

GENDER DIFFERENCES IN FIRST YEAR MEDICAL STUDENTS' ATTITUDES TOWARDS A DISCUSSION-ORIENTED BEHAVIORAL SCIENCE COURSE

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We investigated gender differences among first year medical students' attitudes towards a discussion-oriented behavioral science course, performance on an end of course essay, and locus of control. Female medical students generally evaluated the course more favorably than their male counterparts, and scored higher on the Rotter I-E scale (i.e., were more external). There were no gender differences in essay grades. Implications of the findings are discussed and future research directions are suggested.

Keywords: discussion-oriented behavioral science course, attitudes, gender differences.

Although medical student education has been dominated by a lecture-based curriculum, the General Professional Education of the Physician Report (Mueller, 1984) recommended a shift from students being passive recipients of "prepackaged" information to learning experiences that challenge them to be more actively involved in their own education. One such instructional mode is a discussion group, where students are challenged to generate their own information, to implement their acquired information (e.g., by role-playing), and to improve their problem solving abilities. Further, a skillfully led discussion group provides the opportunity for closer personal contact and information transmission between faculty and students, as well as role modeling with the group leader(s).

As part of our ongoing evaluation of a discussion-oriented behavioral science course for first year medical students, we compared gender differences in student assessments of the course components (leaders, readings, content, process), as well as on a personality measure, the Rotter Internal-External Locus of Control Scale (Rotter, 1966). Because of their greater experience and comfort with discussing personal experiences, feelings, and relationships (Browman & Allen, 1985) we hypothesized that female students, as a group, would evaluate the course more favorably than male students. Since both male and female medical students generally are highly motivated achievers, we did not anticipate sex differences on either the Rotter I-E scale or on the end of course written essay.

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METHOD

COURSE DESCRIPTION

Ninety-seven first year medical students ($N = 23$ females, 74 males) were randomly divided into seven groups of approximately 14 students. The groups remained intact, and over the 7-week block rotated through each discussion emphasized seminar. Seminar topics included adult sexuality, aging and health, the impaired physician, physical illness and coping style, psychological stress in medical school, doctor-patient relationships, and sociocultural models of mental health.

SUBJECTS AND QUESTIONNAIRE

Seventy-nine students completed a post-course questionnaire (see Table 1) assessing various aspects of the course (e.g., course content, leaders, peers, reading, group process). Of the respondents, 54 were male, 19 were female and 6 questionnaires had no gender identifying information. Rotter I-E Locus of Control (Rotter, 1966): This scale assesses a person's beliefs regarding reinforcement contingencies. High Is (Internals) believe that rewards are contingent upon one's own behavior, and conversely High Es (Externals) believe that rewards are controlled by powerful others or chance. Forty-six males and 16 females completed I-E scales at the time of course questionnaire completion. Essay: All students were asked to review a topic of their choosing which included describing the topic's clinical relevance and expressing their own opinions about the subject matter. The essays were graded by two readers (Director of Undergraduate Education and Chairman of Psychiatry) on a 92 (high pass), 85 (pass), and 70 (fail) basis. Although content was assessed on hard to define factors such as critical thinking, assessment included the student's ability to summarize current literature, originality, conceptual understanding and grasp of relevant principles. Readers were in agreement on approximately 90% of the essay grades and were not aware of students' response to the course evaluation questionnaires.

STATISTICAL ANALYSES

Male and female participants' essay grades, course ratings (from the questionnaire), and Rotter I-E scores were compared by means of student t tests.

RESULTS AND DISCUSSION

Several intriguing findings emerge from our exploratory study. For example, female medical students evaluated the adult sexuality course more favorably than their male counterparts. It appears that female students, compared to male, are more comfortable talking about this subject matter in a mixed sex-group setting. It is unclear whether comfort levels would have differed if singled-sexed groups had been used. While not reaching significance, the consistent pattern of female students ranking course topics more favorably than male students might be explained in terms of a social desirability factor (Reynolds, 1982). Additionally, female students would likely be more comfort-

TABLE 1
MALE-FEMALE ATTITUDES TOWARDS BEHAVIORAL SCIENCE COURSE

	MIJFK		#M. P ⁷ "		<i>p</i>
Contents					
Sociocultural models	3.2	3.8	33.12	1.72	<i>ns</i>
Adult sexuality	3.9	4.4	43.14	2.20	.03
Aging	3.9	4.3	41.16	1.71	<i>ns</i>
Impaired physician	4.2	4.4	43.17	0.80	<i>ns</i>
Physical illness and coping	3.9	4.2	34.13	1.37	<i>ns</i>
Psychological stress	4.2	4.1	46.18	0.32	<i>ns</i>
Doctor-patient relationship	3.9	4.2	36.16	1.03	<i>ns</i>
Leaders•					
Knowledge	3.5	3.3	53.17	0.80	<i>ns</i>
Stimulating interest	3.0	3.1	53.17	0.19	<i>ns</i>
Stimulating discussion	3.2	3.1	53.17	0.12	<i>ns</i>
Leaders co-working ability	3.2	3.2	51.17	0.17	<i>ns</i>
Readings •					
Appropriate	3.8	4.2	53.19	2.53	.01
Prepared me for seminar	3.3	3.5	53.19	0.81	<i>ns</i>
Up to date	3.7	3.7	53.19	0.53	<i>ns</i>
Group Process/Aids*					
Role playing	1.7	2.0	51.18	1.72	<i>ns</i>
Patient participation	2.1	2.6	48.17	2.81	.01
Student faculty interaction	2.6	2.6	54.19	0.01	<i>ns</i>
Student-student interaction	2.5	2.6	54.19	0.82	<i>ns</i>
Audiovisual aids	1.8	2.6	53.18	4.34	.001
Overall participation	1.9	2.3	54.19	2.11	.04
Utility of discusslod format	3.6	4.1	54.19	2.3	.03
Utility of lecture format for this course	2.4	2.8	54.19	1.92	.05
Overall Seminars					
Interest generated	3.2	3.7	52.19	1.61	<i>ns</i>
Information gained	3.0	3.4	52.19	2.00	.05
Comprehensive increased	3.2	3.4	51.19	1.20	<i>ns</i>
Appreciation of psychiatry	3.0	3.6	51.19	1.94	.056
Projected information'	2.1	2.4	53.19	2.52	.01
Anxiety Levels	1.8	1.8	54.19	0.10	<i>ns</i>
I-E Locus of Control*	8.5	11.4	46.16	2.42	.02
Essay	87.2	88.0	54.19	0.91	<i>ns</i>

• = 5-point rating scale; 5 = most positive

* = 3-point rating scale; 3 = most positive

Note: Because some items were not rated on individual questionnaires or some respondents had not attended specific seminars, *ns* do not always equal 79. *N* = 46 males; 16 females completed an identifiable I-E scale.

able with the interpersonal nature of the topics discussed in the course. That is, females are more accustomed than males to discussing their ideas and feelings about issues in general as well as the subjects of sexuality and relationships. Contrary to expectations, first year female medical students scored higher ($t = 2.42, df = 60, p = .02$) on the Rotter external dimension than male students. Our expectation was that both male and female students must have previously experienced a contingency between their own efforts and desired rewards (5). Further, the I dimension overlaps with a sense of competence or personal efficacy. However, Gurian et al. (1969) pointed out that talented blacks who aspired for high prestige and ability jobs (e.g., engineering, business) from which they were previously excluded would have been made dysfunctional by an internal locus of control. That is, they would have engaged in self-blame for their exclusion (e.g., belief that blacks lack intelligence, ability, skill). However, talented blacks who realistically viewed their exclusions as being due to external obstacles placed the blame on societal discrimination (i.e., the system).

Female medical students may have initially been high Internals but once they became medical students they became like the talented blacks, a low status group in a highly competitive, prestigious nontraditional role. In such a position, it is likely functional to heighten one's sensitivity to external cues (e.g., reactions from male peers and professors); this "externally" is likely not perceived as being as critical for male students. Perhaps after demonstrating their ability to achieve comparable to male students, female students shift back to a higher internal orientation.

We also correlated male and female medical students' I-E scores with their evaluation of the seminar format as a medium of instruction. For female students, the external dimension correlated significantly ($r = .51, p = .04$) with a favorable rating; the correlation ($r = .52, p = .09$) for male students was in a positive rating; the correlation for male students was statistically nonsignificant. It appears that the I-E factor is more important for females than males in their perception of the importance of a discussion format for learning behavioral science.

The two groups did not differ in their essay grades. One goal of our course evaluation is to generate research hypotheses about the interaction between gender issues and the medical school educational experience. This appears particularly important since the percentage of women enrolled in medical schools has increased dramatically both locally (Vanderbilt) and nationally. On the national level, it is now approximately one-third of the total. As females constitute a greater percentage of the medical school class, gender-related attitudes represent an important focus for study and understanding of the learning environment in medical school. For example, are there gender differences in interaction style (e.g., communication style of giving and receiving feedback) and if so, how do they influence learning? Do male seminar leaders direct more questions to or seek concept elaborations differently from male and female students? Are there differences in cohesiveness in mixed-sex and single-sex learning groups and how do these affect group interaction (Alagna & Reddy, 1985). If we, as educators, want to optimize the effectiveness of discussion groups, as hoped for in the GPEP report, we need to understand better the role of variables such as gender in heterogeneous and homogeneous medical training groups.

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