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ORIGINAL ARTICLE

Attitudes towards patients with mental illness in Irish medical students

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Abstract
Background A positive attitude to patients with mental illness is important in all branches of medicine, as it can impact on the quality of care patients receive from doctors. Attitudes of preclinical medical students is an under researched area.
Aims This study aims to (1) assess the attitudes of preclinical and clinical medical students to patients with mental illness and (2) assess the effect of two modules taught using different teaching methods on students' attitudes to patients with mental illness.
Methods During the same academic year all students ($N = 394$) completing the year 3 preclinical psychiatry module and the final year psychiatry module completed an attitudinal questionnaire at the beginning and following completion of the module. Seventy-two percent of students completed both pre- and post-module questionnaires in full ($n = 285$).
Results There was no significant difference in attitudes displayed by preclinical and clinical medical students prior to starting their respective modules. An association was found between female gender and more tolerant attitudes ($r = 0.20$, $p = 0.02$). Students who knew someone with experience of mental illness were associated with more tolerant attitudes ($r = 0.32$, $p < 0.001$). Final year students who completed the clinical module demonstrated a positive attitudinal shift ($p < 0.001$), and the attitudes of third and final year male students improved significantly following the module ($p < 0.05$).
Conclusions Given the high rates of physical illness in patients with mental health problems, specific educational initiatives to address medical student's attitudes to patients with mental health problems should be an educational priority in medical school.

Keywords Psychiatry · Stigma · Students · Attitudes · Education · Mental illness

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Introduction

A positive attitude towards patients with mental illness is important in all branches of medicine. Attitudes towards patients with mental illness impact on the quality of care patients with mental illness receive from physicians and also the ability of doctors to identify and respond to their patient's psychological needs. It is well established that people with mental illness have poorer physical health [1, 2, 3]. Schizophrenia is associated with a decreased life expectancy of 12–15 years, because of its association with obesity, sedentary lifestyles and smoking, as well as an increased rate of suicide [4]. Depression is associated with an increased risk of cardiovascular and cerebrovascular disease [5, 6], and it is estimated that up to one-third of people with chronic physical illness have a co-morbid depressive disorder [7]. However, there is evidence that

physical illness often goes undetected in patients with mental illness [8]. Some authors have proposed that discriminatory attitudes held by health professionals may in part explain this finding [9]. 'Diagnostic overshadowing' a phenomenon in which the patients' physical problems are "over-shadowed" and attributed to their psychiatric diagnosis is well described and may represent an example of the impact of such discriminatory attitudes [10].

Regulatory bodies such as the Irish Medical Council and the European Union of Medical Specialists have made explicit that appropriate attitudes to patients are core competencies in physicians in general and psychiatrists in particular [11, 12].

The attitudes of medical students towards people with mental illness are particularly important. Not only they are the treating doctors of the future but they will also teach and guide junior staff, other health professionals and the public by their attitudes and behaviour towards patients with mental health or psychological difficulties. Medical students are still in training, and their attitudes have been demonstrated to be more flexible than established health professionals, as such their attitudes can be targeted by specific educational interventions [13].

Previous attitudinal studies in medical students nationally and internationally have focussed on clinical students and their attitudes to psychiatry as a specialty [14, 15, 16, 17]. Attitudes of preclinical students is an under researched area. Some of the questionnaires used to assess attitudes to psychiatry do include a small number of questions which assess students' specific attitudes to patients with mental illness. The ATP-30 (Attitudes to Psychiatry with 30 questions), one of the most commonly used attitudinal questionnaires, includes only three questions on attitudes to patients with mental illness [18]. While one might suspect that a positive attitude to psychiatry would be associated with positive attitudes to patients with mental illness, the literature indicates that mental health professionals hold attitudes to patients with mental illness that are at least similar to, if not more stigmatising, those of the general public [19, 20]. Little research internationally, and no research nationally has looked at the attitudes of clinical or preclinical medical students to patients with mental illness exclusively [21, 22, 23].

A number of studies have looked at the capacity of taught modules in psychiatry to influence students' attitudes to the specialty [15, 17, 24, 25, 26]. There is little published data to indicate whether taught modules in psychiatry have the capacity to affect students' attitudes either positively or negatively to patients with mental illness.

Aims of this study

- To assess the attitudes of preclinical and clinical medical students to patients with mental illness.
- To assess the effect of two modules taught using different teaching methods on students' attitudes to patients with mental illness.

Subjects and methods

In University College Dublin, psychiatry is taught as part of an introductory multi-subject module in the final preclinical year (year 3) and again as a final year subject with half the class completing a module which includes an attachment to a clinical team in year 5 and the remaining half completing their psychiatry module in their final year (year 6). More recently, a Professional Completion Module just prior to graduation also includes a psychiatry component which integrates psychiatry knowledge into the overall patient assessment and management plan.

In third year, a mandatory 9-week composite module of Psychiatry, Obstetrics and Paediatrics is delivered. Each specialty gets equal teaching time. The psychiatric teaching in this module comprises a series of nine interactive lectures in psychiatry used in combination with eLearning materials and three 3-h small group workshops. Reducing stigma is one of the specific goals of this module, though teaching and learning to this end is integrated into the existing curriculum and students do not receive a specific lecture/workshop on stigma in mental illness. At the end of the module, students are assessed by Objective Structured Clinical Examination (OSCE) and an MCQ.

The final year 6-week clinical psychiatry module includes 6-week clinical attachment programme where students are assigned to one of six centres where they are allocated to a multidisciplinary clinical team. Teaching is delivered thematically. A typical day's programme commences with a small group session on the theme of the day after which students rejoin their clinical teams with specific tasks related to this theme. Under this experiential learning model, lectures which are delivered at the end of the day's programme aim to fill knowledge gaps and consolidate learning. The final year students participate in a 1-h workshop on stigma and mental illness. The majority also attend a 2-h lecture from two service users, which includes some discussion on stigma. Some students on clinical placements outside of Dublin may not have the same opportunity to attend this talk. Reduction of stigmatising attitudes is a specific goal of this module, and teaching and learning to this end is integrated in all aspects of the module. Under supervision, students are facilitated to partake in the assessment of patients across a range of hospital and community-based therapeutic facilities. The module is assessed using a range of formative and summative methods and tools including continuous assessment and case presentation (20 %), a reflective essay (20 %),

a multiple choice question paper (20 %) and an objective structured clinical examination (40 %).

During the academic year of 2010/2011, all students completing the year 3 psychiatry preclinical module and all students completing the final year clinical clerkship were asked to complete an attitudinal questionnaire on the first day of teaching prior to receiving any tuition in psychiatry and again on the last day of their module in psychiatry immediately after their end of module Multiple Choice Questionnaire examination (MCQ).

The survey was conducted quasi-anonymously. Students were invited to volunteer their student numbers. This identifying information was then coded prior to analysis.

Ethical approval was received for the completion of this study from the Ethics Committee of University College Dublin.

Questionnaire

The Community Attitudes to Mental Illness (CAMI)

This self-rated questionnaire was developed in Northern America by Taylor and Dear using the Opinions about Mental Illness scale (OMI) as a conceptual basis [27]. At the time of study design (February 2010), there were no questionnaires in the literature validated to assess medical student's attitudes to mental illness. Most attitudinal questionnaires of this population assess attitude to psychiatry as a specialty rather than exclusively attitudes to people with mental illness. As such, we reviewed the available questionnaires and selected the Community Attitudes to Mental Illness questionnaire (CAMI). The CAMI has been widely used and has been proven to be both reliable and valid in community and health professional populations [28, 29, 30]. It has been used in the UK, America and in a Europe-wide study to assess attitudes of nursing students to mental illness [31, 32]. The CAMI is a 40-statement inventory, and students were asked to rate each statement on a 5-point scale (strongly agree, agree, neutral, disagree, strongly disagree). The CAMI has four subscales which measure authoritarianism, benevolence, social restrictiveness and community mental health ideology.

At the end of the module, students were also asked to indicate their interest in psychiatry as a career and were encouraged to use the free text section of the questionnaire to describe their own subjective opinion of the module they completed. Data relating to gender, age, marital status, previous university education and nationality were also compiled.

Data were analysed using the Statistical Package for the Social Sciences (SPSS) version 17. Paired *t*-tests were used in the analyses of pre- and post-module mean total scores. Wilcoxon signed rank test was used to analyse results of individual questions pre- and post-module, and Conventional *t*-tests was used to examine group differences. Pearson's correlation co-efficient was used to examine correlations between continuous variables.

Results

In the third year sample, 150 students of a total of 196 students completed at least one of the questionnaires, however only 140 (73 males, 67 females) could be identified as completing both pre- and post-questionnaires and thus be included in the analysis (71 %). In the final year sample, 169 students of a total of 198 students completed at least one of the questionnaires, however only 145 students (86 females, 59 males) could be identified as completing both pre- and post-questionnaires and thus be included in the analysis (73 %). Average age of third year students was 23.3 years (SD ± 1.8) and that of final year students was 24.3 years (SD ± 2.67). For demographic details of the two groups, see Table 1.

In the third year sample, the pre-module mean of the CAMI was 159.2 (SD ± 14.6), however it did not increase significantly post-module (162.8, SD ± 16.5) (Table 2).

In the final year sample, pre-module mean of the CAMI was slightly lower than their third year counterparts at 158.5 (SD ± 16.5); however, this mean increased significantly ($p < 0.001$) post-module to 165.1 (SD ± 16.5) (see Table 2).

Table 1 Demographics of third and final year students

	Third year *N* (%)	Final year *N* (%)
Gender		
Male	73 (52)	59 (41)
Female	67 (48)	86 (59)
Marital status		
Single	138 (98)	142 (97)
Married	2 (2)	2 (1)
Nationality		
Irish	101 (71)	106 (72)
Malaysian	16 (11)	22 (15)
Canadian	9 (7)	14 (8)
American	7 (5)	2 (1)
Other	7 (5)	1 (1)
Medicine first degree		
Yes	101 (72)	128 (88)
No	39 (28)	17 (12)

Table 2 Pre- and post-module mean total scores for the CAMI questionnaires

	Pre-module mean (SD)	Post-module mean (SD)	Paired *t*-test	*p*
Third year				
Total ($n = 140$)	159.2 (14.6)	162.8 (16.5)	−1.8	NS
Males ($n = 74$)	155.7 (15.3)	161.2 (16.5)	−2.1	<0.05
Females ($n = 66$)	163.8 (12.2)	164.5 (16.6)	−0.3	NS
Final year				
Total ($n = 138$)	158.5 (16.5)	165.1 (16.5)	−1.3	<0.004
Males ($n = 58$)	154.7 (15.5)	164.8 (16.1)	−3.4	<0.001
Females ($n = 80$)	161.3 (16.7)	165.4 (16.7)	−1.6	NS

NS Not significant at 0.05 level

There were gender differences in both samples, with females in the final year sample more likely to score higher on the pre-module CAMI ($r = 0.20$, $p = 0.02$), i.e. demonstrate less stigmatising attitudes. In the third year sample, female students were also more likely to score higher on the CAMI pre-module ($r = 0.28$, $p < 0.001$). Both final year and third year male students scored lower at pre-module assessment but both displayed a positive shift in attitudes post-module ($p < 0.05$) demonstrating a significant positive shift in male students attitudes following the module.

With regard to the subscales of the CAMI of authoritarianism, benevolence, social restrictiveness and community mental health ideology, differences between the third year and final year samples were found only on the benevolence subscale. There was a trend for the third year group to have a more benevolent attitude to people with mental illness before the module ($t = -1.94$, $p = 0.06$) while following the modules, the final year students had a significantly more benevolent attitude to patients with mental illness ($t = 2.05$, $p < 0.05$), demonstrating a more significant shift in the attitudes of the final year students who completed the psychiatry module (Table 3).

Students who expressed an interest in becoming a psychiatrist at the end of either of the modules were more likely to score higher on the CAMI, i.e. indicating a more positive attitude to people with mental illness and lower levels of stigma (third year $r = -0.23$, $p < 0.02$; final year $r = -0.27$, $p < 0.001$).

There was a correlation between a more benevolent and less authoritarian attitude to people with mental illness as evidenced by a higher score on the benevolence and authoritarian subscales of the CAMI and an expressed interest in becoming a psychiatrist in both pre- and post-modules in the third year sample (benevolence pre-module: $r = 0.30$, $p < 0.01$, post-module: $r = 0.21$, $p < 0.03$; authoritarianism pre-module: $r = 0.25$, $p < 0.01$, post-module: $r = 0.22$, $p < 0.01$). In the final year sample, the correlation between benevolence and an interest in becoming a psychiatrist was only found in the post-module sample ($r = 0.40$, $p < 0.001$), but the association between low levels of authoritarianism and interest in a career in psychiatry is present both pre- and post-module (pre-module $r = 0.22$, $p < 0.05$, post-module $r = 0.33$, $p < 0.001$).

There was a trend for those students who had completed a degree prior to medicine to score lower on the CAMI ($r = 0.12$, $p = 0.07$) and they were less likely to report an interest in psychiatry as a career ($r = 0.175$, $p < 0.05$). Students in third year were no more likely than their final year colleagues to express an interest in becoming a psychiatrist (final year 33 %, third year 32 %); however, 14 % of third year students wrote in the free text section that they were undecided and awaited the clinical attachment in final year.

Students who knew someone who had experience of mental illness scored higher on the CAMI ($r = 0.32$, $p < 0.001$). No association was found between total CAMI scores and family members working in mental health.

Third year students identified the small group interactive workshop components of their module as the most useful aspect of their teaching; however, they also identified the lack of direct patient contact as a deficit in their module. There was a trend for those students who spontaneously expressed negative attitudes to the module to have lower pre-module CAMI scores ($t = -1.9$, $p = 0.06$) and poorer psychiatry examination results when compared to the remainder of the students ($t = -1.7$, $p = 0.07$).

Discussion

The aims of this study were (1) to assess the attitudes of preclinical and clinical medical students to patients with mental illness and (2) to assess the effect of two different taught modules on students' attitudes to patients with mental illness.

This study suggests that attitudes of preclinical and clinical medical students towards people with mental illness are positive even prior to any teaching in psychiatry, as evidenced by their scores in the CAMI. Prior to commencing the modules, the final year and third year students did not differ significantly in their attitudes to people with mental illness.

Only the final year students demonstrated a positive attitudinal shift after completion of their psychiatry

Table 3 CAMI Items which showed significant change from pre- to post-module

Item	Pre-module %		Post-module %		Wilcoxon Z
	Agree	Disagree	Agree	Disagree	
Third year					
Authoritarian subscale					
Mental illness is an illness like any other	51	29	69	20	2.30**
Community mental health ideology subscale					
The best therapy for many patients is to be part of a normal community	66	11	90	8	3.90*
Final Year					
Authoritarian subscale					
One of the main reasons for mental illness is a lack of self discipline and will power	11	80	7	92	2.73*
There is something about the mentally ill that makes them easy to tell from normal people	20	64	13	74	2.60*
Mental illness is an illness like any other	62	25	78	17	2.05**
Benevolence subscale					
More tax money should be spent on the care and treatment of the mentally ill	58	5	72	5	2.20**
Community mental health ideology subscale					
The best therapy for many patients is to be part of a normal community	77	5	93	1	4.25*
Locating mental health services in residential areas does not endanger local residents	64	10	79	6	2.71**

* $p < 0.001$

** $p < 0.01$

*** $p < 0.05$

module. This may indicate that the clinical module with an emphasis on patient and psychiatric team contact, and inclusion of a workshop on stigma and formal teaching from service users has a greater capacity to change medical students' attitudes, at least in the short term.

The finding that female students had more positive attitudes to people with mental illness is consistent with findings of medical students in India [33]. A Europe-wide survey of 858 nurses using the CAMI also found an association between female gender and more tolerant attitudes. However, in a review of 27 studies of stigma towards people with mental illness in the general population, 14 studies found no statistical difference between male and females opinions on mental illness [30].

While males in this study did have more stigmatising attitudes prior to commencing their respective modules, their attitudes were conversely more responsive to education. Males in the third year sample did demonstrate a significant improvement in stigmatising attitudes unlike their female peers, and males in the final year sample demonstrated a more marked improvement in their attitudes when compared to their female peers.

The subscale scores in our study compare favourably with those found in previous studies looking at the attitudes of student nurses to mental illness as measured on the CAMI in the US [34] and the UK [29]. A correlation was found between a more benevolent and less authoritarian attitude to people with mental illness and an expressed interest in becoming a psychiatrist. These findings are not entirely unsurprising as others have emphasised non-authoritarian attitudes, open-mindedness and greater interest in social welfare as being associated with a choice of psychiatry as a career [35, 37].

The number of graduate entry places to medicine in Ireland is increasing as recommended by a 2006 government report [36]. We found a trend that such students may hold slightly more negative attitudes to both patients with mental illness and a career in psychiatry. Medical school admission bias towards those who have completed biological rather than social science or humanities degrees may be partially responsible for this as previous studies have found that those who chose psychiatry as a career are more likely to have completed degrees in the humanities or social sciences rather than the biological sciences [37]. Graduate entry students in our study ($N = 56$) are more likely to have completed a degree in the biological sciences ($N = 41$, 73 %) rather than a degree in the humanities/social sciences ($N = 3$, 5 %). Our findings suggest this area requires further study as it could have implications for training and recruitment into psychiatry in this group.

Knowing someone who has mental illness in our study was associated with a less stigmatising attitude to people with mental illness. Brockington et al. [28] also found that having an acquaintance with mental illness was strongly

associated with tolerance as measured by the CAMI. Some other studies have found that knowing someone with a mental illness was not associated with more tolerance [38, 39]. However, this inconsistency may be explained by Huxley who identifies that it is not sufficient to have an acquaintance with someone with mental illness to affect your attitude rather than that acquaintance must have had "helpful treatment for episodes of mental illness" [40]. Furthermore, the Disabilities Rights Commission in the UK (2006) contends that attitudinal change is fostered by contact with people with mental health problems, as long as it is on equal terms [8]. As such, contact with people with mental illness has the capacity to bring about attitudinal change but only when they are seen as equal and have experienced helpful treatment. One way of encouraging this effect in medical school would be through the involvement of service users in the training of doctors and other mental health workers.

Conclusion

Our data indicate that preclinical and clinical medical students in Ireland have positive attitudes towards people with mental illness prior to any psychiatry teaching. The clinical psychiatry module increases tolerance, particularly in males, possibly because of dedicated patient interactions over 6 weeks, engagement with service users, and the inclusion of a stigma workshop. However, the composite early non-clinical module was not associated with an improvement in student's attitudes. Given the high prevalence of physical morbidity with associated elevated mortality rates in patients with mental illness and the finding that access to lifesaving treatment is poorer in patients with mental illness, educational initiatives to address stigma should be an educational priority in undergraduate medical education. Formal integration of service users in the delivery of teaching in medical school may be of substantial benefit in addressing the stigma of mental illness.

Study limitations

A particular methodological issue which must be addressed is that the CAMI questionnaire relies on a self-report method of data collection. Despite assurances otherwise, students may perceive that negative answers on the questionnaires, particularly prior to their clerkships may result in less favourable treatment during their module, thus inducing a bias towards an 'expected' group response. While anonymity was assured, students may not necessarily believe this to be the case, and so adjust their responses accordingly. We took measures to minimise this bias by emphasising to students that if they included their student number it would be coded and their responses would not be analysed until the end of all of their psychiatry modules, i.e. at the end of the academic year.

Furthermore, we allowed a free text response to allow students to express their opinion of the module. The responses in this free text were sufficiently varied to indicate that it was likely they were expressing their genuine opinions.

The response rate of 71–73 % is comparable to those of similar published studies [15, 16, 17, 24, 25, 26]. However, it is possible that the 27–29 % of students who failed to complete both questionnaires in full were those students who held more negative attitudes to psychiatry.

This study was conducted in one university in Ireland and as such the results may not be generalisable to other sites and/or countries. The final year students in this study had themselves completed the preclinical module previously, making direct comparison between preclinical and clinical cohorts difficult. Finally, attitudes of clinical and preclinical students may have been influenced by factors totally independent of the psychiatric training modules, e.g. exposure to other clinical training and attitudes of clinicians in other specialties.

Conflict of interest None.

References

1. Leucht S, Burkard T, Henderson J et al. (2007) Cambridge: Cambridge University Press. Schizophrenia and physical illness
2. Robertson MM, Katona CLE (1997) Chichester: Wiley. Depression and physical illness
3. Harris EC, Barraclough B (1998) Excess mortality in mental disorder. Br J Psychiatr 173:11–53
4. van Os J, Kapur S (2009) Schizophr Lancet 374:635–645
5. Pan A, Sun Q, Okereke OI et al (2011) Depression and risk of stroke morbidity and mortality: a meta-analysis and systematic review. JAMA 306:1241–1249
6. Celano CM, Huffman JC (2011) Depression and cardiac disease: a review. Cardiol Rev 19:130–142
7. Bair MJ, Robinson RL, Katon W (2003) Depression and Pain Comorbidity: a literature review. Arch Intern Med 163:2433–2445
8. Disability Rights Commission (2006) Equal treatment: closing the gap. A formal investigation into physical health inequalities experienced by people with learning disabilities and/or mental health problems. Disability Rights Commission, London
9. Leucht S, Burkard T, Henderson J, Maj M, Sartorius N (2007) Physical illness and schizophrenia: a review of the literature. Acta Psychiatr Scand 116:317–333
10. Jones S, Howard L, Thornicroft G (2008) 'Diagnostic overshadowing': worse physical health care for people with mental illness. Acta Psychiatr Scand 118:169–173
11. Irish Medical Council Standards for postgraduate medical education (2011) http://www.medicalcouncil.ie/Education-and-Training/Postgraduate-Medical-Education/Medical-Council-Accreditation-Standards-for-Postgraduate-Medical-Education-and-Training-Revised-Oct-2011.pdf

12. European Union of Medical Specialists (2008) UEMS Strategy http://www.uems.net/fileadmin/user_upload/uems_documents/Official_documents/UEMS_2008.05_-_UEMS_Strategy.pdf
13. Creed F, Goldberg D (1997) Students' attitudes towards psychiatry. Med Educ 21:227–234
14. Glynn S, Reilly M, Avalos G, Mannion L, Carney PA (2006) Attitudinal change toward psychiatry during undergraduate medical training in Ireland. Ir J Psych Med 23:131–133
15. Sloan D, Browne S, Meagher D et al (1996) Attitudes toward psychiatry among Irish final year medical students. Eur Psychiatr 11:407–411
16. Reddy JP, Tan SMK, Azmi MT et al (2005) The Effect of a clinical posting in psychiatry on the attitudes of medical students towards psychiatry and mental illness in a Malaysian medical school. Ann Acad of Med Singap 34:505–510
17. Galka SW, Perkins DV, Butler N et al (2005) Medical students' attitudes toward mental disorders before and after a psychiatric rotation. Acad Psychiatr 29:357–361
18. Burra P, Kalin R, Leichner PWJJ et al (1982) The ATP- a scale for measuring medical student's attitude to psychiatry. J Med Educ 16:31–38
19. Nordt C, Rössler W, Lauber C (2008) Attitudes of mental health professionals toward people with schizophrenia and major depression. Schizophr Bull 32:709–714
20. Lauber C, Nordt C, Braunschweig C et al (2006) Do mental health professionals stigmatize their patients? Acta Psychiatr Scand Suppl 429:51–59
21. Altindag A, Yanik M, Ucok A et al (2006) Effects of an anti-stigma program on medical students' attitudes towards people with schizophrenia. Psychiatry Clin Neurosci 60:283–288
22. Mino Y, Yasuda N, Tsuda T et al (2001) Effects of a one-hour educational program on medical students' attitudes to mental illness. Psychiatry Clin Neurosci 55:501–507
23. Kerby J, Calton T, Dimambro B et al (2008) Anti-stigma films and medical students' attitudes towards mental illness and psychiatry: randomised controlled trial. Psychiatr Bull 32:345–349
24. Araya RI, Jasresic E, Wilkinson G (1992) Medical students' attitudes to psychiatry in Chile. J Med Educ 26:153–156
25. Sajid A, Khan MM, Shakir M et al (2009) The effect of clinical clerkship on students' attitudes toward psychiatry in Karachi, Pakistan. Acad Psychiatr 33:212–214
26. Fischel T, Manna H, Krivoy A et al (2008) Does a clerkship in psychiatry contribute to changing medical students' attitudes towards psychiatry? Acad Psychiatr 32:147–150
27. Taylor SM, Dear MJ (1981) Scaling community attitudes toward the mentally ill. Schizophr Bull 7:225–240
28. Brockington IF, Hall PH, Levings J (1993) The Community's tolerance of the mentally ill. B J Psych 162:93–99
29. Chambers M, Guise V, Valimaki M et al (2010) Nurses' attitudes to mental illness: a comparison of a sample of nurses from five European countries. Int J Nurs Stud 47:350–362
30. Wahl O, Aroesty-Cohen E (2010) Attitudes of mental health professionals about mental illness: a review of the recent literature. J Commun Psychol 38:49–62
31. Schafer S, Wood S, Williams R (2011) A survey into student nurses' attitudes towards mental illness: implications for nurse training. Nurse Educ Today 31:328–332
32. Morris R, Scott PA, Cocoman A et al (2012) Is the community attitudes towards the mentally ill scale valid for use in the investigation of european nurses' attitudes towards the mentally ill? A confirmatory factor analytic approach. J Adv Nurs 68:460–470
33. Mahto RK, Verma PK, Verma AN et al (2009) Students' perception about mental illness. Ind Psychiatry J 18:92–96
34. Morrison R (2011) Nursing students attitudes towards people with mental illness; Do they change after instructions and clinical exposure? Thesis (PhD), University of South Florida
35. Pasnau RO, Bayley SJ (1971) Personality changes in the first year psychiatric residency training. Am J Psychiatr 128:79–84
36. Medical Education in Ireland: A New Direction (2006) Report of the working group on undergraduate medical education and training (the "Fottrell Report"). The Department of Health, Ireland. http://www.dohc.ie/publications/pdf/fottrell.pdf?direct=1. Accessed 26 Aug 2011
37. Nemetz P, Weiner H (1965) Some factors in the choice of psychiatry as a career. Arch Gen Psychiatr 13:299–303
38. Wolff G, Pathare S, Craig C et al (1996) Public education for community care. A new approach. Br J Psychiatr 168:441–447
39. Byrne P (2000) Stigma of mental illness and ways of diminishing it. Adv Psych Treat 6:65–72
40. Huxley P (1993) Location and stigma: a survey of community attitudes to mental illness: enlightenment and stigma. J Men Health 2:73–80