afraid to be connected with such people" (Latvia)</li> <li>• "...pharmacists need to be more careful than for people with other health problems" (Finland)</li> </ul>
Health-system related factors
<ul style="list-style-type: none"> <li>• "The physician should explain about the medication" (Latvia)</li> <li>• "In the presence of other people [in the pharmacy], patients with mental disorders may feel uncomfortable" (Estonia)</li> <li>• "Lack of private counselling areas in community pharmacies" (Australia)</li> <li>• "You don't know the cause of the depression..." (Belgium)</li> </ul>
Social or cultural related factors
<ul style="list-style-type: none"> <li>• "Our society and environment is mainly responsible for barriers to providing medication counselling" (India)</li> <li>• "Mental health is a taboo subject in our country" (Finland)</li> <li>• "Language barriers" (Australia)</li> </ul>

Pharmacists' uncertainty in relation to the role of family members and caregivers were classified as pharmacist related barrier. Students in India reported being particularly uncertain about how much medication counselling to provide to family members and caregivers of people with mental health disorders. The role of family members in caring for people with mental health disorders may be different in India than in the other countries the study was conducted.<sup>49,50</sup> In India family may be expected to be involved in care of people with mental health disorders; thus, there may be a need to involve family members in decisions related to medications.<sup>50,51</sup> This may not be the case in the other countries. Several Indian students also believed that pharmacists should only provide medication counselling to family members or caregivers. This belief may have arisen from the perception that providing medication counselling to people with mental health disorders may decrease medication adherence<sup>52</sup>, a perception that is not necessarily supported by research evidence.<sup>53</sup>

Perceived lack of knowledge and skill to provide medication counselling to people with mental health disorders was common pharmacist related barrier identified by students in all countries. Pharmacy education in many countries remains primarily focused on the pharmacological properties of medications rather than the needs and experiences of people taking when these medications. Students commonly reported the need to better understand the psychology of mental health disorders. New models of pharmacy education may be required to provide students with an insight into people's experience of their illness. Although medical students' attitudes may improve over the course of medical education<sup>54</sup>, this finding was not replicated in a study of pharmacy students' attitudes.<sup>42</sup> Greater consumer involvement in development and delivery of mental health pharmacy education may be one effective strategy to improve the attitudes of

pharmacy students toward people with mental health disorders.<sup>55</sup>

Students in India were more likely to attribute barriers to pharmacist related factors and less likely to health-system related factors than students studying in other countries. Students studying in India were least likely to have worked in a pharmacy and, therefore, may have been less likely to cite barriers related to the health-system factors. Lack of work experience in pharmacies may also have restricted their ability to identify health-system related barriers. Additionally, the Bachelor of Pharmacy degree program in India is primary focused on preparing graduates to work within the pharmaceutical industry.

A common health-system related barrier identified by the students studying in Australia, Belgium, Estonia and Latvia was lack of privacy. This barrier has also been reported by Canadian pharmacists.<sup>29</sup> This finding may highlight a shortcoming in the layout and design of community pharmacies in these countries. Despite recent initiatives to improve the layout of pharmacies in Australia, the majority of community pharmacies lack private areas for conducting medication counselling at the time of dispensing. A greater number of Finnish pharmacies include purpose built counselling stations designed to protect patient privacy. The need to ensure patient privacy in community pharmacies is also enacted in Finnish law.<sup>20</sup> In contrast, few Indian students identified lack of privacy as a barrier to the provision of medication counselling. This was likely due to underlying beliefs about the relative need for privacy rather than the layout of community pharmacies in India.

Pharmacists not having access to medication histories, medical histories or patient diagnostic data were commonly cited health-system related barriers in relation to providing medication counselling. The development and implementation

of electronic patient record systems may provide community pharmacists with access to more accurate and comprehensive medication histories. This may facilitate the improved provision of medication counselling to people with mental health disorders. However, existing electronic patient record systems in pharmacies may be incomplete and require pharmacists to be more proactive and systematic when gathering patient information.<sup>56</sup> Electronic patient record systems may improve communication between pharmacists and physicians if pharmacists are able to add their own notices about patients' medication to the records, such as side-effects or interactions. However, this does not remove the need to build clear agreement of the roles of physician and pharmacist in managing patients' medication therapy. One common health-system related barrier identified by pharmacy students was the impression that it is physicians' responsibility to provide counselling about the medication. A survey conducted in 1994 revealed that despite pharmacists' medication counselling being mandated in law, many Finnish physicians believed that pharmacists should be cautious when discussing the indication of psychotropic medications, especially neuroleptics, if the indication is not specified on the prescription.<sup>52</sup> While it is not clear how many physicians retain these views, these findings support the need to find consensus about the roles and responsibilities of pharmacists and physicians concerning medication counselling.

Language was a social and cultural barrier to medication counselling identified by Australian students. Australia is recognised for its cultural diversity (as reflected in the fact approximately half the Australian pharmacy student respondents in our study were not born in Australia). The need to consider culture and language when conducting medication counselling has received recent attention.<sup>57-59</sup> This may be particularly true in relation to people with mental health disorders. In contrast, Belgium, Estonia, Finland, India and Latvia are more homogenous in terms of the nationalities of the inhabitants. These countries may include people from a variety of cultural and religious backgrounds from within the country. A recent study indicated ethnic Russians living in Estonia were less satisfied with medication information provided in community pharmacies than ethnic Estonians.<sup>59</sup> However, few Estonian or Latvian students cited cultural barriers in relation to providing medication counselling to people with mental health disorders.

#### Limitations

Not all universities offering pharmacy education in Australia, Belgium, Finland and India participated in the IPSHS, and thus, the results may not be generalisable to all pharmacy students within these countries. It is possible that students from urban and rural backgrounds perceived different barriers, although this was not explored in the present study. The term mental disorders refers to a diverse range of neuropsychiatric disorders with some commonalities.<sup>60</sup> It is not known whether barriers pharmacy students perceive to medication

counselling differed accordingly to the type of mental disorder. Despite students studying in Latvia and Estonia likely having different cultural backgrounds, data from these two Baltic States were pooled. The numbers of respondents from these countries individually were otherwise insufficient to facilitate meaningful comparison. Future studies are needed to determine whether students' self-perceived barriers to medication counselling differ in Latvia and Estonia.

The directed coding of responses facilitated an informed approach to data interpretation. However, a limitation of the directed content analytic approach was that some of the nuances in the data may have been lost.<sup>39,61</sup> However, owing to the brevity of the students' responses, many of which were listed in point-form, this was unlikely to have been a significant issue in our study.

Detailed data concerning the content, format or duration of mental health pharmacy education were not collected from the eight universities that participated in IPSHS. However, on the basis of other reports it is reasonable to assume that there was considerable variation between universities.<sup>62,63</sup> Internship experience in the pharmacy workplace is now a core component of undergraduate education in many countries. However, it was not assessed whether barriers perceived by students who had worked in pharmacies differed from those who had not. Previous studies have produced conflicting results as to whether internship experience in the pharmacy workplace improves students' attitudes toward people with mental health disorders.<sup>27,42</sup> Nor was it assessed whether the barriers identified varied according to the age or gender of the respondents, or according to whether the students had personal or family experience of mental health disorders. The focus of this study was on the provision of verbal medication counselling in community pharmacies. Future studies may seek to explore the use of alternative methods of communication, such as e-mail counselling about antidepressant medications.<sup>64</sup>

#### CONCLUSIONS

Misconceptions related to mental health disorders were common among students in all countries. The nature of barriers to medication counselling identified varied according the country in which the students studied. The responses of students highlighted areas in which pharmacy education and pharmacy practice may need to be improved.

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## CONFLICT OF INTEREST

All authors declare that they have no conflicts of interest relevant to the subject of the manuscript. No

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