

## Conference Abstract

---

### London Global Cancer Week 2025

24 - 28 Nov 2025

London, United Kingdom of Great Britain and Northern Ireland

---

## The ACTION Study: A multicenter study to address global inequities in breast cancer genetic testing, counselling, and management in Nigeria

21 Feb 2026

### Authors and Affiliations

Funmilola Olanike Wuraola<sup>1\*</sup>, Jenine Ramruthan<sup>2</sup>, Nneka Sunday-Nweke<sup>3</sup>, Olayide Sulaiman Agodirin<sup>4</sup>, Olusegun Isaac Alatise<sup>1</sup>, Matthew Castelo<sup>5</sup>, Andrea Covelli<sup>6</sup>, Anna Dare<sup>5</sup>, Sharif Folorunso<sup>1</sup>, Michelle Jacobson<sup>7</sup>, Saheed Lawal<sup>4</sup>, Ogechukwu Nwafor<sup>3</sup>, Olalekan Olasehinde<sup>1</sup>, Janet Papadakos<sup>8</sup>, Larissa Peck<sup>9</sup>, Emma Reel<sup>2</sup>, Danielle Rodin<sup>10</sup>, Emily Thain<sup>9</sup>, and Tulin D. Cil<sup>2,5</sup>

1. Department of Surgery, Obafemi Awolowo University Teaching Hospital Complex, Ile Ife, Nigeria
2. Department of Surgery, Princess Margaret Cancer Centre, Toronto, Canada
3. Department of Surgery, Federal Teaching Hospital Abakaliki, Abakaliki, Nigeria
4. Department of Surgery, University of Ilorin, Ilorin, Nigeria
5. Department of Surgery, University of Toronto, Toronto, Canada
6. Department of Surgery, Mount Sinai Hospital, Toronto, Canada
7. Department of Obstetrics and Gynaecology, Women's College Hospital, Toronto, Canada
8. Cancer Education Program, Princess Margaret Cancer Centre, Toronto, Canada
9. Department of Genetics, Princess Margaret Cancer Centre, Toronto, Canada
10. Global Cancer Program, Princess Margaret Cancer Centre, Toronto, Canada

### Background

Breast cancer (BC) is a significant health challenge in Nigeria, characterized by early onset (15-39 years), late-stage diagnosis (>80% stage III/IV), and high prevalence of triple-negative BC (~40%). Overall survival is significantly worse compared to North America (43.6% vs 90%). Germline BRCA1/2 pathogenic variants (PVs) are reported in approximately 11% of Nigerian patients with BC, yet access to genetic testing and counselling remains extremely limited, underscoring a significant global disparity. This pilot study evaluated the feasibility and clinical utility of BRCA1/2 testing in Nigerian patients with BC.

## Methods

In this prospective, observational study, newly diagnosed patients with invasive BC were enrolled across three tertiary hospitals representing the north-central, southwest, and southeast regions of Nigeria. Saliva samples were analyzed for BRCA1/2 variants through an international testing provider. Participants received pre- and post-test counselling, culturally tailored education, and clinical follow-up. Demographic and clinicopathological data were compared between BRCA carriers and noncarriers.

## Results

Among 100 participants (median age 43 years), 16% carried BRCA1/2 PVs, 4% had variants of uncertain significance and 80% tested negative. Clinicopathological features were comparable between carriers and noncarriers, including stage III/IV disease (88% vs 82%), triple-negative tumors (46% vs 38%), and premenopausal status (75% vs 69%). Metastatic disease was more frequent among carriers (44% vs 26%,  $p=0.20$ ). Family history of cancer was significantly higher in BRCA carriers than in noncarriers (25% vs 3.6%,  $p=0.012$ ). Genetic results informed management: among BRCA carriers, 50% underwent mastectomy (25% bilateral, 25% unilateral), while 25% underwent prophylactic bilateral salpingo-oophorectomy.

## Conclusion

This study shows that hereditary genetic testing is feasible and clinically actionable in Nigeria, with 16% of patients harboring a BRCA1/2 PV and disclosure of results influencing surgical uptake. Family history was significantly higher among carriers, underscoring the potential for cascade testing to identify asymptomatic high-risk relatives as a strategy for community-level prevention.

## References

1. Olasehinde O, Alatise O, Omisore A, Wuraola F, Odujoko O, Romanoff A, Akinkuolie A, Arowolo O, Adisa A, Knapp G, Famurewa O. Contemporary management of breast cancer in Nigeria: insights from an institutional database. *International journal of cancer*. 2021 Jun 15;148(12):2906-14.
  2. Zheng Y, Walsh T, Gulsuner S, Casadei S, Lee MK, Ogundiran TO, Ademola A, Falusi AG, Adebamowo CA, Oluwasola AO, Adeoye A. Inherited breast cancer in Nigerian women. *Journal of clinical oncology*. 2018 Oct 1;36(28):2820-5.
-