Do students' attitudes toward women change during medical school?

Education

Éducation

Susan P. Phillips,* MD; Karen E. Ferguson,† MD

Abstract

Background: Medical school has historically reinforced traditional views of women. This cohort study follows implementation of a revitalized curriculum and examines students' attitudes toward women on entry into an Ontario medical school, and 3 years later.

Methods: Of the 75 students entering first year at Queen's University medical school 70 completed the initial survey in September 1994 and 54 were resurveyed in May 1997. First-year students at 2 other Ontario medical schools were also surveyed in 1994, and these 166 respondents formed a comparison group. Changes in responses to statements about sex-role stereotypes, willingness to control decision-making of female patients, and conceptualization of women as "other" or "abnormal" because they are women were examined. Responses from the comparison group were used to indicate whether the Queen's group was representative.

Results: Attitudinal differences between the primary group and the comparison group were not significant. After 3 years of medical education students were somewhat less accepting of sex-role stereotypes and less controlling in the doctor–patient encounter. They continued, however, to equate adults with men and to see women as "not adult" or "other." Female students began and remained somewhat more open-minded in all areas studied.

Interpretation: A predicted trend toward conservatism was not seen as students became older, more aware and closer to completion of medical training, although they continued to equate adults with male and to see women as "other." Findings may validate new curricular approaches and increased attention to gender issues in the academic environment.

Résumé

Contexte : La faculté de médecine a toujours renforcé les opinions traditionnelles sur les femmes. Cette étude de cohortes suit la mise en œuvre d'un programme d'études revitalisé et examine les attitudes des étudiants à l'égard des femmes au moment de leur entrée dans une faculté de médecine de l'Ontario et trois ans plus tard.

Méthodes : Sur les 75 étudiants qui sont entrés en première année à la faculté de médecine de l'Université Queen's, 70 ont rempli le premier sondage en septembre 1994 et 54 ont été sondés de nouveau en mai 1997. On a interrogé aussi des étudiants de première année de deux autres facultés de médecine de l'Ontario en 1994 et ces 166 répondants ont constitué un groupe témoin. On a étudié les changements des réponses à des énoncés sur les stéréotypes sexuels, la volonté de contrôler les décisions prises par les patientes et la conceptualisation des femmes comme étant des êtres «autres» ou «anormaux» parce qu'elles sont des femmes. On a utilisé les réponses du groupe témoin pour déterminer si le groupe de Queen's était représentatif.

Résultats : Les attitudes du groupe primaire ne différaient pas de façon significative de celles du groupe témoin. Après trois ans d'études en médecine, les étudiants acceptaient un peu moins les stéréotypes sexuels et contrôlaient moins la rencontre médecin–patiente. Ils continuaient toutefois de considérer les hommes

Dr. Phillips is an Associate Professor in the Department of Family Medicine, Queen's University, Kingston, Ont. Dr. Ferguson is a resident in the Department of Family Medicine, University of Ottawa, Ottawa, Ont.

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comme des adultes et les femmes comme des «non adultes» ou «autres». Les étudiantes avaient un peu plus d'ouverture d'esprit au début et l'ont conservée dans tous les domaines étudiés.

Interprétation : Une tendance prédite au conservatisme ne s'est pas concrétisée à mesure que les étudiants vieillissaient, étaient plus sensibilisés et achevaient leurs études en médecine, même s'ils ont continué d'établir un équivalent entre l'âge adulte et l'homme et de considérer les femmes comme des êtres «autres». Les résultats peuvent valider une nouvelle démarche d'élaboration de programmes et l'attention accrue qu'on accorde aux questions spécifiques aux sexes dans les milieux universitaires.

Both within and outside the medical establishment many have expressed concern that physicians stereotype women, wish to control decision-making of female patients, "pathologize" their normal bodily functions, are oblivious to diversity issues or treat women as abnormal because they are not men.[1–3] Numerous examples exist of how anatomy texts,[4–6] language[1] and medical practice[3,7,8] have defined the male body as the prototype of the human organism and women as aberrations from that norm. If a medical school reinforces social stereotypes, graduates may enter medical practice with fixed views that restrict communication, shape medical care and affect the health of women.[9,10]

Measures of medical students' attitudes toward women[8,11] generally have raised concerns about stereotypical beliefs. Medical students hold more authoritarian attitudes than law students[12] and are less liberal than students of nursing or social work.[13] Over the course of medical training students show a trend toward conservatism[14] and away from ethical sensitivity.[13,15]

Broverman and colleagues[16] developed a scale to assess whether one sex is more closely equated than the other with healthy adult status. They found that mental health professionals associated being a healthy adult with being male, whereas female traits were seen as unhealthy and as "other."

Existing attitudinal studies predate the revitalization of curriculum at many North American medical schools. Recognizing the broad determinants of health such as gender, schools have shifted their curricular emphasis away from the purely biological toward the biopsychosocial.[17] This change has been accompanied by increased educational emphasis on attitudes.

In this study we examine the evolution of students' attitudes toward women over the years spent in medical school.

Methods

A 39-item questionnaire was developed in which we incorporated a few original statements and adapted the remainder from pre-existing scales. Specific areas examined included sex-role stereotypes (the adherence to traditional views that limit the options for women in our society), control of female patients by physicians (the tendency to direct rather than share in decision-making), and women as "other" (defining the prototype of the human body as male, with adult meaning male and female being conceptualized as an aberration from the model ["smaller than the 70-kg male"] and being, by definition, "abnormal").

Responses to stereotype and control statements were measured using a 5-point Likert scale. Questions and statements exploring women as "other" were of 2 types. Some were open ended, requiring written answers. Others were adaptations of Broverman and colleagues' work[16] and used 10 pairs of words representing the poles of traditionally male and female characteristics (e.g., "rational" and "intuitive"). The paired traits were separated by a 5-point scale. Students were asked to answer one of 3 questions about each pair ("[adults/women/men] tend to be . . .").

This interchanging of the terms "adult," "women" and "men" was used for all of the "other" type questions. For example, questionnaires each included one of the following 3 statements: "Two common diseases of the elderly are . . .," "Two common diseases of elderly women are . . .," and "Two common diseases of elderly men are . . . ."

To evaluate whether men were viewed as the prototype of adults we compared the group's responses for male and female patients with those for all adult patients within each question.

The first-year medical students at Queen's University were surveyed before their first lecture in September 1994. A covering letter explained that our aim was to examine the effect of medical school on attitudes of medical students, that participation was optional and that responses would be confidential and anonymous. It also explained that there were no correct responses to the statements.

The same class completed the same survey in May 1997, at the beginning of their final year of medical school.

First-year students at 2 of Ontario's other 4 medical schools were also surveyed during the 1994–95 academic year. Their responses were used to determine whether the group studied was typical of medical students throughout Canada's largest province.

Data were analysed using the SPSS program (version 7.1; SPSS Inc., Chicago). Before analysis all Likert scales were reordered so that a response of 5 suggested a high acceptance of sex-role stereotypes or control over patients and a response of 1 implied a rejection of these concepts. Significance ($p < 0.05$) was assessed with the use of the t-test. Similarly, responses to

the paired-traits section were reoriented, with 1 representing the stereotypical female pole and 5 the stereotypical male pole.

Results

Attitudes of first-year students

Of the 75 first-year students (49 men, 26 women) in the class of 1998 at Queen's University, 70 (45 men, 24 women, 1 sex not specified) completed the questionnaire. Responses of the 166 first-year students (91 men, 71 women, 5 sex not specified) from the 2 other universities were gathered during class time later in the first year.

Overall, neither the male nor the female Queen's students embraced sex-role stereotypes. With a score of 5 representing highest acceptance of stereotypes, mean scores were 2.14 for the whole group, 2.01 for the women and 2.19 for the men. The responses of the comparison group (mean score 2.20, $p = 0.21$) indicate that the Queen's students were representative of medical students in Ontario.

The overall mean scores for the control statements did not differ significantly between the male and female Queen's students (all 2.91, women 2.83, men 2.94; $p = 0.30$). The responses of the comparison group were almost identical (mean score 2.92, $p = 0.90$). Thus, on entry to medical school, students were, in general, neutral about or somewhat averse to controlling encounters with female patients.

Written responses to each of the questions examining whether students equated normal adult with normal male, while conceptualizing women as "other," were analysed separately. When students were asked to name 2 common diseases of elderly adults, men and women, conditions associated with elderly adults did not correspond disproportionately with the responses for either women or men. The students did not seem to think in gender-specific terms when they read the term "adult." They did, however, associate heart disease particularly with men (20 responses), somewhat with adults (9 responses) and minimally with women (3 responses). Conversely, osteoporosis was the most commonly named disease of older women (20 responses) but not of adults (9 responses). When asked to identify the most frequent cause of death, students chose circulatory disease for men (19 of 23 responses) and adults (20 of 24 responses), but not for women (10 of 23 responses). For this question adult was clearly equated with male.

Responses to the 10 paired traits were examined as a group. Overall, the students' concepts of men (mean score 3.44) did not differ significantly from their concepts of adults (mean score 3.30, $p = 0.10$). The characteristics of women, however, were viewed quite differently from those of adults (mean score 2.86, $p < 0.05$). Again, there were no significant differences between the responses of the study group and those of the comparison group.

Attitudes 3 years later

The Queen's students were resurveyed in May 1997. All 54 students who received the follow-up questionnaire (29 men, 23 women, 2 sex not specified) returned it. Responses showing significant change are listed in Table 1.

Students seemed to be slightly less accepting of sex-role stereotypes by their final year (mean scores: all 2.02, women 1.95, men 2.11). The mean score for the stereotype statements appeared to have decreased, but in fact this change was not significant when male and female responses were examined separately (men $p = 0.28$; women $p = 0.60$). A separate analysis of paired results

Table 1: Responses to statements assessing medical students' attitudes toward women that changed significantly between first and fourth year

Statement	Time of survey; mean score*		*p* value
	First year	Fourth year	
Stereotyping			
A woman will not feel truly fulfilled until she has been a mother	2.3	2.1	0.03
Many women claim rape if they have consented to sexual relations and regret consenting afterward	2.3	2.0	0.03
Women do not provoke rape by their appearance or behaviour	2.6	3.1	0.02
Often what women describe as sexual harassment is really a misinterpretation of harmless or humorous behaviour	2.4	2.1	0.03
Controlling			
Doctors should anticipate the pain of labour and intervene to make birth as pain-free as possible	2.6	3.0	0.02
A married woman should be permitted to have an abortion even if her husband is opposed to it	2.8	2.4	0.04
Unless it is a life-threatening situation, a doctor should not x-ray a woman who is in the second half of her menstrual cycle because, even if she denies it, she could be pregnant. (It is known that x-rays can be damaging to a fetus.)	1.7	2.4	< 0.01
Doctors are more objective than their patients in assessing the risks and benefits of abortion because most pregnant women are too emotionally involved to make a reasoned decision	2.5	2.1	0.02

*Responses were measured using 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

(using only the first- and fourth-year surveys that had been completed by the same students) showed similar results.

Students became significantly less willing to control female patients and their decision-making (mean scores: all 2.70, $p = 0.01$; women 2.62; men 2.79). The change in overall attitudes was greater for female students ($p = 0.09$) than for male students ($p = 0.16$). The paired sample of first- and fourth-year surveys showed similar results.

Fourth-year students were able to accurately name circulatory diseases as the leading cause of death for all adults. Neither sex was more closely identified with the neutral term "adult." By their final year students did not assume that heart disease was a common cause of death for men and adults, but not for women.

Responses to the statements examining the traits of women and men changed after 3 years of medical school. The students' views of healthy adult traits had not changed (mean score 3.28, $p = 0.90$) and were still somewhat oriented toward characteristics traditionally identified as male. Characterizations of men and women were, however, less polarized (men score 3.21, $p = 0.04$; women 3.03, $p = 0.08$). Nevertheless, despite these shifts the equating of men and adults persisted ($p = 0.47$), and the view of women remained significantly different from that of adults ($p = 0.01$). The male and female participants' responses were not analysed separately because the numbers in each group were small.

Interpretation

In the doctor–patient relationship the physician's behaviour is central to the dynamic. Presumably doctors' behaviours are, in turn, shaped by knowledge and attitudes, and thus measuring attitudes becomes an indirect measure of behaviour.[18]

The examination of attitudes presents a challenge. Although many scales measuring sex-role stereotypes, gender bias or authoritarian attitudes have been tested and validated using nonmedical participants, none has focused on the interaction between doctor and patient.[17,19–24] The authors of these scales generally include explanations for how they have eliminated the confounder of social desirability. Nevertheless, it is difficult to be certain that today's medical students would not guess at the "socially correct" response to a statement such as "It is ridiculous for a woman to run a locomotive and a man to darn socks."[22]

Although many of the statements and questions used in our study had been validated as parts of other surveys, the questionnaire overall was original. Our aim was not to rate participants' attitudes absolutely, but rather to explore changes over time; therefore, we have not assessed the questionnaire beyond its face validity. We cannot assume that a mean "stereotype" score of less than 3 implies a lack of stereotypical thinking. We can look at the relative changes in responses over time and conclude that a decreasing mean score for the stereotype questions implies a decrease in stereotypical thinking.

Our findings suggest that men and women entering medical school no longer wholeheartedly accept sex-role stereotypes and are neutral about assuming control over female patients' decision-making. We cannot, however, draw conclusions about the attitudes of medical trainees relative to a broader population. We can assume that the small group studied is typical of medical trainees in Ontario because of the congruence of their responses with those of the comparison group.

Our observations differ from those of the few studies of the evolution of medical students' attitudes that we could find.[14,15] Over the course of their medical education, our male and female respondents became somewhat less stereotypical in their thinking, less controlling toward female patients and less likely to assume that "adult" and "male" were synonymous and that "female" represented "other." They did not adopt increasingly conservative beliefs.

Although the control questions specifically explored the students' willingness to make decisions for female patients, the respondents might have shown an identical reluctance to control male patients. We should not therefore assume that this trend is gender specific.

In both teaching and practice, medicine has come to reflect the stereotypes and values prevalent in our society. Numerous authors have stated that, by equating the attributes of adults more closely with those of men than of women, textbooks and faculty subtly but effectively teach future physicians that women, because they are women, are abnormal.[2–6,8] Our findings replicated those of Broverman and colleagues[16] that adults and men share similar attributes and that women are somehow different from adults. This tendency was less apparent over time.

Was there something unique about the medical school studied? What was the specific effect of medical education on the attitudes of trainees? Will the trend toward more liberated values seen over the course of medical training continue or reverse after entry into medical practice?

Queen's University has a small medical school, noted neither for its traditional nature nor for its innovation. Its curriculum has changed and been revitalized over the past 10 years in keeping with similar changes throughout North America. It would be impossible to assess whether distinctive aspects of this medical school explain our findings or make them less generalizable; however, there is

nothing apparently unique about the students, faculty or curriculum.

Reasons for the small liberalization of attitudes observed are speculative. The trend may indicate a maturation effect. Awareness of gender and women's issues may have increased — either because of, or despite, medical education. The fourth-year students' correct knowledge of causes of death for men and women probably indicated learning rather than changing attitudes. Students' understandings of which responses would be considered correct have undoubtedly become more sophisticated, making it difficult to determine whether observed changes primarily reflect a social desirability factor.[25] When they were resurveyed the students had just started their clinical clerkships. The hospital setting and the role modelling inherent in working closely with medical supervisors may be most responsible for shaping the values of young physicians.[26] Although medical education may have changed the respondents' attitudes, their clinical and postgraduate training could have the reverse effect.

Nevertheless, for those who consider that physicians' stereotyping, controlling of female patients' decision-making and viewing women homogeneously as "aberrant men" will negatively affect the health of women, our findings suggest that medical education may no longer be reinforcing stereotypes.

Our study may be the only such one undertaken since North American medical schools have revitalized curriculum. In contrast to most previous findings, our participants did not become more controlling over the course of their medical education, nor did they become more accepting of sex-role stereotypes or more likely to assume that adults and men were synonymous but that women were different. If changes in medical education have modified an inherent conservatism among doctors, then perhaps our curricular changes, gender-issues committees and the attention given to the process of education are having the desired effect.

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Reprint requests to: *Dr. Susan P. Phillips, Department of Family Medicine, Queen's University, Family Medicine Centre, 220 Bagot St., Kingston ON K7L 5E9*

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