

## Analysis of the factors that lead women physicians not to choose surgical specialties

### *Análise dos fatores que levam mulheres médicas a não optarem por especialidades cirúrgicas*

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**ABSTRACT:** *Objective:* To verify the probable reasons that lead women physicians not to choose surgical specialties. *Methods:* We evaluated the answers of 75 women physicians through an objective questionnaire composed of 15 questions about their choice to not pursue surgical specialties. The data was expressed in percentages and shown in charts and tables. *Results:* It was observed that 45.3% of the women physicians had already considered being a surgeon. The most limiting factor, selected by 40% of the participants, was on-call hours. It was observed that 86.7% of the participants believe that it is possible to be a surgeon and to start a family. The characteristic most used to define a women surgeon was “strong”, selected by 72% of the participants. In addition, only 12% of participants believe that there is no sexism on the part of patients or co-workers in relation to women surgeons. *Conclusion:* In addition to identifying probable factors that lead women not to choose surgical specialties, it was concluded that more studies like this should be conducted so that labor (flexibility of shifts, equal pay) and behavioral (prejudice, sexism) issues can be reviewed.

**Keywords:** Physicians, women/statistics & numerical data; Medicine; Women/education.

**RESUMO:** *Objetivo:* Verificar as prováveis causas que levam as mulheres médicas a não optarem por especialidades cirúrgicas. *Métodos:* foram avaliadas as respostas de 75 médicas, através de um questionário objetivo composto de 15 perguntas sobre a não escolha da área cirúrgica, que foram transformadas em porcentagem e apresentadas em gráficos e tabelas. *Resultados:* Observou-se que 45,3% das médicas já cogitaram ser cirurgiãs, que o fator mais assinalado como limitante, por 40% das médicas (questão de múltipla escolha), à escolha da área cirúrgica foi o horário de plantões/sobreaviso. Além disso, observou-se, nesta pesquisa, que 86,7% acreditam que é possível ser cirurgiã e constituir família. A característica de personalidade mais utilizada por 72% das médicas participantes deste estudo para definir uma mulher cirurgiã foi: “forte”. E apenas 12% das participantes não acreditam que haja machismo/preconceito por parte dos colegas ou pacientes em relação às cirurgiãs. *Conclusão:* Além de identificar os possíveis fatores que limitam as mulheres médicas a optarem por especialidades cirúrgicas, conclui-se que mais estudos como este devem ser feitos para que questões laborais (flexibilidade de horários, igualdade salarial) e comportamentais (preconceito, machismo) sejam revistas.

**Descritores:** Médicas/estatísticas & dados numéricos; Medicina; Mulheres/educação.

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## INTRODUCTION

Throughout history, the medicine field has not only stressed that men and women are different, but has also characterized this difference, usually trying to emphasize women's inaptitudes<sup>1</sup>. Some careers have always been considered masculine activities, and medicine is among them<sup>2</sup>. Prejudice against women working in certain areas has existed for many centuries. In the medical field, women were prohibited from studying at a medical school until 1879, and the first female physician in Brazil graduated from the Faculty of Medicine of Bahia in 1887<sup>3</sup>.

Up to the beginning of the 19th century, when medical practice still did not require licenses issued by official courses, which did not accept women, there are several mentions of female surgeons who worked anonymously or were shielded by male relatives<sup>4</sup>. The most notorious and curious case is that of Miranda Barry (1797-1865), who, under the name of James Barry, was the Principal Medical Officer and Surgeon of the British Navy, where she served for 40 years<sup>4</sup>.

Between 1949 and 1968, women accounted for about 10% of each college class; between 1982 and 1993, this rate was already at 50%<sup>4</sup>. However, the percentage increase in the number of women surgeons has not kept pace with the accelerated growth of the number of female medical graduates in the last three decades<sup>4</sup>. The reason why so few women want to be surgeons is a complex issue, with no single answer<sup>5</sup>. A consistent trend towards the feminization of medicine has been observed in Brazil over the last few decades and especially in recent years<sup>6</sup>. From 2000 to 2016, 220,993 new physicians were registered, of which 49.3% were men and 50.7%, were women. Observing this distribution by year of entry shows that the rate of female physicians grows rapidly<sup>7</sup>.

Lack of self-confidence and of role models of successful female surgeons and problems related to the usual lack of institutional support for physicians who are mothers are difficulties that must be overcome by women who wish to be surgeons. These factors are still present and are partly responsible for the small number of women surgeons<sup>4</sup>.

For centuries, women have fought tooth and nail against the usual sexist hostility to claim their natural right to practice medicine<sup>8</sup>. Despite of all the barriers, some studies already show favorable data related to female surgeons compared to male surgeons. A study conducted at the University of Toronto (Canada) found that patients treated by female surgeons had a 12% lower likelihood of death within 30 days of surgery<sup>9</sup>. A study published in the journal of the Associação Catarinense de Medicina<sup>10</sup> on the prevalence of medical errors in the cases judged by the Regional Medical Council of the State of Santa Catarina showed that the majority of the physicians convicted of

malpractice were men and worked in surgical services.

Any effort to address the maldistribution of physicians by specialty should include women, trying to discover the factors that affect preferences in the choice of specialty by medical students and to understand why women have not been drawn to certain specialties<sup>5</sup>

## METHOD

Prospective and qualitative study, in which the participants were asked to answer a questionnaire with 15 multiple-choice questions to assess which factors influenced women not to choose surgical specialties. To reach this objective, the instrument used was a questionnaire called: "Analysis of the factors that lead women physicians not to choose surgical specialties", which was adapted from a study called: "Factors influencing the choice of specialty by doctors residing in Minas Gerais", by Patrícia Roberta Berithe Pedrosa de Oliveira (UNICAMP).

The initial sample consisted of 100 female physicians. In the end, 75 questionnaires were answered by non-surgical specialists working in the city of Itajaí - SC, in one or more of the following specialties: Clinical Medicine, Pediatrics, Family Medicine, Preventive Medicine, Endocrinology and Metabolism, Medical Genetics, Hematology, Homeopathy, Infectious Diseases and Pathology or General Practice.

Considering the above and according to the objectives of this study, the following inclusion criteria were used: female physicians registered in the city of Itajaí - SC and who worked in the aforementioned specialties, which, according to data from the Federal Council of Medicine, are predominantly made up of women. The exclusion criteria were incomplete questionnaires and/or participants who were not in any of the specialties mentioned in the inclusion criteria. Among the 25 questionnaires excluded from this study, 23 were excluded because 01 (one) or more questions were left blank, and 02 (two) because the physicians were not in any of the specialties mentioned in the inclusion criteria.

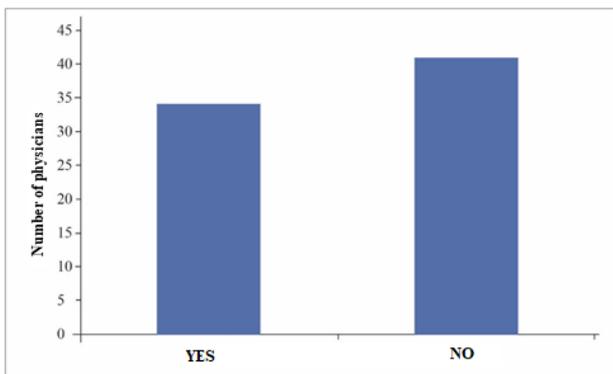
The data obtained in the questionnaire were recorded and grouped in a Microsoft Office Excel spreadsheet and expressed as percentages with a 95% confidence interval (which represents a probability of error of 0.05). The results obtained were presented in tables and/or graphs.

The sample was selected by non-probabilistic convenience sampling; that is, the research subjects willingly accepted to participate in this study. There were no distinctions as to social habits, and responses were anonymous. The Ethics and Research Committee of UNIVALI approved the study and all participants filled out an informed consent form. (CAAE: 78984817.9.0000.0120) There was no conflict of interest and no funding source.

**RESULTS**

The study sample was composed of 75 (seventy-five) female physicians in the following specialties: Clinical Medicine, Family and Community Medicine, Endocrinology, Pediatrics, Hematology, Infectious Diseases and General Practice. Among the participants, 45.33% graduated between 2010 and 2017; 29.33%, between 2000 and 2009; 12% in the 90s; 12% in the 80s and 1.33% in the 70s.

When asked about the moment of the course when they decided which specialty they wanted to pursue, 46.66% of the physicians answered the end of the course, while 88% of the doctors said that during their graduate studies they had already thought about choosing another specialty and about half of the participants reported that they had considered pursuing a surgical specialty. The figure shows the number of female doctors who thought of pursuing a surgical specialty during graduate studies (Figure 1).



**Figure 1** - Number of female physicians who considered pursuing a surgical specialty during graduate studies

However, 92% of the research volunteers reported that they are currently satisfied with the specialty they have chosen.

The question on why they did not choose to pursue a surgical specialty allowed physicians to choose more than one answer. Family demands and work shifts/on-call hours were the most selected answers. Table 1 shows the answers selected by the physicians as limiting factors in the choice of a surgical specialty.

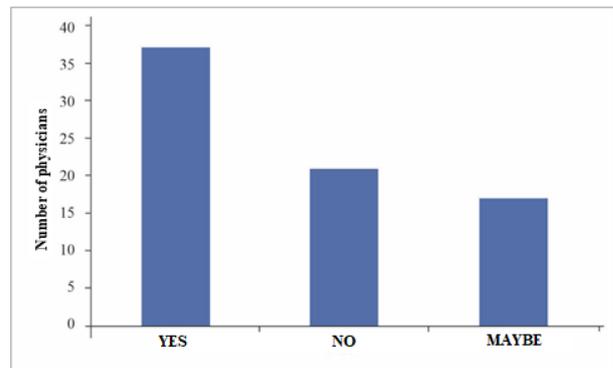
In addition, 49.3% of physicians believe that, to be professionally successful, a woman surgeon must give up many personal choices (Figure 2).

The responses given by the physicians showed that most of them believe that it is possible for a woman to be a surgeon and to start a family at the same time (Figure 3).

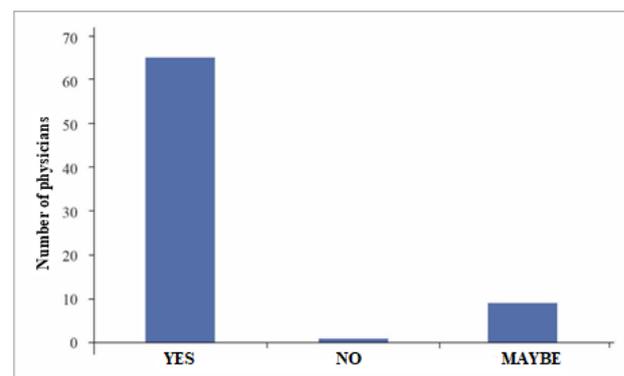
**Table 1** - Factors that led physicians not to choose surgical specialties

Factors	Nº of Physicians
Work shifts	30
Work and family demands	29
Always wanted to be a clinician	26
Day-to-day strain	23
Others	22
Stress and fatigue	15
Prejudice against women in the field	12
Low performance in the area	7
Advice from teachers	2

**Nota:** \*Physicians were able to select more than one factor as a reason for deciding not to pursue a surgical specialty (Multiple-choice question).

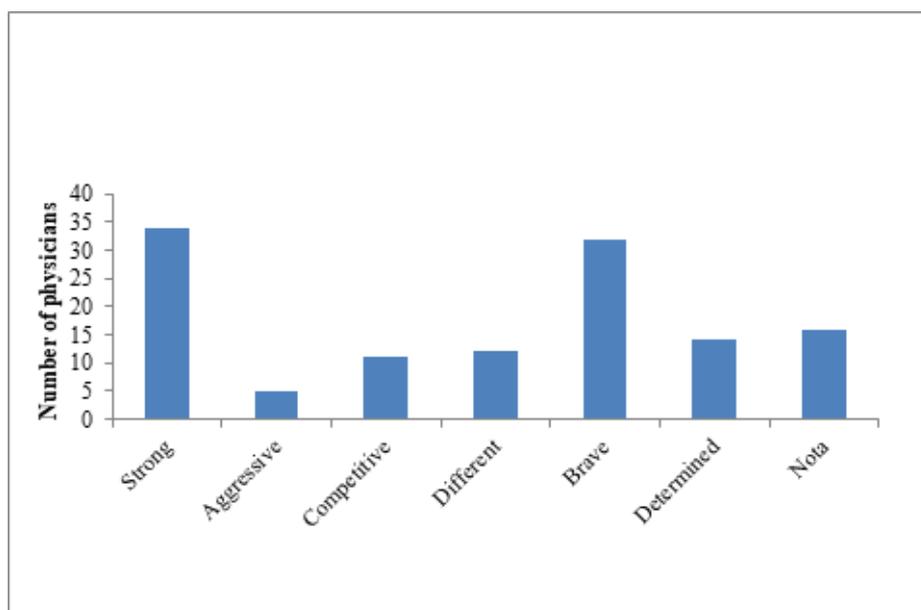


**Figure 2** - Answers from the volunteers regarding the question of whether women surgeons need to give up many personal choices to be professionally successful



**Figure 3** - Answers from the volunteers regarding the question of whether it is possible for a woman to be a surgeon and to start a family

When asked about the personality of women surgeons, the participating physicians answered that they are strong and brave (Figure 4).



Note: \* It was a multiple-choice question, so a physician could select more than one characteristic.

Figure 4 - Characteristics selected by the study participants to characterize the personality of a woman surgeon

It was also found that the lack of female surgeons as mentors and role models to be followed during graduate studies is not a factor that influences women not to choose a surgical specialty, according to the study participants.

Among all participants, only 12% believe that there is no sexism on the part of patients or co-workers in relation to women surgeons (Figure 5).

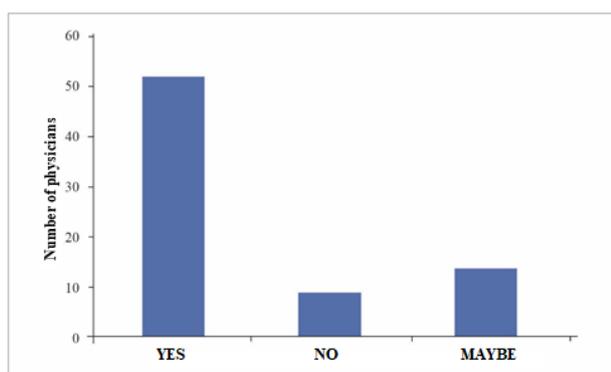


Figure 5 - Responses of the volunteers in the question of whether there is sexism, prejudice, or discrimination on the part of patients or co-workers in relation to women surgeons

## DISCUSSION

Explaining why few women want to be surgeons is a complex task that has no single answer. In the 21st century, women are still questioned about their desire to have children and their personal plans, as if those facts could negatively affect their qualification; meanwhile,

men competing for the same job are not questioned about these intentions<sup>12</sup>. Unlike men, who can simply choose a profession or specialty that pleases or suits them, women, even when more capable, have to overcome several obstacles<sup>4</sup>. In this research, the first and second most selected answers in a multiple-choice question with 9 (nine) answer options regarding factors that led women physicians not to choose surgical specialties were, respectively, work shifts/on-call hours and family demands. This corroborates the aforementioned data, demonstrating that there are many obstacles that must be overcome by women who want to be surgeons.

Even in General Surgery, which is one of the basic specialties, women account for only one fifth of the surgeons. In this study, 45.3% of the participants answered that they had never considered being a surgeon.

Household tasks and caring for children are still seen as female roles. A male physician who is totally dedicated to his specialty is seen as an individual who wants the best for himself and for his patients. On the other hand, a female physician doing the same thing is seen as a person who is abandoning her house and putting her children second<sup>13</sup>. The concepts of maternal and feminine and ability for care and abstraction are often confused. Consequently, women are allocated to activities that seem natural and desired, capable of reconciling the female condition and women's professional practice<sup>12</sup>.

The data obtained in the answers of one of the questions showed that most of the physicians answered that one of the main factors for not choosing the surgical area

was the difficulty to balance work and family demands. Another question asked the participants if they believed that it was possible to be a surgeon and to start a family, and the majority answered that it was. According to critical common sense, one of the factors that lead women not to choose a surgical specialty is the challenge of managing career and family. The American Journal of Surgery found some hypothetical factors to explain the small number of female surgeons in management positions: the family responsibilities of women, the lack of mentorship<sup>14</sup>, and other factors related to this study.

Some personal characteristics considered ideal for a surgeon, such as a strong personality, self-control, a questioning mind, leadership and even some aggressiveness, are seen as qualities common in men and absent in women<sup>4</sup>. The general secretary of the Union of Doctors of São Paulo, Denize Ornelas, reported that, since the first year of college, there is a veiled discourse that in order to be a surgeon or an orthopedist, they (women who will be physicians) need to put aside their personal lives, have a masculine attitude and, still, submit to moral and sexual harassment<sup>12</sup>. Certain characteristics of male surgeons converge with those pointed out by the participants when describing a female surgeon. For example, most of the research volunteers described women surgeons as “strong”; however, aggressiveness was the last option for describing a woman surgeon, which diverges from the aforementioned literature.

A lot of issues are pointed out as factors for not choosing a surgical specialty, such as the false myth of women’s lack of strength, the number of years required for training, physical and emotional stress at home, and prejudice for being a woman<sup>3</sup>. The surgical field of Medicine has a problem accepting women. This is due to cultural problems that are common in the different specialties: “you can’t stay here because you are a woman”<sup>13</sup>.

One of the most important data found in this research is that most of the participating physicians believe that there is sexism or prejudice on the part of patients or co-workers in relation to female surgeons. This result converges with the studies presented, such as the study by Pringle<sup>15</sup> cited by Franco, which found that a male phenotype inspires 25% more confidence than a female phenotype. This means that, for any position a woman seeks, she must be at least 25% more capable than her male competitor to have the same chance of success.

In conclusion, this study demonstrated that factors such as work shifts, prejudice and difficulty to balance work and family demands are limiting factors in the choice of surgical specialties by female physicians. In addition, it provided evidence on the growing feminization of medicine and the discrepancy in the growth of the number of women in this specific field. Therefore, studies like this are necessary so that labor (flexibility of shifts, equal pay) and behavioral (prejudice, sexism) issues can be reviewed.

**Author’s participation:** Paulo D: planning of the research project, application of the questionnaire, data collection and analysis, writing of the article, references. Assis MS: planning of the research project, application of the questionnaire, data collection and writing of the abstract and title in English. Kreuger MRO: initial guidelines, planning, review, and supervision of the research project.

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