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Gynecological patients differ from prenatal patients in appraisals of medical student participation in outpatient clinics

Pacientes ginecológicas diferem de pacientes do pré-natal na apreciação da participação de estudantes de medicina nos atendimentos ambulatoriais

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ABSTRACT

Introduction: The participation of students in clinical consultations is essential for their medical education. This experience allows for the acquisition of technical skills and the transmission of ethical and professional values.

Objective: To evaluate how differences in outpatient conditions (gynecological or prenatal care), appraisal of previous experience, and sociodemographic profiles influence women's willingness to accept student participation in their consultations.

Methods: We selected 743 cases (45.1% prenatal) with previous experience in student participation of 893 women attending outpatient gynecological (52.6%) or prenatal (47.4%) clinics at Brasilia University Hospital from 2016 to 2019. Scales were adopted for women's appraisal of student interpersonal communication, willingness to accept, and unwillingness to accept student participation. We used *t* tests to assess differences, chi-square statistics to compare proportions between outpatient groups, correlations between key variables, and linear regression to estimate variables predicting the willingness outcome.

Results: Odds ratios over 1 (p< 0.01) emerged for age older than 35 years, not married, less than higher education, multiparity, discomfort with students, and lower acceptance of gender equality in relation to the Ob-Gyn gender for the gynecological group. Women in the gynecological group offered a better appraisal (from one to five) of interpersonal communication (4.75 vs. 4.43, effect size g= 0.605), showed more willingness (4.58 vs. 4.26, g= 0.625), and conveyed less unwillingness to accept student participation (2.35 vs. 2.47, g= 0.143) than women in the prenatal group. In the linear regression analysis (N= 743), a higher willingness to accept student participation was significantly related (in decreasing impact) to better appraisal of student interpersonal communication (p< 0.001), lower unwillingness (p< 0.001), gynecological group (p< 0.001), tolerance to pelvic examination by a student (p= 0.017), and age older than 35 years (p= 0.016).

Conclusions: The experience of supportive interpersonal communication, especially regarding the gynecological group, had a predominant impact on the patient's willingness to accept the participation of students in consultations. Overall, the willingness to accept this participation differs depending on the patient's (reason for consultation, lower unwillingness, age) and student's (communication, gender) factors. Hopefully, the findings can contribute to fostering student-patient partnerships from the perspective of the articulation between service and teaching in medicine.

Keywords: Medical Students; Communication; Gynecological Examination; Prenatal; University Hospital.

RESUMO

Introdução: *A participação de estudantes nas consultas clínicas é essencial para a educação médica deles. Tal experiência permite a aquisição de habilidades técnicas e a transmissão de valores ético-profissionais.*

Objetivo: *Este estudo teve como objetivo avaliar como diferenças na condição ambulatorial (atendimento ginecológico ou pré-natal), na apreciação de experiências anteriores e nos perfis sociodemográficos influenciariam a disposição das mulheres em aceitar a participação de estudantes em suas consultas.*

Método: *De um total de 893 mulheres atendidas no ambulatório de ginecologia (52,6%) e de pré-natal (47,4%) do Hospital Universitário de Brasília de 2016 a 2019, foram selecionadas 743 (45,1% pré-natal) que referiam experiência prévia com a participação de estudantes em suas consultas. Foram adotadas escalas para avaliar a apreciação das mulheres sobre a comunicação interpessoal dos estudantes e a disposição e a falta dela em aceitar a participação deles. Foram utilizados o teste t para avaliar as diferenças, as estatísticas qui-quadrado para comparar as proporções entre os grupos, as correlações entre variáveis-chave e a regressão linear para estimar as variáveis associadas à boa vontade das pacientes quanto aos estudantes.*

Resultado: *Razões de chance acima de 1 (p < 0,01) para mulheres do grupo ginecológico emergiram quanto à idade acima de 35 anos, não casadas, escolaridade aquém da educação terciária, multíparas, desconfortáveis com estudantes e menor aceitação de equidade de gênero dos médicos ginecologistas obstetras. Mulheres no grupo ginecológico apresentaram melhor apreciação da comunicação interpessoal, de um a cinco (4,75 versus 4,43, tamanho do efeito g = 0,605), maior disposição (4,58 versus 4,26, g = 0,625) e menor indisposição (2,35 versus 2,47, g = 0,143) em aceitar a participação de estudantes do que mulheres do grupo pré-natal. Na análise de regressão linear (n = 743), maior disposição em aceitar estudantes foi significativamente associada (em impacto decrescente), com melhor apreciação da comunicação interpessoal destes (p < 0,001), menor indisposição (p < 0,001), grupo ginecológico (p < 0,001), tolerância ao exame pélvico realizado por estudante (p = 0,017) e idade maior que 35 anos (p = 0,016).*

Conclusão: *A experiência de comunicação interpessoal de suporte, principalmente no que concerne ao grupo ginecológico, teve impacto predominante na disposição das pacientes em aceitar a participação de estudantes nas consultas. No geral, a vontade de aceitar essa participação difere dependendo dos fatores da paciente (motivo da consulta, menor indisposição, idade) e do estudante (comunicação, gênero). Espera-se que os achados possam contribuir para fomentar parcerias estudante-paciente na perspectiva da articulação entre serviço e ensino em medicina.*

Palavras-chave: *Estudantes de Medicina; Comunicação; Exame Ginecológico; Pré-natal; Hospital Universitário.*

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INTRODUCTION

The participation of students in patient consultations is essential for their medical education. Among other reasons, students can learn clinical skills, refine interpersonal communication, and develop critical professionalism to ensure a robust physician-patient partnership in their future careers. However, within the clinical education framework, student participation depends on patient self-determination to decide whether to accept the student's presence at appointments and to allow learners to participate in clinical history-taking and physical examination.

Given the singularities of private and personal clinical history and sensitive pelvic examination, women in obstetrics-gynecology care appear to be more stringent in determining the amount and level of student participation compared to patients in some other specialties[1]. Thus, in leading studies of obstetric-gynecological consultations, most women showed higher acceptance of student participation if attended by a female student, examined less intimately, and previously experienced student involvement in consultations[2-7].

Nevertheless, the relationships of patient acceptance with their clinical conditions, demographics, and sociocultural factors are more uncertain. For example, Ching et al. found no significant differences between the gynecological and obstetric groups[8]. Rizk et al. found greater acceptance in obstetric consultations and. observed that participation acceptance was inversely related to the patient's perception and knowledge of the student's task and responsibility[3]. In contrast, Subki et al. observed that gynecological patients, compared to obstetric ones, were more accepting of medical students' presence[9].

In a two-phase study, we evaluated women's comfort status during gynecological or prenatal care regarding medical students' involvement in consultations and assessed how the comfort levels were related to the women's demographics, sensitivity to the students' gender, and previous experience with student presence[10,11]. This study, conducted in the same public-hospital outpatient clinics for 4 years, involved women of equivalent social strata, either for gynecological or prenatal care. Wide receptiveness to students' participation in outpatient care appointments was a common finding of the two-phase study[10,11]. We also clarified the positive relationship between patients' appraisals of students' interpersonal communication in previous consultations and their willingness to accept learners' participation in upcoming appointments[12].

The current secondary investigation aimed to evaluate how differences in outpatient conditions (gynecological or prenatal care), appraisal of previous experience, and sociodemographic profiles influence women's willingness to accept student participation in their consultations. We analyze the following research questions to assess the attributes of the outpatient groups regarding the outcome of willingness.

1. How did the selected demographic and attitudinal conditions differ between women receiving gynecological and prenatal outpatient care?
2. How did women in gynecological care differ from women in prenatal care in their appraisals of students' interpersonal communication, willingness, or unwillingness to accept medical students' attendance at outpatient consultations?
3. What were the antecedent or concomitant factors (attitudinal, demographic, or outpatient conditions) related to the women's willingness to accept student attendance at their consultations?

METHODS

Context

We conducted the study in a public university hospital connected to the Brazilian Unified Health System. The Brasília University Hospital (HUB) outpatient unit provides well-diversified health care to any woman with a medical appointment. Informed consent was obtained from all women involved in the study. All women agreed to participate: those aged < 18 signed an assent form, as did their parents, and those aged > 18 signed an informed consent form. The Ethics Committee for Human Research of the Faculty of Medicine of the University of Brasilia approved the study (approval n. 1.126.648; CAAE 45773315.3.0000.5558). Notably, across the 4-year study period, 327 students (45.6% women, 74.3% younger than 27 years at graduation) learned and contributed to outpatient care, under supervision, during two semesters of their clinical education in gynecology-obstetrics and graduated from the University of Brasilia Faculty of Medicine.

Participants

The original two-phase observational study involved 893 women selected by casual sampling while attending gynecological (52.6%) or prenatal (47.4%) outpatient services at HUB from 2016 to 2019. Two cases from the gynecological group and one from the obstetrical group were excluded because of crucial omissions in the data. In the current reanalysis, 743 patients (335 prenatal) with previous student participation experience constituted the study sample. This sample was adequate based on the *t* test difference between two independent means: alpha = 0.05, power = 0.90, and effect size = 0.25. Five demographic factors were identified and recorded (for the analyses) in the binary classification: age (1= 36 years or older; 0= up to 35 years), parity (0= nulliparous), marital status (1= married, 0= not married: divorced, single, or widowed),

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schooling (1= higher education (partial or completed); 0= less than higher education), and family income (1= three minimum wages or more; 0= less than three). Furthermore, three attributes were recorded: level of comfort with (the prospect) of student (male or female) presence in the consultation (1= comfortable; 0= uncomfortable), performance of a pelvic exam by a student (1= acceptance; 0= restriction), and gender preference for Ob-Gyn physician (1= gender equity; 0 = bias to male or female).

Procedures

Using a questionnaire, trained medical students conducted face-to-face interviews with women who had a medical appointment for any gynecological condition and pregnant women who complied with a scheduled prenatal consultation at any gestational age. Interviews were conducted in 2016–17 for the gynecological participants and in 2018–19 for the prenatal participants. We describe the used questionnaire elsewhere[10].

Analysis

As reported, performing dimension and reliability analyses helped validate the rating scales[12]. The first measure was the willingness scale, based on four items on motives for accepting student participation. The second was the unwillingness scale, based on six items on motives for disagreeing with student involvement. Based on six elements, the scale for patients' appraisal of student interpersonal communication in the consultation was the third measure. Internal consistency measures (Cronbach's alpha) were 0.68, 0.71, and 0.90, respectively, which are acceptable[13]. The items for the three rating scales are read as follows.

Willingness scale (motives to consent): Students helping with the consultation; Expecting the student to be present; Wishing to help the students' education; Learning about one's health.

Unwillingness scale (motives to disagree): Need for privacy during a pelvic examination by an Ob-Gyn; Need for privacy during a dialogue with an Ob-Gyn; Feeling ashamed during an examination by a male student; Feeling ashamed during an examination by a female student; Students' lack of (medical) expertise; Lingering consultation in the student's presence.

Interpersonal communication scale (student's attitudes): Revealed concern for my health; Acted professionally during the consultation; Communicated well throughout the appointment; Was respectful and caring; Had good looks and manners, which helped with the consultation; Asked permission to attend the consultation.

We report the scores as weighted means using the 1-to-5 response scale. Correlations (Spearman's rho) and chi-square statistics (Fisher exact tests) measured relationships and compared proportions between the indicator (attitudinal, demographic, and group) variables; *t* tests explored differences between the gynecological and prenatal groups. We used linear regression analysis (automatic linear modeling, best subsets model) to assess independent indicators that explain variances in the willingness outcome[14]. SPSS software, version 20, was used for the analyses with bootstrapping (a method robust to violations of assumptions of normality and outliers), as needed[13]. The BCA (bias corrected and accelerated) method improved the accuracy of the confidence intervals. The abbreviations used are M (mean), SD (standard deviation), CI (confidence interval), and g (Hedges' g for the effect size of the standardized difference between two group means). A larger g indicates larger differences between the groups.

RESULTS

All participants shared previous experiences with student attendance at outpatient consultations. Table 1 shows the demographic differences between the gynecological and prenatal groups. Women in the gynecological group (compared to those in the prenatal group) were older, delivered more live births, had less schooling, and had a higher proportion of unmarried status. The strongest association appeared for the age indicator, as evidenced by the odds ratio. Compared to younger women, older women had higher proportions of less schooling (59.7 vs. 40.3%) and unmarried status (53.9 vs. 46.1%) among the 743 participants.

Table 2 shows the differences in the rates of attitudinal attributes between the outpatient groups. The strongest association emerged for the comfort factor, as indicated by the odds ratio. Compared with gynecological cases, women in prenatal care depicted higher rates of comfort with the prospect of students' presence in consultations and acceptance of gender equality concerning the gender of an attending Ob-Gyn but similar tolerance to the pelvic exam by a student.

Among all participants (N= 743), the women's appraisal of student interpersonal communication during the consultations was positively correlated (Spearman's rho) with the willingness to accept student attendance (rho= 0.372, p< 0.001), gynecological group (rho= 0.341, p< 0.001), older age (rho= 0.194, p< 0.001), lower level of schooling (rho= 0.181, p< 0.001), and unmarried status (rho= 0.083, p= 0.024). (Data not included in Table.)

Table 3 shows significant differences between the gynecological and prenatal cases in the patients' appraisals of three measures related to student attendance in outpatient appointments. Women in the gynecological care group, compared to those in the prenatal group, showed less unwillingness (2.35 vs. 2.47, g= 0.14), were more willing to

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accept student attendance (4.58 vs. 4.26, g= 0.62), and revealed a better appraisal of student interpersonal communication (4.75 vs. 4.43, g= 0.60). The willingness rating ranged from 4 to 5 for 87.5% of the 743 participants.

Table 1. Differences in percentages of dichotomized demographic attributes between women in prenatal (n=335) or gynecological (n=408) outpatient care at the Brasilia University Hospital.

Demographics	Condition		Odds ratio (CI)	P value
	Prenatal	Gynecological		
	N (%)	N (%)		
36 years or older	96 (28.7)	292 (71.6)	6.27 (4.55;8.63)	<0.0001
Up to 35 years	239 (71.3)	116 (28.4)		
Multiparous	226 (67.5)	317 (77.7)	1.68 (1.21;2.33)	0.0018
Nulliparous	109 (32.5)	91 (22.3)		
Married	256 (76.4)	216 (52.9)	0.35 (0.25;0.48)	<0.0001
Unmarried	79 (23.6)	192 (47.1)		
Higher education	138 (41.2)	99 (24.3)	0.46 (0.33;0.63)	<0.0001
Less than higher education	197 (58.8)	309 (75.7)		
Higher family income*	125 (37.3)	144 (35.3)	0.92 (0.68;1.24)	0.5688
Lower family income**	210 (62.7)	264 (64.7)		

*Three or more minimum wages.
**Less than three minimum wages.
Source: prepared by the authors.

Table 2. Differences in the percentages of dichotomized attitudinal characteristics between women in prenatal care (n = 335) or gynecological (n = 408) care in the outpatient clinics of the Brasília University Hospital.

Attitudinal attributes	Condition		Odds ratio (CI)	P value
	Prenatal	Gynecological		
	N (%)	N (%)		
Comfortable with student's presence	275 (82.1)	297 (72.8)	0.58 (0.41;0.83)	0.0029
Uncomfortable with student's presence	60 (17.9)	111 (27.2)		
Pelvic exam acceptance	235 (70.1)	305 (74.8)	1.26 (0.91;1.74)	0.1613
Pelvic exam restriction	100 (29.9)	103 (25.2)		
Acceptance of gender equality related to Ob-Gyn gender	298 (89.0)	336 (82.4)	0.58 (0.38;0.89)	0.0121
Gender bias related to Ob-Gyn gender	37 (11.0)	72 (17.6)		

Source: prepared by the authors.

Table 3. Differences between women in gynecological (n= 408) or prenatal (n=335) care regarding scores of appraisals of student participation in outpatient consultations at the Brasilia University Hospital.

Appraisals of student participation	Gynecology M (SD)	Prenatal M (SD)	Mean Diff.	BCa* 95% CI	P value	Hedges' g
Willingness to consent	4.58 (0.55)	4.26 (0.47)	0.321	0.248; 0.395	<0.001	0.625
Unwillingness to consent	2.35 (0.94)	2.47 (0.72)	-0.121	-0.241; -0.004	0.050	0.143
Student interpersonal communication	4.75 (0.47)	4.43 (0.59)	0.319	0.243; 0.389	<0.001	0.605

Weighted mean (M) in the response scale metric (1-5) with standard deviation (SD).
*Bias corrected and accelerated; 2000 samples (an accurate measure of CI= confidence interval).
Source: prepared by the authors.

Table 4. Results of linear regression (automatic modeling) highlighting predictors for the outcome (patients' willingness to accept student participation in outpatient consultations) among gynecological and prenatal patients with prior experience of student involvement (N = 743).

Independent variables	Coefficients (St. error)	95% Confidence Interval	P value	Importance*
Student interpersonal communication	0.306 (0.039)	0.228; 0.383	<0.001	0.450
Unwillingness to accept student involvement	-0.154 (0.023)	-0.199; -0.109	<0.001	0.338
Outpatient group (positive if gynecological)	0.157 (0.040)	0.078; 0.235	<0.001	0.114
Pelvic exam by a student (negative if restriction)	-0.113 (0.043)	-0.197; -0.029	0.009	0.052
Age at the consultation	0.004 (0.001)	0.001; 0.007	0.013	0.046
Intercept	3.197 (0.199)	2.806; 3.587	<0.001	

Dependent variable: Willingness to accept student participation.
Model building method: best subsets. Information criterion: -1150.44 (accuracy: 27.7%). Adjusted R-square = 0.277.
ANOVA: F(5, 737) = 57.923; p< 0.001.
Modeling excluded degree of comfort, level of schooling, marital status, and income as independent nonoverlapping variables.
*The importance values assess the individual contribution of each predictor variable (e.g., age) to the overall prediction model[14].
Source: prepared by the authors.

To evaluate the relative importance of predictors for the measure of willingness as an outcome variable, we performed multiple linear regression (as reported in Methods). Table 4 shows that five indicators represent 27.2% of the variance in the outcome of willingness. The appraisal of (previous) student interpersonal communication was the most critical antecedent, (current) gynecological status was the third most important antecedent, and older age had the least impact.

DISCUSSION

Studies have identified many factors that affect women's comfort with student participation during their gynecological or obstetric care[2-7]. Our investigation provides information on the relative importance of key influences, including whether a gynecological condition or a prenatal check-up motivated outpatient appointments.

The results of the multiple regression model provided information on the relative contribution of the selected indicator variables to the willingness outcome. As portrayed by interpersonal communication scores, a better experience of student-patient interaction was the main predictor of willingness, accounting for 45% of the overall importance. Other studies have already revealed that previous experiences with student involvement contribute to greater acceptance of students in subsequent consultations[4,5,7,15]. Our data indicate that the patient's assessment of experienced interpersonal communication definitively matters[4,16]. Additionally, the patients' appraisals suggest a positive effect of communication training in medical school[17]. Of note, a French study remarked that students showing higher interpersonal skills during consultations were more prone to be female[18]. Overall, the findings remind us of the relevance of broader communication training (including staff, students, and patients)[19].

The second important factor (expressed in the unwillingness score) implies the women's reasons for disagreement with student attendance, negatively affecting their potential willingness. As previously reported, the unwillingness scale represents women's concerns about privacy, self-assurance, student intervention, ability, and gender[9,10]. Women in either outpatient group shared those concerns. However, those in prenatal care were more sensitive, perhaps due to their higher level of schooling (Table 1), as claimed by other authors[20]. Furthermore, a negative attitude towards student participation is more prevalent with male than female students, especially regarding breast and pelvic exams and talking about sexual issues, as reported in more or less recent studies[3,4,7,15,21,22]. Notably, feelings about the pelvic exam by a student appeared to be an independent, nonoverlapping factor, accounting for 5.2% of the impact on the level of willingness.

Although not targeted in this study, gender differences in women's compliance with student participation hint at limitations on experiential skills, affecting male learners' clinical competence and career interests[23]. Among the 327 medical school graduates from 2016 to 2019, 34 (six men) chose a medical residency in gynecology and obstetrics (unpublished data). A scoping review explored the perceived bias felt by male students, the influences, probable reasons, and potential effects of women's choice to consent to or disagree with student attendance[24].

Of note, the gynecological group was a positive factor in explaining the variability in willingness. Congruently, women in the gynecological group appraised interpersonal

communication better than those in the prenatal group. The health condition underlying the type of outpatient care may be the main differentiation factor. The disease burden is more compelling among women in gynecological care than those in prenatal care. Patients in the gynecological group have a pressing experience of variable disorders, while those in the prenatal group have an ongoing experience of a physiological condition. We suggest that the experience of health damage induces a deeper need for help and, hence, a greater willingness to accept the student-patient interaction. Along the same lines, Carmody et al. observed that accepting the presence of students was significantly more prevalent among inpatients than outpatients, reflecting greater clinical vulnerability and, therefore, greater proximity to their caregivers[5]. Nonetheless, the literature is scarce and divisive on this topic[3,8,9].

We also found that older age was related to greater willingness to accept student involvement, agreeing with some but not other reports[3,5,15,16,20]. The age association suggests that the willingness score expresses (albeit weakly) the psychological construct of benevolence. According to a study on the benevolence dimension, older people can be more generous[25]. Indeed, older women had a higher prevalence of less schooling and unmarried status than younger women and rated student interpersonal communication in consultations better than younger women.

This study's findings confirm the significance of patients' views on the relational skills of the trainees in medical interviews and the importance of the trainees' modeling professional behavior and incorporating compassionate techniques into their communication skills[12]. During the study period, differences in the indices (willingness and unwillingness) indicate that women in gynecology, compared to those in prenatal care, had greater tolerance for the participation of students. The effect of (outpatient) status suggests subtle relationships that prompt questions for future investigations. For example, do gynecological diseases have psychological consequences? If so, how do these issues relate to patient health care and compliance with medical education?

Among the limitations, this observational investigation uses the responses of a questionnaire applied in a single public teaching institution, which can restrict the level and generalization of the interpretations. Public hospital patients appear more likely to agree with a student present at a consultation than those at a private hospital[26]. Furthermore, face-to-face interviews could influence the patient's responses to the questionnaire. Unobserved confounding factors *(e.g., specific reasons for consultation; relatedness need)* could also affect the participants' responses. In future studies, the three rating scales may be improved and revalidated[27-29].

Because lack of practice lowers the standards of medical education, it is crucial to support students in developing clinical skills without compromising patient autonomy. Most women seem to be willing to contribute to medical education by consenting to student attendance at Ob-Gyn appointments. However, patient consent should not be taken for granted or subordinated to teaching purposes[19,30,31]. For the ultimate benefit of women's health, the ethics of patient autonomy requires a constructive, evidence-based approach to clinical education that addresses their rights and learners' needs.

CONCLUSIONS

We highlight three findings as follows. First, compared to women in prenatal care, women in gynecological care showed a greater willingness to accept medical students during consultations in an outpatient public hospital setting. Second, willingness was closely related to the appraisal of student interpersonal communication, which was more positive among women in gynecological care. Third, women's privacy, gynecological condition, age, and student interpersonal communication emerged as independent factors for the relationship to willingness as an outcome.

Briefly, greater tolerance or benevolence (including towards the male student's presence) was associated with better appraisal of student interpersonal communication and less reluctance about student participation (including a pelvic exam) in outpatient consultations, gynecological status, and older age. The results indicate that factors related to the patient (privacy, gynecological status, age) and the student (communication skills, gender) affect the willingness to accept the learner's participation in outpatient health clinics.

Hopefully, knowledge of interpersonal communication can help to adjust and optimize student learning opportunities, improve the context of outpatient services, and foster student-patient partnerships, thus allowing a higher proportion of patients to feel more comfortable and willing to cooperate even more with medical teaching.

AUTHORS' CONTRIBUTION

Both authors contributed to the study design, analysis and interpretation of data, writing of the original draft and review-editing of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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