


Diagnostic and Therapeutic Options of Breast Cancer Patients in Yaounde, Cameroon

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Abstract

Introduction: Breast cancer remains a public health problem due to its severity and because it is the leading cause of death from cancers in women worldwide as well as in Cameroon. Our objective was to study the diagnostic and therapeutic options that patients followed for breast cancer choose in Yaounde. **Method:** This was an analytical cross-sectional study with prospective data collection among patients followed for breast cancer at two referral hospitals in Yaounde from February 1, 2019 to August 31, 2019. Data collected were recorded and analyzed using R application version 3.5.0., p values < 0.05 were considered to be statistically significant. **Results:** A total of 105 patients were recruited, including 104 women and 1 man. The median age was 46 years with extremes of 25 and 77 years. Most patients (71%) had a monthly income of less than 175 USD. Patients in this study had opted for: contemporary medicine (49.5%), therapeutic abstention (38.1%), naturopathy (1.9%), self-medication (9.5%) and traditional medicine (1%). The factors significantly associated with the choice of contemporary medicine as a first diagnostic option were monthly income above 175 USD (OR = 0.37, 95% CI: 0.15 - 0.89, p = 0.028), good level of education (OR = 0.37, 95% CI: 0.16 - 0.82, p = 0.034) and good knowledge about breast cancer (OR = 0.28, 95% CI: 0.08 - 0.89, p = 0.005). The majority of patients (65.7%) sought contemporary medicine as the first therapeutic option after a diagnosis of breast cancer was confirmed, while about a third of them had chosen alternative treatment options including naturopathy (15.2%), traditional medicine (9.5%), religious practices (4.8%), therapeutic abstention (2.9%) and self-medication (1.9%). **Conclusion:** The first diagnostic and therapeutic choices of breast cancer patients in our setting are

numerous and intricate, including contemporary medicine, therapeutic abstinence, self-medication, traditional medicine, naturopathy and religious practices. There is a need to promote breast cancer awareness in our population.

Keywords

Breast Cancer, Traditional Medicine, Therapeutic Abstinence, Naturopathy, Contemporary Medicine

1. Introduction

Breast cancer is an abnormal and anarchical development of cells in the mammary glands. It is the most frequent cancer in women worldwide with about 2 million new cases reported annually. It represents 23% of all female cancers and 11.6% of all human cancers according to Globocan 2018 report. Mortality of this cancer is estimated at 6.6% worldwide [1].

Breast cancer represents a major public health problem given its rapidly increasing incidence and its mortality. In 2008, almost 1.4 million women were diagnosed with breast cancer worldwide. Even though it is the first cause of death due to cancer worldwide, the mortality rates are higher in developing countries [2].

As the incidence increases, it is paralleled by a concomitant increase in morbidity-mortality [3]. In more developed countries about 70% of cases are diagnosed in stages I and II, while only 20% to 50% of cases in less developed countries are diagnosed in these stages with subsequent low survival rates [4] [5] [6]. This is rather unfortunate given that timely management at early stages remains a determining factor for the outcome of treatment, furthermore, early management is not only much easier but equally cost-effective compared to treatment of advanced-stage cancers [2]. An in depth comprehension of the factors which influence delay to treatment is vital to ameliorating the survival rates of this cancer's patients [4]. The marked difference in the results of cancer treatment in women in developed countries compared to those in less developed countries warrants that the obstacles to early diagnosis and treatment in African women should be examined [2].

A study conducted in Cameroon revealed that consultation, diagnostic and treatment delays of breast cancer are long compared to those reported in developed countries [6]. The situation is also characterized by low survival rates of 30% at 5 years and 13.2% at 10 years which is much less compared to the corresponding 90% and 82% values at 5 and 10 years respectively in some developed countries [5] [7]. The long delays of consultation after the onset of the first symptoms could justify partly the late stages at the time of diagnosis. The obstacles to early consultation could be the beliefs and cultural considerations of the patients with

respect to the disease, the low financial potential, as well as geographical barriers to diagnosis and management options [8]. Faced with these barriers to early consultation, the patients thus tend to adopt alternative means to seek solutions.

This raises the hypothesis that there exist different diagnostic and therapeutic choices used by these patients. The multiple routes taken by the patients after initial symptoms and even after a confirmatory diagnosis have been made participate in prolonging the delay till management. Patients usually consult in several different places without obtaining any definitive diagnosis. After the diagnosis of cancer is confirmed, they still engage in different itineraries hence further enhancing the delay. All of these have an impact on retarding the diagnosis and management of their disease [9]. For an in depth understanding of these delays, we sought to study the patients' choices after initial symptoms (diagnostic) and after confirmed diagnosis (therapeutic) in a group of patients followed up for breast cancer in two referral hospitals at Yaounde.

2. Methods

We carried out a cross-sectional analytical study on diagnostic and therapeutic choices of breast cancer patients followed from December 2018 to August 2019 in two university teaching hospitals: The Yaounde General Hospital and The Yaounde Gyneco-Obstetric and Paediatric Hospital which have both the human and material resources necessary to manage breast cancers. The recruitment of breast cancer patients and the analysis of data were done over a period of 6 months from 1st February 2019 to 31st October 2019. All consenting patients followed up during this period were included. We excluded non-consenting women and those who could not answer the questions. A consecutive and exhaustive non probability sampling method was used and the minimum sample size calculated was 30 according to the Cochran's formula using incidence of new cases of breast cancer in Cameroon of 20.1% [10]. Using a pre-tested questionnaire, we collected the variables of interest from the patients and from the hospital registers. The variables of interest were sociodemographic parameters, socio-economic parameters (monthly revenue, availability of financial support, monthly expenditure for breast cancer care, health insurance coverage), the first symptoms of breast cancer observed, date of discovery of the first symptom, different initial measures taken and the reasons motivating the choices, the stage of the disease at diagnosis, the histological type, the current treatment. Also, the level of knowledge on breast cancer was assessed (its definition, risk factors, symptoms, high risk population, the methods of screening and their usage of the methods, its curability, the different treatment options and their actions). They had to respond by either "yes", "no"; "I don't know" or chose among preconceived phrases. Each correct answer weighed 1 point and each wrong answer 0 point. A total mark was calculated at the end. The overall score was on 8. The appreciation of their level of knowledge was done using a scaling system used for evaluating knowledge, attitudes and practices which stipulates that: <25% of correct answers = poor; 25% to 49% = insufficient; 50% to 70% = average; >70%

= good [11].

Data was entered into Excel and exported to the R application version 3.5.0 for statistical analysis. Contingency tables were drawn between the characteristics of patients and their first diagnostic and therapeutic choice. Multivariate logistic regressions were used to identify the determinants of the first choice. Only indicators which were significantly linked by at least 10% in univariate analysis were included in multivariate analysis. Multicollinearity tests between the variables were evaluated with the aid of the variance inflation factor. Forward and backward stepwise selection was used to obtain the best adjustment model. P-values were obtained using Wald test. Globally, the level of significance was 5%. Ethical clearance was obtained from the Institutional Review Board of “University des Montagnes”.

3. Results

A total of 105 participants were included in this study with a median age of 46 years and extremes of 25 years and 77 years. Most of the patients were married and had secondary school level of education (**Table 1**). Majority of the patients (71.43%) had a monthly income of less than 175 USD. However, they estimated their monthly expenditures for breast cancer to be above 875 USD, which was mostly supported by their personal efforts since they had not subscribed to any form of health insurance (**Table 2**). They however benefitted from financial support from their families and friends occasionally. Most of the patients had advanced disease; 42.86% in stage 4 and 27.62% in stage 3 breast cancer. The most common histological type was invasive ductal carcinoma (**Table 3**).

Concerning their level of knowledge on breast cancer, most of the patients (63.81%) could define breast cancer, only 33.33% knew that risk factors of breast cancer are natural, while 05.71% believed that they were mystical or spiritual. Breast mass was known to be a symptom of breast cancer by 54.29% of patients. Most patients were well informed about breast cancer screening methods (64.76%) and treatment modalities (80%) (**Table 4**).

The knowledge scores on breast cancer were good in 42% of participants, average in 17%, insufficient in 24% and poor in 16% (**Figure 1**).

Concerning the factors associated to first choices at the discovery of initial symptoms of breast cancer, monthly revenue greater than 175 USD (OR = 0.37, 95% CI: 0.15 - 0.89, $p = 0.028$), average of standard of living (OR = 0.37, 95% CI: 0.16 - 0.82, $p = 0.034$) and good level of knowledge on the disease (OR = 0.28, 95% CI: 0.08 - 0.89, $p = 0.005$) were significantly associated to choosing contemporary medicine as first option (**Table 5**).

Concerning the reasons for making choices, 35.19% of patients received advice from a relative, 08.57% from a health care professional and 47.62% of cases were personal initiatives (**Table 6**).

At the discovery of the first breast symptoms, breast cancer patients had as first recourse, contemporary medicine in 49.5%, therapeutic abstention in 38.1%, self-medication in 9.5%, naturopathy in 1.9%, traditional medicine in 1%. Among

Table 1. Distribution of study population with respect to sociodemographic characteristics.

Characteristic	Number (N = 105)	Percentage
Age (Years)		
[20, 30]	5	4.76
]30, 40]	27	25.71
]40, 50]	34	32.38
]50, 60]	26	24.76
]60, 70]	11	10.40
]70, 80]	2	1.91
Marital Status		
Single	32	30.48
Married	60	57.14
Divorced	4	3.81
Widow	9	8.57
Region		
Grand North	6	5.71
Grand South	49	52.37
Littoral/South West	4	3.81
West/North-West	46	43.81
Level of Education		
Unschoolled	6	5.71
Primary	19	18.10
Secondary	48	45.71
University	32	30.48
Sex		
Woman	104	99.05
Man	1	0.95
Residence		
Rural	22	20.95
Urban	83	79.05
Profession		
Student	7	6.67
Housewife	34	32.38
Informal Sector	27	25.71
Salaried	32	30.48
Retired	5	4.76

Table 2. Distribution of study participants with respect to socio-economic characteristics.

Socio-economic characteristic	Number (N = 105)	Percentage
Monthly income		
<175 USD	75	71.43
≥175 USD	30	28.57
Financial help		
No	11	10.48
Yes	94	89.52
Monthly expenditure on breast cancer		
<175 USD	39	37.14
>175 USD	66	62.86
Health insurance		
No	102	97.14
Yes	3	2.86

Table 3. Distribution of patients with respect to stage of disease and histological type.

Variables	Number (N = 105)	Percentage
Stage		
Stage 1	9	8.57
Stage 2	22	20.95
Stage 3	29	27.62
Stage 4	45	42.86
Histological types		
Invasive ductal carcinoma	101	96.90
Others	4	3.1

Table 4. Distribution of patients with respect to their knowledge of breast cancer.

Knowledge of the patients	Number (N = 105)	Percentage
Definition of breast cancer		
No	38	36.19
Yes	67	63.81
Risk factors of breast cancer		
Natural	57	33.33
Mystical or spiritual	6	5.71

Continued

Mixed	35	54.29
Symptoms of breast cancer		
No symptom	39	37.14
Axillary mass	1	0.95
Abnormality of the nipple	1	0.95
Breast pain	2	1.90
Nipple discharge	2	1.90
Breast tumefaction	3	2.86
Breast nodule	57	54.29
Sex with high risk of breast cancer		
Female	76	72.38
Both sexes	29	27.62
Age with high risk for breast cancer		
Don't know	7	6.67
Old persons	21	20.00
All ages	77	73.33
Know of a screening method		
No	37	35.24
Yes	68	64.76
Curability of breast cancer		
Unknown	41	39.05
No	10	9.52
Yes	54	51.43
Know of treatment available		
No	21	20.00
Yes	84	80.00

Table 5. Determinants of the first diagnostic choice at discovery of initial symptoms of breast cancer.

Characteristics of patients	Contemporary Medicine	Other choices	Total	RC (IC = 95%)	P
Monthly income					
<175 USD	32 (61.5)	43 (81.1)	75	1	-
≥175 USD	20 (38.5)	10 (18.9)	30	0.37 (0.15 - 0.89)	0.028

Continued

Standard of living					
Low	24 (46.2)	37 (69.8)	61	1	-
Average	28 (53.8)	16 (30.2)	44	0.37 (0.16 - 0.82)	0.015
Level of knowledge on breast cancer					
Poor	6 (11.5)	11 (20.8)	17	1	-
Insufficient	8 (15.4)	18 (34)	26	1,23 (0.33 - 4.51)	0.757
Average	9 (17.3)	9 (17)	18	0.55 (0.13 - 2.09)	0.381
Good	29 (55.8)	15 (28.3)	44	0.28 (0.08 - 0.89)	0.034
Time since diagnosis of breast cancer (months)					
≤6	17 (32.7)	8 (15.1)	25	1	
]6 - 12]	11 (21.2)	12 (22.6)	23	2,32 (0.73 - 7.75)	0.160
]12 - 36]	19 (36.5)	18 (34)	37	2,01 (0.71 - 6.01)	0.195
>36	5 (9.6)	15 (28.3)	20	6,37 (1.81 - 25.8)	0.005

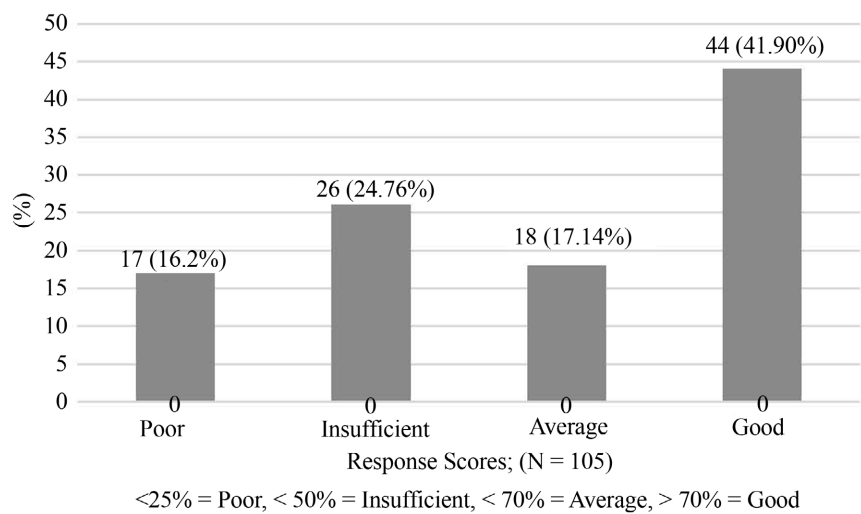


Figure 1. Distribution of participants with respect to their knowledge scores on breast cancer.

Table 6. Distribution of patients according of reasons for making choices.

Reasons for choosing a option	Number (N = 105)	Percentage
Advice from a relative	38	35.19%
Advice from a health care professional	9	8.57%
Personal initiative	50	47.62%

those who chose at first recourse a modality other than conventional medicine, at second recourse, they chose conventional medicine in 85%, 80%, and 100% respectively for those of abstention group, of self-medication and of naturopathy/traditional medicine groups (**Figure 2**).

After confirmed diagnosis of breast cancer, the patients had different itineraries in their search for a therapeutic solution. The patients' first therapeutic recourse was contemporary medicine in 65.7%, naturopathy in 15.2%, traditional medicine in 9.5%, religious practices in 4.8%, therapeutic abstention in 2.9% and self-medication in 1.9%. At second therapeutic recourses', majority of patients who chose initially an modality other than contemporary Medicine at first therapeutic recourse at second recourse chose contemporary medicine in 99%, 80%, 40%, 66.7% and 100% respectively for those of naturopathy group, traditional medicine, religious practices, therapeutic abstention and self-medication (**Figure 3**).

4. Discussion

The objective of the present study was to determine among women followed up for breast cancer in two referral hospitals in Yaounde, their diagnostic and therapeutic choices. We found that the first and second diagnostic and therapeutic choices of these patients in our environment are varied and include contemporary medicine, naturopathy, therapeutic abstention, self-medication, traditional medicine, religious practices in various proportions.

The median age of patients was 46 years with extremes ranging between 25 and 77 years which is consistent with the results of other African studies in Cameroon by Kemfang *et al.* (47.5 ± 12.36 years), Engbang *et al.* (46.80 ± 15.87 years) and in Mali by Ly *et al.* (46.0 ± 19.6 years) in which it is reported that the young age of breast cancer patients is due certainly to the low life expectancy of Africans compared to Caucasians and probably genetic factors predisposing to early breast cancer [7] [12] [13].

In our study, almost half of patients had studied up to high school level (45.71%) which is different from those reported by Benbakhta *et al.* in Morocco, where 56% were illiterates [14]. The difference is probably due to the cultural and religious differences that exist in these two countries. The level of education has a fundamental impact on the different behaviours exhibited by humans in the society, the more the population is educated, the more the utilization of

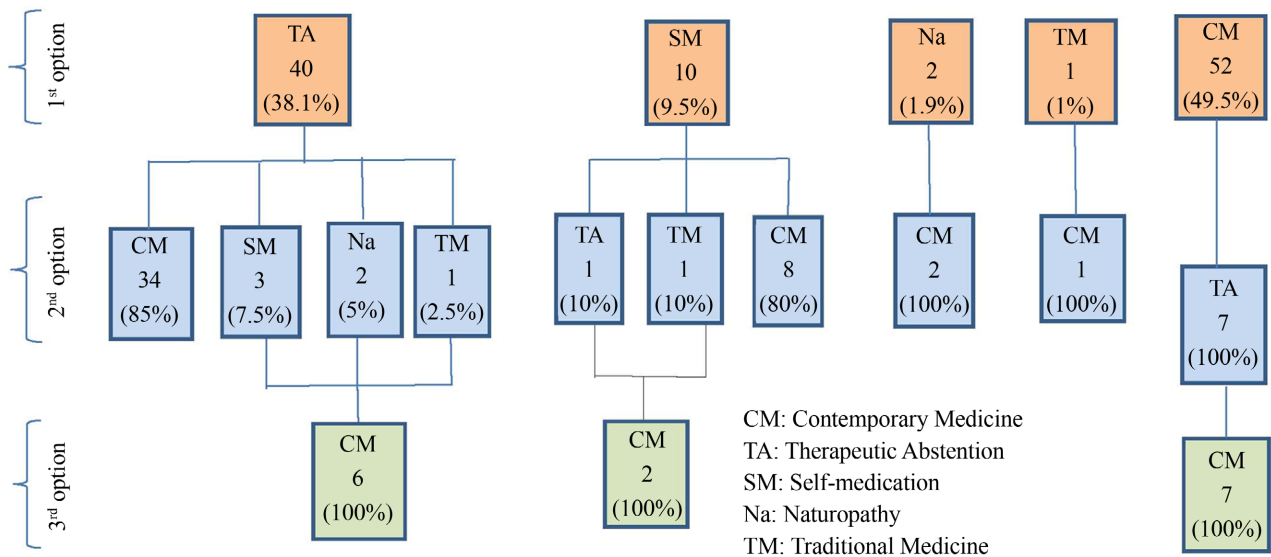


Figure 2. Diagnostic itineraries of the patients after initial symptoms.

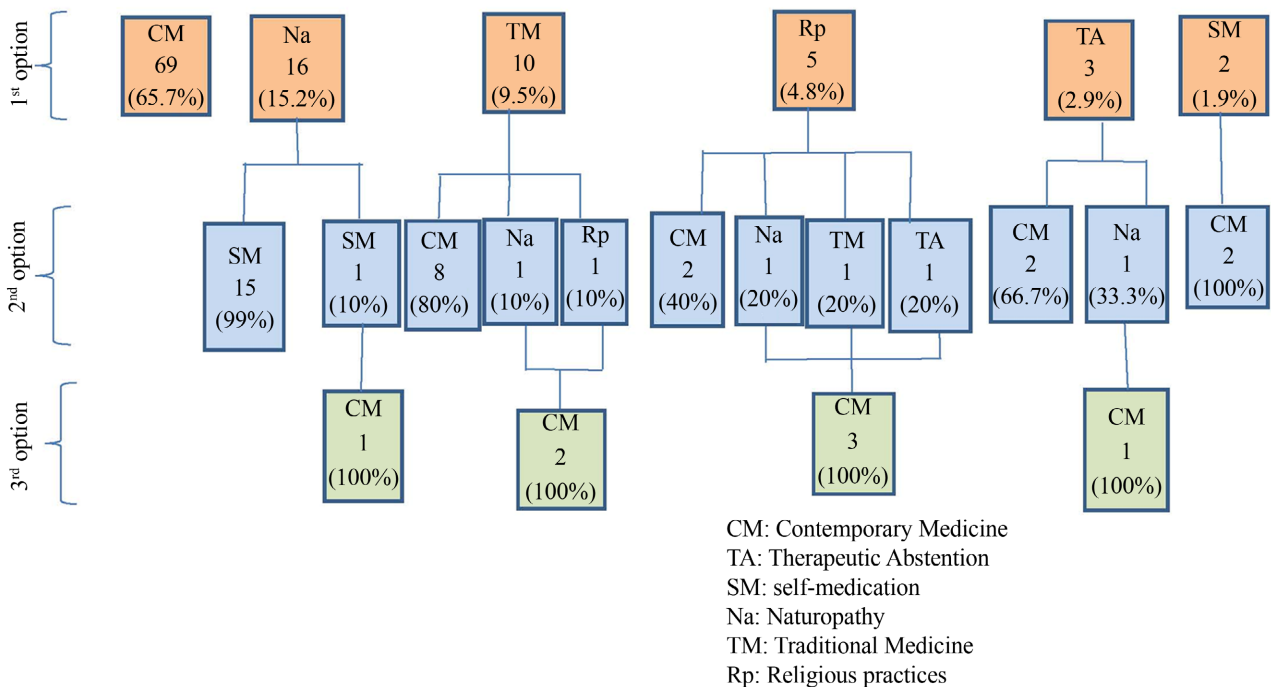


Figure 3. Therapeutic itineraries of patients at confirmed diagnosis of breast cancer.

modern health care facilities and the lesser the usage of traditional medicines [15].

Most of the patients 71.43% had a low level of monthly income and 58.10% had a low standard of living. Consequently, 73.33% of the patients reported that the cost of treatment was very high. These results are similar to those reported in Benin and Senegal and confirm the low socio-economic level of our African population in general and sub-Saharan African populations in particular [16].

In this study, contemporary medicine, therapeutic abstention, self-medication,

traditional medicine and naturopathy were among the choices made as diagnostic option. Zannou *et al.* in Benin have had similar results with various diagnostic options including traditional medicine, religious practices and contemporary medicine [16]. The first choice is the stage in which significant differences are observed in the itineraries of the patients [9]. As the first diagnostic choice, about half of the patients 50.58% in the present study did not chose contemporary medicine. This is similar to what was reported in Benin by Zannou *et al.*, where more than half of the participants had initially consulted traditional medicine [16].

Concerning therapeutic options, the choices identified were contemporary medicine, self-medication, abstention, naturopathy, traditional medicine and religious practices. The therapeutic itineraries of the patients were very long with some using about three options for their care.

Cultural, educational, financial and geographic factors may influence the diagnostic and therapeutic choices of patients. In this study, monthly income greater than 175 USD; OR. 0.37 (0.15 - 0.89), average of standard of living; OR. 0.37 (0.16 - 0.82) and good knowledge on the disease; OR. 0.28 (0.08 - 0.89) were significantly associated to choosing contemporary medicine as first recourse. Limited access to the funding and the high cost of medical care are among the reasons for the long delay in initiating therapy after diagnosis in our study population. This also includes expenses on transport and other costs like feeding and the living costs of accompanying persons [13] [15]. Fear of breast cancer treatment was also recorded as one of the reasons for choosing non-contemporary medicine. The patients feared losing an essential organ of their body that is tightly linked to their femininity through mastectomy. They feared becoming *Half Women* and subdue the social pressures associated with it. This was more common in the married women who constituted the majority of our study population with 57.14%. The participants also feared chemotherapy, viewing it as too aggressive and thought it could cause death. Belief in spiritual healing by the patients caused them to use traditional medicine and religious practices as a therapeutic recourse; and this is more so because they attributed a mystical origin to their disease. A patient made the following declaration in this light “*I did not have enough money to do the tests I was asked to do... I spoke about it to my Pastor and we started prayer sessions, he gave me oil to rub on the breast. The lump kept growing..., when I had money, I came back to the hospital*”.

Self-medication was observed in 9.52% of patients in this study. They did not regard their symptoms as serious and thought they were benign or of infectious origin. These same considerations were reported by authors in Mali and in Benin [13] [16].

Being a hospital-based study was the major limit of our study as we could recruit only patients who at some point in their itinerary decided to come to the hospital and excluded all those who never began care in a hospital setting.

5. Conclusions

The first diagnostic and therapeutic choices of breast cancer patients in our setting are numerous and intricate including contemporary medicine, therapeutic abstention, self-medication, traditional medicine, naturopathy and religious practices. Only a half of breast cancer patients choose as the first recourse to consult at a health center.

A good level of education, monthly income greater than 175 USD and good knowledge of breast cancer are the main factors significantly associated with choosing contemporary medicine as a first diagnostic option at the time of initial symptoms.

There is a need to inform and educate our population on the importance of screening, early diagnosis and adequate treatment of breast cancer and also the need for the establishment of universal health coverage in our environment to improve the access to breast cancer care.

Conflicts of Interest

The authors declare no conflicts of interest.

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