

Abstract

Medical students with poor attitudes towards psychiatry are unlikely to choose it as a career, and current psychiatry recruitment is inadequate for future NHS needs. Amending medical school curricula has been suggested as one solution.

We performed a unique naturalistic mixed-methods cross-sectional survey of two sequential cohorts in a UK medical school, before and after restructuring of the entire MBChB curriculum. As well as increasing integration with other specialties, the emphasis placed on psychiatry increased throughout the course, but the final psychiatry block reduced from 8 to 6 weeks.

Students experiencing the refreshed curriculum had better attitudes to psychiatry and psychiatric patients, and were more positive about psychiatry as a career for themselves and others, compared to students on the old curriculum. This was demonstrated both quantitatively using validated rating scales (12/30 questions ATP-30 and 1/6 questions PEAK-6), and qualitatively using free-text responses.

Restructuring undergraduate medical curricula to enhance integration may yield added value, including the potential to improve attitudes to specialties previously learnt in silos, such as psychiatry. This may improve recruitment, and the understanding of mental health for all future doctors.

Keywords:

Psychiatry / Nervous System, Medical Education Research, Attitudes / Ethics, Integrated Curriculum, Curriculum Infrastructure

Introduction

Recruitment into psychiatry

Recruitment into psychiatry training programmes has been of concern for over 15 years, both in the United Kingdom (UK) (Brockington and Mumford 2002) and beyond. Between 2011 and 2017 there was a decrease in recruitment to UK CT1 posts nationally (69% in 2017 (HEE 2017(a)) versus 83% in 2011 (RCPsych 2012)), despite a specific 5-year recruitment strategy from the Royal College of Psychiatrists (RCPsych) in 2012 (RCPsych 2012). However, this has occurred on the background of fewer applications to specialty programmes in general (HEE 2017(b)). A proportion of 1500 extra medical school places promised by the UK Government will be allocated to universities with a reputation for producing psychiatrists (RCPsych 2017), which has incentivised medical schools to support student recruitment into psychiatry. Based on data released by the RCPsych, the average progression from medical school to psychiatry training over the period 2014 to 2016 varied between 4.3% of the student cohort from the Universities of Keele and Oxford (joint first place), to 1.4% from Peninsula College (last place). 3.4% of students from Warwick Medical School progressed to psychiatry, putting it joint third place (RCPsych 2017). Nonetheless, every medical school is far short of the 6% of current students that are required in order to meet the likely healthcare demands of the future UK National Health Service (NHS) (CFWI 2014).

Changing the undergraduate medical curriculum to support psychiatry recruitment and improve attitudes

The RCPsych has recently encouraged medical schools “to put mental health at the heart of the curriculum”(RCPsych 2017), suggesting amendments to student curricula to offer psychiatry experience as early as possible and in an integrated manner with other specialties (RCPsych 2012). In addition to any benefit for recruitment, changing curricula to improve understanding and attitudes of all medical students is important: at least 40% of all foundation doctors will now undertake psychiatry as a four-month placement (Perry et al. 2016), and all medics will experience patients who have mental health problems. To encourage medical students who may be interested in psychiatry as a career, there is evidence that curricula need to consider: (i) allowing psychiatry to be seen as a speciality in which there are effective and evidence based treatments, and providing inspiring supervisors (Farooq et al. 2014; Mahendran et al. 2015); and (ii) factors relating to curriculum management, such as providing early psychiatry experience (Baller et al. 2013), and iii) good quality teaching provided for a sufficient length of time (Farooq et al. 2013). Evaluation of change in terms of student perception of future specialty choice has been conducted using validated scales of attitudes, which appear to be sensitive to change: ATP-30 (Burra et al. 1982), and PEAK-6 (Hofmann et al. 2013). The ATP-30 (Attitudes Towards Psychiatry-30-Items) scale is validated 30 item Likert-type scale, and the PEAK-6 (Psychiatric Experience, Attitudes, and Knowledge-6-Items) is a 6-item Likert-type scale, with both designed to assess the attitudes of medical students. The ATP-30 lists 30 statements about psychiatry and psychiatric patients with which respondents confirm how much they agree or disagree. The PEAK-60 asks respondents to rate their knowledge and experience of, and attitude towards, psychiatry and psychiatric patients. These questionnaires are detailed in full in the supplementary material.

Curriculum change at Warwick Medical School

The MBChB (primary medical qualification) curriculum at Warwick Medical School (WMS), an exclusively graduate medical school, has recently undergone significant change, with the first cohort of the refreshed curriculum graduating in 2017. A new cohesive, coordinated curriculum has been achieved using ‘three-dimensional’ integration (de Cates et al. 2018) with vertical integration of core themes (such as ‘pharmacology, prescribing & therapeutics’) and horizontal integration of medical specialties by focusing learning outcomes around patient presentations (e.g. fatigue) rather than specific diseases in their respective specialty silos. These two ‘dimensions’ complement a third ‘dimension’: a spiral of increasing complexity that encourages students to re-visit and build upon previously experienced material as they progress through their training. These three ‘dimensions’ are embedded in the curriculum using learning tools, especially case-based learning (CBL) (Thistlethwaite et al. 2012).

[Insert Figure 1 around here (Figure 1: diagram to demonstrate three-dimensional integration in the WMS refreshed curriculum). Adapted from (de Cates et al. 2018)]

From a psychiatry perspective, psychiatry appears earlier and more frequently throughout the curriculum, featuring alongside related physical conditions to mimic real life clinical situations. The aim is that students experience mental health problems as a fundamental aspect of many presentations of disease: for example, a student will learn about alcohol

misuse alongside the consequential liver disease and neurological disease. In the refreshed curriculum, the final psychiatry block is 6 weeks (rather than 8 weeks as previously), but the overall time devoted specifically to mental health concerns is similar under both curricula, and the overall emphasis on mental health is designed to be greater within the refreshed curriculum (see figure 2). The leadership, faculty and teaching methods within the psychiatric block were broadly the same (i.e. these factors were similar across the two cohorts), although mapping of the curriculum within the block was necessarily different and methods of assessment also changed.

[Insert Figure 2 around here (Figure 2: diagrammatic representation of integration of psychiatry throughout the WMS refreshed curriculum)]

Updating the curriculum at WMS has provided a unique natural experiment, as to our knowledge, there has been limited research assessing the potential for a change in student attitudes to psychiatry following such a significant curriculum change. Therefore, we aimed to identify whether a cohort of WMS medical students on the refreshed curriculum had significantly different attitudes and career intentions towards psychiatry compared to students on the old curriculum, measured at the point where all major teaching on psychiatry has been received (after their final psychiatry block). We hypothesised that there may be a positive change in attitudes to psychiatry in the cohort of students exposed to an integrated curriculum compared to the old curriculum. Approval for this survey was granted by senior faculty including the Head of Medical Education at Warwick Medical

School, and the Biomedical and Scientific Research Ethics Committee at the University of Warwick (REGO-2015-1671).

Methods

This was a cross-sectional survey on two separate student cohorts to compare responses on attitudes to Psychiatry and current perceptions of future specialty choice: (i) 2012 cohort, with predicted completion date of their MBChB in 2016 studying the old curriculum; (ii) 2013 cohort, with predicted completion date in 2017 studying the new curriculum.

There were three major components to the survey:

1. Two validated scales (ATP-30 and PEAK-6) with a Likert range of possible responses. For each question, Likert responses were scored between 5 (excellent / definitely agree) and 1 (very poor / definitely disagree).
2. A single question on each respondent's personal likelihood of choosing psychiatry as a career: "at the moment, I am considering psychiatry as a future career" with a Likert range of possible responses (definitely, possibly, uncertain, probably not, definitely not), scored between 5 and 1;
3. A free-text box to allow students to add relevant comments or views on the topic which had not otherwise been discussed due to the constraints of the fixed questions. We invited students to provide comments or thoughts raised by the quantitative questions, and we included three prompt questions for students to consider (see appendix in supplementary material). We deliberately aimed this

section to be open in manner to enable capture of all participants' views, as the paucity of previous research in this area meant that a more focussed question was not possible.

Responses from the two cohorts of students were then compared in terms of:

- Response rate
- Quantitative data from responses for the ATP-30 and PEAK-6
- Quantitative data from a question of personal likelihood of choosing Psychiatry as a career
- Qualitative data from free-text responses

Data on age, sex and first degree were also collected (although students were able to decline to answer these questions). Students in both cohorts received a research and information sheet electronically, using administration staff emails. To maximise comparability between the two cohorts, students were invited to undertake the survey after the completion of timetabled psychiatry teaching (excluding revision sessions), which for both curricula resulted in conducting the survey once all students had completed the senior psychiatry placement in their final year. This placement was completed by all 2012 cohort students on the old curriculum by January 2016, and by February 2017 for the 2013 cohort on the refreshed curriculum. We opened the survey to all students in each cohort to minimise the bias of selecting a subgroup of students. We also used an electronic survey programme (Soorvey™), which allowed students to complete the survey anonymously in their own time within an advertised period. Basic demographic details were asked of the

students to allow contextual understanding of responses. However, students were able to respond "do not wish to say" for demographics, but still answer the questions relating to attitudes, specialty choice, and the free-text responses. Students were provided with an incentive to encourage participation (one £50 voucher allocated at random after the survey closed by a blinded administrator using a prize draw).

Quantitative data was analysed using unpaired T tests with the significance level set at $p < 0.05$, and an appropriate effect size calculation (Cohen's d). For Cohen's d, a value of d less than 0.2 is considered a small effect, 0.5 is considered a moderate effect, and 0.8 is a large effect (Cohen 1988). A modified form of thematic analysis was used to analyse responses to the free-text box question (Braun and Clarke 2006; Ng et al. 2013) similar to that used in other qualitative analyses of medical student responses to questions regarding potential future specialty choice (Burack et al. 1997). The question asked of students was "Please use this box to state any thoughts or comments raised by the questions above" with further suggestions for consideration given (see appendix for exact wording). AdeC and PdeC conducted qualitative analysis in a collaborative manner using NVivo Pro 11 software (QSR International Pty Ltd., 2016). The first step of analysis focused on each researcher becoming familiar with the data, by reading and re-reading the students' free-text responses to allow familiarisation with the content. After individual data familiarisation, coding occurred with each researcher identifying themes from student comments using an iterative process with repeated comparison of emerging issues of interest until no further themes were evident. Each student response could be assigned multiple codes and coded sections of text could be of any length. These themes and their

broader overarching categories were then discussed and agreed collaboratively by the two researchers (Adec, PdeC) in consultation with a third researcher (SM), with discrepancies resolved until consensus was achieved. All student responses were then organised and labelled separately by AdeC and PdeC with later discussion and re-reading of the data until consensus on categories, themes and data organisation was achieved. Each response could be listed under as many higher-level “categories” and lower-level “themes” as appropriate.

Results

50 students from 156 in the 2012 cohort (response rate of 32.1%), and 55 students from 165 (response rate of 33.3%) in the 2013 cohort, completed the survey. In addition, 28 students from 2012 and 25 students from 2013 provided qualitative data.

Demographic data

Basic demographics of individuals who responded to the survey from the two cohorts can be seen in supplementary material table 1. The cohorts were similar in terms of demographics except for the finding that in the 2012 cohort there were a greater proportion of basic science graduates, and fewer medical sciences graduates, than in the 2013 cohort. Five respondents from 2013, and one from 2012, chose not to give their age bracket. Four students in 2013 also chose not to describe their primary degree. One respondent in each cohort did not declare whether they were male or female. We have not included the context of participants’ ages and undergraduate degrees in the qualitative analysis, as this might

potentially identify individual respondents due to the small numbers present in some groups. We have therefore limited this contextual data to the table of sample demographics and quantitative analysis.

Quantitative results

Results for the ATP-30 and PEAK-6 scales are shown in supplementary tables 2 and 3. There were no significant differences between the two cohorts for the summed results of each scale, either when examining the entire cohorts, or when these were subdivided according to demographic data. The one exception for this was psychology graduates on the PEAK-6 scale ($p=0.001$), but this may be complicated by the fact that only 3 students in 2012 and 2 students in 2013 were included in this subdivision.

The single question about potential likelihood of choosing psychiatry for a career was also not significantly different between the 2012 and 2013 cohorts (table 1). However, there was a general tendency for the 2013 to be more positive in their responses to this question (2.52 / 5 vs. 2.10 / 5).

[Insert table 1 about here]

However, significant differences appeared between the cohorts when each question of the ATP-30 and the PEAK-6 was examined individually (tables 2 and 3 (i.e.) with regard to 12 questions in the ATP-30 scale and 1 question in the PEAK-6 scale.

In the ATP scale, the questions where the 2013 cohort answered significantly more positively than the 2012 cohort are detailed in table 2. Questions in the ATP and PEAK scale where the 2013 cohort answered significantly more negatively are detailed in table 3 ((i.e.) the 2013 cohort were significantly more likely to disagree with the statements).

[Insert table 2 and table 3 about here]

Qualitative results (analysis of free-text box responses)

28 students from 2012 and 25 students from 2013 provided qualitative data. Overall, qualitative responses from the 2013 cohort suggested that these students held more positive attitudes to psychiatry than the 2012 cohort.

Six overarching categories were identified: comments about the survey itself, attitudes towards psychiatry as a discipline and career, role models in psychiatry, students' experience of classroom-based teaching, personal and clinical experience of psychiatry, and the organisational context or resources. Each category is explored in more detail in this section, with examples of quotes from the data including attention to negative cases to enhance the quality of interpretation (Mays and Pope 2000). We have used these categories and themes for descriptive purposes in terms of interpretation (Ng et al. 2013). For a complete list of categories, included themes, and the relevant source data please see supplementary material table 4.

a) *Comments about the survey itself*

Both cohorts had concerns about the data collection method with two respondents registering concerns in each cohort. However, the quality of concerns was different. Both students in the 2012 cohort felt that many of the questions were ambiguous or asked for answers that they were not qualified to give:

“...I do not have sufficient evidence from my experience to either agree or disagree with the statements” ... (P12, male, 2012)

“Question 32 is ambiguous” (P18, male, 2013)

whereas students from the 2013 cohort felt that the questions were too obvious.

“Are these questions written with tongue in cheek?! - Asking if we see psych patients as humans?! Give us a break. It might be reasonable to ask if we see psych illnesses as 'real' vs medical illness, but to ask if we see psych patients as 'human' seems rather lazy (or patronising?).” (P72, female, 2013)

“I think a number of the statements... sound like greatly overly stated negative bias[e]s (sic.) against psychiatry, and I would be surprised if there are a large number of medical students who agree with them.” (P83, male, 2013)

b) *Attitudes towards psychiatry as a career and discipline*

The students' views appeared to be more negative in terms of psychiatry as a career and discipline in the 2012 cohort. Comments that psychiatry is not being medical enough, that diagnoses are imprecise and possess little evidence-base, and that the profession is failing

and cannot be respected were only found in responses from 2012 students, with none in the 2013 cohort (e.g.)

“I am mostly put off psychiatry because I feel like I would not be using nearly all of my medical training, and this would be a waste” (P40, female, 2012)

“Certain mental health disorders have become “fashionable”, you can’t fake diabetes or other medical conditions, it decreases the credibility of a profession when diagnoses are handed out to anyone that asks for one, especially when they are seeking money (DLA) not treatment. It is the lack of objectivity and the attempt to label any small difference as a diagnosis that damages the reputation of psychiatry.” (P23, gender withheld, 2012)

“Personally I don’t understand a lot of what goes on in psychiatry, again from my experience it seems different people have their own different ways of doing things and it seems to be a lot of trial and error, which doesn’t sit well with me coming from a hard science background. I like cause and effect and there doesn’t seem to be that relationship in psychiatry.” (P30, male, 2012)

(Psychiatrists) (sic).. were far from role models and if anything continued the stereotype of a failing profession. (P9, male, 2012).

The only response to mention the working hours in psychiatry came from the 2012 cohort, although the tone of the response was generally negative (e.g.)

“The doctors seemed incompetent at normal medicine and only chose psychiatry because of nice working hours, it seems cut off from the rest of the profession.” (P22, female, 2012)

Whereas psychiatry being underappreciated by other medics, being useful for other specialities, and responses expressing an interest in psychiatry after medical school qualification and as a career, pertained only to students in the 2013 cohort. This was even when dissatisfaction in the teaching and experience of it at medical school was acknowledged.

“I think that psychiatry is a very important medical specialty and does not get the appreciation (it deserves from) (sic.) the remainder of the medical profession....”

(P65, female, 2013)

“I am personally considering a career in General Practice. I believe that Psychiatry training is extremely valuable towards my future career goal, which is why I have chosen to do a 4-month Psychiatry placement during my Foundation training” (P98, female, 2013).

“I would really like a job in psychiatry as I care a lot about mental illness and have experience of dealing with those who are mentally ill. They have so much to offer society that is often unappreciated....” (P74, female, 2013)

“Unfortunately my clinical experiences were really disappointing, mostly due to lack of enthusiasm and rude attitude from the consultant which was disappointing considering I am so interested in a career in psychiatry” (P63, female, 2013)

Both cohorts had students who felt that psychiatry was an interesting discipline. Equally, both cohorts had students where they felt that psychiatry was not for them as a career. However, several students in each cohort linked this lack of desire to undertake psychiatry

as a career to concerns about poor levels of patient care and an inability for psychiatrists to provide appropriate care to patients.

“I feel we do not really do the profession justice, and the outsourcing of talking therapies away from psychiatrists is a cost-saving exercise which adversely affects patient care.” (P6, female, 2012)

“I was very interested in psychiatry at the start of medical school but I feel that my psychiatry placement made me doubt this a little as the progress did seem very slow and it seemed hard to help patients significantly. That doesn't mean I don't believe psychiatry can be a useful and admirable specialty but in my short experience, I didn't see as much evidence of this as I had hoped for.” (P89, female, 2013)

“Unfortunately I felt the services offered in Psychiatry during my placement with them were too limited or poor in quality that I could consider a career in psychiatry as I would feel as though I was failing patients on a regular basis as I would be unable to offer a level of care I felt appropriate....” (P99, female, 2013)

c) *Role models in psychiatry*

Of responses that focussed on psychiatrists and junior doctors in psychiatry, all responses about the perceived poor quality of medical doctors were from the 2012 cohort (e.g.)

“I found that the psychiatrists themselves [were] fairly disappointing and often didn't have basic medical knowledge. They were far from role models and if anything continued the stereotype of a failing profession. They would give wildly

different answers to the same questions and they seemed to lack academic rigour”
(P9, male, 2012)

Although respondents in both cohorts remarked positively on their individual supervisors, the only respondent who felt that doctors in psychiatry were generally enthusiastic came from the 2013 cohort:

“I was bowled over by the enthusiasm of psychiatrists to instil and pass down their experiences and try and convince me to take up psychiatry” (P69, female, 2013).

However, one student from the 2012 cohort commented on the good clinical skills demonstrated by their supervising consultant

“He had excellent patient relationships and worked well with even the most challenging to tackle their condition be it depression or addiction” (P39, female, 2012)

d) *Students’ experience of classroom-based teaching*

There were only positive comments about classroom-based teaching in the 2012 cohort, as opposed to only negative comments in the 2013 cohort

“The teaching we had in our psychiatry block was good.” (P33, female, 2012)

“...My interest in it (psychiatry) (sic) started to wane when I began to receive didactic psychiatry lectures (before my psychiatry block): at times, I found the way it was taught at medical school slightly uninspiring” (P105, male, 2013)

e) *Personal and clinical experience of psychiatry*

Two students in the 2012 cohort had experiences where they were fearful for their safety (e.g.)

“Whilst on placement we had a pretty terrifying experience where we were in a room with a patient that shouldn't have been in there who got quite aggressive, and despite us pulling our alarms it took a long time for anyone to come and help”
(P30, male, 2012)

Both cohorts had students mentioning positive and negative experiences of their psychiatric placement. However, there were more positive comments in the 2013 cohort, and more negative comments in the 2012 cohort (e.g.)

“I had a very good clinical placement. Thought it was well organised and the staff were keen to teach” (P8, male, 2012)

“I was on PICU [Psychiatric Intensive Care Unit] at [site] for my placement and got so much out of it. Each day interviewing patients and doing MSEs” (P81, female, 2013).

“Unfortunately I did not enjoy my clinical placement. ...Even though I still believe that psychiatric patients can be effectively treated, this is not what I saw in practice and overall I found the clinical placement quite depressing, especially the psychiatric hospital!” (P33, female, 2012)

My thoughts about psychiatry did change after the clinical experience I received during my psychiatry block: in fact, it put me off the speciality even more” (P105, male, 2013).

Students from both cohorts were concerned about the possibility of patients not attending for appointments or patients' refusal to see a student and the effect this had on their learning (e.g.)

“Outpatient clinics were often cancelled last minute and patient DNA's [“Do Not Attends”; patients who missed appointments] were high. This is understandable in psychiatry, but nonetheless frustrating to then have nothing to do for the 45 min to 1 hour that the consultation was booked for” (P10, male, 2012)

“...it would be useful if there was a system to help for when patients don't turn up as this could mean a lot of waiting around” (P71, female, 2013)

f) *Organisational context and resources*

Students from both cohorts were concerned about the limited resources available in psychiatry (e.g.)

“...mental health is underfunded...” (P23, gender withheld, 2012)

“I think more credit towards Psychiatrists is due. They are working very hard with very limited resources - and facing further cuts within mental health services from the government than in any other sector” (P69, female, 2013)

There were also comments from both cohorts about the potential “slow pace” of the specialty (e.g.):

“...(it) may have contributed to me being put off Psychiatry as a specialty as I like to be constantly busy and his days appeared relatively relaxed and slow-paced” (P44, female, 2012)

“I am concerned that psychiatry is a bit slow as a specialty and that you do not get as much time to talk to the patient and explore their concerns as you should, and rather just make changes to medication” (P74, female, 2013)

Only students in the 2012 cohort discussed negative perceptions of the organisational structure and amount of administration present in psychiatry (e.g.):

“I felt my consultant psychiatrist had a mostly organisational role and felt she had not gone into psychiatry to do this” (P2, female, 2012)

“It also appears to be far too important that we label patients in order to facilitate access to specific services (e.g. Personality Disorders Service, Depression, Anxiety) which are all disjoint(ed) (sic) and take separate approaches whilst pulling in distinct directions, rather than actually seeking to understand the processes which have caused the issue and taking a single approach, which tackles all issues simultaneously” (P6, female, 2012)

Discussion

Summary of results

We undertook a survey of sequential medical school cohorts before and after restructuring of the entire MBChB medical curriculum. The 2013 cohort (after curriculum restructuring) appeared to be more positive and less negative, both in terms of their attitudes to psychiatry as a discipline and their personal feelings about it as a career, and for them personally and others in general. 12 questions in the ATP scale and 1 in the PEAK scale reached statistical

significance in this regard. Furthermore, the qualitative data supported this general trend: free-text comments that psychiatry as a speciality is not evidence-based enough, has imprecise diagnoses, is not “medical” enough, is a failing profession and has poorer quality doctors exclusively came from students in the 2012 cohort, whereas comments involving a potential future interest in psychiatry were only given by students in the 2013 cohort. This indicates that students in the 2013 cohort by the time of testing may have had a better understanding and more positive attitude to psychiatry in general, and potentially were also more anti-stigma and pro-recruitment into psychiatry. We cannot be certain of the causality of this, but it is possible that the early introduction, and successful integration, of mental health throughout the curriculum may have had a significantly positive impact on students’ attitudes towards psychiatry, despite an associated reduction in the length of the specialist psychiatry placement from 8 to 6 weeks.

Why might developing a positive attitude to psychiatry be important for medical students?

Students with a positive attitude to psychiatry increasingly report that they are considering psychiatry as a future career (Farooq et al. 2013; Farooq et al. 2014). Furthermore, encouraging medical students to develop a positive attitude towards psychiatry is important for medicine as a whole, particularly as many will complete a foundation placement in psychiatry (Perry et al. 2016). "Quality placements" appear to be a key aspect in helping to achieve this, as students can be inspired by observation of psychiatrists as scientists with skills in holistic management, can perceive the merits of psychiatry in collaboration with other specialties, and appreciate that effective treatments exist for mental health issues (Farooq et al. 2014; Mahendran et al. 2015).

The more negative impression of psychiatry apparent in the 2012 cohort may be based on a lack of awareness of the specialist knowledge and skills required of psychiatrists (Gask 2018). Potential negative attitudes to psychiatry we identified, similar to a recent systematic review of students and doctors (Choudry and Farooq 2017), include concerns that psychiatry has a poor evidence base and is “unscientific”, too much administration and bureaucracy, low morale amongst trainee doctors, and poor future prospects as a specialty, as well as stigmatic comments towards psychiatric patients. These negative attitudes appeared to be less prevalent in the 2013 cohort. This is consistent with previous evidence that (i) it is possible to create an educational environment for students which promotes positive attitudes towards mental health (Papish et al. 2013), and that (ii) certain methods of teaching psychiatry can influence the level of stigma that students have towards psychiatry and psychiatric patients (Mann and Himelein 2008). However, the situation is complex; not all educational interventions designed to improve student attitudes are more effective than traditional teaching methods (Singh et al. 1998), and care is required to ensure persistence of these beneficial educational effects, as there may be some depreciation of attitudinal improvement over time even with previously successful anti-stigma interventions (Friedrich et al. 2013).

Is length of psychiatry placement important for attitudes and recruitment?

The sum total experience of psychiatry that the student receives also appears to be important, particularly for recruitment, as medical schools that have a high psychiatry content report an higher proportion of their students considering psychiatry as a career choice (Farooq et al. 2013). However, shortening a psychiatry placement does not

necessarily lead to students developing poorer attitudes. In the 1990s, Nottingham Medical School shortened their psychiatry placement but also changed the delivery method of teaching received during the placement from didactic lectures to interactive, problem-orientated sessions. Attitudes to psychiatry improved over the course of the placement for students in both cohorts, with no difference between the two (Singh *et al*, 1998). A recent systematic review, which included 10 surveys of over 6000 medical students identified that investing in enrichment activities, such as research, university psychiatry clubs, electives and special study modules, appeared to affect students positively in their attitudes to psychiatry as a career separately to the time devoted to standard teaching and experience (Choudry and Farooq 2017). In our survey, we also have not found any evidence that the shortening of the senior placement affected attitudes towards psychiatry as a discipline or a potential career in a negative manner. However, it should be borne in mind that this reduction in placement length at the medical school was potentially mitigated by increased “integrated” Psychiatry earlier in the medical course (as seen in figure 2).

Are the quality of teaching and the type of curriculum important for attitudes and recruitment?

Good quality teaching and placements are obviously important (Farooq *et al*. 2013), but poor experience in formal teaching environments does not necessarily dissuade potentially interested medical students from a career in psychiatry (Halder *et al*. 2013). This is consistent with our qualitative data where there were no negative comments about the classroom-based teaching from the 2012 cohort (although none stated that they were considering it as a career), and the reverse was true of the 2013 cohort. Furthermore, many more students

made comments regarding their learning experiences during the clinical placement itself, with few mentioning classroom-based learning. A recent systematic review supports the superior importance of actual clinical experience (Choudry and Farooq 2017).

As part of its recruitment strategy, the RCPsych has encouraged medical schools to offer psychiatry experience to medical students as early as possible, and in an integrated manner with other specialties (RCPsych 2012). This is despite some previous indication that type of curriculum may not necessarily affect recruitment into psychiatry training in either direction (McParland M et al. 2003; Maidment et al. 2004). However, students may find psychiatry superficially different to general medical and surgical specialties (Choudry and Farooq 2017), and this barrier may be overcome to some extent by closer integration with other specialties as part of the curriculum. This is corroborated by our finding that students on the refreshed 2013 curriculum were significantly more likely to respond positively to a statement that psychiatry helped to inform their learning of medical and surgical specialties ($p < 0.011$, Cohen's d 0.512).

Limitations

We only studied each cohort of students at one specific time-point, and thus this survey is subject to the typical limitations from cross-sectional data collection. It is also important to be mindful that the mix of the cohort entry (in terms of type of undergraduate degree studied) was different between the cohorts: in the 2013 cohort, there were fewer basic science and maths graduates and more medical sciences graduates, and it is possible that medical science graduates may be particularly keen on holistic professions generally, including psychiatry. Another limitation of our data is that approximately 1/3 of the cohort

completed the survey on each occasion, and only 1/6 of each cohort (1/2 of those who completed the survey) completed the qualitative free-text box, potentially introducing a responder bias. However, the general trend of responses in the qualitative data matched the quantitative data. Another factor is that students in the final year before a publicised course change may be more despondent for various reasons, and as such, the 2012 cohort may not be representative of a typical student cohort. In a similar vein, medical faculty may have the perception and / or reality of being burdened with organising an impending and significant curriculum change, and their time may be compromised for those on the old cohort. We are also cautious of some subdivisions of the data, including the results for students with a previous psychology degree due to the small number of students involved (two students in 2012 and three students in 2013). As previously mentioned, it is impossible to directly attribute the significant differences in attitudes between the cohorts to one causative factor, such as curriculum change; other important co-occurring factors include the quality of clinical experience and pre-existing attitudes. Therefore, we have aimed to explore these factors, and any resulting discrepancies between the cohorts, as part of our qualitative analysis to help inform interpretation of the data.

Conclusion

As we studied two cohorts within one medical school consecutively receiving psychiatric education, we are unable to draw firm conclusions from our data. However, our naturalistic study has allowed us to consider which curriculum factors may affect a medical student's perception of psychiatry as a discipline and a career. We suggest that integration throughout

the course and alongside other specialties may normalise approaches to mental health, and this may help (along with other measures) to improve general attitudes about psychiatry at the same time as improving knowledge and skills. This is important not only for psychiatry recruitment, but also to foster a good understanding of mental health for all future doctors regardless of their ultimate career destination.

Practice Points

- 1) Analysing qualitative comments from medical students alongside results from validated rating tools allows more comprehensive understanding of how and why attitudes may change following an educational intervention.
- 2) Highly integrated curricula may help to increase awareness and understanding, and reduce stigma, relating to typically siloed medical specialties such as psychiatry.
- 3) In line with previous evidence, positive aspects of clinical experience seem to be of primary importance when students form attitudes relating to medical specialties, and quality of teaching of less importance.
- 4) A longer duration of specialty placement does not necessarily equate with more positive attitudes towards the specialty in medical students, and vice versa.

Notes on contributors

Dr Angharad de Cates, BM BCh (Hons), BA, MSc, MRCPsych, is a Specialty Registrar in General Adult Psychiatry, and currently a Wellcome Trust Clinical Doctoral Fellow at the University of Oxford. This research was undertaken whilst she was an Academic Clinical Fellow in Psychiatry at the University of Warwick, and she remains an Honorary Research Fellow there.

Dr Paul de Cates, BM BCh, BSc, DRCOG, MMedEd, MRCPGP, FHEA, is a GP Partner and Academic Lead for Phase III MBChB at Warwick Medical School with responsibility for learning, teaching, assessment, and support of medical students in their final two years of training. He is also currently the External Examiner at Keele University School of Medicine.

Professor Swaran Singh, MBBS, MD, FRCPsych, DM, is a Professor of Psychiatry at Warwick Medical School, Head of the Mental Health & Wellbeing Unit, and Deputy Head of the Division of Health Sciences. He is also Associate Medical Director at Coventry and Warwickshire Partnership Trust and a Commissioner for the UK *Equality and Human Rights Commission*.

Professor Steven Marwaha, PhD, MRCPsych, MSc, MBBS, MA, BA, is a Professor of Psychiatry at the Institute of Mental Health, Birmingham, and until September 2018 was a Reader in Psychiatry at Warwick Medical School. Prior to this, he was a Clinical Lecturer at UCL. He also works as an Honorary Consultant Psychiatrist.

Acknowledgments

None

Details of source of funding for work described

This work was completed whilst AdeC was in receipt of an NIHR Academic Clinical Fellowship.

Declaration of interest

The authors report no declarations of interest.

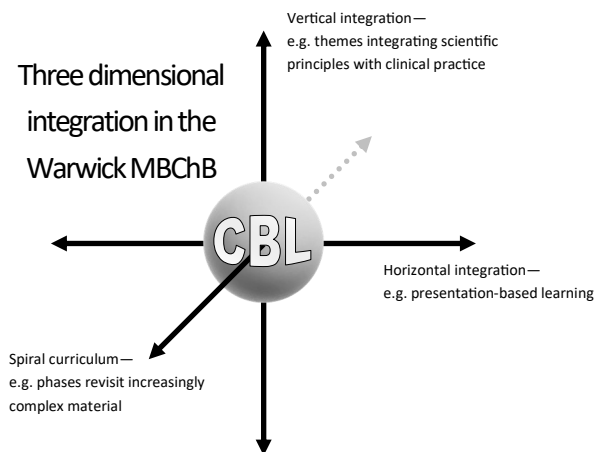
Ethical approval

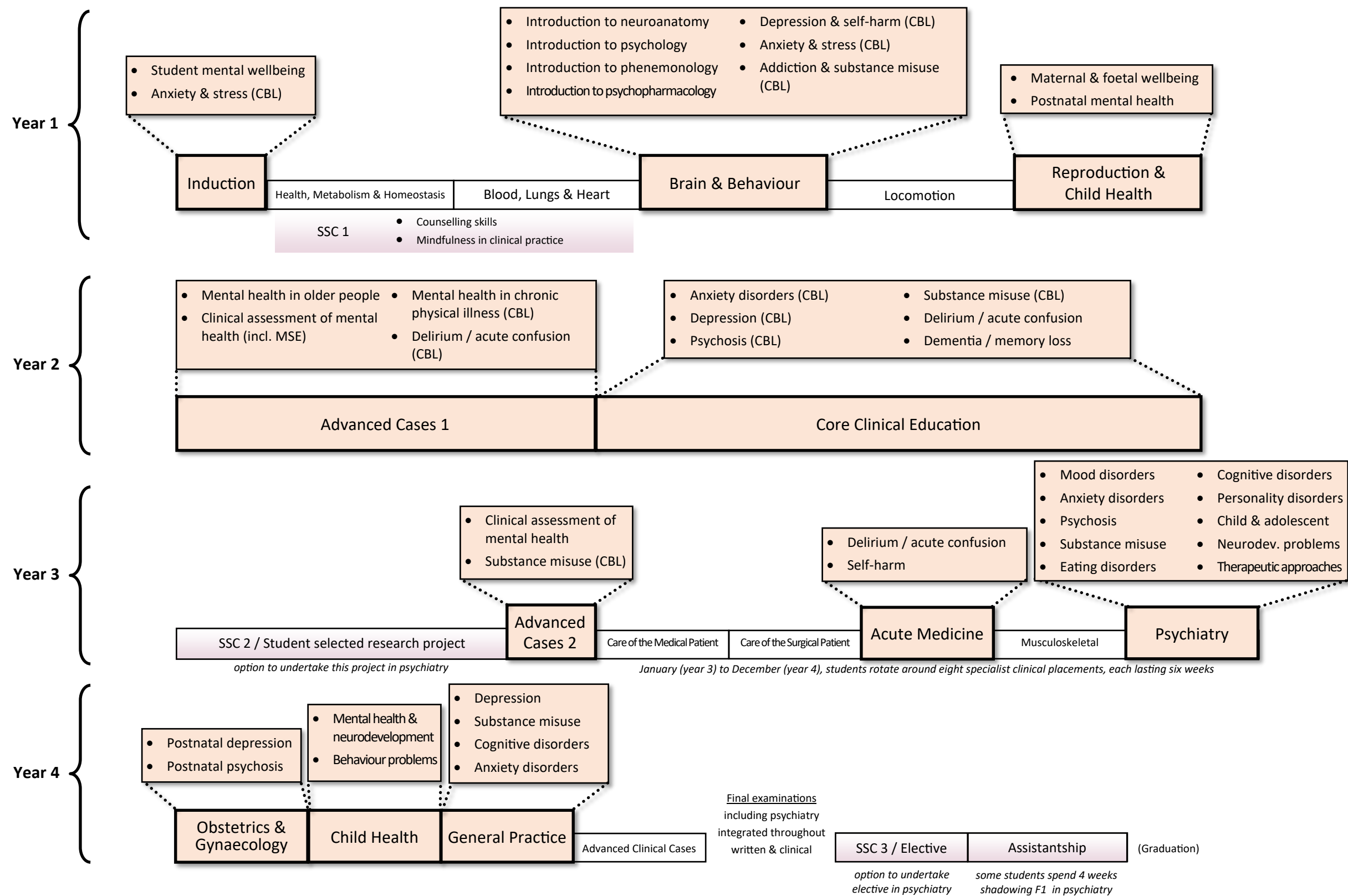
Approval for this survey was granted by senior faculty including the Head of Medical Education at Warwick Medical School, and the Biomedical and Scientific Research Ethics Committee at the University of Warwick (REGO-2015-1671).

References

- Baller FA, Ludwig KV, Kinas-Gnadt Olivares CL, Graef-Calliess IT. 2013. Exploring the ideas and expectations of German medical students towards career choices and the speciality of psychiatry. *Int Rev Psychiatry*. 25(4):425-430.
- Braun V, Clarke V. 2006. Using thematic analysis in psychology. *Qual Res Psychol*. 3:77-101.
- Brockington I, Mumford D. 2002. Recruitment into psychiatry. *Br J Psychiatry*. 180:307-312.
- Burack JH, Irby DM, Carline JD, Ambrozy DM, Ellsbury KE, Stritter FT. 1997. A study of medical students' specialty-choice pathways: trying on possible selves. *Acad Med*. 72(6):534-541.
- Burra P, Kalin R, Leichner P, Waldron JJ, Handforth JR, Jarrett FJ, Amara IB. 1982. The ATP 30-a scale for measuring medical students' attitudes to psychiatry. *Med Educ*. 16(1):31-38.
- CFWI. 2014. In depth review of the psychiatrist workforce: Main report. Centre for Workforce Intelligence.
- Choudry A, Farooq S. 2017. Systematic review into factors associated with the recruitment crisis in psychiatry in the UK: students', trainees' and consultants' views. *BJPsych Bull*. 41(6):345-352.
- Cohen J. 1988. Statistical power analysis for the behavioral sciences. Second ed. New York: Lawrence Erlbaum Associates.
- de Cates P, Owen K, Macdougall CF. 2018. Warwick Medical School: A four dimensional curriculum. *Med Teach*. 40(5):1-7.
- Farooq K, Lydall GJ, Bhugra D. 2013. What attracts medical students towards psychiatry? A review of factors before and during medical school. *Int Rev Psychiatry*. 25(4):371-377.
- Farooq K, Lydall GJ, Malik A, Ndeti DM, Group I, Bhugra D. 2014. Why medical students choose psychiatry - a 20 country cross-sectional survey. *BMC Med Educ*. 14:12.
- Friedrich B, Evans-Lacko S, London J, Rhydderch D, Henderson C, Thornicroft G. 2013. Anti-stigma training for medical students: the Education Not Discrimination project. *Br J Psychiatry Suppl*. 55:s89-94.
- Gask L. 2018. In defence of the biopsychosocial model. *Lancet Psych*. 5(7):548-549.
- Halder N, Hadjidemetriou C, Pearson R, Farooq K, Lydall GJ, Malik A, Bhugra D. 2013. Student career choice in psychiatry: findings from 18 UK medical schools. *Int Rev Psychiatry*. 25(4):438-444.
- HEE. 2017(a). Psychiatry National Recruitment: 2017 CT1 Core Psychiatry Training - August 2017. Health Education England; [accessed 23/10/2017].
[https://www.nwpgmd.nhs.uk/national Psychiatry Recruitment Comp Ratios Fill Rates](https://www.nwpgmd.nhs.uk/national%20Psychiatry%20Recruitment%20Comp%20Ratios%20Fill%20Rates).
- HEE. 2017(b). CT1-ST1 Competition Ratios 2017. Health Education England; [accessed 18/09/2018].
<https://specialtytraining.hee.nhs.uk/portals/1/Content/Resource%20Bank/Competition%20Ratio's/Competition%20Ratios%202017%20ST1.pdf>.
- Hofmann M, Harendza S, Meyer J, Drabik A, Reimer J, Kuhnigk O. 2013. Effect of medical education on students' attitudes toward psychiatry and individuals with mental disorders. *Acad Psychiatry*. 37(6):380-384.
- Mahendran R, Lim HA, Verma S, Kua EH. 2015. The impact of the educational environment on career choice and attitudes toward psychiatry. *Med Teach*. 37(5):494-497.
- Maidment R, Livingston G, Katona C, McParland M, Noble L. 2004. Change in attitudes to psychiatry and intention to pursue psychiatry as a career in newly qualified doctors: a follow-up of two cohorts of medical students. *Med Teach*. 26(6):565-569.
- Mann CE, Himelein MJ. 2008. Putting the person back into psychopathology: an intervention to reduce mental illness stigma in the classroom. *Soc Psychiatry Psychiatr Epidemiol*. 43(7):545-551.

- Mays N, Pope C. 2000. Qualitative research in health care. Assessing quality in qualitative research. *BMJ*. 320(7226):50-52.
- McParland M, Noble LM, Livingston G, C M. 2003. The effect of a psychiatric attachment on students' attitudes to and intention to perform psychiatry as a career. *Med Educ*. 37:447-454.
- Ng S, Lingard L, Kennedy T. 2013. Chapter 26, Qualitative Research in Medical Education: Methodologies and Methods. In: Swanwick T, editor. *Understanding Medical Education: Evidence, Theory and Practice*. Second ed. Wiley Blackwell.
- Papish A, Kassam A, Modgill G, Vaz G, Zanussi L, Patten S. 2013. Reducing the stigma of mental illness in undergraduate medical education: a randomized controlled trial. *BMC Med Educ*. 13:141.
- Perry J, Boyle A, Wessely S. 2016. The expansion of the Foundation Programme in psychiatry. *BJPsych Bull*. 40(4):223-225.
- mRCPsych. 2012. Recruitment Strategy 2011-2016. London
- RCPsych. 2017. University of Keele outranks University of Cambridge in creating psychiatrists of the future. [accessed 18/09/2018].
<http://www.rcpsych.ac.uk/mediacentre/pressreleases2017/workforceofthefuture.aspx>.
- Singh SP, Baxter H, Standen P, Duggan C. 1998. Changing the attitudes of 'tomorrow's doctors' towards mental illness and psychiatry: a comparison of two teaching methods. *Med Educ*. 32(2):115-120.
- Thistlethwaite JE, Davies D, Ekeocha S, Kidd JM, MacDougall C, Matthews P, Purkis J, Clay D. 2012. The effectiveness of case-based learning in health professional education. A BEME systematic review: BEME Guide No. 23. *Med Teach*. 34(6):e421-444.





Key

Block contains significant psychiatry learning

Block contains optional psychiatry learning

No significant / specific psychiatry learning

CBL = Case-based learning, see text for further explanation. CBL is used throughout the curriculum, but for simplicity has not been shown in years 3 & 4.

SSC = student selected component (students choose their own learning areas)

Table 1: Individual questions (attitude to Psychiatry, ATP and PEAK scale)

2012 v 2013 (whole cohort)	Mean score for 2012 (out of 5) (2dp)	Mean score for 2013 (out of 5) (2dp)	P value (sig level 0.05) (3dp)	Effect size (Cohen's d) (3dp)
<i>ATPQ1</i>	3.12	2.46	0.060	0.555
<i>ATPQ2</i>	2.74	2.41	0.090	0.355
<i>ATPQ3</i>	2.32	1.72	0.001*	0.677
<i>ATPQ4</i>	2.14	2.63	0.026*	0.445
<i>ATPQ5</i>	3.18	3.74	0.004*	0.577
<i>ATPQ6</i>	1.88	1.70	0.245	0.230
<i>ATPQ7</i>	1.32	1.22	0.311	0.201
<i>ATPQ8</i>	1.62	1.52	0.411	0.163
<i>ATPQ9</i>	3.24	3.76	0.011*	0.512
<i>ATPQ10</i>	3.00	3.44	0.033*	0.433
<i>ATPQ11</i>	2.74	3.28	0.005*	0.560
<i>ATPQ12</i>	4.28	4.56	0.066	0.365
<i>ATPQ13</i>	2.72	2.17	0.003*	0.593
<i>ATPQ14</i>	3.08	3.41	0.052	0.387
<i>ATPQ15</i>	3.26	3.61	0.047*	0.395
<i>ATPQ16</i>	2.40	2.43	0.864	0.034
<i>ATPQ17</i>	2.48	2.30	0.297	0.205
<i>ATPQ18</i>	3.72	4.28	0.002*	0.638
<i>ATPQ19</i>	2.32	2.00	0.076	0.351
<i>ATPQ20</i>	4.18	4.31	0.255	0.224
<i>ATPQ21</i>	3.60	3.54	0.809	0.048
<i>ATPQ22</i>	2.88	2.09	0.000*	0.779
<i>ATPQ23</i>	1.72	2.19	0.004*	0.587
<i>ATPQ24</i>	2.90	2.19	0.000*	0.776
<i>ATPQ25</i>	3.52	3.69	0.214	0.246
<i>ATPQ26</i>	2.70	2.22	0.005*	0.571
<i>ATPQ27</i>	4.52	4.59	0.572	0.111
<i>ATPQ28</i>	3.94	4.07	0.480	0.139
<i>ATPQ29</i>	3.36	3.62	0.236	0.235
<i>ATPQ30</i>	2.52	2.38	0.383	0.173
<i>PEAKQ1</i>	3.44	3.49	0.716	0.071
<i>PEAKQ2</i>	3.56	3.61	0.638	0.092
<i>PEAKQ3</i>	3.76	3.40	0.077	0.351
<i>PEAKQ4</i>	3.60	3.55	0.556	0.116
<i>PEAKQ5</i>	3.36	3.93	0.002*	0.635
<i>PEAKQ6</i>	4.06	4.11	0.318	0.197
Attitude to Psychiatry	2.10	2.52	0.084	0.346

Key:

*= significant (0.05)

Table 2: Questions from ATP scale where 2013 cohort answered significantly more positively than 2012 cohort

Question from ATP scale	P value	Cohen's d
"I would like to be a psychiatrist" (Q4)	p=0.026	0.445
"It is quite easy for me to accept the efficacy of psychotherapy" (Q5)	p=0.004	0.577
"Psychiatric teaching increases our understanding of medical and surgical patients" (Q9)	p=0.011	0.512
"The majority of students report that their psychiatric undergraduate training has been valuable" (Q10)	p=0.033	0.433
"Psychiatry is a respected branch of medicine" (Q11)	p=0.005	0.560
"Psychiatrists tend to be at least as stable as the average doctor" (Q15)	p=0.047	0.395
"It is interesting to try and unravel the causes of psychiatric illness" (Q18)	p=0.002	0.638
"These days psychiatry is the most important part of the curriculum" (Q23)	p=0.004	0.587

Table 3: Questions from ATP or PEAK scale where 2013 cohort answered significantly more negatively than 2012 cohort

Question from ATP /PEAK scale	P value	Cohen's d
"Psychiatric hospitals are little more than prisons" (Q3 ATP)	p=0.001	0.677
"Psychiatry has very little scientific information to go on" (Q13 ATP)	p=0.003	0.593
"At times it is hard to think of psychiatrists as equal to other doctors" (Q22 ATP)	p=0.000	0.779
"Most of the so-called facts in psychiatry are really just vague speculations" (Q26)	p=0.005	0.571
"My attitude towards psychiatry is (excellent to very poor)" (PEAK Q5)	p=0.002	0.635