The ACTION Study: Addressing global inequities in breast cancer genetic testing, counselling, and management among breast cancer patients in Nigeria: A Healthcare Provider Educational Program

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Introduction

- **Breast cancer in Nigeria**: Driven by early onset (15-39 years, late-stage diagnosis (>80% Stage III/IV), high prevalence of triple-negative tumors (~40%).
- **Context**: Limited access to genetic testing and counseling, to evaluate the lifetime risk of breast cancer and inform subsequent management → highlighting a significant global disparity
- **Barriers:** Shortage of trained genetic counselors & training programmes

Methods

1. Team Formation: June - Sept 2023

- Multidisciplinary team from West Africa and North America
- Includes genetic counselors, surgical oncologists, gynecologists, and education experts

2. Curriculum Development:

- Developed collaboratively through virtual meetings
- Focused on breast cancer genetics and clinical management

3. Invitations to Apply

- Invites sent to all cadres of HCPs in tertiary hospitals across Nigeria

4. Hybrid Design:

- Online learning over one-month via Moodle-based platform
- Subsequent in-Person Training: ARGO Symposium in Nigeria

Objective

To develop and assess the effectiveness of a breast cancer genetics educational curriculum for Nigerian healthcare providers (HCPs) delivered through e-learning and in-person formats

Results

Table 1: Online vs In-person Effectiveness of the Hereditary Breast Cancer Training

Curriculum	Estimate (95% CI)	p-value	Pre-post increase
Online	0.230 (0.174, 0.287)	<0.001	23.0%
In-Person	0.101 (0.028, 0.173	0.007	10.1%

- A linear mixed-effects model showed significant improvements in HCP knowledge across all modules
- Both training formats effectively improved HCP understanding of hereditary breast cancer
- The grouped box plot (Fig.1) illustrates the differential impacts of online and in-person training on knowledge scores.
  - ❖ Pre-training scores were uniformly lower in both formats, with a notable increase observed post-training.
  - ❖ The average pre-in-person scores were similar to the online scores → knowledge retention

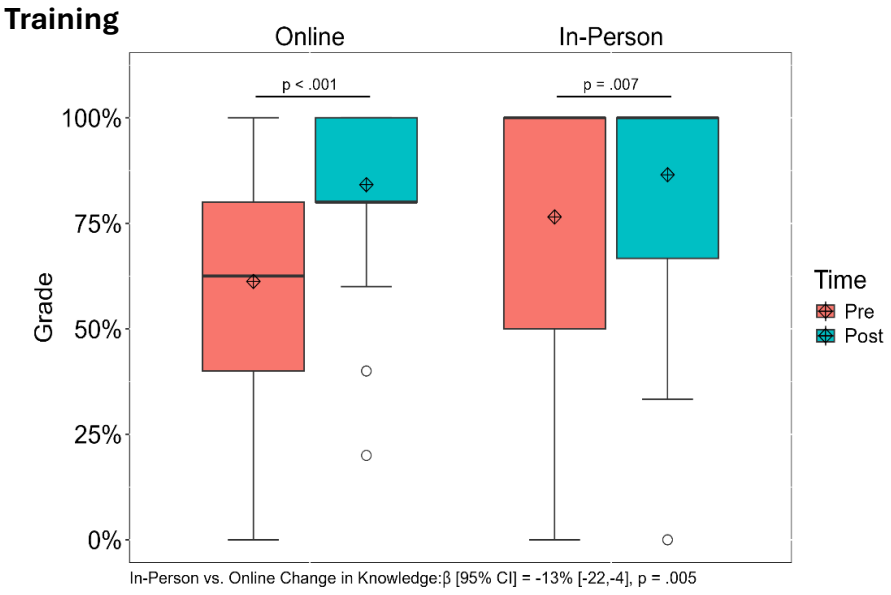

Fig. 1 Box plot of knowledge grade for online and in-person modalities

Conclusion

- Our study demonstrates the effectiveness of a hybrid training program to improve knowledge of breast cancer genetics among Nigerian HCPs
- This collaborative effort underscores the vital role of accessible education to support genetic counseling services in Nigeria and advocate for equitable breast cancer care globally.

Acknowledgments

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