

Awareness of hereditary breast cancer and genetic testing among patients with breast cancer in Nigeria: A multi-center study

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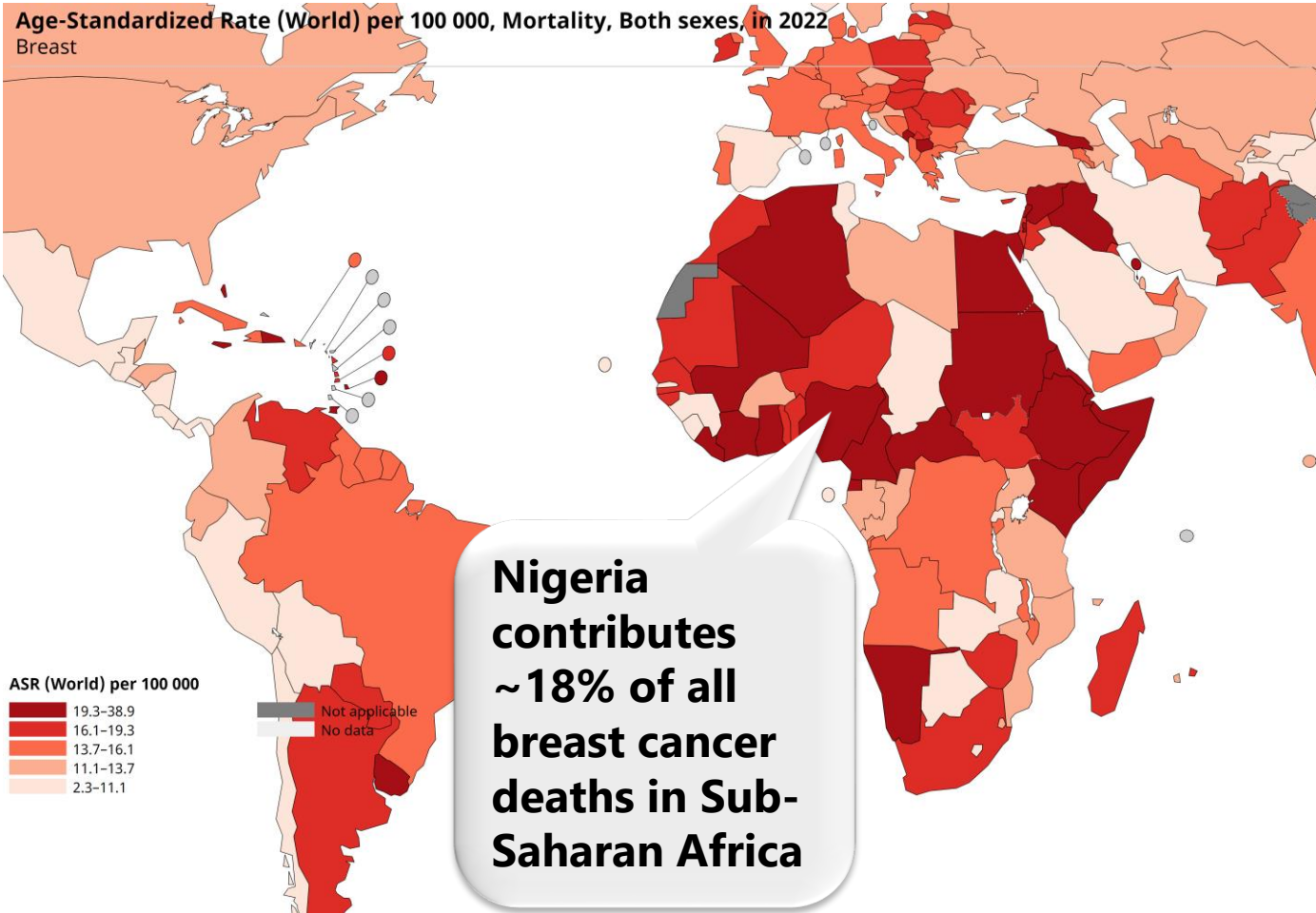
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WITS SCHOOL OF PUBLIC HEALTH 2025 BIENNIAL RESEARCH DAY

6 NOVEMBER 2025



Breast cancer burden in Sub-Saharan Africa



Country	Mortality Rank	Prop of SSA BC Deaths
Nigeria	1	17.9%
Ethiopia	2	10.5%
Egypt	3	10.5%
South Africa	4	5.7%
Algeria	5	5.4%
Democratic Republic of Congo	6	4.7%
Morocco	7	4.4%
Kenya	8	3.7%
Sudan	9	3.5%
Ghana	10	2.6%

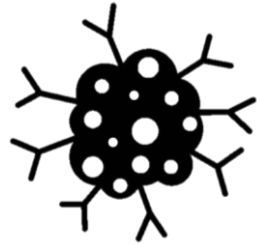
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Cancer TODAY | IARC
<https://gco.iarc.who.int/today>
 Data version: Globocan 2022 (version 1.1) - 08.02.24
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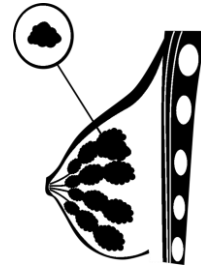
Challenges of treating Breast cancer in Nigeria



Early onset
15-39
years at
diagnosis



Late stage
III/IV
diagnosis



About
40%
aggressive
TNBC



Overall
43.6%
survival



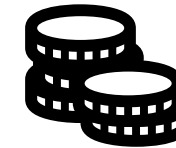
Estimated
220M+
people



About
20%
women
have CBE
each year



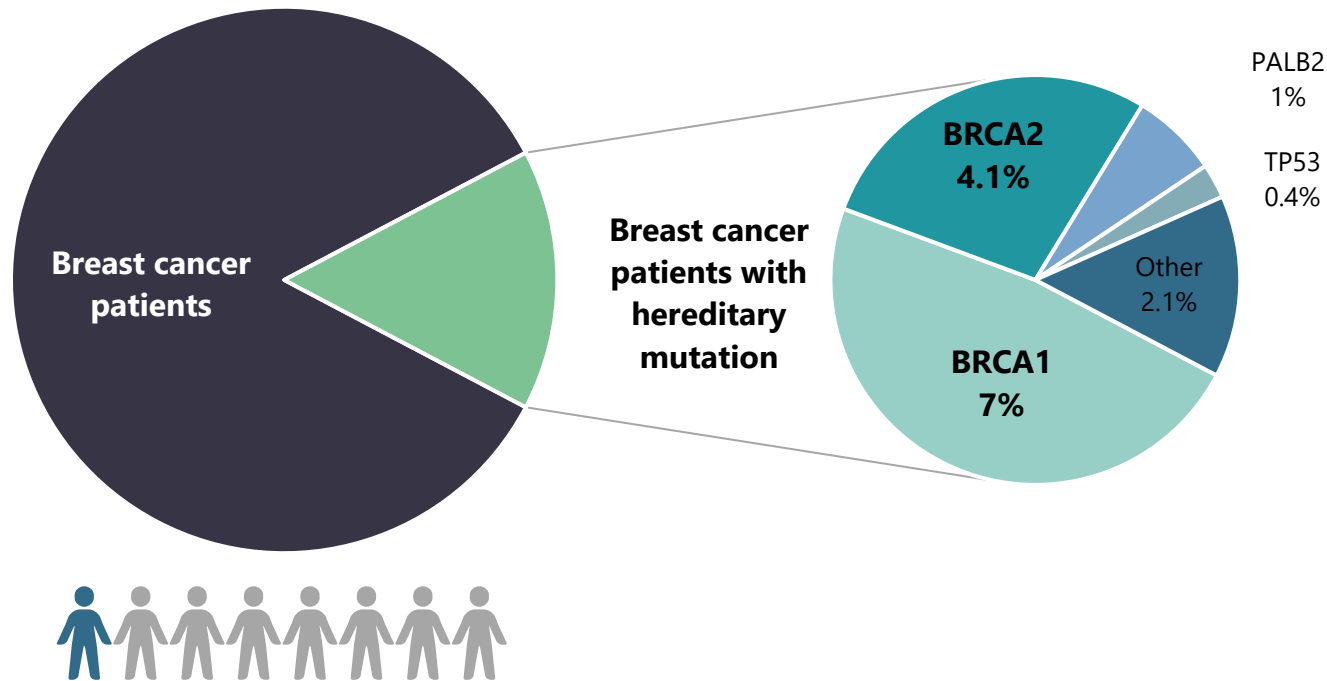
About
2.3%
women have
mammograms
each year



Government
funded
\$\$\$
Public Health
care system



Hereditary Predisposition in Nigeria: Findings From Ibadan



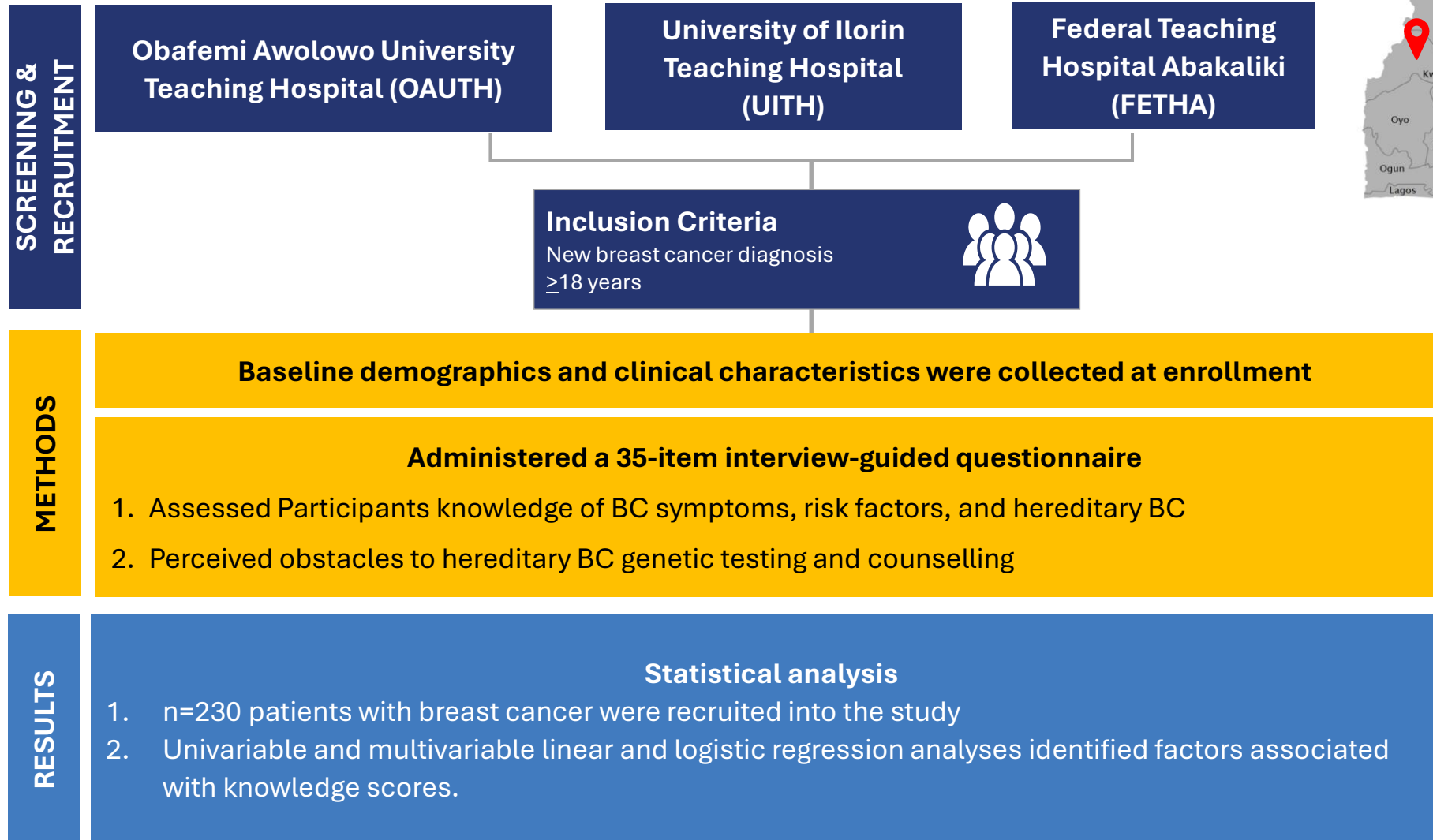
- **11.1%** (127 of 1,136) were found to have an inherited mutation in *BRCA1*, *BRCA2*
- **Unlike in North America and Europe:**
 - Access to genetic testing + counselling to evaluate the lifetime risk and inform management is extremely limited in Nigeria → **major oncologic health disparity**

Understanding patient knowledge of breast cancer is essential to improve early detection.

Objective

This study aimed to assess the demographic and clinical characteristics of patients with breast cancer (BC) in Nigeria and evaluate their knowledge of BC symptoms, risk factors and hereditary BC.

Methods



*Questionnaires were translated from English into the three predominant local languages (**Yoruba, Igbo, and Hausa**), then back-translated to ensure fidelity.*

Trained interviewers administered the questionnaires in the participants' preferred language to ensure comprehension and accuracy.

Sociodemographic Characteristics

n= 230 ; %	
Hospital Centre	
OAUTHC, Ile-Ife	43.0
UIITH, Ilorin	32.2
FETHA, Abakaliki, Ebonyi	24.8
Sex	
Female	99.1
Male	0.4
Not reported	0.4
Age	
Mean (sd)	23.5
Median (Min,Max)	4.3
Occupation	
Trading	51.1
Civil Servant	17.9
Other ^[1]	12.7
Self Employed	8.3
Farmer	7.0
Pensioner	1.7
Unemployed	1.3

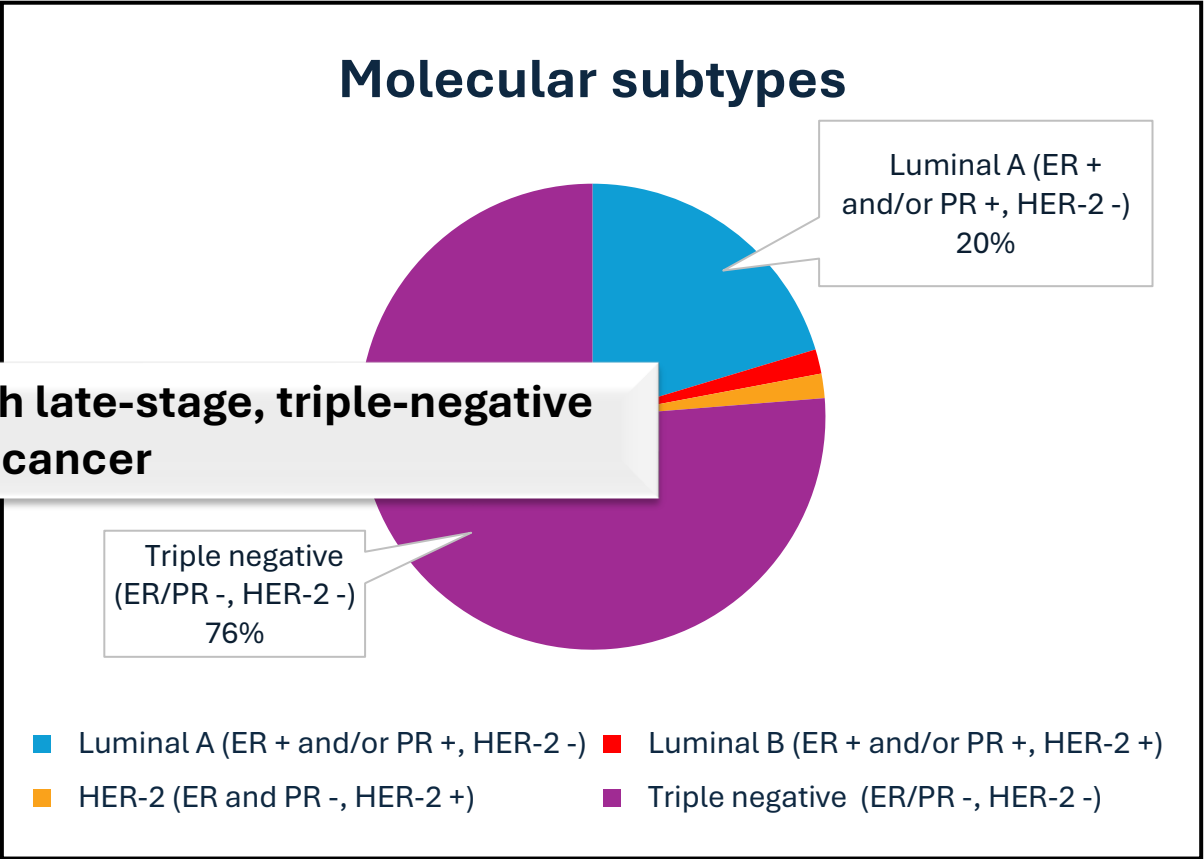
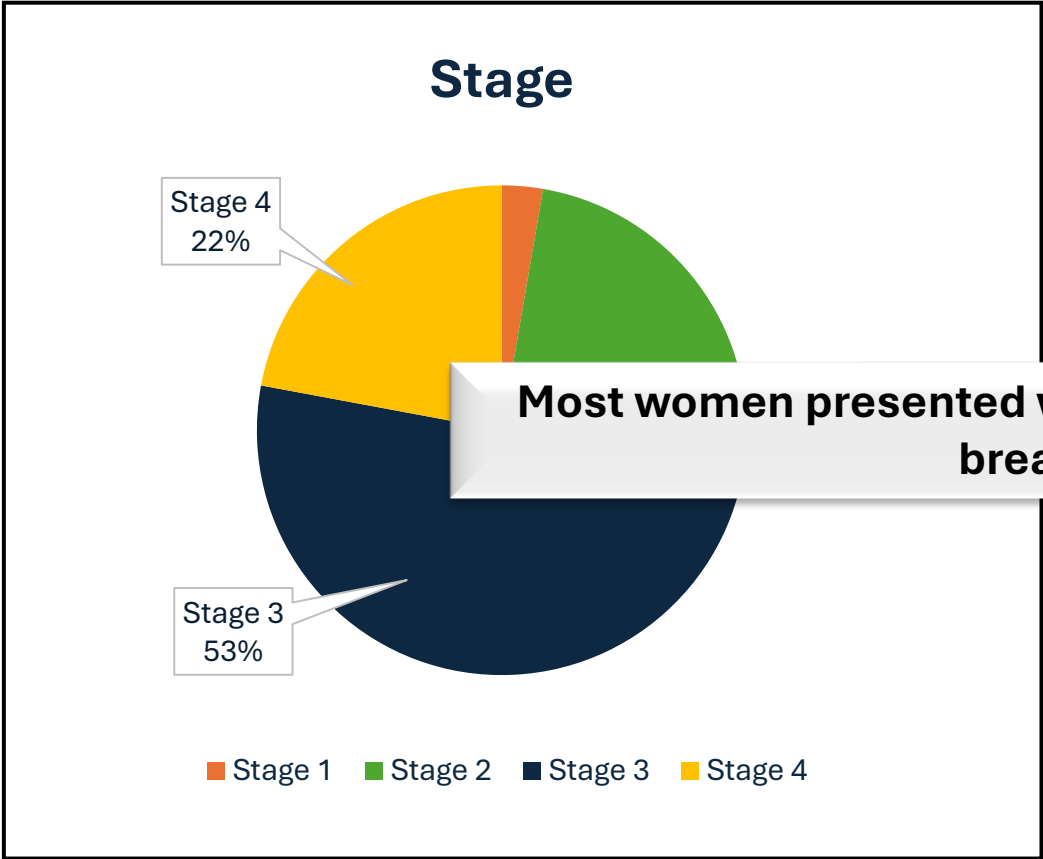
n= 230 ; %	
Socio economic status	
Low	66.5
Middle	30.9
High	2.2
Not reported	0.4
Ethnicity	
Yoruba	71.3
Hausa	0.9
	23.5
	4.3
	8.7
	23.0
	34.8
	33.0
Religion	
Christianity	69.1
Islam	30.4
Traditional	0.4

Most women in this cohort were younger, of low socioeconomic status, predominantly Yoruba, and had at least secondary education

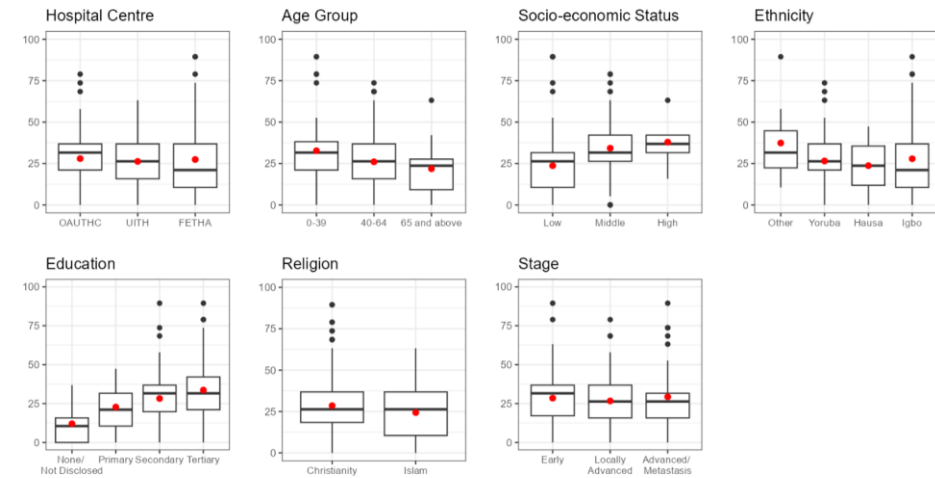
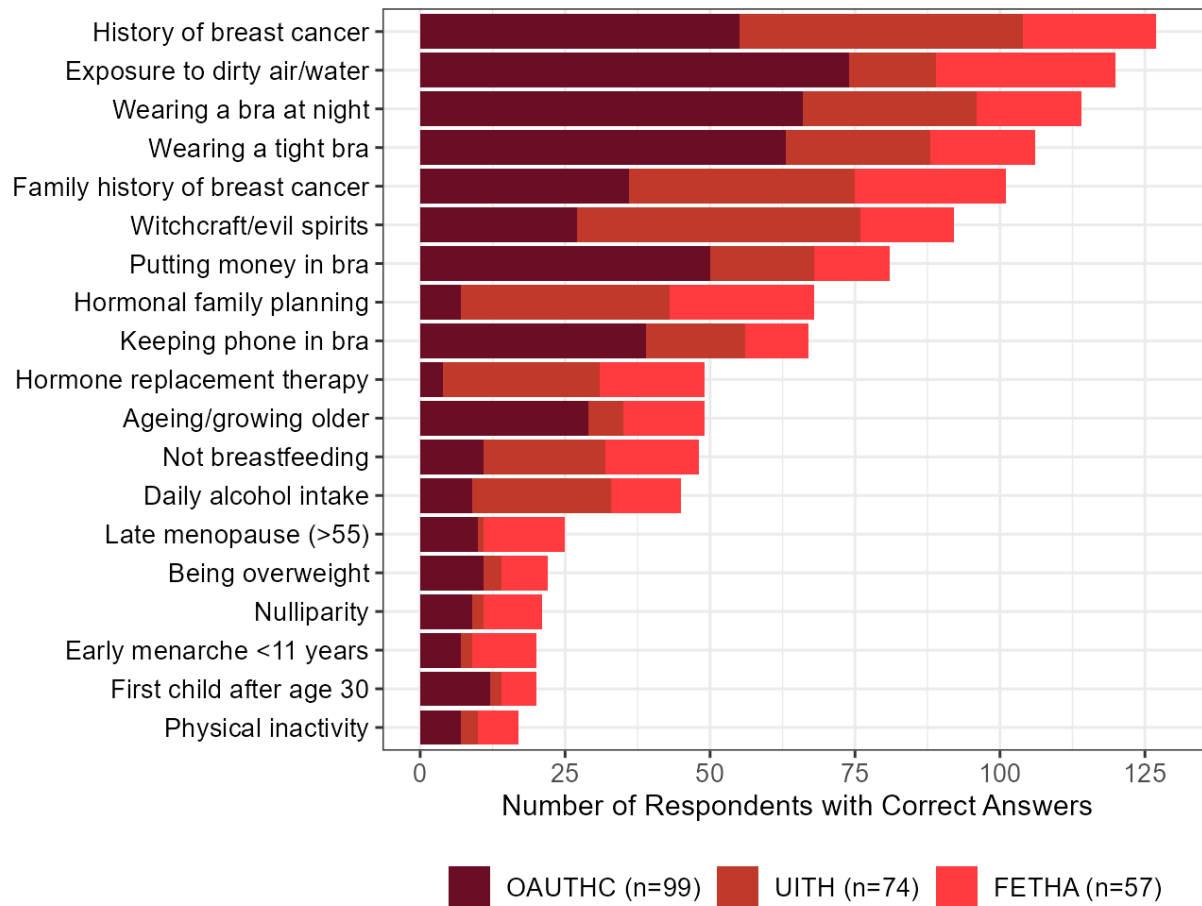
^[1] "Other" occupations (n = 29) included teaching (17.2%), business and hairdressing (10.3% each), fashion design, tailoring, retiree, attendant (6.9% each), and single mentions (3.4% each) such as banker, housewife, makeup artist, prophetess, seamstress, student, system analyst.

^[2] "Other" ethnicities (n = 10) included Bette, Nupe, Boki, Cross River, Obudu, Urhobo, Yahe, and Yala

Clinical Characteristics

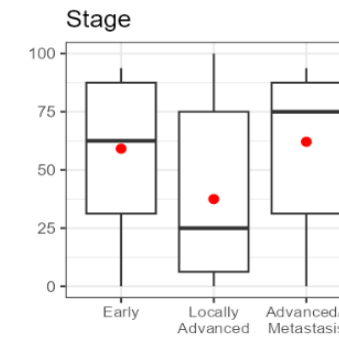
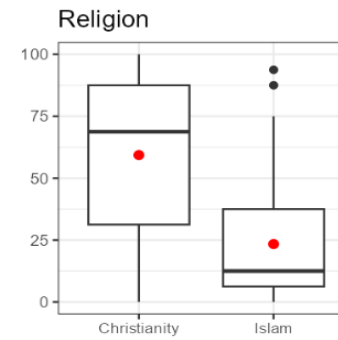
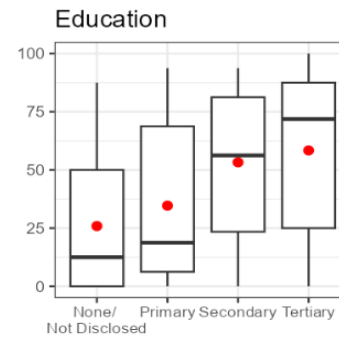
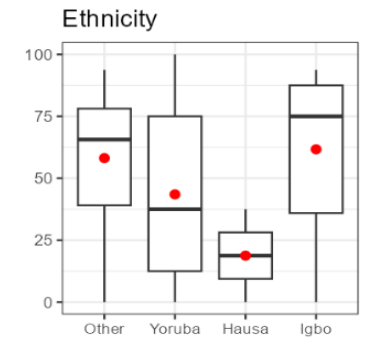
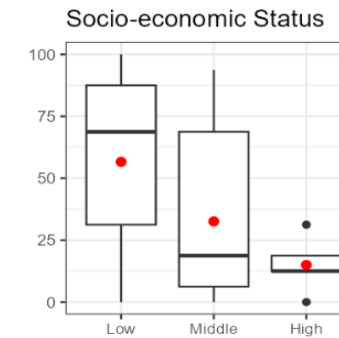
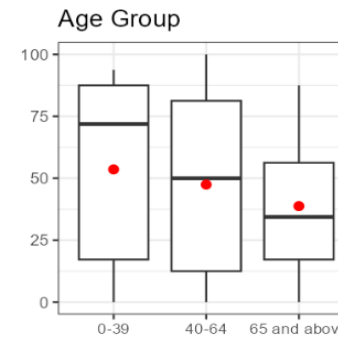
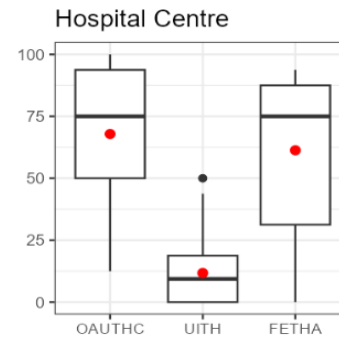
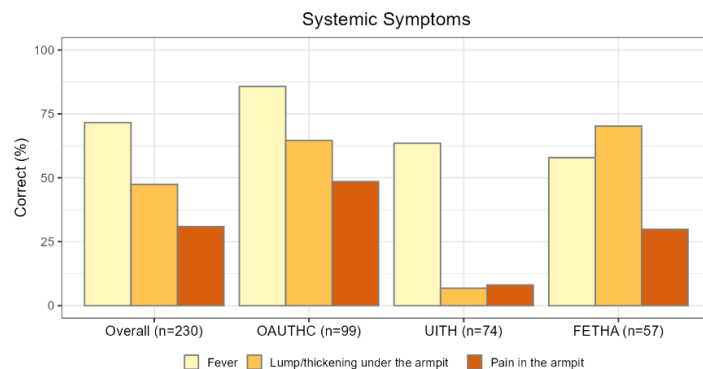
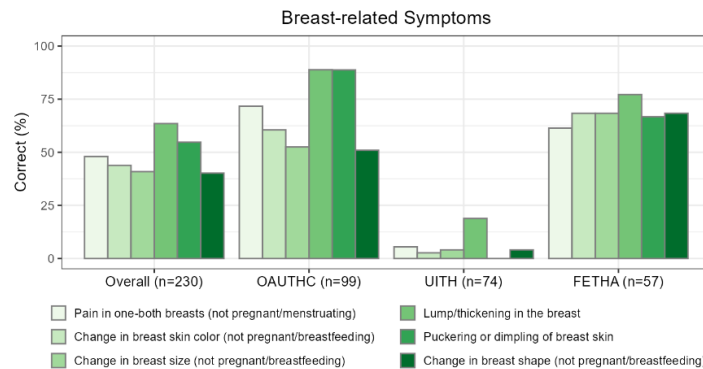
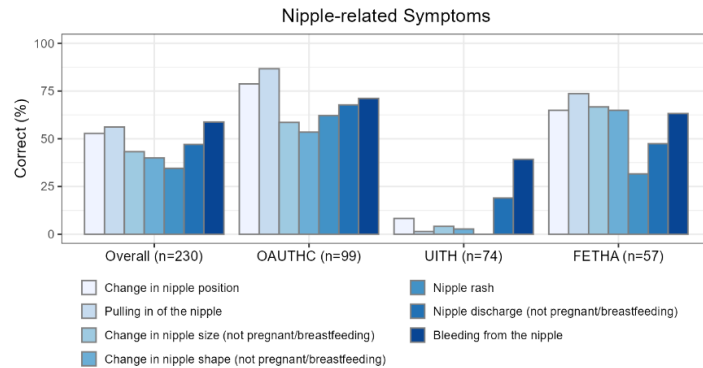


Knowledge of breast cancer risk factors



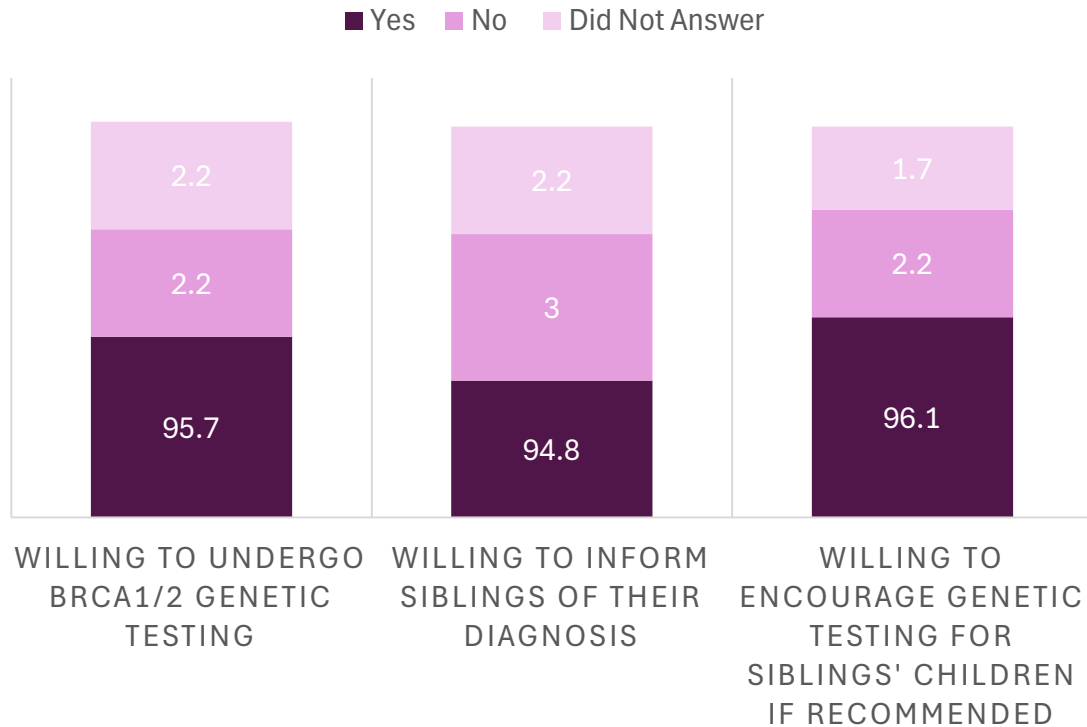
- **Knowledge of evidence-based risk factors was low** (daily alcohol intake, being overweight, physical inactivity, early menarche before, and nulliparity)
- Most correctly identified prior breast cancer history (55%) as a risk factor
- **Myths were common** – many believed causes of BC included wearing tight bras (46%), witchcraft (40%), or dirty air/water (52%)
- **Higher knowledge associated with tertiary education ($p < 0.001$), higher SES ($p < 0.001$), and younger age ($p = 0.040$)**

Knowledge of breast cancer signs and symptoms



- Participants from UIITH/Ilorin ($p < 0.001$) and those of Hausa ethnicity ($p=0.014$), had significantly lower awareness of BC symptoms
- Most recognized symptoms: fever (72%) and breast lump/thickening (64%)
- Recognition of several other key clinical signs was low, only 40.9% of participants correctly identified changes in breast size, and 30.9% recognized pain in the armpit as a warning sign.
- **Higher knowledge scores were observed among participants with secondary and tertiary education ($p < 0.001$) and those who reported being Christian ($p < 0.001$).**

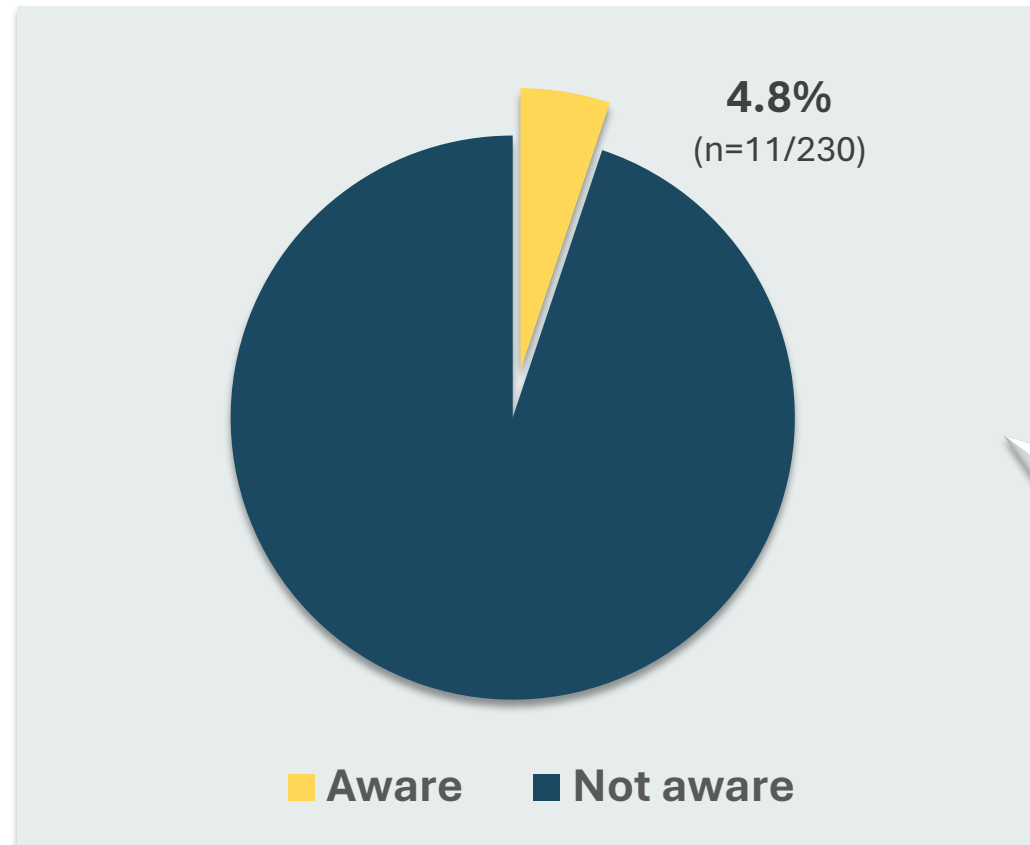
Knowledge of hereditary breast cancer and willingness to conduct genetic testing



- Over half (56%) knew breast cancer can be hereditary; 8% were unsure.
- **Higher awareness among those with:**
 - higher education ($p < 0.001$),
 - higher socioeconomic status ($p < 0.001$)
 - younger (<65 years) age group ($p = 0.026$)
- No significant differences by ethnicity, religion, hospital, or cancer stage.
- **Strong willingness for testing**



	n=11; %
Hospital Centre	
OAUTHC, Ile-Ife	45.5
FETHA, Abakaliki	54.5
Age group	
0-39	72.7
Socio economic status	
Low	54.5
Middle	45.5
Ethnicity	
Yoruba	36.4
Igbo	54.5
Educational Status	
Secondary	27.3
Tertiary	72.7
Stage grouping	
Early Breast Cancer (0,I,II)	40.0
Locally Advanced (III)	20.0
Advanced/Metastasis (IV)	40.0
Molecular Subtype	
Basal-like (ER/PR -, HER-2 -)	80.0



Awareness of BRCA genes was extremely low → even among those most likely to benefit from genetic testing

This highlights that beyond willingness, gaps in awareness of hereditary BC, and access remain major barriers to implementing genetic testing in Nigeria



Conclusion



Most women presented with advanced breast cancer, underscoring **persistent barriers to early detection in this setting**



Low awareness of symptoms and risk factors, coupled with prevalent myths (e.g., witchcraft), **highlights a major gap in health literacy**



Higher education and SES were strong predictors of knowledge. Knowledge gaps were more pronounced among older, less educated patients with lower SES

NB. Awareness of breast cancer is tied to social inequality



Awareness of hereditary BC was low, despite high willingness for genetic testing.

These findings highlight the need for targeted patient education to improve understanding of hereditary BC and genetic testing in Nigeria

THANK YOU

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ACTION

Addressing global inequities in breast cancer genetic testing, counselling, and management among breast cancer patients in Nigeria



UHN Princess Margaret Cancer Centre

The Princess Margaret Cancer Foundation  UHN

