

RESEARCH ARTICLE

# Characterizing the High Breast Cancer Incidence in Bacolod City, Philippines

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**Abstract:** This paper characterizes the high incidence of breast cancer in Bacolod City, Philippines. The methods of research involved (1) an epidemiological study; (2) a determination study on the environmental factors that cause breast cancer; and (3) a breast cancer behavioral study. A statistical analysis of the personal demography profile found significant indicators of the presence or absence of breast cancer in the areas of breastfeeding duration ( $p = 0.0029$ ), age when they experienced first sexual intercourse ( $p = 0.0449$ ), cancer cases in the family ( $p < 0.0001$ ), incidence of smoking ( $p = 0.0322$ ), and occupation ( $p < 0.0001$ ). From an environmental perspective, data obtained from the Department of Environment and Natural Resources (DENR) Region 6 showed nothing of suspect. The sociological dimension found a correlation between stress and the presence or vulnerability of patients and their families to breast cancer incidences. The study likewise found that the women in the study incorporated a range of attitude and behavior that directly and indirectly aim to manage the strains of home and office works revolving around the confluence of (i) faith, (ii) their family, and (iii) and anticipated future. The study promotes the creation of breast cancer support groups as they present a positive and viable mechanism within the community to create social awareness about breast cancer and foster genuine social support networks for its members and their families as well as promote initiatives for low-income members to obtain medicines, referrals, and information. Investing in counseling for the survivors and their families leads to stress management and increased awareness about self-examination, increasing the probability of early detection. Overall, this study can serve as an important document that could be used by government agencies in drawing up screening as well as treatment and management programs for breast cancer in the Philippines.

**Keywords:** breast cancer, epidemiology, behavior and environmental aspects

Approximately 1.4 million women were diagnosed with breast cancer worldwide in 2008, and an estimated 459,000 breast cancer-related deaths were recorded (Ferlay et al., 2010). In the Philippines, reports from the Department of Health–Health Intelligence Service in 1992 and 1996 found that cancer ranks third in leading causes of morbidity and mortality after communicable diseases and cardiovascular diseases (Ngelangel & Wang, 2002). Their study also found that 75% of all cancers occur after the age 50, and only about 3% occur at age 14 years and below. Researches on cancer prevention are most often focused on the effects of cancer rather than on the causes of cancer, specifically the environment (Stare & Jozefowicz, 2008).

For Filipino women, the occurrence of breast cancer may be related to a unique set of risk factors, on the basis that they have: 1) a geographical location and culture similar to other Orientals, for example, Chinese; 2) a relatively high fertility rate (4.2); 3) a predominantly young population (41% of population in age group 0-14 years); 4) a practice or relatively early age at marriage; 5) widespread breastfeeding practices; 6) a predominantly low-income group; and 7) a largely agricultural rather than a rapidly industrialized and urbanized country. It is of interest to investigate the main factors on breast cancer in a population characterized by relatively high incidence but where traditional habits are still widespread (Laudico, Esteban, Reyes, & Liquido, 1998).

The reported incidence of breast cancer among women in Bacolod City was noted to be high with 241 reported cases from 2008–2012 as listed in the records of the Corazon Locsin Montelibano Memorial Regional Hospital Department of Pathology. A subsequent preliminary survey conducted by the University of St. La Salle (USLS) researchers indicated a citywide average of 47 breast cancer cases per 100,000 population. This value is higher than the country average of 31.9 per 100,000 reported by Ferlay, et. al. (2010). The Bacolod count is one of the highest when compared with the national averages reported for Asia, including that of Japan which was 42.7. Only Singapore with 59.9 is higher than that of Bacolod City in terms of the number of affected individuals. This alarming result prompted the conduct of an epidemiological survey to validate these reports. Environmental and behavioral surveys were also conducted to validate our findings.

## Methods

### *Personal Demographic Profile Survey*

A population-based case-control study utilizing 89 breast cancer patients out of the 241 previously recorded cases (from the period 2008–2012) and 76 female volunteers with no breast cancer serving as the control group was conducted. The list of the names, addresses, and personal information of women with breast cancer was retrieved from the Department of Pathology of the Corazon Locsin Montelibano Memorial Regional Hospital (CLMMRH) in Bacolod City. The list was prepared by the residents-on-training under the same department. The Chairman – Pathologist of the department made a check on the list. A total of 241 women with breast cancer were derived from the list in 2008–2012. Prior consent of all participants to the study was obtained before they were asked to answer the survey instrument. The instrument is in a checklist form with a nominal scale for the level of measurement. The original instrument in English was translated to Hiligaynon so is the attached informed consent. Two separate jurors were again consulted for the translation. The researcher-made instrument was validated by four jurors composed of one statistician, one obstetrical-gynecological specialist, a Ph.D. holder in Developmental Studies, and a Ph.D. holder in Economics.

The instrument was utilized to determine the variables such as personal demography with its corresponding categories and level of measurement in nominal scale, environmental risk factors with its corresponding categories and level of measurements in nominal scale, and incidence rates in various clustered barangays in Bacolod City. The barangays were clustered into City Proper (Poblacion), Coastal (Western Part), Lowland (Southern Part), Lowland (Northern Part), and Semi-upland (Eastern Part). There were 60 barangays in all, seven in proximity to Bacolod City and two in proximity to Talisay City.

For the field enumerators, 16 Red Cross volunteer nurses who had previous training and experiences in doing field research for a DOH project on measles were asked and they accepted. The 16 enumerators were given orientation in the presence of a lady physician-in-charge of the volunteer nurses. Her role was that of a research supervisor. Her responsibility was to organize groups consisting of five to six members, and check

on the completed questionnaires submitted at the end of the day. The field-data gathering lasted 15 days.

The data were then encoded using the SPSS. The statistician did the statistical treatment. We utilized f percentage and median for the description data analysis, and chi-square at  $P \geq 0.05$  to determine significant differences.

### ***Environmental Survey of Bacolod City and Vicinity***

The environmental survey was conducted through key informant interviews, mostly farmers, and a review of Philippine government publications on demographic and health surveys. Information on soil and water quality from the Department of Environment and Natural Resources (DENR) for Negros province was also obtained.

### ***Survey of Behavioral Practices in Bacolod City and Vicinity***

The research participants were women who have been diagnosed with breast cancer and have been interviewed prior to the launching of the present study. From the interview dossiers, 15 were chosen. In addition to their medical condition, respondents' selection was based on the following criteria: (i) resident of the identified barangay for at least 10 years, (ii) with relatives having a similar medical condition, and (iii) willing to participate in the research by signing the Consent Form. With the respondents' consent, the interview sessions were audio-recorded and transcribed. Using thematic content analysis, the interview transcripts were used as the primary textual data of the study.

**Episodic interview.** Women participants were asked to reconstruct their experience as women members of their respective families and work spaces. Using the episodic interview, they were requested to weave their life narratives using their breast cancer condition as the starting point (or point of reference). Their medical condition, therefore, became the fulcrum with which their roles as mothers, wives, and daughters were re-evaluated. From there, they were assisted to recount significant biographical episodes, which they perceived to have a meaningful bearing on the vulnerabilities they confronted in the fulfillment of their roles. The recounting brought to the fore their gendered participation in the economic ventures of their families with special note on health concerns.

## **Results**

Three research questions were addressed by this study.

### ***What is the Personal Demographic Profile of Breast Cancer Patients in Bacolod City?***

The results of the survey are given in Tables 1 and 2. A total of 16 indicators were utilized and analyzed using the chi-square test.

Results from the chi-square test for independence show that the presence or absence of breast cancer among the women is not significantly associated with the environmental risk factors as listed in Table 2, namely: residential place in Bacolod ( $p = 0.2143$ ) and place resided prior to Bacolod ( $p = 4529$ ).

The chi-square test for independence shows that these variables are not significant indicators for the presence or absence of breast cancer among the women (see Table 3). On the other hand, these profile variables are significant indicators of the presence or absence of breast cancer: breastfeeding duration, age when they experienced first sexual intercourse, cancer cases in the family, incidence of smoking, and occupation.

The median breastfeeding duration among breast cancer cases is 4.8 months, which is only almost one-half of the median of 10.5 months among the women in the control group. Furthermore, with breastfeeding duration above one year as the baseline or reference category, the odds of breast cancer is 4.74 times among women with less than six months of breastfeeding duration and 1.64 times among women with six months to one year of breastfeeding duration. The corresponding Cochran-Armitage trend test indicates a significant trend ( $p = 0.0004$ ) in terms of increasing odds of breast cancer as the breastfeeding duration decreases.

Using age 26 years and above when first experienced sexual intercourse as the baseline, the odds of breast cancer is 0.07 times, 0.55 times, and 0.93 times among those aged below 15, 16–20, and 21–25, respectively. The corresponding Cochran-Armitage test for trend indicates the significance ( $p = 0.0124$ ) of the observed increasing odds of breast cancer as the age at first sexual intercourse increases.

Results also show that the odds of breast cancer among women with a family history of cancer are 4.32 times more compared to those without cases of cancer in the family. The odds of breast cancer among women with the current/previous incidence of

**Table 1**

*Comparative Profile of the Breast Cancer Cases and Control Group (Non-Cancer) Among Women in Bacolod City, Negros Occidental*

<b>VARIABLE/INDICATOR</b>	<b>SICK VOLUNTEER (n)</b>	<b>WELL VOLUNTEER (n)</b>
<b>AGE</b>		
Below 20 years old	0	1
20 - 24	0	2
25 - 30	3	3
30 & Above	86	70
TOTAL	89	76
<b>CIVIL STATUS</b>		
Single	20	14
Married	48	47
Separated	3	2
Widow	18	13
TOTAL	89	76
<b>RELIGION</b>		
Roman Catholic	75	64
Evangelical (Baptist)	13	8
Seventh Day Adventist	1	2
Iglesia ni Cristo	-	1
Mormon	-	1
TOTAL	89	76
<b>OCCUPATION</b>		
Housewife	32	41
Career / Professional	42	6
Entrepreneur / Business	10	15
Retired / Pensioner	4	4
Agricultural / Industrial Worker	-	4
Helper / Maid	-	3
Government Employee	-	2
Student / None	1	1
TOTAL	89	76
<b>HOUSEHOLD MONTHLY INCOME</b>		
Less than P 5,000.00	24	33
P 5,001 – 10,000	22	19
P 10,001 – 15,000	19	8
P 15,001 – 20,000	10	9

continue Table 1...

VARIABLE/INDICATOR	SICK VOLUNTEER (n)	WELL VOLUNTEER (n)
More than P 20,000	14	7
TOTAL	89	76
Median	P 9,660	P 6,317
<b>CASES OF CANCER IN THE FAMILY</b>		
Yes	54	20
No	35	56
TOTAL	89	76
<b>INCIDENCE OF SMOKING</b>		
Never	76	69
Current	2	5
Previous	11	2
TOTAL	89	76
<b>ALCOHOL INTAKE</b>		
None	67	58
1 – 6 bottles / day	10	10
Occasionally	12	8
TOTAL	89	76
<b>AGE AT FIRST MENSTRUATION</b>		
Below 10 years old	0	2
10 – 12	40	24
13 – 15	44	42
16 & Above	5	8
TOTAL	89	76
Median	12.8 yrs.	13.4 yrs.
<b>AGE WHEN MONTHLY PERIOD STOPPED</b>		
Below 30 years old	0	1
31 – 35	1	1
36 – 40	5	5
41 – 45	14	15
46 & Above	49	32
Not Applicable	20	22
TOTAL	89	76
Median	47.0 yrs.	46.3 yrs.

*continue Table 1...*

VARIABLE/INDICATOR	SICK VOLUNTEER (n)	WELL VOLUNTEER (n)
<b>AGE WHEN THEY EXPERIENCED FIRST SEXUAL INTERCOURSE</b>		
Below 10 years old	0	1
11 – 15	0	4
16 – 20	16	19
21 – 25	37	26
26 & Above	23	15
Not Applicable / No Answer	13	11
TOTAL	89	76
Median	23.5 yrs.	22.1 yrs.
<b>SEXUAL ACTIVITY</b>		
Active	21	26
Inactive	50	37
Not Applicable	18	13
TOTAL	89	76
<b>AGE WHEN FIRST GIVE BIRTH</b>		
12 – 22 years old	18	20
23 – 33	44	36
34 & Above	8	7
Not Applicable	19	13
TOTAL	89	76
Median	26.8 years	26.1 years
<b>CHILD FEEDING PRACTICES</b>		
Breast Feeding	27	20
Artificial Feeding	14	11
Mixed Feeding	24	28
Not Applicable	24	17
TOTAL	89	76
<b>BREAST FEEDING DURATION</b>		
Less than 6 months	*33	16
6 months to 1 year	10	14
More than 1 year	10	*23
Not Applicable	36	23
TOTAL	89	76
Median	4.8 mos.	10.5 mos.

**Table 2**

*Comparative Study on Environmental Risk Factors Between Cases (Volunteers with Breast CA) and Control (Non-CA Volunteers) in Bacolod City, Negros Occidental*

VARIABLE/INDICATOR	SICK VOLUNTEER (n)	WELL VOLUNTEER (n)
<b>BACOLOD ADDRESS</b>		
Residential Area	77	56
Industrial Area	2	1
Seaside	1	3
Commercial Area	6	12
Agricultural Area	3	4
TOTAL	89	76
<b>ADDRESS PRIOR TO BACOLOD</b>		
Agricultural Area	23	25
Industrial Area	5	2
Commercial Area	20	22
Fishing Area	6	11
Not Applicable	35	16
TOTAL	89	76

smoking are 1.69 times the breast cancer odds among the non-smokers.

The significance of the profile variable occupation ( $p < 0.0001$ ) can be explained by the disparity in the distribution of the type of occupation between the experimental group and control group. The biggest disparity can be seen among career/professional women wherein almost half (47.2%) of the cancer cases are career/professional women but only 7.9% of the women in the control group are in this category. It can also be seen that majority of the women in the experimental control are housewives or career women/professionals (83.2%) whereas the majority of the women in the control group are housewives or entrepreneurs/businesswomen (73.6%).

Overall, the results from the demographic profile survey correlate with previous research on the causes of breast cancer. Travis and Key (2003) have found that a woman's total lifetime exposure to estrogen increases her overall risk to breast cancer. Conversely, having children reduces a woman's lifetime exposure to her own estrogen and, therefore, her breast cancer risk (Russo, Moral, Balogh, Mailo, & Russo, 2005).

Each pregnancy is thought to decrease breast cancer (Andrieu et al., 2006). This is because for the duration of pregnancy, the ovaries are not producing estrogen. Similarly, research indicates that breastfeeding also reduces breast cancer risk and that the longer a woman breastfeeds, the higher the reduction in risk, with a 4.3% decrease in cancer for every 12 months of breastfeeding (Schack-Nielsen, Larnkjær, & Michaelsen, 2005). Genetics is also a factor as there is a small percentage of women who have faulty versions of genes called BRCA1 and BRCA2, and having these genes does make them particularly susceptible to developing breast cancer (Antoniou et al., 2003; King, Marks, & Mandell, 2003). Although smoking has long been thought to have no significant effect on breast cancer risk (Sasco, Kaaks, & Little, 2003), recent research has instead suggested exposure to tobacco smoke as the real cause for the increased risk. Exposure to second-hand smoke (passive smoking) has been found to slightly increase breast cancer risk (Johnson, 2005). Research further suggests that smoking at an earlier age can also increase a woman's risk post-menopause (Marcus et al., 2000; Ha et al., 2007).

**Table 3***Summary Table of the Chi-Square Test Results for Independence*

VARIABLE/INDICATOR	p-value
Age	0.1621 (NS)
Civil status	0.7872 (NS)
Religion	0.2400 (NS)
Educational attainment	0.0752 (NS)
Occupation	<b>&lt;0.0001 (sig.)</b>
Household monthly income	0.1104 (NS)
Cases of cancer in the family	<b>&lt;0.0001 (sig.)</b>
Incidence of smoking	<b>0.0322 (sig.)</b>
Alcohol intake	0.8080 (NS)
Age at first menstruation	0.2591 (NS)
Age when monthly period stopped	0.5442 (NS)
Age when they experienced first sexual intercourse	<b>0.0449 (sig.)</b>
Sexual activity	0.1569 (NS)
Age when first give birth	0.7389 (NS)
Child feeding practices	0.4908 (NS)
Breast feeding duration	<b>0.0029 (sig.)</b>
Bacolod address	0.2143 (NS)
Address prior to Bacolod	0.4529 (NS)

### ***What is the Environmental Perspective of Breast Cancer in Bacolod City?***

The baseline environmental data we obtained from the DENR Region 6 showed nothing of suspect. The soil and water quality passed the criteria set by the agency though we asserted that said criteria are insufficient for meaningful cancer incidence assessment. It is apparent that a more comprehensive chemical analysis of the Bacolod physical environment is warranted to give us a better picture.

Bacolod, though considered to be one of the most rapidly urbanizing communities in the country, remains largely an agricultural area. Sugar cane remains a major product and more than 80% of its agricultural land area is planted with sugarcane (Oabel, 2011).

Agricultural inputs such as pesticides have always been cancer agent suspects (Proctor, 2001). We can, for now, hypothesize that agricultural input may have a role in the observed breast cancer rate in Bacolod and similarly situated communities. There is also an

indication that the sound handling of pesticides and other farm implements is not adhered to in general.

Key informants hinted at Bacolod residents' fondness for grilled meat (pork and chicken) as a possible risk factor for breast cancer, among others. In any case, high fat content in the diet has been associated with breast cancer in several studies (Rose, 1994).

The cities of Bacolod City, Iloilo City top the chart of breast cancer incidence in the Western Visayas, Philippines with a rate of 8–10 cases per 100,000 population whereas the town of Sagay City (1) registered the lowest. The average rate for the country, across the total population, is 7. Breast cancer in males accounts for 1% of the cases. The average for W. Visayas is 7.1. By comparison, the National Capital Region has the highest rate (9.5) and Calabarzon (9). It is noteworthy that mortality from malignant neoplasms of the breast is high in urban centers (Magpantay, Benegas-Segarra, Sinson, Rebanal, & Timbang, 2011). A hypothesis on the association between air pollution

and cancer incidence can be put forward. In a 2010 study, an association between urban air quality and breast cancer has been suggested (Crouse, Goldberg, Ross, Chen, & Labrèche, 2010).

The rate of breast cancer incidence as a cause of death in Bacolod is alarming but does not stand out in comparison to the other urban centers of the Philippines. The neighboring cities of Iloilo and Cebu show about the same rate as Bacolod, as well as many highly urbanized and urbanizing centers of the country.

### *What are the Sociological Dimensions of Breast Cancer in Bacolod City?*

**Socio-demographic profile of the women participants.** There were two groups of women who participated in the study (Table 4). The first group includes those who were home-based and were the typical “plain housewives” type; however, the second group of working women occupied significant posts in local educational institutions in Bacolod.

Two of the four home-based participants were high-school graduates, whereas the other two were able to obtain a degree in college. Those who were high-school graduates have a large household size (average is five children) and were both widows. They supported their respective families with their home-based businesses—one was making rice cakes and selling “banana cue” and the other has her own sari-sari store. The retired teacher had only two children, living off from her pension and was also a widow.

The second group were highly educated ones and had been economically productive and independent during their employment days. Five had their own high-profile jobs in local universities in Bacolod city, and the others were earning quite handsomely from the business they established several years ago. From the second group, two were widows and the other two, at the time of the interview, were unmarried.

**Tripartite role and bifocal context and associated health vulnerabilities.** The study participants shared a host of common tasks when compared to that of a typical Filipina elsewhere in the country. These sets of tasks were those that were traditionally assigned to women both as homemakers and caretakers. Regardless of their marital status—whether single or married—the house-related tasks remained constant which included, but not limited to, cooking and managing the house chores such as house cleaning, washing clothes, and so forth. This suggests that the roles of women cut across their marital status and cannot be disaggregated as *episodic* as in the romantic rendition of these roles. Rather, these roles must be seen as a *continuum*. As such, even gainfully employed women who worked eight hours a day in an office were expected (if not obliged) to perform filial duties at home. The only difference between them and the housewives group was the extent of such performance.

The members of the housewives group may not be working outside their homes to earn a living or for “pin money,” but the magnitude of such performance was

**Table 4**

*Profile of the Women Participants*

Age	Educational Attainment	Marital Status	Occupation	Religion
47	College Graduate	Married	Accounting Staff	Catholic
55	Elementary graduate	Married	Housewife	Catholic
62	Elementary graduate	Married	Housewife	Catholic
65	Graduate (MA)	Single	Professor	Catholic
Undisclosed	College Graduate	Married	Housewife	Baptist
Undisclosed	Graduate (PhD)	Married	Former Professor	Catholic
63	Graduate (PhD)	Married	VP for Finance	Catholic
63	Graduate (PhD)	Single	School Director	Catholic
59	College Graduate	Married	Housewife	Catholic

made equally difficult by the fact that they were no longer “anticipated” to attend to their families—such performance becomes “obligatory.” Because of that, more than being obligations, the tasks befell on them as their main (pre)occupation as they were ubiquitous, interminable, and cyclical. How well and how bad were their performance of these tasks became the very measure of their standing as mothers and homemakers. As “everyday measures” of their work, most of the housewives began to acknowledge the unassailable standards of gauging their self-worth.

This matrix of expectations vis-à-vis obligations was further complicated by the features of their respective social contexts—family and community. For the working women, the burdens of house chores were replaced by the burdens of office chores. Although the two chores were not comparable in terms of specific tasks, they were both sources of tremendous tensions and stress. The home as a context put so much weight on women not in terms of their monotony as traditionally believed; the weight was more in terms of their “persistence” made intricate by demographics of the family. A larger household required a huge quantity of basic needs like food and medicine; large households produce equally large quantity of concerns regarding laundry, water, energy, and so forth. The strain for women who are obliged to attend to these needs every day and constantly was so tremendous that some women complained of headaches, backaches, and fatigue. From the interviews, it is not only the actual performance of the tasks attendant to their roles as housekeepers, but the stress is also produced even more by the thought of doing it again and again on a day to day basis. Household and personal needs that require expenses added further strain on the already stressful situation.

The office as a “second home” for working women is no less stressful. In this context, the expectations only shifted from the genre of tasks performed by women. Women who were interviewed in the study occupied managerial positions which required tremendous amounts of paperworks, documents handling, and endless supervisory work. The “chores” so to speak, are related to employee concerns which may be seen as members of households albeit in a different sense. Office chores are also routine in nature, but require less direct physical exertions as some tasks may be delegated to other office staff or otherwise, and postponed to later dates. It was also less stressful

in terms of resources needed for their performance because their procurements were taken cared of as part of their office’s operational expenses. What made the office chores equally stressful as house chores were the number of quality assurance requisites as standards of their performance. Given these rather different modes of stress, working women compensated by extending their *time input*, which translated to more overtime schedules and bringing work at home.

#### **Management of health vulnerabilities.**

Interviewed women have a range of attitude and behavior that directly and indirectly aim to manage the strains of home and office works revolving around the confluence of (i) faith, (ii) their family, and (iii) and anticipated future. They were not seen as mutually exclusive attempts to feel healthy; they were embraced as mutually defining. Faith, for example, is not limited to the belief of miracle healing from God, it includes the faith in science and traditional healing. Almost all of the interviewed women expressed tremendous faith in God, who is seen as capable of making them whole again. Most believe that this healing capability of God worked through their medicines and treatment protocols or in the hands of their non-medical healers. Even with differential access to expensive medicines and treatment protocols, all of the women interviewed in the study expressed that it is not the price of the medication, nor the sophistication of the treatment protocols that count. Taking the medication or undergoing the treatment protocols was one way to help God do his part. Faith extends to the belief in the extra caring (e.g., *malasakit*) of their significant others, notably their loved ones.

The latter is the source of their inner strength. Their respective families are seen as equally suffering; hence, they became an extension of their spiritual bodies. These spiritual bodies may either be their husbands, eldest daughters or son, or even other women who were themselves breast cancer patients. In one particular case, both the woman and her husband were ill; the husband was terminally ill and suffering from lung cancer due to smoking. The wife resolved that she must be stronger than her husband as she believed that he had been drawing his remaining strength from her.

The same goes for women who were members of the local breast cancer association. The first breast cancer support group was established by a local hospital in Bacolod; hence, its ranks were populated by medical doctors. The breast cancer women-initiated

support group was later established by a group of prominent Bacolod women who themselves are breast cancer patients. They draw strength from each other and from their initiatives to help those that were financially challenged to deal with their conditions. Although constantly challenged by the social class issues, the breast cancer women-initiated association was instrumental in recruiting members, in creating social awareness about breast cancer, and hosting socio-civic activities to solicit support from the general public. Despite being unsuccessful in recruiting women with breast cancer from the low-income sector, the group remained to be one of the genuine social support networks from where low-income members obtained medicines, referrals, and information. Those women who remained outside the group drew support from women who happened to be neighbors or residents of the same barangay. Their means of fellowship was through storytelling (*kwentuhan*) and sharing of scenarios of what to do in worst case situations. Unfortunately, some of these low-income women remained secretive of their conditions that others in the nearby areas/barangays would only know them once they died.

Having faith in God, their families, and others, the women anticipated a less gloomy future despite the immanence of pain and even death. Most women were quite accepting as to what is expected, and they believed that they should take advantage of the time remaining. This “remaining time” was still anchored on the idea of getting well again with a wish of having a longer relapse (if recurrence of cancer is unavoidable). Hence, being healed completely or having longer relapses were part of the forward-looking attitude of the women participants.

## Conclusion

From a list of women with breast cancer taken from the 2008–2015 registry of the Pathology Department of the Corazon Locsin Montelibano Memorial Regional Hospital in Bacolod City, the study was able to identify and request the participation of 89 women with breast cancer and a further 76 women without breast cancer (as control) in the proximity of not more than 10 meters from the place of the target participant. A statistical analysis of their personal demography profile found significant indicators of the presence or absence of breast cancer in the areas of breastfeeding duration,

age when they experienced first sexual intercourse, cancer cases in the family, incidence of smoking, and occupation.

From an environmental perspective, data obtained from the DENR Region 6 showed nothing of suspect. The soil and water quality passed the criteria set by the agency though these criteria are insufficient for meaningful cancer incidence assessment. It is apparent that a more comprehensive chemical analysis of the Bacolod physical environment is warranted to derive a conclusive observation.

The sociological dimension of the study of breast cancer in Bacolod City has found a correlation between stress and the presence or vulnerability of patients and their families to breast cancer incidences. The same study likewise found that the women in sociological dimension study incorporated a range of attitude and behavior that directly and indirectly aim to manage the strains of home and office works revolving around the confluence of (i) faith, (ii) their family, and (iii) and anticipated future. They were not seen as mutually exclusive attempts to feel healthy; they were embraced as mutually defining. Thus, breast cancer support groups presented a positive and viable mechanism within the community that not only creates social awareness about breast cancer; it likewise fosters genuine social support networks for its members and their families as well as promote initiatives for low-income members to obtain medicines, referrals, and information. Furthermore, investing in psychosocial counseling for the survivors and their families on the value of stress management and increase awareness about self-examination will improve the probability of early detection. Overall, this study can serve as an important document that could be used by government agencies in drawing up treatment and management programs for breast cancer in the Philippines.

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## Ethical Clearance

The study was approved by the institution.

## Conflict of Interest

There is no conflict of interest on the part of the authors.

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