

Fatalistic Breast Cancer Beliefs and Health Screening Attitude and Practice among Adolescent Girls in Ilorin, Kwara state

¹K.M. Ibiyeye, ²B.A. Adeyemi, ³A.I. Adedo, ¹O.F. Abiona, ¹E.E. Balogun, ¹I.J. Olumutimi

¹Department of Anatomy, University of Ilorin, Ilorin. Kwara. Nigeria. ²Department of Community Health, Faculty of Health Sciences, Al Hikmah University, Ilorin. ³Department of Medical Biochemistry, Faculty of Basic Medical Sciences, College of Health Sciences, University of Ilorin.

Abstract

Background: Breast cancer in the young presents a major health challenge in Nigeria. Delayed diagnosis, often driven by low community awareness, contributes significantly to late presentation and poor survival outcomes. Understanding awareness, beliefs, and attitudes is crucial for promoting early diagnosis, which is directly associated with improved survival. This study aimed to explore the beliefs, attitudes toward breast cancer, and screening practices among adolescent girls in Ilorin, Kwara State, Nigeria.

Materials and Methods: We conducted a cross-sectional survey among 433 female senior secondary school students (aged 12 to 22 years) randomly selected from schools across the three local government areas of Ilorin. Data were collected using a questionnaire adapted from the modified Breast Cancer Screening Beliefs Questionnaire. Consent was obtained from both participants and their parents. All items were rated on a five-point Likert scale, where a response of "disagree" or "strongly disagree" indicated less fatalistic beliefs and a more proactive attitude toward health screening.

Results: The Cronbach's alpha ranged from 0.66 to 0.79. The study showed that the participants had good awareness and poor practice of breast cancer screening, demonstrated a proactive inclination toward general health screening, while they simultaneously held strong fatalistic beliefs about breast cancer.

Conclusion and Recommendations: The presence of strong fatalistic beliefs, despite a tendency toward proactive screening, suggests a significant psychological barrier to early breast cancer detection efforts. Interventions focused on educating young women and challenging fatalistic beliefs are urgently needed.

Keywords: Belief, attitude, screening practice, breast cancer, adolescent girls

Introduction

Breast cancer stands as a major global public health concern. However, the death from breast cancer globally is on the decrease, but the trend is reversed in developing countries including Nigeria.^{1,2}

Correspondence to:

K. M. Ibiyeye

Department of Anatomy, University of Ilorin, Ilorin.

Email: ibiyeye.km@unilorin.edu.ng.

ORCID: 0000-0001-5543-0989

In Nigeria, the challenge is amplified by a rising incidence of the disease among young women. A study conducted in Ibadan revealed that a substantial 30% of breast cancer diagnoses involved women aged 15 to 39 years.³ This burden on younger populations presents a significant clinical and public health crisis. Adolescent girls represent a demographic age 10 to 19 years of age.⁴ Attitudes beliefs, perceptions and

habits, and formed during adolescence are often carried into adulthood.^{5,6}

Survival outcomes for breast cancer are strongly tied to the stage at diagnosis.^{7,8} Unfortunately, in Nigeria, many patients present with late-stage disease.^{1,2} A critical driver of this late presentation is delayed diagnosis, which is often compounded by low community awareness regarding the risk factors for breast cancer, signs, the available screening and the benefits of early detection.⁹ Promoting early detection, diagnosis and access to treatment is crucial for improving survival rates and reducing the years of life lost due to this cancer.

Effective early diagnosis programs depend not only on the availability of screening services but also on the public's awareness, beliefs, and attitudes toward the cancer and screening services. Deep-rooted cultural

and psychological factors can shape risk perception, willingness to participate in screening or seeking medical help, and treatment choices. Conversely, a positive attitude toward health screening is a facilitator of positive health behaviour.¹⁰

Given the significant burden of breast cancer in young Nigerian women, the critical role of awareness, attitudes and belief in determining health-seeking behaviour, this study sought to explore the awareness, practice and attitudes toward breast cancer screening, and belief toward breast cancer among adolescent girls in Ilorin, Kwara State, Nigeria. By assessing these factors in this group, this research aims to provide evidence-based insights necessary for developing interventions that address the specific psychological and knowledge gaps that may hinder early detection efforts.

Materials and Methods

This study employed a cross-sectional survey design to investigate the belief, attitudes, and screening practices regarding breast cancer among adolescent girls in Ilorin, Kwara State, Nigeria.

Study Setting and Population

The study was conducted in the three local government areas in Ilorin: Ilorin West, Ilorin East, and Ilorin South. The target population comprised female senior secondary school students who were currently attending public and private schools within these LGAs. Health talks, question and answer sessions were held with the staff and students after the filled questionnaires were retrieved from the respondents.

Sample Size Determination

The minimum sample size was determined using the appropriate formula for sample size determination when the variable of interest being measured is a proportion as shown below.

$$n = (Z^2 pq) / d^2$$

Where: n = the desired sample size when population is greater than 10,000, Z = the standard normal deviate usually set at 1.96, p = proportion of target population that have good awareness of breast screening (67.8%)¹¹, q = 1.0 - p and d = degree of accuracy, set at 0.05.

Therefore:

$$\begin{aligned} n &= (1.96)^2 \times 0.678 \times 0.322 / (0.05)^2 \\ &= 3.8416 \times 0.218316 / 0.0025 \\ &= 0.838681 / 0.0025 \\ &\approx 336 \end{aligned}$$

For 10% non-response rate: 374

Final sample size: 374

Sampling techniques

A multi-stage random sampling technique was utilized to select the participants. Two senior secondary schools were randomly selected from each of the three LGAs. A simple random sampling method was used to select classes by balloting and the students within those selected classes were selected by systematic random sampling, whereby, a random starting point was selected between 1 and the sampling interval ($k=4$), and every 4th student was chosen until 16 to 17 students were chosen per class. The mean total number of students per class was 68. Sample size was calculated using the formula for proportion estimation, with a 10% non-response adjustment. A total of 500 female students were successfully enrolled in the study.

Data collection instrument

Data were collected using a structured, self-administered questionnaire that was adapted from the modified Breast Cancer Screening Beliefs Questionnaire.¹² The questionnaire was designed to assess the following key areas: Socio-demographic characteristics (e.g., age), breast cancer screening knowledge and practices, fatalistic beliefs about breast cancer, as well as attitudes toward general health screening.

Scoring and grading

Item related to awareness, the participants were to select at least one of the options. Each option was scored one (1) and the option "None" was scored zero. The total score ranged from 0-3. Zero (0) was considered poor awareness and 1-3 good awareness. All items related to belief (4 items) and attitudes (4 items) were rated on a five-point Likert scale (1 = Strongly agree to 5 = Strongly disagree). The total score ranged from 4-20. Scores of 4-12 were considered poor attitude or belief while 13-20 good attitude or belief. Responses were coded such that disagreement with certain statements (e.g., "disagree" or "strongly disagree") indicated less fatalistic beliefs and a more proactive attitude toward health screening.

Ethical Considerations

Ethical approval was obtained from University of Ilorin Ethical Review Committee (approval number UERC/ASN/2025/3278) and Kwara state Ministry of Education and Human Development (reference DE/SS/GEN/001/VOL.I/200). Before data collection, informed consent was secured from both the participants and their parents/guardians, recognizing the participants' status as minors. Participation was entirely voluntary, and confidentiality was maintained throughout the study.

Data Analysis

Descriptive statistics, including frequencies and

percentages, were used to summarize the socio-demographic data and responses to the awareness, belief and attitude statements. Chi square tests were performed to investigate the association and independence among the target variables of the study. IBM SPSS Statistics version 26.0. was used for statistical analysis.

Results

433 questionnaires were returned and properly filled. Response rate was 86.6%. The mean age of the respondent was 15 ± 1.41 years. All respondents were between the ages of 12 and 22 years, majority of which fall within the age group of 14-15 and 16-17 (43.9% and 42.3% respectively) (Table 1). Majority of the respondents were from public schools (90.1%) (Table 1).

Table 1: Socio-demographic variables of respondents N=433

Variables	Frequency	Percentage
Age groups		
12 – 13	19	4.4
14 – 15	190	43.9
16 – 17	183	42.3
≥ 18	41	9.5
Mean $\pm$ SD	15 ± 1.41	
Range	12 – 22	
Type of school		
Public	390	90.1
Private	43	9.9

About half of the number of respondents were awareness of the available breast cancer screening. Self-breast examinations (SBE) was the most known breast screening while mammogram was the least known (Table 2). Most of the respondent had never practiced SBE (70%) nor been examined by a physician or nurse (Table 2).

On the respondents' fatalistic belief on breast cancer, minority disagreed or strongly disagreed that breast cancer is like a death sentence (27.5%), cannot be cured (36.7%) and that there is little a woman can do to change its faith if detected earlier (20.3%). Furthermore, minority also disagreed or strongly disagreed (27.7%) that if a woman is destined to have it, she will (Table 3). The Cronbach's alpha for this subscale was 0.66.

Table 2: Awareness and practice of breast cancer screening N=433

Variables	Responses	Percentage
Awareness		
Self-breast examination	171	39.5
Clinical breast examination	101	23.3
Mammogram	12	2.8
None	215	49.7
Practice		
Frequency of self-breast examination		
At least once every month	70	16.2
Annually	22	5.1
Once every few months	38	8.8
Never	303	70.0
Frequency of breast examination by a doctor or nurse		
Annually	33	7.6
Once every two years	4	0.9
Never	396	91.5

As per their attitudes towards general health screening, majority disagreed or strongly disagreed that if they feel well, it is not necessary to get a medical check-up (59.2%) (Table 4), that there is no need for medical checkup if one has a healthy lifestyle (46.1%) and healthy individuals do not need to see a doctor (54.3%). However, about half of the respondents agreed or strongly agreed to see a doctor only when there is a health problem (55%) (Table 4). The Cronbach's alpha for this subscale was 0.79.

Generally, among the respondents, the level of awareness of breast examination was good (50.6%). Their practice of breast cancer screening was poor (31.4%). Their belief fatalistic belief towards breast cancer was strong (75.1%). Their attitudes towards general health screening was, however, good; (58%). The respondents' age, awareness of breast cancer screening and belief had significant relationship with the practice of breast cancer screening (at p-value < 0.05) (Table 5).

Table 3: Belief towards breast cancer N=433

Variables	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Breast cancer is like a death sentence, if you have it, you will surely die from it	120 (27.7)	141 (32.6)	53 (12.2)	81 (18.7)	38 (8.8)
Breast cancer cannot be cured, you can only prolong suffering	80 (18.5)	144 (33.3)	50 (11.5)	110 (25.4)	49 (11.3)
Even if breast cancer is detected early, there is little a woman can do to reduce chances of dying from it	87 (20.1)	210 (48.5)	48 (11.1)	62 (14.3)	26 (6.0)
If a woman is destined to have breast cancer, she will get breast cancer; there is little she can do to change it.	75 (17.3)	174 (40.2)	64 (14.8)	80 (18.5)	40 (9.2)

Table 4: Attitude towards general health screening N=433

Variables	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
If I feel well, it is not necessary to have a medical checkup.	45 (10.4)	103 (23.8)	29 (6.7)	186 (43.0)	70 (16.2)
I do not need any medical checkups when I have a healthy lifestyle, eat a balanced diet and do regular exercise/activities	68 (15.7)	125 (28.9)	40 (9.2)	176 (40.6)	24 (5.5)
I see a doctor or get a medical checkup only when I have a health problem	76 (17.6)	162 (37.4)	33 (7.6)	135 (31.2)	27 (6.2)
If I feel healthy, I don't need to see a doctor	63 (14.5)	98 (22.6)	37 (8.5)	184 (42.5)	51 (11.8)

Table 5: Association between practice of breast cancer screening and variables

Variables	Practice		χ^2	p-value
	Poor (%)	Good (%)		
Age groups			9.652	0.021
12 – 13	15 (78.9)	4 (21.1)		
14 – 15	143 (75.3)	47 (24.7)		
16 – 17	112 (61.2)	71 (38.8)		
≥ 18	27 (65.9)	14 (34.1)		
Type of school			0.272	0.612
Public	266 (68.2)	124 (31.8)		
Private	31 (72.1)	12 (27.9)		
Awareness of breast cancer screening			103.873	< 0.001
Poor	196 (91.6)	18 (8.4)		
Good	101 (46.1)	118 (53.9)		
Fatalistic belief toward breast cancer			12.749	< 0.001
Poor	208 (64.0)	117 (36.0)		
Good	89 (82.4)	19 (17.6)		
Attitude towards general health screening			0.206	0.650
Poor	127 (69.8)	55 (30.2)		
Good	170 (67.7)	81 (32.3)		

Discussion

This study examined awareness, attitudes, beliefs towards breast cancer and breast cancer screening practices among adolescent girls in Ilorin, Nigeria. The study showed that the participants demonstrated a proactive inclination toward general health screening, while they simultaneously held fatalistic beliefs about breast cancer. This might hinder the actual practice of breast cancer screening.

Despite the level of awareness regarding breast cancer screening, the actual practice remains low. This gap between awareness, knowledge and practice is consistent with previous studies among adolescent in Nigeria,¹³⁻¹⁶ where students may have the awareness and understand the importance of screening but lack the practical skills or the willingness to perform them. However, it is worth mentioning that self-breast examination is encouraged to start by age 20, monthly and 3 to 7 days after menstruation.¹⁶ Nonetheless, self-breast examination is recommended to raise awareness of breast cancer, its signs and symptoms.^{7,8}

A large population of the respondents exhibited fatalistic views toward breast cancer. Similar fatalistic belief have been reported among women in Nigeria.¹⁷⁻¹⁹ Cancer fatalism is defined as the belief death is inevitable when one has cancer.²⁰ Breast cancer was seen as a diseases that kills fast and cost of treatment

is huge.^{18,21} The fear of the treatment options,²² mental burden of the disease,²³ attributing breast cancer to spiritual attack and witch craft²⁴ were recorded. The fatalistic beliefs formed early in life could be influenced by community narratives and observed poor outcomes; where breast cancer is perceived as a death sentence and an unavoidable fate.

In contrast, the participants' attitudes toward general health screening were notably more positive. Respondents demonstrated fair positive attitudes toward health screening, with most disagreeing that medical check-ups are unnecessary when one feels healthy. This aligns with findings from studies among Nigerian adolescents showing openness to health screening.²⁵⁻²⁷ However, over half of the respondents still agreed that doctors should be consulted only when health problems arise, indicating that preventive care is not yet fully internalized.

The study identified several variables significantly associated with the practice of breast cancer screening. Age, awareness of screening methods, and fatalistic beliefs were found to have a statistically significant relationship with screening behaviour. The significant association between awareness of breast cancer screening and screening practice observed in this study supports the indication that awareness and knowledge is a key predictor of preventive

behaviour.^{18,28} This fatalistic belief is similar to previous findings among women where fatalism strongly predicts delayed presentation.^{18,22-24} There is no statistical significant association with the screening behaviour and attitudes toward general health. The association between positive attitudes toward health screening and better screening practice supports health behaviour models that emphasize attitudes as determinants of action. This may indicate that among adolescents, limited knowledge, lack of skills are belief systems are more immediate barriers.

Conflicts of interest

The author(s) declared no potential conflicts of interest

Acknowledgement

Special thanks to the staff and students of Government day secondary school Tanke, Senior Secondary school Danialu, Government day secondary school Karumo, Christ the Redeemer's secondary school Sango, Muslim model secondary school Idi-Ori, Government secondary school Adeta and Cherubim and Seraphim college Sabo-oke.

References

- World Health Organization. Breast cancer [Internet]. Geneva: World Health Organization; 2024 Mar 13 [cited 2025 Dec 28]. Available from: <https://www.who.int/news-room/fact-sheets/detail/breast-cancer>
- Anyigba CA, Awandare GA, Paemka L. Breast cancer in sub-saharan Africa: the current state and uncertain future. *Exp Biol Med*. 2021;246(12):1377–87.
- Ntekim A, Nufu FT, Campbell OB. Breast cancer in young women in Ibadan, Nigeria. *Aust N Z J Surg*. 2009;9(4):242–6
- World Health Organization. Adolescent health [Internet]. New Delhi: World Health Organization; [cited 2025 Dec 28]. Available from: <https://www.who.int/southeastasia/health-topics/adolescent-health>.
- Vecchione M, Schwartz SH, Davidov E, Cieciuch J, Alessandri G, Marsicano G. Stability and change of basic personal values in early adolescence: A 2-year longitudinal study. *J Pers*. 2020;88(3):447–463. doi:10.1111/jopy.12502
- Pöge A. Stability and change of values during the formative years: Latent state-trait analyses of adolescents in a seven-wave panel study. *J Pers*. 2020;88(2):266–286. doi:10.1111/jopy.12484.
- Anderson BO, Braun S, Lim S, Etzioni R, Chadha M, Chustecka Z, et al. Early detection of breast cancer in countries with limited resources. *Breast J*. 2003;9 Suppl 2:S51–S59. doi:10.1046/j.1524-4741.9.s2.4.x
- Anderson BO, Yip CH, Smith RA, Shyyan R, Sener SF, Eniu A, et al. Guideline implementation for breast healthcare in low-income and middle-income countries: overview of the Breast Health Global Initiative Global Summit 2007. *Cancer*. 2008;113(8 Suppl):2221–2243. doi:10.1002/cncr.23844
- Ntekim A, Folasire A, Odukoya OA, Sowunmi A, Alabi A. Pathway to care among adolescents and young adults with breast cancer in Nigeria: a mixed methods study. *BMC Cancer*. 2025; 25(1):11.
- Antabe R, Kansanga M, Sano Y, Kyeremeh E, Galaa Y. Utilization of breast cancer screening in Kenya: what are the determinants?. *BMC Health Serv Res*. 2020;20(1):228. doi:10.1186/s12913-020-5073-2
- Sadoh AE, Osime C, Nwaneri DU, Ogboghodo BC, Eregie CO, Oviawe O. Improving knowledge about breast cancer and breast self examination in female Nigerian adolescents using peer education: a pre-post interventional study. *BMC Womens Health*. 2021;21(1):328. doi:10.1186/s12905-021-01466-3
- Kwok C, Lee CF. Assessment of the validity and reliability of the Vietnamese version of the Breast Cancer Screening Beliefs Questionnaire. *Asia Pac J Oncol Nurs*. 2021;9(1):69–74. doi:10.1016/j.apjon.2021.11.003
- Ifediora CO, Azuik EC. Tackling breast cancer in developing countries: insights from the knowledge, attitudes and practices on breast cancer and its prevention among Nigerian teenagers in secondary schools. *J Prev Med Hyg*. 2018;59(4):E282–E300. doi:10.15167/2421-4248/jpmh2018.59.4.964
- Sadoh AE, Osime C, Nwaneri DU, Ogboghodo BC, Eregie CO, Oviawe O. Improving knowledge about breast cancer and breast self-examination in female Nigerian adolescents using peer education: a pre-post interventional study. *BMC Womens Health*. 2021;21(1):328. Doi:10.1186/s12905-021-01466-3
- Adesokan OJ, Daniel EO, Abiodun PO, Bello AM, Amari KY, Popoola IO, et al. Breast cancer screening: Knowledge, attitude and practice of female youths in Lugbe community of Abuja Nigeria. *Cancer Res J*. 2021;9(1):1–7. Doi:10.11648/j.crj.20210901.11
- Smith RA, Saslow D, Sawyer KA, Burke W, Costanza ME, Evans WP, et al. American Cancer Society guidelines for breast cancer screening: update 2003. *CA Cancer J Clin*. 2003 May-Jun;53(3):141–69. Doi: 10.3322/canjclin.53.3.141.
- Aderounmu AO, Egbewale BE, Ojofeitimi EO, et al. Knowledge, attitudes and practices of the educated and non-educated women to cancer of the breast in semi-urban and rural areas of SouthWest, Nigeria. *Niger Postgrad Med J*. 2006;13(3):182–188.
- Oladimeji KE, Tsoka-Gwegweni JM, Igboekwe

- FC, et al. Knowledge and Beliefs of Breast Self-Examination and Breast Cancer among Market Women in Ibadan, South West, Nigeria. *PLoS One*. 2015;10(11):e0140904. Doi:10.1371/journal.pone.0140904
19. Pruitt LCC, Odedina S, Anetor I, et al. Breast Cancer Knowledge Assessment of Health Workers in Ibadan, Southwest Nigeria. *JCO Glob Oncol*. 2020;6:387-394. Doi:10.1200/JGO.19.00260
 20. Powe BD, Finnie R. Cancer fatalism: The state of the science. *Cancer Nurs*. 2003;26(6):454–65. Doi: 10.1097/00002820-200312000-00005.
 21. Mohammed S, Bagudu Z, Lawal I. Improving breast cancer patients survival and quality of life by targeting traditional and religious leaders in northern Nigeria. *J Glob Oncol*. 2018;4(Suppl 2):129s. doi:10.1200/jgo.18.39400
 22. Adaranijo AA, Amzat J, Abdulrahman D, Kanmodi KK. The Social Reality of Meaning Making: The Dichotomy in the Illness Narratives of Women With Breast Cancer and Biomedical Practitioners in Nigeria. *Psychooncology*. 2024;33(10):e9317. doi:10.1002/pon.9317
 23. Odiaka E, Israel-Isah S, Alabi T Sr, Ibrahim A, Peter ID, Igbinomwanhia VD, et al. Knowledge and barriers to breast and cervical cancer screening in rural Nigerian communities: An ethnographic study. *J Clin Oncol*. 2025;43(16_suppl):e23233. doi:10.1200/JCO.2025.43.16_suppl.e23233
 24. Allo TA, Edewor PA, Imhonopi D. Assessment of perceived risks of breast cancer and breast cancer screening among women in five selected local governments in Ogun State, Nigeria. *SAGE Open*. 2019;9(2). doi:10.1177/2158244019841924
 25. Olorunnisola AA, Oyewole O, Ibukunoluwa A, Jacob AI, Chiamaka U, Oluwaseunfunmi O. Assessing the awareness, attitude, and intention of adolescents for HIV screening services utilization in Osogbo, Osun State, Nigeria. *Int J Public Health Pharmacol*. 2024;4(1):1-7. doi:10.52589/IJPHP-JB8QNPBG
 26. Orji M- laurretta, Joe-Akunne CI, Ifebunandu NA, Onah OC, Oyim-Elechi CO, Nwobi MA, et al. Attitudes and Beliefs about HIV/AIDS and their Relationships with Sexual Practices among Senior Secondary School Students in Abakaliki, Nigeria. *Niger Med J*. 2025;65(6):1135-4.
 27. Amorha KC, Ozota GO, Ndunwere MO, Anyaji UL, Egbo OF, Ogugofor OA. Knowledge, attitudes, and practices of adolescent girls regarding cervical cancer: a cross-sectional study in Enugu State, Nigeria. *Pan Afr Med J*. 2024;47:17. doi:10.11604/pamj.2024.47.17.41087
 28. Rincón Uribe FA, Godinho RCS, Machado MAS, de Castro AC, da Costa CA, Barbosa LG, et al. Health knowledge, health behaviors and attitudes during pandemic emergencies: A systematic review. *PLoS One*. 2021;16(9):e0256731. doi:10.1371/journal.pone.0256731