Does Knowing Someone with Breast Cancer Influence the Prevalence of Adherence to Breast and Cervical Cancer Screening?

Conhecer alguém com câncer de mama influencia a prevalência da adesão ao rastreamento dos cânceres de mama e colo uterino?

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Abstract

Objective   To evaluate the prevalence of adherence to screening methods for breast and cervical cancer in patients attended at a university hospital and to investigate whether knowing someone with breast cancer, moreover belonging to the patient's family, affects the adherence to the screening recommendations.

Methods   This was a cross-sectional and quantitative study. A structured interview was applied to a sample of 820 women, between 20 and 69 years old, who attended a university hospital in the city of Juiz de for a, MG, Brazil. For the analysis, the chi-square test was used to assess possible associations between the variables, and the significance level was set at p-value ≤ 0.05 for a confidence interval (CI) of 95%.

Results   More than 95.0% of the sample performed mammography and cervical cytology exam; 62.9% reported knowing someone who has or had breast cancer, and this group was more likely to perform breast self-examination (64.9%; odds ratio [OR] 1.5; 95% CI 1.12–2.00), clinical breast examination (91.5%; OR 2.11; 95% CI 1.37–3.36), breast ultrasound (32.9%; OR 1.81, 95% CI 1.30–2.51), and to have had an appointment with a breast specialist (28.5%; OR 1.98, 95% CI 1.38–2.82). Women with family history of breast cancer showed higher propensity to perform breast self-examination (71.0%; OR 1.53 95% CI 1.04–2.26).

Conclusion   There was high adherence to the recommended screening practices; knowing someone with breast cancer might make women more sensitive to this issue as they were more likely to undergo methods which are not recommended for the screening of the general population, such as breast ultrasound and specialist consultation; family history is possibly an additional cause of concern.

Keywords

► mass screening
► breast neoplasms
► breast self-examination
► uterine cervical neoplasms
► public health

Resumo

Objetivos   Avaliar a prevalência da adesão aos métodos de rastreamento dos cânceres de mama e de colo uterino em pacientes atendidas em um hospital universitário e investigar se conhecer alguém com câncer de mama e, o fato de este pertencer à família, modifica a adesão às recomendações de rastreamento.

Métodos   Estudo transversal e quantitativo. Uma entrevista estruturada foi aplicada a uma amostra de 820 pacientes do sexo feminino, entre 20 e 69 anos, usuárias de um hospital universitário na cidade de Juiz de Fora, MG. Para a análise, o Teste Qui-quadrado foi usado para avaliar a possibilidade de associação entre as varáveis, e o valor de significância foi determinado em valor-$p \leq 0,05$ para um intervalo de confiança (IC) de 95%.

Resultados   Mais de 95,0% da amostra realizava os exames de mamografia e colpocitologia; 62,9% relataram conhecer alguém que teve ou tem câncer de mama, sendo que este grupo realizou, com maior frequência, autoexame (64,9%; razão de prevalência [RP] 1,5; IC 95% 1,12–2,00), exame clínico (91,5%; RP 2,11; IC 95% 1,37–3,36) e ultrassonografia das mamas (32,9%; RP 1,81, IC 95% 1,30–2,51) e consulta ao mastologista (28,5%; RP 1,98, IC 95% 1,38–2,82). Mulheres com história familiar de câncer de mama realizaram com maior prevalência o autoexame das mamas (71,0%; RP 1,53 IC 95% 1,04–2,26).

Conclusão   A amostra apresentou elevada adesão aos métodos de rastreamento preconizados; conhecer alguém com câncer de mama pode tornar as mulheres mais sensíveis a essa questão, aumentando a realização de medidas não recomendadas para o rastreamento da população geral, como ultrassonografia das mamas e consulta com médico especialista; a história familiar possivelmente implica em um fator de preocupação adicional.

Palavras-chave

► programas de rastreamento
► neoplasias da mama
► autoexame de mama
► neoplasias do colo do útero
► saúde pública

Introduction

Breast cancer is the second most common malignant neoplasm among women in Brazil, as well as in the world, being surpassed only by non-melanoma skin cancer.[1,2] In addition to its high prevalence, it is also a source of anxiety and fear for patients, since the primary treatment of this type of cancer is based on the surgical excision of the lesion, sometimes causing mutilations and affecting women's self-image.[3]

After the diagnosis of breast cancer, the patient might face feelings of guilt, anguish, pain, and suffering, as well as doubts about the success of the treatment, and fear of dying. Anxiety, depression, reduced libido, physical discomfort and low self-esteem are some of the situations experienced by patients with cancer, provoking profound changes throughout their lifetime.[4–7]

It is also known that these repercussions go beyond the patient herself, also affecting the women who live around her.[8,9] More than 40% of women know someone with breast cancer, and a study showed that these women had a better knowledge and perception of the disease.[10,11] Women with heightened perceptions of breast cancer risk are more likely to take actions to gain a sense of control over the disease, leading to a higher prevalence of mammography screening, genetic testing, and prophylactic mastectomy.[12,13] Lack of information about cancer, misunderstanding of risk factors or screening guidelines, and inaccurate perception of cancer risk may also affect the

individual's behavior toward other types of cancer, such as cervical and colon cancer.[14] Few studies, however, have investigated whether these repercussions instill changes in attitudes and behaviors, leading women, for example, to greater adherence to guidelines for screening of breast and cervical cancer.[15] Determining the factors that influence the adherence to cervical cancer screening measures is also important as it remains the third most prevalent type of cancer among women in Brazil.[1]

The Brazilian Ministry of Health recommends that breast cancer screening for the general female population, meaning women without high risk for such neoplasm, should consist of bi-annual mammography (MMG) between the ages of 50 and 69 years old.[16] It also recommends clinical breast examinations (CBE) as part of the integral care for women's health, and breast self-examination (BSE) as an educational health action, encouraging women to gain knowledge about their own bodies.[16,17] Screening for cervical cancer and its precursor lesions, in turn, consists of a cytological examination, which should begin at the age of 25 for women who have had sexual activity, and it should continue until the age of 64.[16]

This study aims to evaluate the prevalence of adherence to screening methods for breast and cervical cancers in patients attended at a university hospital. Additionally, we sought to investigate whether knowing someone with breast cancer, moreover belonging to the patient's family, would effectively instill a greater adherence to cancer screening recommendations.

Methods

A cross-sectional, quantitative and descriptive field study was performed. The purpose of the study was to assess the possible associations between knowing someone who has had or currently has breast cancer with the adherence to screening measures for breast and cervical cancers.[16]

The sample consisted of 820 female patients, with ages ranging from 20 to 69 years old, attended at a university hospital in the city of Juiz de Fora, MG, Brazil. The minimum sample size was estimated in 820 women, based on a simple random sampling, with a confidence level of 95.0% and a sampling error of 5.0%. Women with a personal history of breast cancer were excluded from this study. A total of 861 patients were invited to respond the questionnaire, 41 of whom refused to participate (refusal rate 4.7%). The data collection was performed during the working hours of the hospital's different outpatient clinics, while the patients were in the waiting room. They were assigned a random number that was electronically generated.

The data was collected through an interview application composed by 43 questions, which were based on the specialized literature about the subject and elaborated by the authors of this research. To cover the points of interest in this study, five questions were asked regarding the socioeconomic profile of the sample, as well as two questions about whether or not someone with breast cancer is known, and six questions regarding adherence to screening measures and other complementary tests.

The study's exposure variables were: 1. knowing someone who has had or currently has breast cancer; 2. if this known individual belonged to the family of the research participant. The outcome variables consisted in the completion or not of the screening measures as recommended by the Brazilian Ministry of Health: 1. BSE; 2. CBE; 3. MMG for women between 50 and 69 years old; 4. cervical cytology, for women between 25 and 64 years of age. In addition to these variables, the following were evaluated: 5. consultation with a breast specialist; 6. to have performed a breast ultrasound (BUS).

Additionally, to carry out the analysis of the association between the variables, the chi-square test of independence (without correction) was applied. The significance level was p-value ≤ 0.05 for a confidence interval of 95.0%. Furthermore, the Statistical Package for The Social Sciences (SPSS) version 15.0 2006 software (SPSS Inc., Chicago, IL, USA) was used to construct the database and the statistical analysis. The approach was done by researchers, the authors of this study, who were previously trained, and the study was approved by the institution's ethics committee under the number 156.162.

Results

The mean age of the patients in the sample was 42.6 years of age (standard deviation [SD]: ± 12.8), 44.5 years old among the interviewees who knew someone with breast cancer, and 39.4 among those who did not know it ($p < 0.01$). The majority of the sample had completed a secondary/technical or undergraduate education (53.0%), presented monthly

Table 1 Distribution of the sociodemographic characteristics of the sample

Variables	n (%)
Age	
20 to 39	356 (43.4)
40 to 44	105 (12.8)
45 to 69	359 (43.8)
Educational level	
Illiterate/incomplete elementary school	9 (1.1)
Completed elementary school/completed high school	376 (45.9)
Completed high school or technical school/incomplete undergraduate education	339 (41.3)
Complete undergraduate education	96 (11.7)
Monthly family income (minimum wages)	
≤ 2	448 (54.6)
> 2 and ≤ 4	307 (37.4)
> 4	65 (8.0)
Living área	
Rural area	762 (92.9)
Urban area	58 (7.1)
Marital status	
Single	242 (28.5)
Married/Stable union	454 (55.4)
Separated/Divorced	78 (9.5)
Widow	46 (5.6)

family income lower than 2 minimum wages (54.6%), lived in urban areas (92.9%) and were married or in a stable union (55.4%) (►**Table 1**).

It is noteworthy to mention that, in the analyzed sampling, a rate of 62.9% reported knowing someone who has had or currently has breast cancer and, among this group of women, 35.5% stated that such patient belonged to their own family.

Statistically, higher rates of the BSE and CBE implementation were observed among those people interviewed who reported having known someone who had or has breast cancer. If we compared them to those women who did not know someone diagnosed with breast cancer, the same fact was not observed in relation to MMG and cervical cytology, which presented a fulfilment rate higher than 94.0% in both researched groups (►**Table 2**).

Additionally, a rate of 28.5% ($n = 147$) of the women who knew someone with breast cancer had already consulted a breast specialist and 32.9% ($n = 170$) had already performed a breast USG. The same fact was observed in 16.8% ($n = 51$, $p < 0.01$, OR = 1.98, 95% CI95% = 1.38–2.82) and 21.4% ($n = 65$, $p < 0.01$, OR = 1.81, CI95% = 1.30–2.51) of the women who did not report having such knowledge.

Table 2 The correlation between knowing someone with breast cancer or not and adherence to the screening measures

Screening	Do you know someone with breast cancer?			
	Yes n (%)	No n (%)	p	OR (CI 95%)
BSE	335 (64.9)	168 (55.3)	0.01	1.50 (1.12–2.00)
CBE	472 (91.5)	254 (83.6)	< 0.01	2.11 (1.37–3.26)
MMG (> 50 years)*	201 (97.6)	65 (95.6)	0.40	1.90 (0.43–7.98)
Colpocytology (25 to 64 years)#	434 (95.4)	245 (94.6)	0.63	1.18 (0.59–2.36)

Abbreviations: BSE, breast self-examination; CBE, clinical breast examination; IC, confidence interval; MMG, mammography; OR, odds ratio.
n = 820; * n = 274; #n= 714.

A higher prevalence of BSE was observed in patients with a family history of breast cancer in relation to the group of women that knew a person diagnosed with cancer who did not belong to their family. Furthermore, no significant differences were observed regarding the adherence to the other screening measures studied herein (►**Table 3**). It was also observed that in the first group, a rate of 31.1% women (n = 57) had already consulted the specialist and 37.2% (n = 68) performed a breast USG. The same was observed in 27.0% (n = 90, p = 0.32, OR = 1.22, CI = 0.82–1.81) and 30.6% (n = 102, p = 0.13, OR = 1.34, CI = 0.92–1.96), respectively, in the second group.

Discussion

The present study described the adherence to screening measures recommended for breast and cervical cancers based on knowing or not knowing someone who was diagnosed with breast cancer, and also, in positive case, if the known individual was a family member. It is noteworthy to mention that more than 60.0% of the sample knew someone who had or currently has breast cancer, and this knowledge implied a higher fulfillment of BSE and CBE, while the first one was performed in an even higher proportion in cases with a family history.

There is an estimation of 58 thousand breast cancer cases each year in Brazil, corresponding to an incidence of 56.2 new cases per 100,000 women.[1] Thus, due to the high prevalence of the disease, it is expected that a considerable proportion of women know patients who had or have such neoplasm. There are few data available about the prevalence of this knowledge among women, ranging from 40 to 63%.[10,18,19] Therefore, the prevalence of women who know someone

with breast cancer can be considered elevated in this study. The authors did not find previous Brazilian statistics about it.

It is known that psychological variables make an important contribution to whether an individual seeks cancer screening.[20] Some authors have suggested that a concern of breast cancer is beneficial, since it would lead women to adopt a more proactive attitude toward cancer screening.[21,22] However, others have advocated that such feelings would conduct women to avoid screening for fear of the diagnosis.[23,24] Although we have not directly assessed the psychological impact of knowing someone with breast cancer, one way to understand the results in the study herein might be in accordance with this first point of view, since a higher completion of BSE and CBE among women who reported knowing patients who had or have breast cancer was identified.

On the other hand, it is possible that such urgency may occur excessively, since, in this group, a higher proportion of submission to BUS and consultations with the breast specialist were also observed. Such actions, which are not considered effective initial methods of breast cancer screening for the general population, may generate negative consequences if performed, such as additional costs, besides the physical impact as an unnecessary biopsy and psychological shock in cases of false-positive results.[22,25]

A family member diagnosed with breast cancer seems to be an additional factor of concern, revealing itself in this study by the greater completion of BSE by women with a history of such disease in the family. This information, again, corroborates with the fact that the fear of diagnosis does not lead women to avoid it, insofar as the family history did not prove to be an impediment to the adherence to the appropriate screening measures.

Table 3 Correlation between family history of breast cancer and adherence to screening measures in the group of women who knew someone who had or has breast cancer

Screening	Family history of breast cancer?			
	Yes n (%)	No n (%)	p	OR (CI 95%)
BSE	130 (71.0)	205 (61.6)	0.03	1.53 (1.04–2.26)
CBE	170 (92.9)	302 (90.7)	0.39	1.34 (0.68–2.63)
MMG (> 50 years)*	65 (98.5)	136 (97.1)	0.56	1.91 (0.21–17.45)
Colpocytology (25 to 64 years)#	157 (96.3)	277 (94.9)	0.48	1.42 (0.54–3.73)

Abbreviations: BSE, breast self-examination; CBE, clinical breast examination; CI, confidence interval; MMG, mammography; OR, odds ratio.
n= 820; * n = 206; # n = 455.

In this scenario, health professionals are important to assist and educate women to minimize their apprehensions and deconstruct myths that exist around breast and cervical cancers. This is necessary, mainly, because the majority of women acquire information about screening measures through layman sources, such as television.[26] Misconceptions about cancer and risk factors can influence behavior toward other types of cancers; however, in this study, knowing someone with breast cancer did not affect cervical cancer screening, possibly due to the high adherence to the recommended practices.

Besides the psychological consequences, knowing someone with breast cancer can influence adherence to screening methods through other ways. For instance, beliefs about the effectiveness and importance of the diagnostic methods, perceived risk of cancer, attitudes toward the healthcare providers, and higher knowledge about the disease can play a role in women's decision to adhere or not to the screening recommendations.[10–14,20] Those aspects, however, were not assessed in this study and should be further investigated.

A positive finding of this study was that, among the recommended age groups by the Brazilian Ministry of Health, in the group researched at the university hospital, a rate of 97.1% reported having done a MMG, and more than 95.1% had undertaken cervical cytology examination. These values are higher than the World Health Organization goals, as well as the national coverage, which are 70.0 and 60.0%, respectively, for MMG, and 80.0 and 79.4% for colpocytology.[27]

The fact that the study sample comes from a university hospital limits the comparison of the results with the Brazilian general population, since all these women receive health-assistance. Furthermore, the prevalence was estimated based on the patients' reports, so it was not possible to verify the performance of the screening methods. Another limitation is the fact that some patients, who may have been considered to be at high risk of having breast cancer and, therefore, should have their screening individualized, may have been analyzed within the recommendations for the general population.

On the other hand, due to the fact that knowing someone with breast cancer may lead to a greater completion of the BSE, CBE and BUS, as well as conduct to consultations with the breast specialist, the present study highlights the health professionals' importance in the assistance and orientation of these patient groups. Additionally, it also serves as a theoretical support for researches that may provide a more comprehensive understanding of the emotional dynamics involved behind the greater search for the screening methods and early diagnosis by women with this context of life.

Conclusion

Knowing someone with breast cancer makes women more sensitive to this issue, which possibly justifies the increase in the implementation of BSE and CBE. The broad coverage of MMG and cervical cytology examinations proved to be important in ensuring that women have access to the main methods of screening, independently of their individual aspects. Finally, considering that most women know a breast cancer patient, health services should be adequate to accommodate and work more effectively on the apprehensions of this group of women.

Contributions

Brum I. V., Rodrigues T. C. G. F., Laporte E. G. J., Aarestrup F. M., Vitral G. S. F. and Laporte B. E. P. contributed with the project and interpretation of data, writing of the article, critical review of the intellectual content and final approval of the version to be published.

Conflicts to Interest

The authors of this article declared they have no conflicts of interest.

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