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Level of Knowledge Regarding Breast Cancer among Women in the Commune of Parakou in 2021

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Abstract

Background: Women well-informed regarding breast cancer are often most conscious about their breast health and would therefore seek medical attention when detecting the initial symptoms. **Objective**: This study sought to identify factors associated with a good level of knowledge regarding breast cancer among women in the commune of Parakou in 2021. **Method**: This was a prospective cross-sectional study with descriptive and analytical purposes, carried out from June 5 to August 5, 2022, among women residing in the first district of the commune of Parakou. A pre-designed questionnaire set up with the Kobotoolbox server was used for data collection through a cluster survey sampling technique. Pearson's chi-square test was implemented to determine associations between variables. **Result**: A total of 630 women were included in this study. The prevalence of women well-informed about breast cancer was 21.75% (95% CI = [18.70 - 25.13]). Factors associated with good knowledge regarding breast cancer were age group (p-value < 0.001), school level (p-value < 0.001), occupation (p-value < 0.001), and regular attendance at a health facility (p-value < 0.001). **Conclusion**: Several women remain unaware of breast cancer in the commune of Parakou. A huge effort is still needed to increase the level of coverage of information regarding breast cancer and its prevention methods.

Keywords

Knowledge, Factors Associated, Breast Cancer, Women, Parakou (Benin)

1. Introduction

Breast cancer is an anarchic breast cell proliferation [1]. It is a women's life-threatening pathology worldwide [2]. Among women, it is the most common cancer and the leading cause of cancer related death [3]. In 2020, 2.3 million women breast cancer cases were reported across the world and overall 685,000 deaths were attributed to it [4]. Breast cancer prevalence is higher in developed countries. However, a large part of worldwide breast cancer-associated deaths are reported from developing countries [4] [5]. This disease mortality rate is 12.1% in Africa, where it was reported to be the most commonly diagnosed and the leading cause of cancer related death [6]. In Benin, the observation is the same. 32.1% of all women cancers are breast cancers. In addition, 12.1% of cancer related deaths among females are attributed to this pathology [7].

Early breast cancer detection combined with appropriate treatment should be the best strategy to reduce breast cancer mortality [8] [9]. Indeed, women well-informed regarding breast cancer are often most conscious about their breast health and would therefore seek medical attention when detecting the initial symptoms [10]. Early detection of the disease also makes successful treatment affordable and increases the chances of healing, and therefore improves survival [11]. Unfortunately, the 5-year overall survival rate of breast cancer in southern Benin was only 40% in 2020 [12]. It is therefore important to assess females' knowledge regarding breast cancer in order to suggest the most effective information outreach.

This study sought to identify factors associated with a good level of knowledge regarding breast cancer among women in the commune of Parakou in 2021.

2. Method

This was a prospective cross-sectional study with descriptive and analytical purposes, which was carried out in the first district of the commune of Parakou from June 5 to August 5, 2022. The study population consisted of women residing in the first district of the commune of Parakou. The study included women between 15 and 60 years old who had given their informed consent to participate in the survey. Those who were unable to communicate orally were excluded from the study, regardless of this inability reason.

The sampling technique was a cluster survey. The minimum sample size calculated by the Schwartz formula was 571 using the assumption of 34.2% knowledgeable of breast cancer screening [13], 95% confidence interval; ($\alpha = 0.05$), 5% margin of error, 10% none response rate, and 1.5 design effect. The sampling frame consisted of all the 30 neighborhoods constituting the first district of the commune of Parakou. Thus, the size of each cluster was determined by making the total sample size on the number of clusters considered; that is, $571/30 \simeq 20$ participants per neighborhood. For data collection, only one investigator went through a neighborhood. The investigator stood in the middle of the neighborhood and drew a direction by the bottle method. This one then went from

household to household, starting with the first one on the right, to conduct an individual face-to-face interview with the women eligible for the study. If the entire right side of the direction has been traversed without reaching the intended number of participants for that neighborhood, the investigator gets back to the middle, and at this time explores the left side of the same direction until the goal is reached.

A pre-designed questionnaire set up with the Kobotoolbox server was used for data collection. This questionnaire collected socio-demographic, socio-cultural, organizational and knowledge data about breast cancer. The approximate time for completing the questionnaire was 15 minutes. For validity assessment verification, the questionnaire's initial draft was reviewed by a group of experts and modifications were made according to their comments. After a second review, experts verified the validity of the modified questionnaire. The validity coefficient of the questionnaire as a whole was estimated at 0.96. For reliability assessment, the questionnaire was administered to twenty women who had randomly been selected from different districts of Parakou in order to detect difficulties that may arise during the study and to estimate the required time to fill the questionnaire. The process was repeated two weeks later with the same 20 subjects. Based on this assessment, the reliability coefficient was calculated to 0.93. The dependent variable was the level of knowledge about breast cancer. This level was assessed by a series of questions expressed in familiar, unequivocal and understandable language. These questions concerned information about the existence of the disease, its risk factors, its protective factors, its symptoms, and its prevention methods. A true answer to a question is scored as 1 point, while a false answer is scored as 0 point. A final score expressed as a percentage is given to each participant. It is equal to the sum of the points obtained divided by the total number of questions, multiplied by 100. Participants with a score equal or over 50% were classified as "well informed" and those with a score down to 50% were classified as "poorly informed". Co-variables included socio-demographic, socio-cultural and organizational data. Data analysis was performed using Epi info software version 7.2.2.6. Pearson's chi-square test was used to determine associations between variables. The significance level of 5% was considered.

3. Result

3.1. Socio-Demographic, Socio-Cultural and Organizational Characteristics of the Sample

A total of 630 women were included in this study. The mean age was 26.15 ± 8.87 years with a predominance of the 20-30 age group. The majority of the women were married (54.13%), Muslim (51.75%) and from Bariba ethnicity and related (31.90%). More than a third (41.59%) had attained secondary school level. Nearly a third (32.38%) was shopkeepers. Almost half (46.83%) regularly attended a health facility (**Table 1**).

Table 1. Distribution of participants according to the sample characteristics (n = 630).

	Size	Pourcentage (%)
Age group (year)		
[15 - 20]	190	30.16
[20 - 30]	312	49.52
[30 - 40]	81	12.86
[40 - 50]	35	5.56
[50 - 59]	12	1.90
Marital status		
Single	287	45.56
Married	341	54.13
Widowed or divorced	2	0.32
School level		
Illiterate	144	22.86
Primary school level	157	24.92
Secondary school level	262	41.59
University level	67	10.63
Occupation		
Civil servant	23	3.65
Shopkeeper	204	32.38
Householdwife	82	13.02
Craftswoman	161	25.56
Unemployed	22	3.49
Student	86	13.65
Self-employed	63	8.25
Religion		
Traditional	4	0.63
Christian	326	51.75
Muslim	298	47.30
Other	2	0.32
Ethnicity		
Bariba and related	201	31.90
Dendi and related	62	9.84
Fon and related	143	22.70
Nagot and related	129	20.48
Other	95	15.08
Regular attendance at a health facility		
Yes	295	46.83
No	335	53.17

3.2. Assessment of Knowledge Level Regarding Breast Cancer

Of the 630 women, 137 had good knowledge about breast cancer and 493 were poorly informed about the disease. The prevalence of women well-informed about breast cancer was 21.75% (95% CI = [18.70 - 25.13]) (Table 2).

3.3. Factors Associated with Good Knowledge Regarding Breast Cancer

Age group (p-value < 0.001) was associated with good knowledge about breast cancer. Indeed, participants in the 20 - 30 age group were 1.85 times more likely to have better knowledge than those age between 15 and 20. Participants in the 30 - 40 age group were 1.71 times more likely to have better knowledge than those age between 15 and 20. Participants in the 40 - 50 age group were 2.36 times more likely to have better knowledge than those age between 15 and 20.

School level (p-value < 0.001) was associated with good knowledge about breast cancer. Indeed, as school level increased, participants were more likely to have better knowledge of breast cancer. Participants with secondary school level were 1.79 times more likely to have better knowledge than illiterates. Participants with university level were 4.52 times more likely to have better knowledge than illiterates.

Occupation (p-value < 0.001) was associated with good knowledge about breast cancer. Indeed, compared to civil servants, participants in the other occupations (Shopkeeper [0.22 - 0.52], Householdwife [0.14 - 0.47], Craftswoman [0.14 - 0.40], Unemployed [0.07 - 0.67], Student [0.28 - 0.73], and Self-employed [0.29 - 0.85]) were significantly less knowledgeable about breast cancer.

Regular attendance at a health facility (p-value < 0.001) was associated with good knowledge about breast cancer. Participants who did not regularly attend a health center were much less informed about breast cancer [0.33 - 0.63] (Table 3).

Table 2. Distribution of participants according to their level of knowledge about breast cancer (n = 630).

	Size	Percentage (%)
Level of knowledge		
Well-informed	137	21.75
Poorly informed	493	75.25

Table 3. Association between the sample characteristics and being well-informed regarding breast cancer (n = 630).

	PR[a]	[CI 95% of PR][b]	p-value
Age group (year)			
[15 - 20]	1.00		<0.001
[20 - 30]	1.85	[1.23 - 2.77]	

Continued

[30 - 40]	1.71	[1.00 - 2.91]	
[40 – 50]	2.36	[1.29 - 4.32]	
[50 - 59]	1.21	[0.32 - 4.53]	
School level			
Illiterate	1.00		
Primary school level	0.77	[0.41 - 1.44]	<0.001
Secondary school level	1.79	[1.11 - 2.87]	
University level	4.52	[2.84 - 7.18]	
Occupation			
Civil servant	1		
Shopkeeper	0.34	[0.22 - 0.52]	
Householdwife	0.26	[0.14 - 0.47]	
Craftswoman	0.24	[0.14 - 0.40]	<0.001
Unemployed	0.22	[0.07 - 0.67]	
Student	0.45	[0.28 - 0.73]	
Self-employed	0.50	[0.29 - 0.85]	
Regular attendance at a health facility			
Yes	1		<0.001
No	0.45	[0.33 - 0.63]	

*a = Prevalence Ratio; *b = Confidence Interval at 95% of the Prevalence Ratio.

4. Discussion

Across the world, breast cancer is the primary cause of mortality due to cancer in females. There is a wide discrepancy in breast cancer survival rates worldwide. According to the literature, the estimated 5-year survival rates are around 80% in developed countries to below 40% for developing countries [14]. Evidence suggests the foundation of breast cancer control lies in enhancing outcomes and survival through early detection [8] [9]. But early detection supposes that women are well-informed about the disease and practice good screening ways as far as breast cancer is concerned.

Unfortunately, the prevalence of women well-informed about breast cancer in this study was 21.75%. This finding is very low compared to others. Indeed, Ramathuba *et al.* stated that the level of knowledge about breast cancer of women in Makwarani Community in South Africa was relatively low with a prevalence of 31% [15]. Asmare *et al.* in 2022 reported a prevalence of 56% Ethiopian women with adequate knowledge regarding breast cancer [16]. In india women, the good level of knowledge regarding breast cancer was seen to be 62.99% and the good knowledge of breast cancer screening was 78.67% [17]. In contrast, Ghanean women displayed a knowledge deficit about both breast cancer and

breast cancer screening in a study conducted by Opoku *et al.* [18]. Toan *et al.* in 2019 reported a prevalence of women poorly informed regarding breast cancer over 50% in northern Vietnam population [19]. This observed difference points out the weaknesses of the health system in our country regarding breast cancer awareness. Public health policies using more effective means to make information available to our women should be therefore considered. This may consist in raising up breast cancer awareness campaigns by writing short messages on social media. It would be interesting to teach children about breast cancer in school and invite them to inform their parents at home. It would also be interesting to target married men, to convince them about the severity of the disease and recommend them to supervise their spouse and girls accordingly as to the screening is concerned. This may also consist in organizing free monthly or quarterly breast cancer screening campaigns by mobile unit: "mammobile" or "mammobus" that would reach out to an isolated female population, in rural areas, several kilometers from specialized radiology centers, but also in "marginalized" urban areas, to ensure equitable access to screening.

Factors associated with the good knowledge regarding breast cancer were age group (p-value < 0.001), school level (p-value < 0.001), occupation (p-value < 0.001), and regular attendance at a health facility (p-value < 0.001). These results are consistent with those found by Pal *et al.* in a systematic review. It was evidenced that most reviewed studies carried out among india women showed a significant association between the knowledge level of breast cancer and the education level, marital status, and age of participants [17]. Asmare *et al.* also reported a significant association between family history of breast cancer and having a good level of knowledge regarding the disease [16]. Actually, as evidenced in this study, the majority of women in the population of Parakou are shopkeepers, Craftswomen, and housewives with a low school level. Therefore, a way should be found to ensure that breast cancer information reaches illiterate women. This points to the need to involve and enlighten religious, ethnic and community leaders about the disease.

5. Limitation of the Study

This study focused on a single district in the commune of Parakou. Therefore, the results should be extrapolated with caution. For some participants who did not understand French, the language barrier motivated the call for an interpreter. This could be a source of bias in the information collected from these participants.

6. Conclusion

This study has pointed out the weaknesses of the health system in our country regarding breast cancer awareness. The prevalence of women well-informed about breast cancer is very low. A huge effort is still needed to increase the level of coverage of information regarding breast cancer and its prevention methods.

Ethical Considerations

This research's proposal was approved by the pedagogical coordination of the School of Public Health and Epidemiology, University of Parakou, as well as by the local ethics committee for biomedical research, University of Parakou. Informed consent was obtained from all participants.

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Conflicts of Interest

There are no conflicts of interest.

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