Does Gender Moderate Medical Students' Assessments of Unprofessional Behavior?

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BACKGROUND: Despite widespread acceptance of professionalism as a clinical competency, the role of certain contextual factors in assessing certain behaviors remains unknown.

OBJECTIVE: To examine the potential moderating role of gender in assessing unprofessional behaviors during undergraduate medical training.

DESIGN: Randomized, anonymous, self-administered questionnaire.

PARTICIPANTS: Ninety seven (97) third-year students from a southeastern U.S. medical school (participation rate=95.1 %).

MAIN MEASURES: Using a 4-point Likert-type scale, subjects reviewed two subsets of randomly administered, equally weighted hypothetical vignettes depicting potentially unprofessional behaviors that could occur during medical students' clinical training. Ratings were categorized from 1 – "Not a Problem" to 4 – "A Severe Problem", based on the perceived degree of unprofessionalism. In each written scenario, trainee gender was systematically varied.

KEY RESULTS: Across all scenario subsets, male and female students' mean ratings of hypothetical behaviors did not differ significantly. Further, male and female students tended, on average, to rate behaviors similarly regardless of the trainee's gender.

CONCLUSION: Study findings suggest that: (1) neither students' gender nor that of the hypothetical "actor" moderates the assessment of unprofessional behaviors; and (2) male and female students assign roughly the same overall rankings to potentially unprofessional behaviors.

KEY WORDS: professionalism; gender; medical education; unprofessional behavior.

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INTRODUCTION

As a required set of knowledge, skills, and attitudes deemed essential to the practice of modern medicine, medical professionalism is a widely-accepted core clinical competency.¹ Despite this, continued challenges remain to clearly identifying and understanding behaviors that may constitute breaches of professional conduct.² Indeed, it is argued that professional behavior, and violations thereof, require identification of the "values–conflict" being tested, which is indirectly linked to a set of complex factors underlying one's value structure.^{3,4} Thus, determining what does and does not constitute unprofessional behavior may vary, based on stage of career/training, level of experience, setting, and/or situation urgency—and may require understanding of context and reasoning over and above the straightforward observation and interpretation of behaviors.³ Perhaps not surprisingly, studies have found that even faculty members disagree on what constitutes professional and unprofessional behavior among medical students,² leading some to advocate for the use of peer evaluations, personality inventories, and objective structured clinical examinations (OSCEs) for assessing medical students' behaviors.^{3–6}

For various reasons, these ambiguities may be especially problematic for undergraduate medical students,⁷ many of whom are experiencing their initial foray into the profession. First, the role transition to medical student, combined with burgeoning access to user-generated Internet content (i.e., *Web 2.0*), may now allow certain unprofessional behaviors to be experienced outside of the learning environment.^{8,9}

Second, the changing motivations and aptitudes of present-day millennial students has created learners who, despite being more rules-conscious,¹⁰ are also more driven to succeed.¹¹ Finally, practicing physicians do not always model behaviors they endorse,^{12,13} forcing students to cognitively reconcile these inconsistencies.¹⁴

To be sure, certain behaviors are deemed unequivocally unprofessional—regardless of extenuating circumstances. However, many others are less clearly defined and may be subject to myriad extraneous factors.¹⁵ Indeed, it has been suggested that the evaluation of professionalism is limited by its innate contextual nature, based on differing standards

and other biases⁵ that are brought, often unconsciously, to bear on situations. Thus, attempts to consistently define unprofessional behaviors may depend, to some degree, on the “who, what, when, where, how, and why.”¹⁶

One potentially relevant factor may be gender. Several studies have detailed the varying relationship between gender and: (1) communication skills, including non-verbal skills;¹⁷ (2) self-perceived and observed level of confidence on wards;¹⁸ and (3) written tests of clinical decision making, as they relate to student gender and that of the patient in the clinical vignette.¹⁹ Van Zanten and colleagues²⁰ identified differences in patient satisfaction ratings afforded to male and female medical students during SP encounters, with females better able to display behaviors related to professionalism. In a study surveying students' perceptions of their mentors, female students' attitudes about “callousness” were more negative than those of their male counterparts,²¹ with women expressing more tendencies toward sensitivity and empathy. Elger²² identified gender as a factor associated with the ability of Swiss physicians to identify violations in hypothetical breaches of patient confidentiality. Finally, in a sample of medical students from six schools in the U.K., Yates and James²³ identified “being male” as a risk factor for subsequent professional misconduct; the most common causes for complaints against these physicians were related to aspects of professional and personal behavior, such as dishonesty and improper relationships.

We postulate that gender may serve as a “filter” when dealing with potential unprofessional behaviors. This study specifically examines the potential influence of gender by positing: (1) Do male and female medical students' assessments of potentially unprofessional behaviors during undergraduate medical training differ? (2) Do these assessments vary by the gender of the hypothetical scenario individual?

METHODS

To examine the role of gender in students' perceptions of potentially unprofessional behavior, 18 hypothetical scenarios were either modified from the literature²⁴ or developed de novo to reflect common situations that might occur during undergraduate medical training ([Appendix is available online](#)). All scenarios depicted behaviors readily identifiable by trainees of either gender at their level of training. For 14 scenarios, the gender of the hypothetical “actor” was specified but not stressed. To offer a mix of cases—and avoid cuing subjects to the study focus—the remaining four cases were not gender-specific, and are not included in the primary analyses.

Since the scenarios portrayed a wide range of potentially unprofessional behaviors (e.g., from being unprepared on

rounds to cheating on exams), two parallel versions of each scenario involving gender were constructed to include male and female trainees. To avoid drawing undue attention to gender, scenarios were subdivided into two subsets of seven scenarios each, allowing each student to respond to behaviors involving both male and female trainees. Based on comparable data collected from prior medical student cohorts, scenarios were weighted equally within subsets to reflect behaviors of equivalent severity. Finally, to minimize any unintended order effects, the presentation of the scenarios was randomized for each respondent. In summary, each student rated behaviors depicted in 18 different, randomly-ordered vignettes: seven featuring male trainees, seven featuring female trainees, and four with gender unspecified.

The data collection took place during a required, end-of-year clinical performance examination for M3 students, and consisted of anonymous, self-administered questionnaires completed during a supplemental, “data interpretation” portion of one unrelated standardized patient station. Third-year students were selected due to documented post-clerkship increases in and tolerance toward certain unprofessional behaviors.²⁵ The venue was selected primarily because it included all eligible participants, and was a suitable context for contemplating professionalism. In addition to rating each scenario, participants were also asked to indicate their gender. Per Institutional Review Board (IRB) approved protocol, the voluntary nature of the study was clearly stated during the exam orientation. Students were informed that the study was designed to elicit their perspectives on professionalism. It was made clear that participation was not part of the examination process, and they (students) could freely decline to fill out the survey instrument.

Within each scenario, respondents were asked to anonymously rate each behavior using a 4-point Likert-type scale ranging from “*Not a Problem*” to “*A Severe Problem*.”¹¹ Mean ratings were calculated for scenarios involving male and female “actors,” respectively. Participants failing to rate at least 12 of 14 scenarios or indicate their gender were excluded from the analyzed sample. For students lacking ratings on one ($n=4$) or two ($n=1$) vignettes, scenario-specific mean substitutions were made for missing values.

With students' mean ratings on male and female scenarios designated as dependent variables, a multiple analysis of variance (MANOVA) was used to examine whether or not assessments of potentially unprofessional behavior were moderated by gender. Since male and female subsets were comprised of equally severe behaviors, it was also possible to compare intra-rater assessments. Thus, the specified model consisted of a 2 (male vignettes, female vignettes) $\times$ 2 (student gender) repeated measures design, with repeated measures on the first

variable. In response to a significant omnibus F test, individual two-way analyses of variance (ANOVAs) were used to delineate differences, using gender and instrument version as factors.

All factors were designated as fixed effects, and all variance estimates were partitioned using Type III sums of squares.

Our initial analyses focused on examining the: (1) between-subjects main effects for *student* gender (i.e., Do male and female medical students' assessments of potentially unprofessional behavior differ?); (2) within-subjects main effects of "actor" gender (i.e., Do medical students' assessments of potentially unprofessional behaviors differ based on the sex of the individual "actor"?); and (3) interaction effects of "actor" and *student* gender (i.e., Do male and female medical students' respective assessments of unprofessional behavior differ based on the sex of the hypothetical "actor"?). Alpha was specified at $\leq .05$ for all statistical tests; all analyses were conducted using SPSS Statistics 18.0 (Release 18.0.0).

RESULTS

Ninety seven (97) of 102 students (40 females, 56 males, one unspecified) returned completed survey instruments, for a participation rate of 95.1 %. Of these, six (6.2 %) either failed to specify their gender or did not provide ratings for at least 12 of the 14 gender-specific scenarios, resulting in a final sample of 91 (39 females, 52 males). Within both 2 x 2 MANOVA and two-way ANOVA frameworks, this enabled the detection of meaningful effect sizes (≥ 0.50) with ample statistical power (≥ 0.80). Internal consistency of ratings across the 14 vignettes was acceptable (0.75), validating their summarization by an overall mean.

Preliminary analysis of the data revealed that, per the random assignment, scenario versions were evenly distributed between male and female participants ($\chi^2=1.32$, $df=1$, $p=0.29$). Students' mean ratings for each scenario subset did not deviate significantly from a normal distribution, allowing the use of parametric statistics. Mean ratings were moderately correlated between male and female subsets ($r_p=0.66$, $df=89$, $p=< 0.001$, 95 % CI [0.52, 0.77]).

Due to the equal weighting of vignettes, examination of differences in students' overall mean ratings of male versus female vignettes was possible. Results from the repeated measures MANOVA showed no statistically significant multivariate main effect for "actor" gender (Wilks's $\Lambda=0.99$, $F(1, 87)=0.34$, $p=0.40$, $\eta^2=0.01$), indicating similar differences (Δ) in students' mean ratings between male and female scenarios. Similarly, no significant main effect was observed for student gender [$F(1, 87)=0.33$, $p=0.57$, $\eta^2=0.01$], suggesting that male and female students' overall mean ratings of behaviors did not differ. Indeed, the ranked

order of scenarios was highly correlated between male and female students ($r_s=0.96$, $df=16$, $p=< 0.001$, 95 % CI [0.89, 0.99]). Further, no statistically significant between-within interaction was noted [Wilks's $\Lambda=0.98$, $F(1, 89)=1.75$, $p=0.21$, $\eta^2=0.02$], confirming that both male and female students, respectively, tended to rate the hypothetical behaviors involving hypothetical male and female "actors" comparably.

Table 1 displays male and female students' mean ratings and 95 % confidence intervals for male and female versions of all vignettes. With rare exceptions, male and female students rated behaviors comparably. Indeed, mean differences varied significantly for only one vignette—about what would be expected by chance. [A corresponding within-subjects analysis of *individual vignettes* was not possible, since subjects responded to only one version (male or female) of each].

DISCUSSION

Our results showed that assessments of hypothetical behaviors did not vary by student gender. On average, females rated the behaviors as more severe than males in a majority of the gender-specific scenarios, but these differences were small. This study suggests that potentially unprofessional behaviors are interpreted similarly, regardless of student (rater) gender or the gender of the primary "actor" involved—a finding of mixed congruence with the existing literature.

For example, one study of students and faculty in an academic health science center to examine perceptions of professional behavior concluded that, "females, the youngest age group (≤ 26), nursing students, and faculty other than medical or dental were more likely to label behavior depicted in the survey statements as unprofessional."²⁶, p. 285 Other investigators examined students' changes in prioritization of professional attitudes regarding altruism before and after a gross anatomy course, and found that female students' changed the most in favor of altruism and that "gender was the only factor to show a significant difference in professionalism attitudes" at posttest.²⁷, p. 12 Finally, Elger²² found that female physicians were better able to correctly identify confidentiality violations – regardless of experience in the profession.

Despite the fact that students are still developing their professional "compass," even practicing physicians vary in their abilities to recognize breaches of professionalism.² State boards of medicine have more clearly-defined rules governing the acceptable and unacceptable behaviors of the profession. For practitioners who aspire to seek or maintain membership in the profession, acceptance of these norms is required. In Elger's study,²² scenarios had clear "correct" answers based on Swiss law. Students may not be aware of state rules or ethical laws, or they may not yet apply these

Table 1. Means, Standard Deviations, Differences, F Values, and p Values for Male and Female Students' Ratings of Gender-Specific Unprofessional Behaviors (n=91)

Vignette	Depicted Behavior	Version	Male Rater	Female Rater	Difference	F*	Sig*
			M (SD)	M (SD)	[95 % CI]		
# 1	Misrepresentation	Male	3.17 (0.80)	3.47 (0.62)	0.30 [-0.16, 0.76]	2.00	0.12
		Female	3.65 (0.65)	3.36 (0.73)	-0.29 [-0.70, 0.12]		
		All	3.38 (0.77)	3.41 (0.68)	0.03 [-0.28, 0.33]		
# 2	Lack of Accountability	Male	3.30 (0.70)	3.05 (0.84)	-0.26 [-0.72, 0.21]	1.75	0.16
		Female	2.97 (0.85)	2.71 (0.92)	-0.26 [-0.80, 0.28]		
		All	3.12 (0.81)	2.90 (0.88)	-0.22 [-0.57, 0.14]		
# 3	Shirking Duty	Male	2.26 (1.10)	1.55 (0.80)	-0.72 [-1.29, 0.14]	2.42	0.07
		Female	1.79 (0.94)	1.76 (0.75)	-0.03 [-0.57, 0.51]		
		All	2.00 (1.03)	1.64 (0.78)	-0.36 [-0.73, 0.02]		
# 4	Lapse in Excellence	Male	2.61 (0.94)	2.64 (0.58)	0.03 [-0.44, 0.50]	0.42	0.74
		Female	2.45 (0.74)	2.65 (0.49)	0.20 [-0.21, 0.60]		
		All	2.52 (0.83)	2.64 (0.54)	0.12 [-0.16, 0.41]		
# 5	Inappropriate Appearance	Male	2.70 (0.88)	2.95 (1.00)	0.25 [-0.30, 0.82]	1.14	0.34
		Female	2.90 (0.90)	2.47 (0.87)	-0.43 [-0.97, 0.12]		
		All	2.81 (0.89)	2.74 (0.97)	-0.07 [-0.45, 0.32]		
# 6	Lack of Altruism	Male	3.83 (0.39)	3.82 (0.39)	-0.01 [-0.24, 0.23]	2.06	0.11
		Female	3.59 (0.73)	3.94 (0.24)	0.35 [0.05, 0.65]		
		All	3.69 (0.61)	3.87 (0.34)	0.18 [-0.02, 0.38]		
# 7	Dishonesty	Male	3.34 (0.86)	3.59 (0.62)	0.25 [-0.24, 0.72]	0.34	0.79
		Female	3.48 (0.79)	3.45 (0.86)	-0.03 [-0.52, 0.47]		
		All	3.40 (0.82)	3.51 (0.76)	0.11 [-0.23, 0.44]		
# 8	Disrespect	Male	2.74 (0.69)	2.45 (0.91)	-0.29 [-0.77, 0.20]	1.44	0.24
		Female	2.39 (1.01)	2.88 (0.93)	0.39 [-0.12, 1.09]		
		All	2.55 (0.89)	2.64 (0.93)	0.09 [-0.29, 0.48]		
# 9	Lack of Integrity	Male	3.18 (0.76)	3.06 (0.56)	-0.12 [-0.55, 0.32]	1.17	0.32
		Female	3.43 (0.73)	3.09 (0.81)	-0.34 [-0.81, 0.12]		
		All	3.29 (0.75)	3.08 (0.70)	-0.21 [-0.52, 0.09]		
# 10**	Inappropriate Appearance	n/a	1.94 (0.90)	1.97 (0.80)	0.03 [-0.32, 0.38]	0.23	0.88
# 11	Tardiness	Male	1.79 (0.62)	1.82 (0.39)	0.03 [-0.31, 0.37]	0.08	0.97
		Female	1.77 (0.73)	1.73 (0.70)	-0.04 [-0.48, 0.39]		
		All	1.78 (0.67)	1.77 (0.58)	-0.01 [-0.28, 0.25]		
# 12**	Lapse in Excellence	n/a	2.62 (1.05)	2.79 (1.10)	0.17 [-0.27, 0.63]	2.74	0.05
# 13	Bias/Unfairness	Male	2.76 (0.79)	3.24 (0.75)	0.48 [0.00, 0.95]	1.38	0.26
		Female	3.09 (0.90)	2.95 (0.84)	-0.14 [-0.66, 0.39]		
		All	2.90 (0.85)	3.08 (0.81)	0.18 [-0.18, 0.52]		
# 14	Disrespect	Male	1.45 (0.51)	2.41 (0.71)	0.96 [0.60, 1.33]	8.33	0.01
		Female	2.26 (0.96)	2.39 (1.00)	0.13 [-0.46, 0.72]		
		All	1.81 (0.84)	2.40 (0.88)	0.59 [0.23, 0.95]		
# 15**	Lapse in Excellence	n/a	3.62 (0.68)	3.56 (0.55)	-0.06 [-0.32, 0.22]	1.04	0.38
# 16	Abuse of Power	Male	3.09 (1.00)	3.32 (0.89)	0.23 [-0.34, 0.80]	2.14	0.10
		Female	2.66 (1.04)	3.06 (0.83)	0.40 [-0.19, 1.00]		
		All	2.85 (1.04)	3.21 (0.86)	0.36 [-0.05, 0.77]		
# 17	Dishonesty	Male	3.65 (0.71)	3.62 (0.84)	-0.03 [-0.51, 0.43]	0.09	0.91
		Female	3.62 (0.73)	3.76 (0.44)	0.14 [-0.25, 0.54]		
		All	3.63 (0.71)	3.68 (0.69)	0.05 [-0.25, 0.34]		
# 18**	Disrespect	n/a	2.58 (0.93)	2.77 (0.81)	0.19 [-0.18, 0.56]	1.30	0.28

* Omnibus F, two-way ANOVA

** Vignettes 10, 12, 15, and 18 are not gender-specific, and are not included in overall means

to their behaviors. This lack of knowledge is perhaps addressable with ethics and professionalism education.

Several limitations to our findings should be acknowledged. First, we used a single set of measures to focus our attention exclusively on behaviors when, in fact, professionalism has been argued to be multidimensional,²⁸ encompassing more than simply a list of characteristics or behaviors.²⁹ For example, we did not measure students' actual past behaviors, which have been shown to correspond with less critical perceptions of such behaviors.^{25,30} In addition, some concerns exist regarding the use of numeric rating scales to validly assess the professionalism of complex behaviors.²

Second, although one study found no discernible difference between videotaped and text-based scenarios,³¹ how closely written vignettes emulate real, observed behaviors is unclear. Moreover, the prominence of gender in each vignette, which we purposely intended to be subtle, may have been too understated to elicit students' "implicit attitudes" toward this factor. Recent studies looking at ways to rate professionalism behaviors have included using videos to display scenarios³² and scripted standardized patient (SP) encounters³³—approaches that present other challenges related to validity. For example, in our study, we compared students to their peer group, thus obviating the need to identify a "gold standard" of professionalism behavior.

Third, it is possible our use of a valid, pre-existing scale may have had an unanticipated consequence. The present study, which uses the scale developed by Borrero and associates in their study of residents and faculty,²⁴ asks students to rate the problematic nature of potentially unprofessional behaviors, which may be a more challenging task for undergraduate medical trainees.³² As a result, it is unclear if a different scale—for example, “Not at all Unprofessional” to “Very Unprofessional”—might have resulted in different findings. On a more theoretical level, the “true” range of severity may vary or be anchored differently, depending on the vignette and/or the gender of the rater.

Finally, while our sample size was adequately powered to detect meaningful omnibus effects in overall mean differences between male and female students (i.e., non-statistically significant differences were not substantive), the observed (increased) variability in individual scenarios resulted in some reduction in power. That is, due to the variations surrounding some mean ratings, the corresponding 95 % confidence intervals for some individual scenarios (Table 1)—at their upper or lower boundaries—do include potential differences which are of substantive (≥ 0.50) magnitude. In such cases, how likely our sample estimates may have been to err from these “extreme” population values, or what this might mean in the context of multiple, individual comparisons, is unclear. Still, to summarize, while male and female students' reactions to individual scenarios differed somewhat, they did not vary systematically along gender-related lines or in terms of overall mean ratings.

Despite the limited generalizability of these preliminary findings, it is perhaps reassuring to note that no significant gender difference was evident in the general ranking or prioritization of unprofessional behaviors, and that the behaviors in question did not elicit a noticeable “gender-bias.” Although the majority of unprofessional behavior pertains to all medical trainees and is not, in theory, subject to radically different interpretation, there remains potential for contextual factors to moderate the “definition of the situation.”³⁴ For the behaviors examined here, these findings suggest that the “who” observing and the “who” behaving does not appear to be implicated by gender. For medical educators who explicitly discuss or implicitly model professional behaviors, concern over different interpretations by males and females, with isolated exceptions, seems largely unwarranted.

Even so, to the extent that gender roles may vary across programs, medical specialties, and/or regions of the country, replication and expansion of this study seem prudent. Moreover, future studies should continue to explore the contextual and changing nature of defining and assessing professionalism—including the potentially subtle nuances that may shape individual interpretations and responses to certain behaviors.

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