

Gender Bias in the Medical Student Performance Evaluation (MSPE)

An Analysis of Medical Student Performance and Evaluation Data, 2003-07

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Background

With the number of women entering U.S. medical schools steadily increasing, it is important to consider the potential for gender-based stereotypes that impact career advancement at critical gate-keeping points. This study examined the adjectives used in MSPEs for possible gender bias at the University of Iowa Carver College of Medicine (UICCOM).

Data

Gathered five years of UICCOM student data (n=705; women=319, men=386) from 2003-07 on:

- MSPE adjectives – calculated the proportion of forms on which each of the 20 adjectives was checked
- Student Performance measures:
 - ✓ USMLE scores
 - ✓ Honors grades received
 - ✓ Near honors grades received
 - ✓ Clinical Clerkship evaluations

Conclusions

Although female students were more likely than male students to be described as compassionate, enthusiastic, and inquisitive, this finding was consistent with observed differences in their clinical performance measure scores and evaluations.

Given the importance of the MSPE in the resident application process the authors recommend that institutions examine the language used in their own MSPE letters.

Methods

Factor Analysis identified five factors underlying the 20 MSPE adjectives.

Conducted ANOVAs to examine gender differences in:

- MSPE factors
- Student Performance measure scores
- Relations between MSPE factors and performance measure scores

Results

Factor Analysis identified the five major groupings of adjectives shown below.

Table 1. Factor Loadings for MSPE Adjectives

Factor	Adjective (Factor Loading)
1. Task Orientation	Conscientious (.449), Dependable (.749), Hardworking (.767), Motivated (.577), Team Player (.532)
2. Student Proficiency	Confident (.721), Efficient (.416), Independent (.669), Quick-learner (.568), Self-directed (.629)
Factor 3	Observant (.776), Respectful (.636), Sensitive (.598)
Factor 4	Compassionate (.503), Enthusiastic (.530), Inquisitive (.666)
Factor 5	Mature (.746), Professional (.604)

There was only one significant difference between male and female students. Men rated lower than women on Factor 4.

Table 2. Gender Differences in Factors

Dependent Variable (Factor)	F	Probability under H ₀ : (p-value)	For Significant Differences: Means by Gender
1. Task Orientation: Conscientious, Dependable, Hardworking, Motivated, Team Player	1.24	.265	
2. Student Proficiency: Confident, Efficient, Independent, Quick-learner, Self-directed	.173	.677	
Factor 3: Observant, Respectful, Sensitive	.008	.930	
Factor 4: Compassionate, Enthusiastic, Inquisitive	86.27	< .001**	Women=274, Men=216
Factor 5: Mature, Professional	1.79	.181	

Results

If the observed gender difference on MSPE Factor 4 adjectives reflects performance differences then one would expect to see corresponding variation by gender in performance measures.

The chart below shows that the variation in performance scores was consistent with gender differences in MSPEs. That is, women scored significantly higher than men on clinical ratings.

