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Gender differences in undergraduate performance in psychiatry

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Earlier research reported that female undergraduates performed significantly better than their male counterparts in medical school examinations. Such findings were partly explained by biases in admission policies with women (who formed only 25% of the student body) being higher achievers than men prior to entry to medical school. While some recent studies provide evidence of higher achievement levels by women (Norcini *et al*, 1985), it is increasingly recognised that these differences do not apply to all specialities within medicine (unpublished observation, Ferrier & Scott, 1987).

Two previous studies of undergraduate psychiatry performance of 121 (Alexander & Eagles, 1988) and 180 (Keitner *et al*, 1984) students respectively showed non-significant differences in male and female attainment. However, subjective impressions suggested that women students performed better than men in their Newcastle psychiatry attachment. This study examined the accuracy of this hypothesis and then compared gender related performance at undergraduate and postgraduate level.

The study

The psychiatry course for Newcastle students is split into two parts, with attachments in the first and final clinical years. The initial course comprises three days of introductory lectures followed by a four week clinical attachment in general adult psychiatry supervised by a named consultant. At the end of this, the student sees a patient under examination conditions and presents a formulation for discussion to two other consultants. Marks are awarded independently by the attachment supervisor and the long case examiners. The students' final grade for the assessment is obtained by combining these scores in a 1:1 ratio.

We analysed first clinical attachment data from three consecutive cohorts of students (1987–91). There were 418 students, 221 were men and 197 were women. We translated the grades awarded for the psychiatry attachment into numerical scores (A = 10 to E = 2), and compared results for men and women using a two-tailed Mann Whitney U test.

We compared postgraduate performance by applying a two-tailed χ^2-test to pass rates for male (n = 758) and female (n = 514) membership candidates in four consecutive Part I examinations during the corresponding time period.

Findings

Female undergraduates performed significantly better than male students in psychiatry on the clinical attachment ($z = 2.5$; $P < 0.05$). Five per cent of women gave outstanding performances (scoring A/A+) compared with 1% of men. Conversely, 13% of women scored less than grade C (an indicator of poor performance) compared with 20% of men. Mean ages of women and men were not significantly different. There were no significant differences in pass rates between the male (52%) and female (58%) Part I membership candidates. Mean ages of female and male postgraduates were not significantly different.

Comment

There are many potential explanations for the results obtained. Differences from previous research may relate to the larger sample size investigated as this reduces the possibility of type II errors. Earlier studies had other potential sources of bias. Alexander & Eagles (1988) investigated the results for only one year of students, while Keiter *et al*'s study (1984) was for students from four consecutive years, but all were attached to one specific psychiatric unit. Alternatively, assessors in Newcastle may be favourably biased towards women. We have no evidence of this and given that the three consultants involved in each assessment grading are brought together randomly throughout the year, this seems unlikely.

Age and social class did not appear to explain differences in undergraduate performance in psychiatry. The role of gender therefore takes on some importance. Pre-attachment attitudes may affect performance. Wilkinson *et al* (1983) reported that male undergraduates are significantly more likely to perceive psychiatry as "too inexact and lacking a

proper scientific basis". Such views may undermine motivation to engage in the specialty.

Aptitude for the speciality will also influence motivation to perform well. Undergraduate men tend to be more adept at scientific and practical subspecialties (Norcini *et al*, 1985). Keitner *et al* (1984) suggested that the superior interpersonal skills of females contributed to their better performance in psychiatry at undergraduate level. Women may also be more able to both elicit and interpret expressions of emotion and emotional distress. At the same chronological age, women appear to be functioning at a more mature level than their male counterparts. The short length of the attachment and the language basis of the specialty may be relevant. Perhaps female students show greater adaptability to novel situations or concepts. Also it has been demonstrated that female students are more articulate and literate than males.

The findings on postgraduate performance are not directly comparable with the results regarding undergraduates. Also, pass/fail rates as opposed to gradings are recorded, so more subtle differences between male and female performance cannot be identified. However, it appears that gender differences in performance are no longer present. This may be explained by a number of influences. First, at postgraduate level a selection bias will operate in both genders as men and women who pursue a career in psychiatry are self-selected. Second, psychiatry is both an art and a science and individuals who are drawn towards medical or psychosocial models can be accommodated with equal ease. Lastly, if length of exposure played any role at undergraduate level, this influence has been lost by the longer time available for postgraduate training.

Conclusions

Female medical students appear to outperform their male counterparts in the undergraduate psychiatry attachment. This significant difference is not apparent in all medical subspecialties (unpublished observation; Ferrier & Scott, 1987) and does not extend to postgraduate performance at membership. Both attitude towards and aptitude for psychiatry may partly explain these gender differences in undergraduate performance. Although we would not recommend specific changes in undergraduate teaching, course organisers and supervising consultants need to register that potential recruits to the specialty may be lost. If we fail to engage some male students and they underachieve in the assessment, their motivation and interest in psychiatry may be further undermined.

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An extended version of this paper with additional references, and the unpublished paper of Ferrier & Scott are available from the authors.