

## A Randomised Control Trial (RCT) of Undergraduate Cross-Cultural Psychiatry Training

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**Abstract. Rationale of study:** Ethnic diversity in the UK requires doctors to be aware of the impact of culture on the clinical assessment, diagnosis and treatment of mental health problems. One way of improving practice is to add specific teaching on the subject of cultural psychiatry to medical school teaching but there is no evidence-base to support this. **Aim:** To assess the impact of a teaching on cultural psychiatry to medical students' assessment and treatment of two vignettes of ethnic minority patients with psychological difficulties. **Methods:** A single-blind, randomised trial of teaching cultural psychiatry to fourth year medical students during their final psychiatric attachment. Students were asked to write down their management plans on case studies. These were rated on 12 items of cultural competency. The outcome was the mean score for the intervention and control groups. **Main findings:** There was no significant difference between the intervention and control groups in the total scores for each vignette. However, compared with the control group, the intervention group was significantly more likely to consider social and psychological interventions especially for the female patient vignette. **Conclusions:** This study offers some evidence that additional teaching on cultural psychiatry can change medical students' assessment and treatment of patients.

**Keywords:** randomised controlled trial; cross-cultural; ethnicity; under-graduate; psychiatry; training; teaching

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**INTRODUCTION** The diversity of UK population requires doctors to be aware of the impact of culture on the assessment and treatment of patients. In psychiatry, cultural awareness, cultural competence and cultural capability have become increasingly important facets of specialist training (Kleinman, 1988; Kai et al., 2001; Oyeboode & Katona, 2002; NIMHE, 2003; Moodley, 2003; Prince, 2006; Bartocci, 2006; Qureshi et al., 2008). Most patients with mental health problems are seen and treated in general practice or by doctors who may have had limited formal psychiatric training after medical school. Therefore, the teaching of ethnic and cultural issues to medical students is often considered most influential in this regard and has been a topic of interest for three decades (Wyatt et al., 1978).

Little curricular time has been devoted to the understanding of the impact of culture on diagnosis and management (Morell et al., 2002). However there have been some studies of

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improving cultural awareness. Godkin and Savageau (2001) found that a student elective using international and domestic 'immersion experiences' promoted greater cultural awareness. Participating students were found to have, for the first time, greater knowledge of certain aspects of local cultures, more tolerance of people of non-English speaking cultures, and felt more comfortable with patients from these cultures, compared with the non-elective participants. Others have found that asking students to write about an illness-episode within their own families helped them to recognise the centrality of narrative and of cultural values in medicine (Yamada et al., 2003). The review of videotaped clinical encounters is reported to be another useful way in creating cultural awareness in medical students (Morell et al., 2002). Using literature, soap operas and film have recently been debated as being useful and relatively available methods of encouraging cultural awareness (Bhugra, 2003).

The easiest way of offering standardised, clinical teaching to a large group of medical students is to use a seminar format. Existing curricula often contain epidemiological data, or research findings based on crude ethnic differences, but few curricula actually encourage reflexive learning by asking students to firstly explore the meaning of culture, ethnic group and race, and then to relate this to explanations for variations in rates of mental illness across ethnic groups. Cultural psychiatry as a discipline relies on anthropological critiques of psychiatric practice, but there have been no evaluations of a more critical, relativist, and de-constructionist approach to teaching and learning about cultural factors in medicine.

The course organiser (KM) approached one of this study's authors (KB) to design a two-hour teaching seminar on cultural psychiatry for a 4th year medical school under-graduate curriculum. The seminar's aim was to stimulate debate among students, and encourage them to be critical of their own assumptions and values in assessment and management of health problems in ethnic minority patients. The seminar was to replace an existing epidemiological seminar on ethnic differences in rates of illness which did not discuss clinical issues or attempt to increase cultural awareness. This study was set up to audit the impact of the new seminar in comparison to the old with regards to assessment and clinical decision-making.

## **METHODS**

### **Participants**

All 4th year medical students at a London Medical School took part in the study. The students had been divided into four groups of 24-25 individuals for administrative purposes by the medical school. The four groups undertook their eight-week psychiatric attachments one after the other. Each group received a similar range of face-to-face clinical experiences as they were all on the same psychiatric rotation.

### **Design and process of randomisation**

The study was an audit of two different lectures on culture and mental illness using an RCT format. It was decided that groups would alternate as to whether they received the intervention or not. Whether the first group received the intervention was decided by tossing a coin. Groups one and three were therefore the intervention groups and groups two and four were controls.

### **Intervention**

The medical student groups were randomised to two styles of teaching and learning about race, culture and mental disorder. The conventional style included a factual lecture on cultural psychiatry that reported variations in rates of mental disorders by ethnic group. This lecture did not cover cross-cultural issues in diagnosis, treatment or service needs. It had more neutral content and concerned the presentations of setting up and discussion of results of an international study which showed that the rates of schizophrenia was similar across the world (World Health Organisation, 1973).

The intervention was a seminar which included a problem-based, approach that unpacked the meaning of race, ethnicity and culture before delivering information about rates of illness to stimulate debate about explanations for this. Students were actively encouraged, in small groups, to consider and feedback how their own cultural assumptions may influence their decision-making. The hypothesis was that the style of teaching and the content influenced the ability for students to analyse complex clinical scenarios where patients came from a black or minority ethnic group. Both the conventional and interventional sessions were two hours in duration.

### **Assessment measures**

#### *Clinical vignettes*

Two clinical vignettes followed by short answer questions were written by one of the authors (KM). They were produced after a general discussion with KB, who performed the intervention, and were set to test the skills that his lecture hoped to improve. The author who performed the intervention did not see the vignettes or questions and did not know their content. The rates were unaware of the content of the interventions. At the end of their psychiatric placements, at least 6 weeks after the lecture, students sat a written examination. Students were asked to complete the vignette examination after they had finished the written examination. This was so that their responses would be informed by the teaching received, in the context of their entire clinical psychiatric experience. Extra time was allowed for them to complete the vignettes. They were told the test was optional, and that their mark on the vignettes would not go towards their overall grade because the aim of the vignettes was to help us in a course evaluation. Students were told that we would welcome their help but they were under no obligation to fill in the vignette exam at all.

The vignettes described two patients. Vignette one concerned the admission to hospital of an African-Caribbean man who had fought with a taxi-driver because he was over-charged but who had previously been admitted with a diagnosis of psychosis. Vignette two concerned a woman from Sierra Leone who was married, childless and believed that a friend was poisoning her food in order to steal her husband.

The students were asked to assess each case, produce a diagnosis, decide whether the person should be admitted, decide which socio-economic or cultural factors were relevant, decide if psychological and/or pharmacological treatment was indicated and consider whether there was any social management indicated.

The vignette-responses were rated by two specialists in Cultural Psychiatry. They were blind to the intervention status of the scripts. They were asked to read the student's answers in full and then mark their answer to each vignette against 12 questions that tested cultural competency skills. Senior clinicians in the research team devised a set of standards to reflect optimally cultural psychiatric practice. The standards covered cultural appropriateness of the assessment and treatment in accord with principles of cultural psychiatry (Figure 1), and formed the basis for the intervention. For instance, if students decided to seek information from relevant culturally-informed experts or organisations as part of their investigations they would receive one mark; if they considered useful social and psychological interventions they would receive one mark; and if they weighed up cultural factors in the psychopathology they would receive one mark, and so on. The maximum possible mark for each vignette was 12. A higher score indicated a more comprehensive appreciation of cultural issues in psychiatric practice.

**Figure 1** Marking scheme for vignette examination

Question	Vignette 1/2	Mark = 0	Mark = 1
1	Weighing up of cultural factors in psychopathology		
2	Weighing up the possibility of social realities contributing to mental state or being interpreted to be explained by beliefs		
3	Seeking information from family about social function		
4	Seeking information from family and friends about social factors		
5	Seeking information from specialist black organisations or culturally relevant parties (e.g. if he is a church member – the vicar or member of congregation might help formulate an opinion)		
6	Reviewing previous notes and diagnosis and seeking prior investigations to clarify presentation, function and premorbid state		
7	Appropriate congruent reasoning for decision making – i.e. not saying he/she is acutely psychotic and dangerous but then not admitting him, or admitting him when conclusion is he is not dangerous and not psychotic		
8	Consideration of other factors that are unknown, e.g. substance misuse		
9	Consideration of diagnoses other than schizophrenia		
10	Consideration of diagnoses other than psychoses		
11	Consideration of useful social and psychological interventions		
12	Consideration of reasons why he/she does not engage with statutory sector and/or believes self not to be ill		

*Measurement of confounding*

a) End-of-attachment exam Scores on the vignette exam could reflect an individual’s overall aptitude in psychiatry rather than the intervention. Therefore, the end-of-psychiatry attachment exam results were collected for each student; each vignette score could then be adjusted for the corresponding student’s final exam result to reduce confounding. The exam consisted of a multiple-choice test, a viva, an extended case report and clinical test. Students were awarded a mark for each part of the exam and then an overall mark graded from A-E (including half marks such as A- and B+). For this study the grade was converted into a numerical mark between 12 (A+) and 1 (E).

b) Ethnic group Ethnic group of the students was assessed by self-report using 9 categories used in the 1991 census. This was collected as it was possible that ethnic minority group status may affect a medical student’s assessment of the vignettes.

**Analysis**

Data were anonymised, coded and entered into the Statistical Package for the Social Sciences, version 10 for Windows (SPSS, 2001). The strategy was to investigate differences between means for the intervention and control groups for the total summed scores for vignette one and vignette two, and to investigate whether particular skills, defined by the mean score to each of the 12 questions, were improved by the intervention. Differences that were statistically significant in univariate tests were subjected to a regression analysis with self-assigned ethnicity and the results in their end-of-attachment examination as confounders.

**RESULTS** 96 of 97 medical students completed the vignette exam. 61.5% (n=58) of the students assigned themselves to an ethnic minority group (see Table 1 below). Those of South Asian origin were the largest single group (53.1%; n=51). There was no difference in the distribution of ethnic groups between the intervention and control group. (Chi-squared 2-sided test, P=0.13). There was no difference in exam grades between the groups (P=0.38, Table 2).

**Table 1** - Self-assigned ethnicity of participating medical students

Treatment arm	South Asian (%)	Chinese (%)	White (%)	Black-African (%)	Unknown (%)	Total (%)
Intervention	24 (25)	6 (6.3)	17 (17.7)	0 (0)	2 (2.1)	<b>49 (51)</b>
Control	27 (28.1)	0 (0)	17 (17.7)	1 (2.1)	2 (2.1)	<b>47 (49)</b>
<b>Total</b>	<b>51 (53.1)</b>	<b>6 (6.3)</b>	<b>34 (35.4)</b>	<b>1 (2.1)</b>	<b>4 (4.2)</b>	<b>96 (100)</b>

### Measures at follow-up

The group means for the vignette scores awarded by each examiner were similar (vignette one: mean 6.125, range 3.5-9.5; vignette two: mean 6.162, range 1.0-9.0). These were normally distributed for vignette one but negatively-skewed for vignette two. Scores for vignette one were correlated with scores for vignette two (Pearson's  $r=0.39$ ,  $P=0.01$ , 2-tailed). T-tests were performed to compare means between the intervention and control groups (Table 2 below). The intervention group scored marginally higher for vignette one and the control group marginally higher for vignette two. However, the differences between the mean vignette scores were not statistically significant. The items were then examined separately rather than as groups, to see if any single item discriminated between intervention status of the student according to their score. The average score for each item was obtained for every student and then the means were compared for intervention and control groups, using the T-test. This produced only one significant result: item 11 for vignette one. One mark is awarded for this item if the student "gives consideration of useful social and psychological interventions".

**Table 2** - Significance tests for differences in outcome according to treatment arm

Variable	Treatment arm	N	Mean (s.e.)	t-test sig. (2 tailed)
End-of-Attachment exam results [E=1, A+=12]	Intervention	49	8.76 (0.21) [B/B-]	0.38
	Control	47	9.02 (0.22) [B+/B]	
Average score for vignette 1	Intervention	49	6.27 (0.16)	0.23
	Control	47	5.98 (0.17)	
Average score for vignette 2	Intervention	49	5.93 (0.24)	0.09
	Control	47	6.40 (0.14)	

### Regression model

In order to test whether this improvement was sustained following adjustment for potential confounders, a regression analysis was performed with students' average scores for item 11 as the dependent variable. The primary predictor was intervention status, and dichotomised ethnicity and end-of-attachment exam result treated as confounders. The results are shown in Table 3. The model reaches statistical significance ( $P=0.031$ ) and explains approximately 10% of the variance

*World Cultural Psychiatry Research Review 2009, 4 (2): 65-73*

(R-squared= 0.096). The variable with the largest standardised regression coefficient was intervention status (Table 3b), indicating that this variable of the three in the model made the strongest and most significant unique contribution to explaining the dependent variable, when adjusted for the other variables.

**Table 3** - Regression model with item 11 from vignette marking scheme as outcome

a) Model summary and results of ANOVA

Model	R	R Square (s.e.)	ANOVA <sup>a</sup>
Regression	0.309a	0.096 (0.28)	F=3.10, P=0.031 <sup>a</sup>

<sup>a</sup> Predictors: (Constant), attachment exam results, dichotomised ethnicity, intervention status

b) Coefficients of model

Model	Standardised regression coefficients <sup>b</sup>	t	Significance
(Constant)		3.02	0.003
Attachment exam results	0.19	1.87	0.064
Dichotomised ethnicity	-0.030	-0.30	0.77
Intervention status	-0.27	-2.67	0.009

<sup>b</sup> Dependent variable: average score for item 11 on vignette marking scheme

## DISCUSSION

### Limitations

There are a number of limitations in the study that need to be borne in mind before interpreting the findings. The medical students undertook clinical attachments in a city with a high proportion of people from ethnic minority groups. It is likely that they were previously exposed to discussion of cultural factors. We were unable to investigate possible other information sources on this subject but believe that the likely effect of such sources would have been to diminish the impact of the lecture and so the possibility of measuring a difference between the two groups. One could also argue that a single seminar is likely to change examination response yet unlikely to change clinical practice, given the years of conventional teaching that students receive. Furthermore, the medical students in different intervention groups could have inadvertently discussed their lectures, swapped lecture notes or discussed the examination.

We cannot rule this out but the results did not significantly improve by group over the year of the study as would be expected if this was happening. It is unclear exactly how seriously the medical students took the examination. However, the length and depth of the answers they gave and the scores they achieved would seem to indicate that they were trying. Alternatively, the vignettes or marking scheme may have been too difficult. If all medical students found the exam difficult, one may expect the test to have little ability to discriminate between groups. The answers to vignette one were normally distributed, which argues against this, however the distribution of answers for vignette two were skewed.

### **Main findings**

Students who were exposed to the intervention did not score better overall in the measure of cultural factors in the diagnosis and treatment of patients with psychological difficulties used in this study. However, they did score significantly higher on one item, the consideration of useful psychological and social interventions, for an African-Caribbean man presenting in distress. And in a regression model, intervention status, along with ethnicity and overall exam result explained approaching 10% of the variance in the score for this item. The marking scheme did not offer weights of importance to one item over another, however, one of the major concerns of patients and carers of African and Caribbean origin with diagnoses of psychosis is the relative lack of referral for psychological treatment (Sainsbury Centre for Mental Health, 2002). Though it is uncertain whether responses to vignette examinations change clinical practice, it is interesting that a single seminar adopting a reflective practice and social-anthropological approach, given one and a half months before the examination, may have changed the medical students' appraisal of the vignette.

### **The future**

This assessment of teaching cultural psychiatry depends on the ability to accurately assess change in practice, but also to make space for a different form of teaching and learning, albeit this is not dissimilar to the recommendations for changes in curricula in general. That is that they should be more person-centred, relying on problem-solving and more flexible thinking, rather than only factual knowledge. It could be argued that measuring outcome on the basis of responses to two clinical vignettes alone is unreliable. However, it was important to keep the test brief to achieve an optimal response rate – in this study it was almost 99%. Both vignettes and the assessment measure were based on the clinical judgement of two experienced experts in Cultural Psychiatry. The items on the instrument reflected issues of importance on the UK scene of cultural psychiatry, such as the diagnostic uncertainty of schizophrenia in African-Caribbeans. A more detailed, structured and multi-dimensional instrument to measure the capability of students in the assessment of how cultural factors influence clinical assessment and management will have to be developed. This could be expanded, perhaps for the assessment of more advanced students of psychiatry, by including sections on the assessment of cultural identity and the clinician-patient relationship, as suggested by the Outline for Cultural Formulation described in the American Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (Lewis-Fernandez & Diaz, 2002). Such an instrument could be made more reliable by using factor analysis in its development and ensuring that it was informed by responses to a greater variety of clinical situations than time permitted in this initial study. Such an assessment may usefully measure cross-cultural teaching outside the intervention. However, it is perhaps encouraging that the one discriminating item between those who received the intervention and those that did not, was the consideration of useful psycho-social interventions in relation to the vignette about a young African-Caribbean man.

## OVERVIEW BOX

### What is already known:

- The impact of ethnicity and culture is paramount to the treatment of mental health problems
- Both appear to be under-emphasised in the current UK medical school curriculum

### What this study adds:

- A single-blind, randomised trial of teaching cultural psychiatry to medical students showed that the group which received the teaching were more likely to consider useful psycho-social intervention

### Future research:

- A more detailed instrument to measure “cultural competency” need to be developed

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CROSS-CULTURAL PSYCHIATRY TRAINING RCT

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