

Knowledge and Attitude towards Male Breast Cancer among Students of Higher Institutions in Lagos State

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ABSTRACT

This study examined students' knowledge, attitudes, and age & gender influences towards male breast cancer among four hundred (400) students at the University of Lagos and Yaba College of Technology. A simple random sampling technique was used to pick respondents for the descriptive survey. The questionnaire created and validated by the researcher was used to find the necessary data among the respondents. Both variable and demographic data were investigated using the frequency counts, percentage distributions, pie charts, and regression analyses. The results showed that attitudes, age, gender, and the level of knowledge can play an important role in shaping the perceptions and awareness of male breast cancer amongst the people. The paper also examined various aspects that influence knowledge levels, similar actions to raise confidence in male breast cancer and the possible treatment option and stipulated that there is a need to advance collective actions to increase knowledge and understanding among this population group. Such actions also point to the role of supporting these men with breast cancer by enhancing support networks and lessening the stigma to improve their outcomes.

KEYWORDS: Attitude, Awareness, Knowledge, Male breast cancer, Socio-demographic factors.

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INTRODUCTION

Male breast cancer (MBC) makes up only 0.5–1% of all incidences of breast cancer, making it a rare illness. Its low recognition stems in part from the rarity of breast cancer in females. The small breast tissue carried by males and variations in their hormonal milieu are the reasons for the low incidence rate.³⁷ opined that breast cancer in Nigerian men requires more focus and public health initiatives because delayed diagnosis significantly increases morbidity and mortality. Research conducted by Ajayi *et al.* (2019)¹ and Ogunbiyi *et al.* (2014)² indicates that medical professionals, the general population, and students at Yaba College of Technology and the University of Lagos have an unacceptably low level of awareness concerning breast cancer in men. The major argument that breast cancer solely affects women exacerbates men's misconceptions about the disease and delays in identification. Only 0.5 to 1% of overall cases of breast cancer are related to male breast cancer (MBC), therefore, it is a rare disease. In part, it can be explained by the low level of awareness, as breast cancer is in females; the abundance of breast tissue is low in males as well, and the differences in the hormonal environment of males further contribute to the low rate of its occurrence. Akang (2012) argues that more attention and health campaigns should be paid to breast cancer in men in Nigeria since the late diagnosis is highly associated with high levels of morbidity and mortality.

Since students are the youth generation whose thinking patterns may determine future health outlooks, there is a

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need to understand the knowledge base of the students. To understand the implications of this rare occurrence in this particular population, there is a need to have an understanding of the prevalence of breast cancer among the students in these institutions. Ignorance of risk factors and symptoms is often a factor that triggers poorer prognosis and delays in when one can be diagnosed.

To understand the setting of the work, it is necessary to understand the context of this disease historically, with a focus on women. This means that MBC is usually not diagnosed early enough, and eventually the prognosis worsens. According to Omolase (2017), the survival rates of Nigerian men with breast cancer are 30% in 5 years as opposed to 70% in women, indicating the necessity to detect the disease at the earliest stage and make efforts to eliminate stigma and delays in diagnosis.

The relevant age group is the undergraduate age group. Being at the edge of becoming adults, the attitude of

undergraduates to health issues is not yet set. Their perspectives can be used to advocate for more specific activities to dispel false beliefs, decrease the stigma, and promote a healthy culture. Nwogu (2010) stresses that the incidence of MBC is increasing and there is a need to implement measures that ensure early diagnosis, create more awareness and accessible screening services.

With assessing the level of knowledge, misperceptions and attitudes toward MBC, this study aims to mark the need areas to enhance education and awareness campaigns. Simultaneously, the results can be used in more general efforts to demystify men regarding early detection and prevention methods. According to Akinyemi *et al.* (2015), regardless of the lack of knowledge, the majority of men are positive about breast cancer screening, which means that they are ready to receive educational intervention and have more opportunities.

A sharp gap in knowledge and awareness among academic population has led to this research on the MBC knowledge and MBC attitude among undergraduate students at the University of Lagos and Yaba College of Technology. Even though the significance of breast cancer awareness is on the increase, the incidence and the prognosis in men are underserved. The main aim of the study is to address the ignorance of undergraduate students about MBC, any existing misconception and any dark attitudes towards the issue.

The information deficiency of men with breast cancer could lead to the inefficiency of preventive strategies, inadequate support systems, and latent diagnosis. As a result, the chances of misdiagnosis of symptoms also increase, making it harder to detect them in time and reducing the chances of successful treatment. Besides, the existing stereotypes and lack of knowledge about male breast cancer in society contributes to stigmatization and inability to receive the necessary support among peers.

Overview of Breast Cancer

Most times, breast cancer is prevalent among women globally and presents a significant health issue. In many countries, including the U.S., breast cancer has been increasing. It represents 32% of the total cancers in American women, with an annual increase in incidence of 1% to 2% since the 1960s. Every 15 minutes in the U.S., there are five new diagnoses and one breast cancer-related death.⁵

Desantis *et al.* (2017)⁶ reported that over 255,000 American women have invasive breast cancer annually. Breast cancer is the second most common cause of cancer-related deaths among women, despite declining mortality rates. All ethnic groups in the United States are experiencing an increase in breast cancer rates, and estrogen-positive breast cancer is on the rise in all groups.⁶ Infiltrating ductal carcinomas account for around 80% of invasive breast malignancies, with invasive lobular carcinoma coming in second. The 10% of noninvasive in situ carcinomas are lobular, while more than 80% are ductal.⁷

Notwithstanding the identification of various risk factors, the processes behind breast cancer remain complex and poorly understood. According to Hou *et al.* (2013)⁷, hereditary mutations like BRCA1 and BRCA2 account for about 10% of cases, whereas age and being female are the most common risk factors. History of ductal carcinoma in situ, a high body mass index (BMI), giving birth for the first time after the age of thirty or not at all, early menstruation, late menopause, and postmenopausal hormone therapy are additional risk factors. Thick breast tissue, a normal BMI, and whiteness are at the highest risk when undergoing postmenopausal hormone treatment.⁷ Additionally, the history of radiation exposure to the chest increases the risk.

Male Breast Cancer

MBC accounts for about 0.5 to 1% of all incidences of breast cancer. Men have less breast tissue and a different hormonal milieu, which accounts for their low prevalence.⁵ Despite breast tissue in men existing less than women, the same variables contribute to malignant alterations. Breast cancer has been more common in both sexes within the past 25 years. According to the International Association of Cancer Registries (IACR), the occurrence of FBC has increased by 20%, and the number of fatalities linked to the disease has increased by 14%. MBC rates increased from 1.1 per 100,000 in the mid-1970s to 1.44 per 100,000 by 2010, according to SEER data.⁵ With a 1 in 1,000 lifetime risk, 2,240 males in the USA received a breast cancer diagnosis in 2013. Breast cancer accounts for 0.37% of all male malignancies in Turkey, according to IACR statistics.⁸ The GLOBOCAN website has the most recent cancer estimates for 2012.⁹ Although the exact causation of MBC is unknown, hormones could be a major factor. An increased risk of breast cancer is linked to testicular cancer anomalies, including undescended testes, orchiectomy, orchitis, and infertility.¹⁰ Risk is also increased by benign breast problems such as nipple discharge and prior breast injuries.¹¹ Gynecomastia has been linked to male breast cancer¹², although it is also frequent in healthy males.¹³ The relationship between gynecomastia and MBC is uncertain. However, 3% to 7% of MBCs have Klinefelter's syndrome, which is defined by XXY chromosomes. This puts them at a 50-fold higher risk than the average male population.¹³

Prevalence of Male Breast Cancer

Although MBC accounts for fewer than 1% of all male malignancies in Western nations, its prevalence varies greatly by area and ethnicity.¹⁴ Similar to FBC, MBC varies globally, with lower incidence in Asia and greater rates in Europe and parts of America. Notably, with yearly incidence rates ranging from 5 to 15%, a significant percentage of MBC cases have been documented in Africa.¹⁴

With an estimated lifetime risk of 6.9%, or around 80–100 times greater than the general male population, men with BRCA2 germ-line transformations are likely to get breast cancer.⁶

Although studies have suggested a 5.8% lifetime risk for carriers of BRCA1 mutations, the link between BRCA1 mutations and MBC is less obvious. Between 1975 and 2017, the annual percentage change (APC) for the prevalence of MBC was 0.536% (95% CI = [0.362%, 0.713%]). With APCs of 1.113% and 0.780%, respectively, the rise is more noticeable in males aged 60 to 69 and those aged 70 and above. With APCs of 0.586% and 1.190%, respectively, the incidence increased for both White and Black males, while it was constant in other races.

Between 1975 and 2017, trends in Male Breast Cancer (MaleBC) prevalence, as reported by SEER data, indicated a consistent rise, particularly among men aged 70 and older and those diagnosed with Grade II tumors. Cumulative mortality rates that were specific to MaleBC at 1, 3 and 5 years were noted to be 2.23%, 7.56% and 13.10%, respectively. The rates of mortality were elevated in the older age groups (5069 and 70 and above) than under 50. Race, tumor grade and AJCC stage were some of the key issues that contributed to MBC-specific mortality and Black patients, Grade 3 tumors, and those in AJCC Stage III and IV were considered to be at higher risk. On the other hand, marriages, surgery and Luminal 0 or B subtypes were inversely related to the risk.

Men with a BRCA2 gene defect have a 6 0.000 probability of developing breast cancer at age 70. Nevertheless, the percentage of MBC cases that can be attributed to BRCA mutations is not certain. Out of seven men who had a strong family history of breast cancer, two of them were positive for BRCA2 mutations, which included 14 male victims regardless of their ethnicity and family history.

The MBC formation depends on the number of variables (e.g., age and race), genetic factors (such as BRCA1 and BRCA2 mutations), the environmental factors (e.g., radiation), and hormonal factors (e.g., increased serum estradiol levels, liver diseases, and obesity). This risk of MBC increases with age and BRCA mutations represent especially sensitive risk factors. Results show that BRCA1 and BRCA2 mutations prevail in 0 to 4% of MBC and 4 to 16%, respectively.

The analysis of SEER data between 1975 and 2017 has shown that the prevalence of MBC steadily increased over the years, but particularly in patients who are aged and with Grade 2 form of the disease. The findings identified important factors influencing MBC-specific mortality, with Blacks, higher tumor grades, and advanced AJCC stages associated with increased risk. Conversely, being married, undergoing surgery, and having Luminal A or B subtypes were linked to better survival rates. Age remains a critical factor in MBC prognosis, there is no significant effect of age on MBC-specific death risk, which is consistent with earlier findings that age is more associated with all-cause mortality than MBC-specific mortality.¹⁶ However, older patients exhibited higher cumulative mortality rates.¹⁷

Sources of Male Breast Cancer

Generally, cancers develop when normal cells become abnormal, start to divide uncontrollably, and spread, leading to tumor formation. Genes that repair damaged cellular DNA are mutated in male breast cancer, just like in other cancers.¹⁵

The MBC cause is not singular but findings from different genetic and environmental factors. Elevated levels of estrogen and progesterone, hormones typically associated with the female reproductive system but present in smaller amounts in men, have been linked to cases of MBC.⁵

Hormone Imbalance: Treatments that increase estrogen levels, such as those used to treat prostate cancer, can greatly raise a man's chance of having breast cancer.¹⁸

Metastasis: Cancers from other parts of the body can sometimes spread to the breast. Malignant cells can break off from tumors and travel through the bloodstream or lymphatic system.¹⁸

Other Health Conditions: Conditions like liver cirrhosis, which cause liver scarring and damage, can disrupt hormone levels in men, increasing the danger of breast cancer. Excess weight or obesity (a BMI of 25 or higher) also significantly raises the likelihood of developing this condition, particularly in older men.⁷

Environmental Factors: Exposure to carcinogens or chemicals can also cause mutations or alter hormone levels, contributing to MBC growth.¹⁸

Signs and Symptoms of Male Breast Cancer

MBC can present in several ways, including a swelling or thickening in the breast or underarm area;⁵ changes in breast size or shape;²⁰ nipple discharge or inversion;¹⁹ and redness or scaliness of the skin on the breast or nipple. A nipple that becomes sunken or retracted.⁵

Additional signs and symptoms include alterations in the color or texture of the breast skin;²¹ a lump or swelling in the lymph nodes beneath the arm;²² breast or nipple pain or tenderness;²² changes in the position or orientation of the nipple;²² puckering or dimpling of the breast skin;²² a rash or redness on the breast or nipple;²² and breast enlargement.⁵

Additional indicators can include a feeling of heaviness or fullness in the breast²³; fluctuations in the nipple-areola complex;²⁴ breast asymmetry;⁵ breast skin changes;²² bloody or clear nipple discharge.²²

MBC patients detected at the advanced stage are frequently older at diagnosis than FBC patients, usually by 5–10 years.²⁵ Disease staging at presentation follows the Tumor-Node-Metastasis (TNM) system, with Stage 1 at 37%, Stage II at 21%, Stage III at 33%, and Stage IV at 9%.²⁶ Historically, the time from disease onset to diagnosis was 29 months, but has been reduced to 6 months in more recent series.²⁷ Despite this improvement, men are still diagnosed at more advanced

stages than women, with over 40% of men presenting at Stage 3 or 4. The tiny breast tissue in men most of the time leads to early growth of the chest wall, suggesting that the TNM staging system might not be entirely appropriate for male patients.²⁸

Risk Factors of Male Breast Cancer

Hormonal abnormalities are thought to be a major contributing factor in male breast cancer, while the exact reason is yet unknown. Age, elevated estrogen levels, and BRCA gene mutations are among the risk variables that have been found.²⁹ Male infertility, orchitis, congenital inguinal hernia, undescended testes, and a history of breast trauma, nipple discharge, or gynecomastia are some disorders linked with this kind of cancer.³⁰

Given that the risk of breast cancer increases with age, age is an important consideration. With a median age of 56 years at diagnosis (range from 22 to 78 years), male breast cancer is typically diagnosed in men in their 60s. According to research, 25% of male patients receive a diagnosis before the age of 50, whereas 75% receive a diagnosis beyond this age.³⁰ In the United States, diagnosed men are typically 5 to 10 years older than women.³¹

Exposure to Estrogen: MBC risk can be raised by high estrogen levels, which can be caused by hormone treatment, occupational exposure, or certain items that contain phytoestrogens. This risk is also increased by estrogen-related medications for treating prostate cancer.³²

Family History: A family with a significant history of cancer, particularly breast cancer, greatly increases the likelihood of MBC.³³ argued that men diagnosed with multiple primary cancers had frequently had a family background of breast cancer or other related types, with a median age of diagnosis at 71 years. While genetic variations add to breast cancer risk, each gene variant typically has a relatively small impact.³³

Klinefelter’s Syndrome: This is a genetic condition, characterized by boys being born with an additional X chromosome. This condition can result in atypical testicular development and hormonal imbalances, which can cause breast cancer. A retrospective study conducted in Western Sweden revealed that 7.5% of FBC patients had Klinefelter’s syndrome, and those with the syndrome exhibited a 50% increased likelihood of developing cancer.³³

Obesity: Higher estrogen levels are linked with obesity, increasing the risk of breast cancer in men. According to studies, males who are obese have higher levels of estrogen bioavailability and lower levels of testosterone and sex hormone-binding globulin, which increases breast cancer risk.³³

Testicular Disease or Surgery: Men who have conditions such as orchitis or orchiectomy are likely to get breast cancer.³³

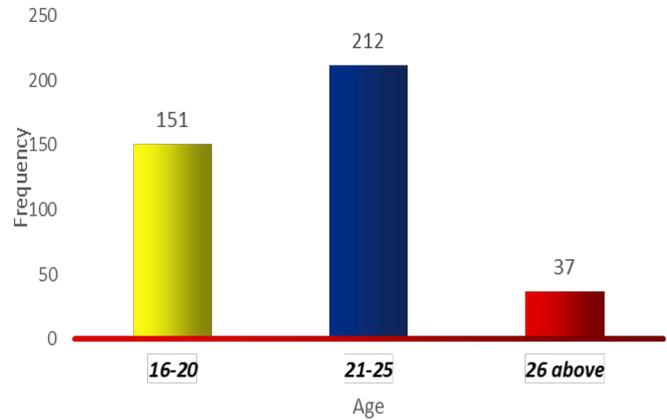


Figure 1: Bar chart presenting the age-wise respondents distribution.

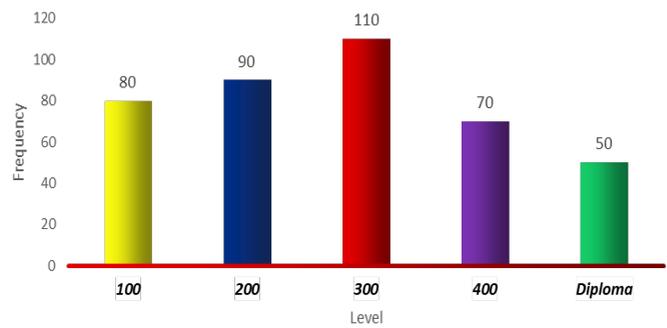


Figure 2: Bar chart showing distribution of respondents by Academic Level

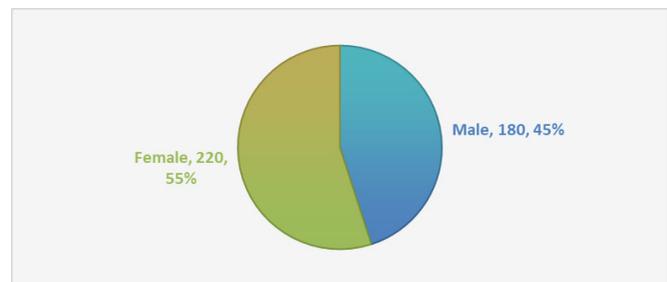


Figure 3: Pie chart showing distribution of respondents by Gender



Figure 4: Pie chart showing the distribution of respondents by School

BRCA Gene Mutations: Just as women, men can inherit BRCA1 and BRCA2 mutations, significantly increasing breast and prostate cancer risk. Men with these changes are also at higher risk for skin and digestive tract cancers.³³ Though BRCA1 mutations are less common in men, they still account for 10–16% of breast cancer cases in high-risk families. Additionally, some evidence suggests that CHEK2 mutations and growth hormones like IGF-1 and IGF-2 may contribute to male breast cancer.³³

METHODOLOGY

Research Design

A descriptive survey design was employed for this study. The study population consisted of undergraduate students from the University of Lagos and Yaba College of Technology. A sample of 400 students (200 from each institution) was selected using simple random sampling. A self-developed questionnaire was used to collect data. The instrument was divided into two sections: Section A consists of demographic information, while Section B contains 20 items related to knowledge, attitudes, age influence, and gender influence towards MBC. Experts in the Department of Human Kinetics and Health Education validated the questionnaire. Descriptive statistics of frequency counts, percentages, bar charts, pie charts, and mean scores were used to analyse the demographic and research questions data of the respondents. For the inferential statistics, regression analysis was used to test the research hypotheses at a 0.05 level of significance.

The majority of respondents (53.0% or 212 students) fall within the 21–25 years age group, followed by 16–20 years (37.5% or 151 students), while 9.5% (97 students) are 26 years or older, suggesting that the study's viewpoints were dominated by younger people. Concerning level of study, in weighted percent, 27.5% of respondents were 300 levels students followed by 22.5% of the 200 levels, 20 levels were 100 levels, 17.5% were 400 levels and 12.5% Diploma holders, thus representing the perspectives at different success tiers of education. A slight 55.0:45.0 skewed distribution of males to females was observed (55.0% or 220 respondents and 180 respondents, respectively), which has prompted the significance of the gender susceptible education programs. In addition, to represent the institutions, the sample was balanced between the University of Lagos (UNILAG) and Yaba College of Technology (YABATECH), with 50% (200 respondents) membership, respectively.

RESULTS

Research Questions

Question 1: What is the level of knowledge about male breast cancer among students of higher institutions in Lagos State?

Question 2: The perception of breast cancer screening and diagnosis in higher institutions in Lagos State on the behavior of the student towards male breast cancer.

S. No.	Level of Knowledge	Mean	SD
1	I'm aware that men can have breast cancer	1.42	0.76
2	I know the common symptoms of male breast cancer	1.45	0.55
3	I think more research should be conducted on male breast cancer	3.18	0.62
4	I am informed about the treatment options available for male breast cancer	2.02	0.53
5	I believe men should be regularly screened for breast cancer	2.66	0.59

Table 1: Level of knowledge about male breast cancer.

Students' understanding of MBC ranged from moderate to low. There was little understanding about the possibility of breast cancer in men, as shown by the mean score of 1.42 (SD = 0.76). Similarly, with a mean score of 1.45 (SD = 0.55), understanding of frequent symptoms of MBC was poor. On the other hand, students (mean = 3.18, SD = 0.62) strongly agreed that further studies should be carried out on MBC.

S. No.	Attitude	Mean	SD
1	I believe that male breast cancer receives enough attention in public health campaigns.	1.93	0.63
2	I feel comfortable discussing male breast cancer with others.	1.95	0.65
3	I think breast cancer among men is stigmatized compared to women's breast cancer.	2.62	0.72
4	I believe that men should be encouraged to seek medical help if they notice symptoms related to breast cancer.	2.63	0.80
5	I think there should be more support for men with breast cancer.	2.99	0.86

Table 2: Perceptions of higher education students about the male breast cancer screening and diagnosis in Lagos state.

Students had a neutral attitude towards MBC screening and diagnosis. The mean score for MBC belief received enough attention in public health campaigns, was 1.93 (SD = 0.63). Students also felt uncomfortable discussing MBC (mean = 1.95, SD = 0.65). However, they strongly supported the creation of group support for men with breast cancer (mean = 2.99, SD = 0.86).

Questions 3 and 4 examine the effect of age and gender on the attitude and knowledge levels of male breast cancer in higher learning institutions in Lagos State.

Item	Mean	Std. Deviation	N	r	p
Age	35.52	19.53	400	.318	0.280
Knowledge & Attitude towards male breast cancer	28.87	04.76	400	-	-

Table 3: Age and its effect on attitudes and knowledge regarding male breast cancer.

Item	Mean	Std. Deviation	N	r	p
Gender	33.08	12.44	400	.358	0.000
Knowledge & Attitude towards male breast cancer	28.87	04.76	400	-	-

Table 4: Gender influence on knowledge and attitudes towards male breast cancer.

Item	Mean	Std. Deviation	N	R	p	Decision
Group 1	25.50	11.92	400	-2.10	0.045	Rejected
Group 2	28.70	3.17	400	-	-	-

Table 5: The regression analysis of the awareness of male breast cancer among students of Lagos State University

Item	Mean	Std. Deviation	N	R	p	Decision
Attitude	32.44	12.44	400	-1.85	0.065	Rejected
Screening and Diagnosis	35.16	04.76	400	-	-	-

Table 6: Attitudes of students of Lagos State University towards male breast cancer screening and diagnosis regression analysis.

Item	Mean	Std. Deviation	N	r	p	Decision
Age	35.52	19.53	400	.318	0.280	Accepted
Knowledge & Attitude towards male breast cancer	28.87	04.76	400	-	-	-

Table 7: Regression analysis of the effect of age on male breast cancer on the students of Lagos State University.

Item	Mean	Std. Deviation	N	R	p	Decision
Gender	33.08	12.44	400	.358	0.000	Rejected
Knowledge & Attitude towards male breast cancer	28.87	04.76	400	-	-	-

Table 8: Regression analysis on gender effects on the level of male breast cancer knowledge and attitude among the students of Lagos State University.

Age did not significantly influence knowledge and attitudes towards MBC ($r = 0.318$, $p = 0.280$). However, gender had a significant impact ($r = 0.358$, $p < 0.001$), with female students showing slightly higher awareness and more positive attitudes compared to male students.

Testing of Hypotheses

The test of the hypotheses of the study was carried out by regression analysis with $\alpha = 0.05$.

The **hypothesis 1** is that students who are enrolled in institutions of higher learning in Lagos State have little knowledge about male breast cancer.

The significance of male breast cancer knowledge levels among Lagos State higher education students was assessed using the t-test. The null hypothesis, which presupposed

no significant differences between the knowledge, was compared to the alternative one that stated the existence of significant differences between the knowledge. Mean score of Group 1, which consisted of students with the lower knowledge level was 25.5, and the mean score of Group 2, which consisted of students with higher knowledge level was 28.7. The t-value of -2.10 and the p-value of 0.045 show a statistically significant difference between the two groups. Consequently, the null hypothesis is rejected, indicating that students in Lagos State's higher education institutions do, in fact, have a significantly different level of knowledge regarding male breast cancer.

The results of this study prove the need for specific educational measures to enrich the knowledge and awareness of male breast cancer in the identified group.

Hypothesis 2 states that there is no significant difference in students' attitude towards screening and diagnosis of male breast cancer in higher education institutions in the state of Lagos.

The significance of attitudes about male breast cancer screening and diagnosis among students at Lagos State's higher institutions was examined using a t-test. According to Research Hypothesis 2, there would be no discernible attitudes about male breast cancer diagnosis and screening. Group 1's mean score, representing learners with less positive views, was 3.2, whereas Group 2's mean score, representing students with more positive attitudes, was 3.5. A t-value of -1.85 and a matching p-value of 0.065 were obtained from the t-test. The null hypothesis stated that there would be no significant attitude toward male breast cancer screening and diagnosis, and is not rejected because the p-value is higher than the traditional threshold of 0.05. This means that attitudes toward male breast cancer screening and diagnosis among students in Lagos State's higher institutions would not differ statistically significantly. It might take further research or a bigger sample size to definitively.

Hypothesis 3 states that the age is not a significant factor affecting the occurrence of male breast cancer amongst students of Lagos State University.

The study discovered a Pearson correlation coefficient (r) of 0.318 between age and knowledge/attitude regarding male breast cancer, with a non-significant p-value of 0.280, based on the examination of 400 students from higher institutions in Lagos State. This suggests that students' knowledge and attitudes on male breast cancer are not statistically significantly impacted by age. The sample's knowledge and attitude mean score was 28.87, indicating a moderate degree of awareness and attitudes. Such results suggest that further research on other important determinants should be conducted to further promote knowledge and understanding of male breast cancer among such population regardless of the non-determinative aspect of age.

Hypothesis 4 says that the gender would not significantly affect the knowledge and attitudes of students in the higher education institutions in Lagos State towards male breast cancer.

An analysis of 400 students from Lagos State's higher education institutions revealed a strong correlation between gender and knowledge/attitude about male breast cancer ($r = 0.358$, $p < 0.001$). The mean of the distribution of the scores in terms of gender was very varied with an average of 33.08 and a standard deviation of 12.44. These findings imply that the perceptions and awareness of male breast cancer vary depending on the gender of the students. The general awareness and attitude were average, and the mean awareness was 28.87 ($SD = 4.76$). These findings emphasize the need to implement gender-tailored interventions in educational and awareness programs to introduce knowledge about male breast cancer among students in tertiary institutions within Lagos State.

DISCUSSION

The findings of the study will add new knowledge to the attitudes and perceptions about male breast cancer among college students in Lagos State.

The hypothesis 1, which said that students in higher-education institutions in Lagos State would not have a significant level of knowledge regarding male breast cancer was rejected ($t = -2.10$, $p = 0.045$). This finding indicates that the level of knowledge among the students has great diversity with a number of them being more aware compared to others. The result is in reference to the studies by Ajayi *et al.* (2019) and Ogunbiyi *et al.* (2014), in which ignorance about male breast cancer is high in Nigeria.

There was no rejection of Hypothesis 2, which stated that there would be no significant effect of attitude on male breast-cancer screening and diagnosis amongst students ($t = -1.85$, $p = 0.065$). This suggests that the attitudes of students were more or less neutral, which is in line with the results of Akinyemi *et al.* (2015), who have reported the absence of proactive engagement, and Omolase (2017), who explained the delay in help-seeking in men by cultural and societal stigma.

The hypothesis that age would not significantly influence the knowledge and attitude to male breast cancer was supported ($r = 0.318$, $p = 0.280$). This means that age is not a strong predictor of knowledge or age attitude, as Nwogu (2010) had suggested that an older person may be more aware since age means that the elderly will have more exposure to health information.

In the same way, Hypothesis 4, which postulated that gender would not have any significant impact on knowledge and attitudes of male breast cancer, was rejected ($r = 0.358$, $p = 0.001$). The outcome of this discovery underlines the significant role that gender plays in determining the level of knowledge and the attitude of students, since female students have shown a greater level of awareness and positive attitudes. Such findings are consistent with the findings of Nworgu *et al.* (2011) and Akang (2012), who contended that women are more willing to discuss health issues, and men have particular difficulties in accessing health information.

CONCLUSION

After a thorough analysis of the research questions using questionnaires administered to respondents and the testing of hypotheses, conclusions were made. It is hereby concluded that:

- Improved educational programs would be justified to improve the awareness and insight on breast cancer in males among them.
- The queries of the respondents to male breast cancer awareness show the need to intensify support groups and diminish stigma to enhance better results and awareness.

- In Lagos State, awareness about male breast cancer did not have a strong influence on the age of the university students.
- Gender seems to have a strong impact on the attitudes and the knowledge that students have about male breast cancer at the institutions of higher learning in Lagos State.

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