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## UK Pharmacy Students' Opinions on Mental Health Conditions

Hanna, L-A., Bakir, M., & Hall, M. (2018). UK Pharmacy Students' Opinions on Mental Health Conditions. *American Journal of Pharmaceutical Education*, 82(7), [6560]. <http://www.ajpe.org/doi/abs/10.5688/ajpe6560>

**Published in:**  
American Journal of Pharmaceutical Education

**Document Version:**  
Peer reviewed version

**Queen's University Belfast - Research Portal:**  
[Link to publication record in Queen's University Belfast Research Portal](#)

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1 **Title Page (manuscript for consideration in the ‘Research Brief’ category, not ‘Research**  
2 **article’.)**

3

4 **Title:** A Questionnaire Study Investigating Future Pharmacists’ Opinions on Mental Health  
5 Conditions

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17

18 **Keywords:** mental health, opinions, pharmacy students, questionnaire

19

20 **Total number of manuscript pages:** 16 after suggested reviewer additions (this includes the title  
21 page and abstract)

22 **Total number of tables:** 1 and **Total number of figures:** 1

23 **Financial disclosures:** none

24 **Conflicts:** none. The paper has not been submitted elsewhere in similar form and all authors have  
25 contributed significantly to the publication. The School of Pharmacy Ethics Committee at Queen’s  
26 University Belfast approved the research (Ref 025PMY2016; Nov 22, 2016).

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28

1 **Abstract**

2 **Objective:** Given the increased emphasis on mental health awareness recently, this study aimed to  
3 ascertain future pharmacists' opinions on mental health conditions (and investigate the influence of  
4 gender), since they would soon be advising patients about this in their capacity as healthcare  
5 professionals.

6 **Methods:** Following ethical approval and piloting, all final year Master of Pharmacy students at  
7 Queen's University Belfast were invited to complete a paper-based questionnaire during a compulsory  
8 class. Section A was an adapted version of a United Kingdom (UK) public opinion questionnaire on  
9 mental health ('Attitudes to Mental Illness'), largely consisting of rating questions. Section B gathered  
10 non-identifiable demographic data. Descriptive statistics were undertaken; Mann-Whitney U test and  
11 Chi-square test were used for gender comparisons with significance set at  $p < 0.05$ .

12 **Results:** An 89% (97/109) response rate was obtained. Most considered that pharmacological and  
13 non-pharmacological measures were beneficial in the management of mental health conditions (89%  
14 and 96%, respectively) and that people with mental illness had the same rights to jobs as anyone else  
15 (82%). However, only 57% of student respondents felt confident discussing mental health issues with  
16 patients and 36% deemed university training to be satisfactory. Males were more likely than females  
17 to 'agree strongly' or 'agree slightly' that they would not want to live next door to someone who has  
18 been mentally ill' ( $p = 0.01$ ).

19 **Conclusion:** While some positive opinions were evident, more work is needed to prepare these future  
20 pharmacists for roles within mental health care teams.

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1    **INTRODUCTION**

2    The National Institute for Health and Care Excellence (NICE) states that common mental health  
3    disorders such as depression, generalized anxiety disorder, panic disorder, obsessive-compulsive  
4    disorder, post-traumatic stress disorder and social anxiety disorder, may affect up to 15% of the  
5    United Kingdom (UK) population.<sup>1</sup> According to the National Institute of Mental Health (NIMH), the  
6    prevalence of adults in the United States of America (USA) with any mental illness is 17.9% (2015  
7    data).<sup>2</sup> However, as many individuals do not necessarily seek medical help, mental health conditions  
8    can be undiagnosed and underreported. Although some mental health problems may be self-limiting  
9    or respond to self-care measures,<sup>3</sup> when an individual delays or avoids medical care, serious  
10   consequences can arise.<sup>4-6</sup> While the severity of individual mental health disorders varies, all can be  
11   associated with significant long-term concerns. For example, depression is associated with significant  
12   morbidity and mortality and is the most common disorder contributing to suicide.<sup>1</sup>

13  
14   Research investigating attitudes towards mental illness has been conducted at population levels  
15   among the general public (such as in Australia,<sup>7</sup> UK<sup>8</sup> and USA<sup>9</sup>) and media campaigns strive to raise  
16   awareness and aim to dispel myths.<sup>10</sup> Work has also been conducted to investigate various university  
17   students' mental health<sup>11-13</sup> and their attitudes towards mental illnesses (involving medical,<sup>14,15</sup>  
18   nursing<sup>16</sup> and pharmacy students<sup>17-22</sup>). Unfortunately, views held by future healthcare professionals  
19   towards mental illness have not always been appropriate. For example, Bell and colleagues'  
20   questionnaire study conducted in six different countries (Australia, Belgium, Estonia, Finland, India  
21   and Latvia) revealed that pharmacy students' attitudes towards people with mental health illnesses  
22   (schizophrenia and severe depression) was sub-optimal.<sup>18</sup>

23  
24   The aim was to investigate Queen's University Belfast (QUB) Level 4 (ie the final year of the degree  
25   program) pharmacy students' opinions on mental health. Specifically, the objectives were investigate  
26   their attitudes towards mental health conditions and determine whether gender affected responses.

27

1 To the best of the authors' knowledge, there has been limited work in this area involving pharmacy  
2 students particularly in the UK and no work specifically conducted in Northern Ireland. This research  
3 adds to the existing body of literature by providing useful baseline data from a UK context. Moreover,  
4 it is important to ascertain pharmacy students' opinions on mental health conditions, given that they  
5 will be advising and counselling patients about this important clinical subject area in their capacity as  
6 a healthcare professional (and since the number of people affected by mental health conditions  
7 continues to grow<sup>1</sup>). Importantly, it is anticipated that the findings of this research will inform future  
8 teaching of the subject matter. From a pharmacy education standpoint, "developing a clinical  
9 knowledge base that culminates in the demonstrated ability of learners to apply knowledge to  
10 practice" and preparing students "to provide patient-centered collaborative care" are stipulations in  
11 the Accreditation Council for Pharmacy Education (ACPE) Accreditation standards and Key  
12 Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree.<sup>23</sup>  
13 These are also reiterated in the UK Master of Pharmacy (MPharm) accreditation standards.<sup>24</sup>

14

## 15 **METHODS**

16 Ethical approval for this work was obtained from the School of Pharmacy Ethics Committee at QUB  
17 (Ref 025PMY2016; Nov 22, 2016). All Level 4 (final year) MPharm students at QUB were invited to  
18 participate in the study. The inclusion criterion was that the study participants had to be currently  
19 enrolled Level 4 students. Level 4 students were selected because they had been taught about mental  
20 health conditions prior to conducting the research (unlike the other year groups) and also because they  
21 were soon to graduate from university and begin their career in pharmacy practice.  
22 Data were collected by means of a paper-based self-completed questionnaire. The questionnaire was  
23 developed with reference to the wider literature<sup>7-18</sup> and consisted of two sections. Section A was an  
24 adapted version of the 'Attitudes to Mental Illness' UK public opinion questionnaire,<sup>8</sup> consisting of  
25 many attitudinal statements measured using a five-point Likert scale (Agree strongly/Agree  
26 slightly/Neither agree nor disagree/Disagree slightly/Disagree strongly) and, on occasion, a seven-  
27 point scale (Very uncomfortable to Very comfortable). The Attitudes to Mental Illness questionnaire  
28 was developed and funded by the Department of Health and includes items from the 'Community

1 Attitudes toward the Mentally Ill (CAMI)' scale and the 'Opinions about Mental Illness' scale.<sup>8</sup>  
2 Further statements were included about confidence counselling patients on mental illness and training  
3 provision within the degree program. Section B related to demographic information and gathered non-  
4 identifiable data only.

5  
6 To maximize response rates, the questions were largely in a close-ended question format.<sup>25</sup> The  
7 questionnaire was piloted with ten pharmacist postgraduate students at the School in November 2016.  
8 As a result, one minor modification was made (wording was amended for one question to clarify that  
9 respondents could select as many options as they wished).

10

11 Questionnaire distribution took place during Semester 1 (in December 2016) in a compulsory class. In  
12 January 2017, the responses from the completed questionnaires were coded and entered into a  
13 customized database developed on IBM SPSS v22 (SPSS Inc., Chicago, IL) for statistical analysis.  
14 Data analysis largely took the form of descriptive statistics. Interpolated median scores were  
15 calculated on the rating questions. Comparisons were done between gender responses as previous  
16 work revealed differences in opinions.<sup>12,14</sup> Mann-Whitney U test and Chi-square test were used for  
17 gender comparisons with significance set at  $P < 0.05$  a priori. The Mann-Whitney U test was performed  
18 on the data that was ordinal in nature whereas the Chi-square test was performed on the data that was  
19 categorical (nominal) in nature.

20

## 21 **RESULTS**

22 A response rate of 89% (97/109) was obtained; 40% (39/97) were males and 60% (58/97) females.  
23 Mean age of the year group was 22.8 years. Before commencing the MPharm degree program at  
24 QUB, the majority of students had received their education in the UK and Ireland (83%, 80/97) with  
25 some from Asia (10%, 10/97). Others (7%, 7/97) did not disclose this information.

26

1 Students were asked about the person closest to them who has/had some kind of mental illness. They  
2 were instructed to select one option from a list. The results to this question are outlined below, with  
3 the top three most popular selections being: a friend, no one known, and immediate family.

- 4 • Friend (24/97; 25%)
- 5 • No-one known (23/97; 24%)
- 6 • Immediate family (spouse\child\sister\brother\parent) (18/97; 19%)
- 7 • Other family (uncle\ aunt\cousin\grandparent etc.) (12/97; 12%)
- 8 • Acquaintance or work colleague (6/97; 6%)
- 9 • Self (5/97; 5%)
- 10 • Partner (4/97; 4%)
- 11 • Other (5/97; 5%)

12

13 In relation to the hypothetical statement about how likely they would be to go to a doctor for help if  
14 they felt they had a mental health problem, responses were: 13/97 (13%) ‘very likely’, 43/97 (44%)  
15 ‘quite likely’, 13/97 (13%) ‘neither likely nor unlikely’, 22/97 (23%) ‘quite unlikely’ and 6/97 (6%)  
16 ‘very unlikely’. The interpolated median was 3.7 (5 equated to ‘very likely’ to 1 for ‘very unlikely’).

17

18 In another hypothetical statement, students were asked to rate how comfortable they would feel talking  
19 to a friend or family member about their mental health. For example, telling a friend or family member  
20 that they (the student) had a mental health diagnosis and how it affected them. Respondents had to rate  
21 their answer from 1 (very uncomfortable) through to 7 (very comfortable). The interpolated median for  
22 this statement (n=97 respondents) was 4.4. Similarly (and using the same scale), students had to rate  
23 how comfortable they would feel talking to a current or prospective employer about their mental health.  
24 The interpolated median for this statement (n=97 respondents) was 2.1.

25

26 Regarding statements about future relationships, students had to indicate their level of agreement [1  
27 (‘disagree strongly’) to 5 (‘agree strongly’)]. The interpolated medians for each are: I would be

1 willing to continue a relationship with a friend who developed a mental health problem (4.9), to live  
2 with someone with a mental health problem (4.5) and to work with someone with a mental health  
3 problem (4.7).

4  
5 When asked about the number of people in the UK who have a mental health problem at some point  
6 in their lives, only 35/97 (36%) respondents selected the correct answer (1 in 4 people). Furthermore,  
7 students had to indicate their level of agreement [1 ('disagree strongly') to 5 ('agree strongly')] about  
8 various conditions such as stress, grief, depression and drug addiction being types of mental health  
9 conditions. The results for this question as presented in Figure 1. Moreover, 23/97 (24%) thought a  
10 person was mentally ill if they were incapable of making simple decisions about his/her life and 34/97  
11 (35%) thought a mentally ill person could not be held responsible for his/her own actions.

12  
13 Other attitudinal statements on mental health conditions and corresponding results are provided in  
14 Table 1. While the majority (93%) considered that virtually anyone could become mentally ill, about  
15 one fifth of respondents (22%) thought there was something about people with mental illness that  
16 made it easy to tell them apart from 'normal' people. Positive opinions were held by most with regard  
17 to people with mental illness having the same rights to jobs as anyone else (82%) and not being  
18 excluded from holding public office positions (74%). Most thought that pharmacological and non-  
19 pharmacological measures were beneficial in the management of mental health conditions (89% and  
20 96%, respectively) and that services should typically be provided via community-based facilities  
21 where possible (86%). However, just over half (57%) felt confident talking about mental illness with  
22 patients and only 36% felt that their university training was adequate. About 6 out of every 10  
23 respondents knew what advice to give a friend with a mental health problem so that they could get  
24 professional help. Moreover, in relation to the statement 'I would not want to live next door to  
25 someone who has been mentally ill', males were more likely than females to 'agree strongly' or  
26 'agree slightly' [8/39 (21%) versus 6/58 (10%),  $p=0.01$ ]. However, given the small numbers involved,  
27 this result should be interpreted with caution. Females were more likely to 'disagree strongly' or



1 'disagree slightly' that people with mental health problems should be excluded from taking public  
2 office [48/58 (83%) versus 23/38 (61%), p=0.01].

3 Lastly, when asked about whether people with mental illness experienced stigma and discrimination  
4 nowadays because of mental health problems, 51/97 (53%) selected 'yes, a lot', 46/97 (47%) selected  
5 'yes, a little' and no one selected 'no'.

6

## 7 **DISCUSSION**

8 Unlike other research,<sup>12,14</sup> gender played a limited role in this current study as there were few  
9 significant differences between male and female responses. Only a small percentage (5%) of students  
10 reported having a mental illness which is a much lower prevalence than that previously reported in the  
11 literature, for example, by Goodwin and colleagues<sup>11</sup> for first year undergraduate university students,  
12 Alfaris and colleagues<sup>12</sup> for health professions' university students (and in particular female students)  
13 and Payakachat<sup>13</sup> and Panthee<sup>19</sup> and colleagues for pharmacy students. Thankfully the majority of  
14 respondents suggested they would be comfortable talking to friends and family about a mental health  
15 condition (if applicable), although over 40% appeared reluctant to seek medical help from a doctor.  
16 Moreover, the majority of respondents disagreed that most people with mental health problems go to a  
17 healthcare professional to get help. In the UK, the doctor is a key medication provider in primary care  
18 and a gateway to other mental health services. Similarly, previous work by Reavley and colleagues<sup>26</sup>  
19 in Australia revealed that 16-24 year olds were less likely to seek help for mental health issues than  
20 middle-aged or older adults. Furthermore, Downs and Eisenberg<sup>27</sup> concluded that people who need  
21 professional support the most are actually the least likely to source it. Ultimately, pharmacy educators  
22 cannot assume that students pursuing healthcare degrees are looking after their own health adequately.  
23 We found this previously in relation to alcohol intake: the mean intake of alcohol was 18.3 units per  
24 week (exceeding the recommended UK amount) with around 70% of pharmacy students reporting  
25 binge drinking on at least one day of the week.<sup>28</sup> In QUB School of Pharmacy, a 'mental health first  
26 aid' scheme has just been launched whereby a cohort of students across the year groups are trained to  
27 spot warning signs of mental health issues among their peers and signpost them to appropriate sources  
28 of help. It would be useful to evaluate the impact of this and conduct further research to ascertain

1 types of professional support that students do, or would consider accessing, in relation to mental  
2 health issues, and barriers towards seeking help.

3 In this current study, respondents did not appear particularly comfortable talking about personal  
4 mental health issues with employers. The score was much greater in relation to friends and family. It  
5 is difficult to draw meaningful conclusions in relation to this as people are probably less likely to talk  
6 to employers (than family and friends) about personal issues anyway. However, it could be related to  
7 concerns about stigma and discrimination since all students also thought stigma and discrimination  
8 associated with mental illness exists today and most considered that we (society) should adopt a far  
9 more tolerant attitude toward people with mental illness. Northern Ireland may be slower to adopt  
10 appropriate attitudes towards mental health than other countries. For example, a public awareness  
11 campaign rolled out across various parts of Europe by Kohls and colleagues<sup>29</sup> gleaned less positive  
12 results in Ireland compared with Germany and Portugal. That being said, many of our students'  
13 attitudes towards mental health in this current study were positive and appropriate, unlike that  
14 previously reported by Bell and colleagues about pharmacy students.<sup>18</sup> The majority of the students in  
15 this current study thought that people with mental health problems should have the same rights to a  
16 job as anyone else (including being given responsibility and public office positions), and seemed fine  
17 with the concept of living next door and having future relationships with people who had mental  
18 health problems.

19

20 With reference to the training provided and knowledge of the subject area, many student respondents  
21 correctly thought that virtually anyone could become mentally ill and all identified common mental  
22 illnesses (schizophrenia, depression and bipolar disorder) as being such. However, only about 1 in  
23 every 2 respondents felt confident talking about mental illness with patients and 6 in every 10 knew  
24 what advice to give a friend with a mental health problem. Only 1 in every 3 respondents considered  
25 that the university training was adequate. These findings, among others, suggest that the current  
26 training provision (a lecture series) within the School of Pharmacy is potentially not enough to  
27 adequately prepare future pharmacists for practice. Similarly, Aaltonen and colleagues<sup>30</sup> investigated

1 perceived barriers among pharmacy students in relation to providing medication counselling for  
2 people with mental health disorders (in Australia, Belgium, Estonia, Finland, India and Latvia; n=649  
3 respondents) and concluded that more work is needed within pharmacy education programs.  
4 Furthermore, in this current study, some misconceptions exist (in relation being able to tell mentally  
5 ill patients apart from others). In light of this, the authors consider that QUB teaching should be  
6 reviewed and evidence-based interventions explored.<sup>16,17,31-33</sup>

7  
8 The study has several weaknesses. The research was only conducted within one year group at one  
9 school of pharmacy and therefore the findings are not generalizable. It is also possible that attitudes  
10 could change depending on when the study was conducted in the semester (for example, knowledge  
11 of mental health conditions could be better after revising for a clinical examination than beforehand  
12 and attitudes might change after working in practice, as has been reported previously for pharmacy  
13 students<sup>20</sup>).

## 14 15 **CONCLUSION**

16 Many of these future pharmacists appeared to have appropriate attitudes towards mental health and  
17 people with mental health conditions. Gender seemed to have very limited influence on attitudes.  
18 However, there was a lack of confidence around advice provision to friends and patients and level of  
19 dissatisfaction with the current training provision. The reluctance to seek medical help if they ever  
20 developed a mental illness probably mirrors the view held by many members of the general public,  
21 but is perhaps surprising given these students are future healthcare professionals.

22  
23 The work adds to the field and provides us with a timely opportunity to reflect on current teaching and  
24 make changes to our educational practice. From the findings, it seems that our mental health  
25 education is not at an appropriate level to adequately prepare these students for practice. Additionally,  
26 this study should provide useful baseline data for other schools of pharmacy in the UK and potentially  
27 beyond. Future research should focus on an exploration of whether having personal mental health

1 issues subsequently affects advice provision to patients and also evaluate the impact of introducing  
2 specific mental health awareness training into the program.

3

#### 4 **ACKNOWLEDGMENTS**

5 The authors wish to thank the students who participated in the study (including the pilot).

6 **Financial disclosures:** none. This research did not receive any specific grant from funding agencies  
7 in the public, commercial, or not-for-profit sectors.

8 **Conflicts:** none.

9

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Table 1 Respondents' Views on Various Attitudinal Statements Relating to Mental Illness (N=97, unless otherwise stated)

	<b>Agree strongly (5)</b>	<b>Agree slightly (4)</b>	<b>Neither Agree nor Disagree (3)</b>	<b>Disagree slightly (2)</b>	<b>Disagree strongly (1)</b>	<b>Interpolated median</b>
	<b>n,%</b>	<b>n,%</b>	<b>n,%</b>	<b>n,%</b>	<b>n,%</b>	
There is something about people with mental illness that makes it easy to tell them apart from normal people (n=96)	2 2%	19 20%	17 18%	30 31%	28 29%	2.2
Mental illness is an illness like any other	59 61%	19 20%	1 1%	8 8%	10 10%	4.7
Virtually anyone can become mentally ill	72 74%	18 19%	2 2%	2 2%	3 3%	4.8
We need to adopt a far more tolerant attitude toward people with mental illness	57 59%	32 33%	4 4%	2 2%	2 2%	4.7
People with mental illness are a burden on society	2 2%	5 5%	9 9%	17 18%	64 66%	1.3
Increased government spending on mental health services is a waste of money	3 3%	2 2%	3 3%	19 20%	70 72%	1.2
People with mental illness should not be given any responsibility	2 2%	4 4%	13 13%	30 31%	48 49%	1.5
People with a history of mental illness should be excluded from taking public office (n=96)	4 4%	8 8%	13 14%	31 32%	40 42%	1.8
I would not want to live next door to someone who has been mentally ill	1 1%	13 13%	15 15%	35 36%	33 34%	1.9
As far as possible, mental health services should be provided through community based facilities	39 40%	45 46%	11 11%	2 2%	0 0%	4.3
People with mental health problems should have the same rights to a job as anyone else	38 39%	42 43%	10 10%	5 5%	2 2%	4.3
If a friend had a mental health problem, I know what advice to give them to get professional help	21 22%	39 40%	18 19%	18 19%	1 1%	3.8
Medication can be an effective for people with mental health problems	33 34%	50 52%	7 7%	6 6%	1 1%	4.2
Psychotherapy can be an effective for people with mental health problems	59 61%	34 35%	3 3%	0 0%	1 1%	4.7
Most people with mental health problems go to a healthcare professional to get help	14 14%	19 20%	19 20%	39 40%	6 6%	2.7
As a future healthcare professional, I feel confident about discussing mental illnesses with patients	20 21%	35 36%	18 19%	18 19%	6 6%	3.7
The university training I have received on mental health has been satisfactory	13 13%	22 23%	30 31%	26 27%	6 6%	3.1

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