# **Understanding Cancer Genetic Risk Assessment Motivations in a Remote Tailored Risk Communication and Navigation Intervention Randomized Controlled Trial among Ethnically and Geographically Diverse Cancer Survivors**

**Circe J. Le Compte, SD, SM**<sup>1</sup>; Shou-En Lu, PhD<sup>2</sup>; Jean McDougall, PhD, MPH<sup>3</sup>; Scott T. Waters<sup>4</sup>; Deb Toppmeyer, MD Shaw<sup>5</sup>; Tawny W. Boyce, MS, MPH<sup>6</sup>; Antoinette Stroup, PhD<sup>7</sup>; Lisa Paddock, PhD, MPH<sup>8</sup>; Sherry Grumet, MA, MS, LGC<sup>9</sup>; Yong Lin, PhD<sup>2</sup>; Julianne Ani, MPH<sup>1</sup>; Emily Heidt<sup>1</sup>; Anita Kinney, PhD, RN<sup>1</sup>

- <sup>1</sup> Rutgers Cancer Institute of New Jersey, New Brunswick, NJ
- <sup>2</sup> Rutgers Environmental Epidemiology and Statistics, Rutgers University School of Public Health, New Brunswick, NJ
- <sup>3</sup> Biostatistics, and Preventive Medicine, University of NM, Albuquerque, NM
- <sup>4</sup> University of North Texas Health Science Center, Fort Worth, TX <sup>5</sup> Stacy Goldstein Breast Cancer Center, LIFE Center, Medical Oncology, Rutgers Cancer Institute of New Jersey, New Brunswick, NJ
- <sup>6</sup> Biostatistics Shared Resource, UNM Comprehensive Cancer Center, University of New Mexico, Albuquerque, NM
- <sup>7</sup> Stoup Research Center, Rutgers Cancer Institute, New Brunswick, NJ
- <sup>8</sup> Cancer Surveillance Research Program, Rutgers Cancer Institute of New Jersey, New Brunswick, NJ <sup>9</sup> LIFE Center, Rutgers Cancer Institute of New Jersey, New Brunswick, NJ

Correspondence: cgl66@rutgers.edu

## Background

- Pathogenic variants (PVs) in cancer predisposition genes account for up to 20% of all cancers.
- National Comprehensive Cancer Network (NCCN) guidelines recommended cancer genetic risk assessment (CGRA) for all women diagnosed with ovarian, fallopian, and/peritoneal cancer or otherwise considered at risk for hereditary breast or ovarian cancer (HBOC).
- Less than one-half of eligible women receive CGRA.
- Underserved women from rural areas and racial/ethnic ethnic minorities even less likely to access this CGRA.

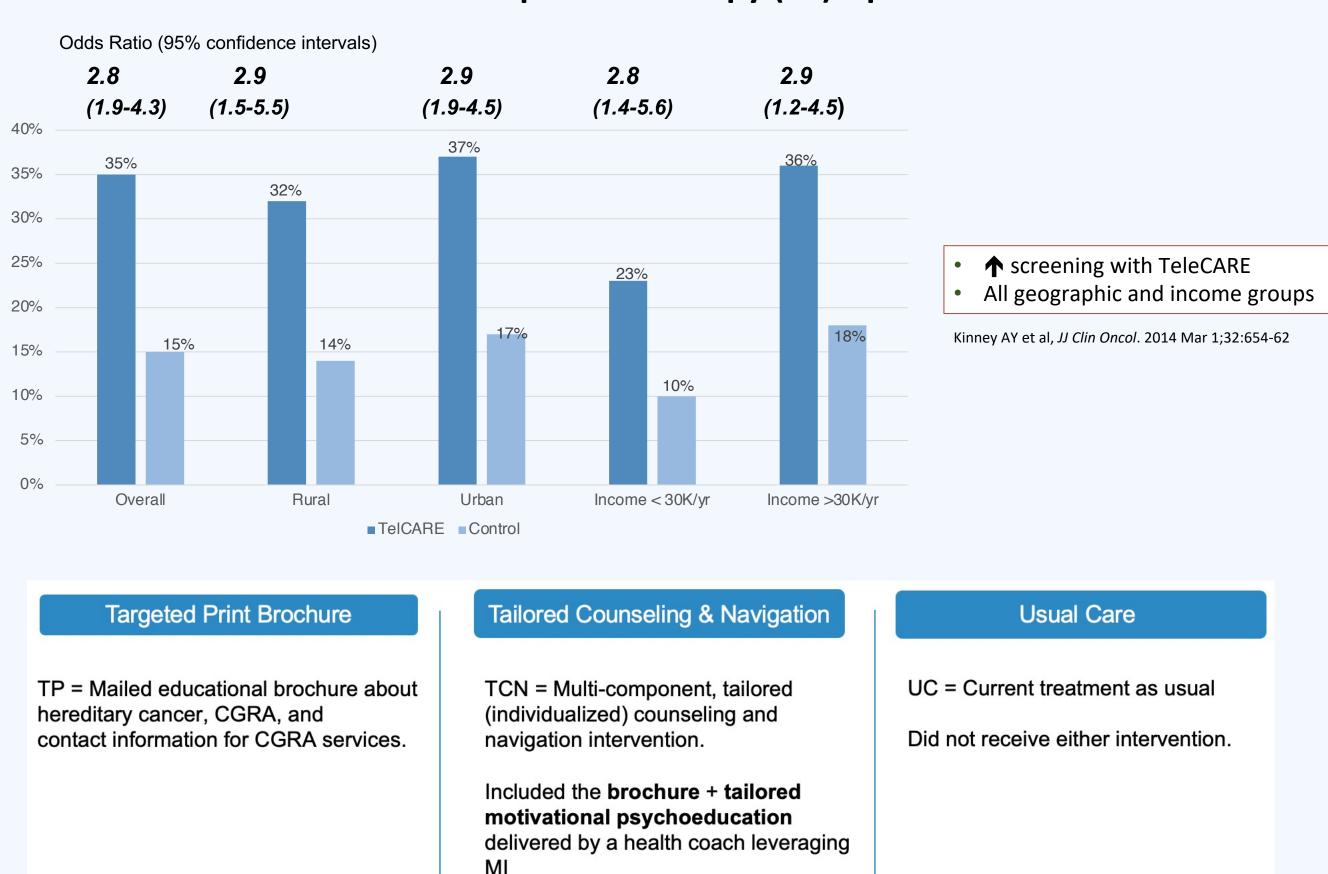
#### Purpose

- Initiated the The Genetic Risk Assessment for Cancer **Education and Empowerment (GRACE) Project**
- GRACE was grounded in the **Family CARE Cluster Randomized Trial**. Family CARE tested a theoretically-based, remote personalized cancer risk communication intervention (TeleCARE) against a generic print brochure on colonoscopy uptake.
- TeleCARE had nearly three times the colonoscopy uptake vs. the brochure.
- GRACE expanded on TeleCARE's tailored, multi-component intervention design with motivational psychoeducation navigation components and a printed educational brochure

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#### TeleCARE - 9-Month Follow-Up: Colonoscopy (CS) Uptake

### **Theoretical Framework**

GRACE's tailored communication intervention encouraged CGRA uptake by employing personalized risk communication messages targeting behavioral constructs drawn from three models:

1) Extended Parallel Process Model (EPPM): posits that risk messages arouse threat and efficacy appraisals.

- Threat = **perceived risk** of HBOC, **perceived severity** of HBOC - Efficacy = **response efficacy** - CGRA's utility reducing risk, **self-efficacy**, confidence obtaining CGRA

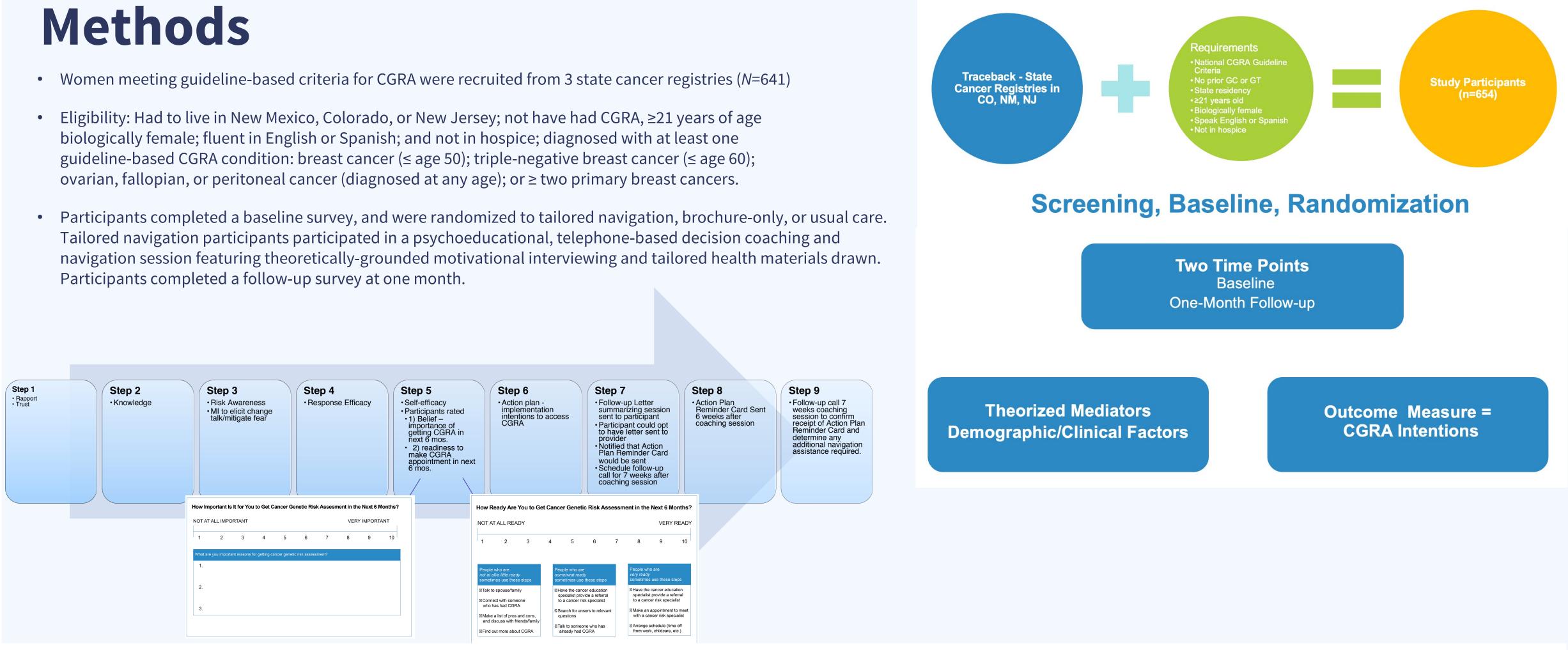
2) Health Action Process Approach (HAPA): Bridges gap between intentions and CGRA uptake; informed the action plan used in the ntervention

3) Ottawa Decision Support Framework (ODSF): cognitive factors to motivate informed decision-making,

#### Hypotheses

- Primary hypothesis: our theoretical variables mediated CGRA intentions from baseline to the one-month follow-up.
- We expected to see more significant improvements in the theorized mediators for participants randomized to the tailored navigation intervention compared to those who received only the brochure or usual care.
- Theoretical targets would vary by sociodemographic and clinical factors: race, place of residence, health literacy, and family history of breast and ovarian cancer (FBOC).

- ovarian, fallopian, or peritoneal cancer (diagnosed at any age); or ≥ two primary breast cancers.
- Participants completed a follow-up survey at one month.

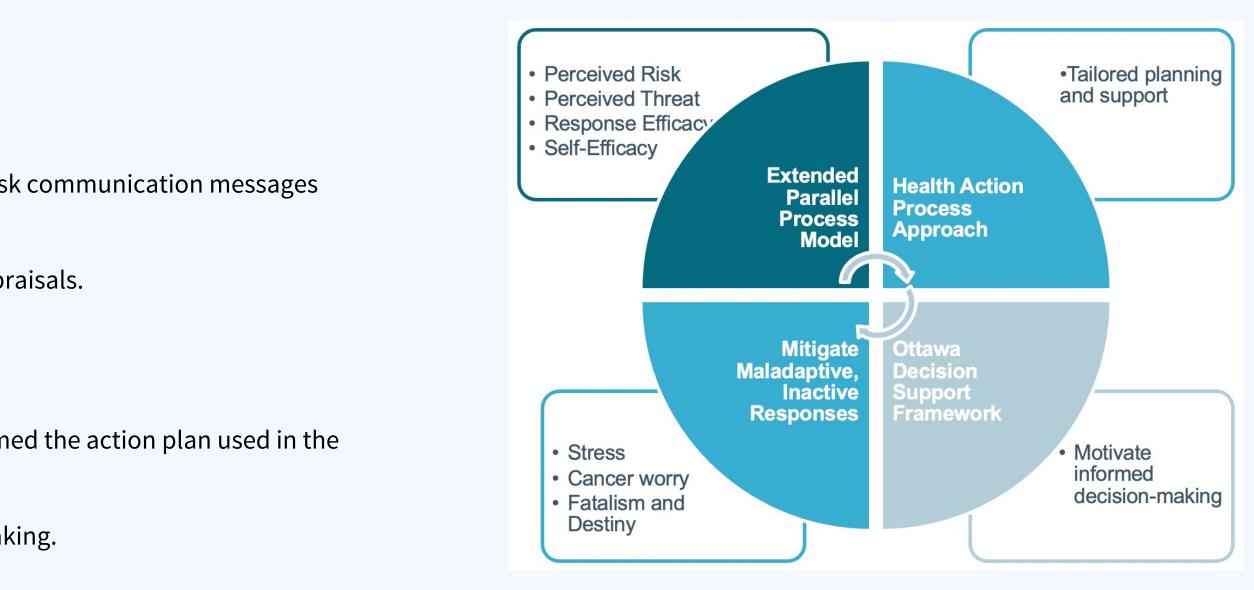


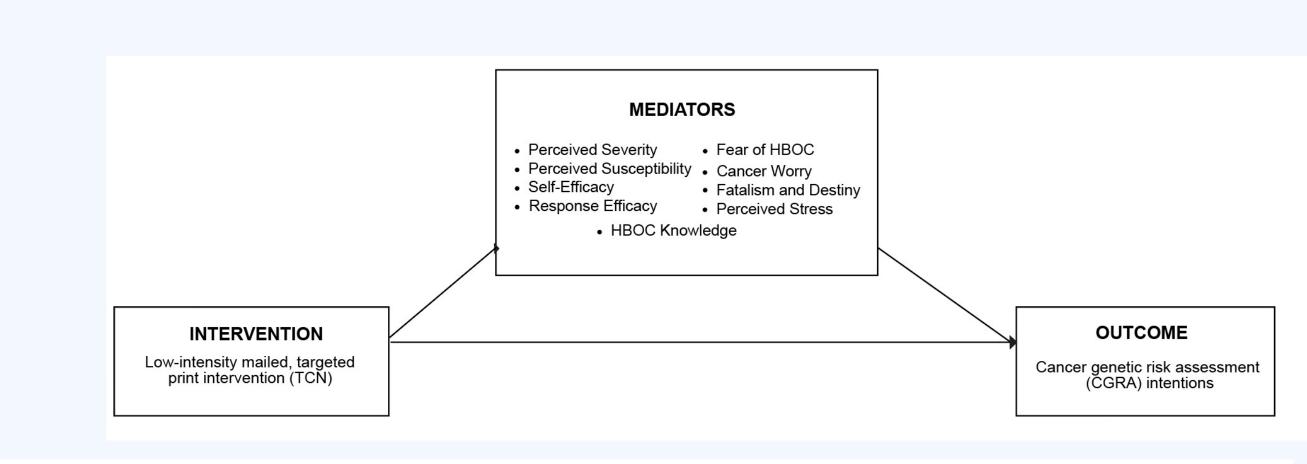
#### Results

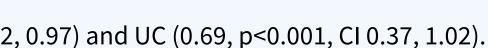
- Balanced randomization across groups.
- Tailored navigation improved CGRA intentions compared to brochure-only (0.64, p<0.001, CI 0.32, 0.97) and UC (0.69, p<0.001, CI 0.37, 1.02).
- Theoretical targets, perceived risk (0.77, p<0.05, CI 0.11, 1.44) and self-efficacy (0.67, p<0.05, CI 0.05, 1.28) mediated CGRA intentions in tailored navigation.
- Multimediation analysis indicated that these two variables contributed just over 15% to the direct effects of the intervention on CGRA intentions.
- Stratification of study arms showed significant pre-to-post improvements in tailored navigation vs. brochure-only for CGRA intentions among: on-Hispanic Whites, Hispanics, urban-dwellers, and those with low health literacy and no family history of breast and/or ovarian cancer.
- Stratification showed perceived self-efficacy improved for tailored navigation participants with no family history of breast and/or ovarian cancer.

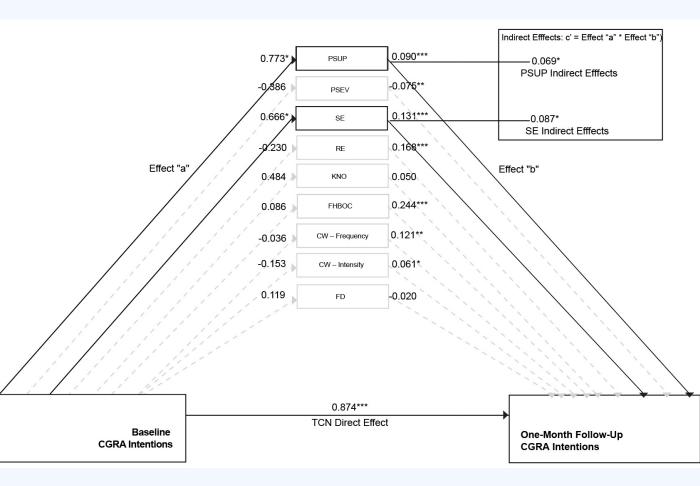
#### **Discussion: Implications/Future Directions**

- GRACE marked the first study testing a population level risk communication intervention to improve CGRA intention.
- Findings support use of tailored, theoretically grounded, remote communications interventions to increase intention to engage in CGRA.
- The tailored navigation group experienced significant increases in CGRA intentions vs brochure only and usual care.
- The tailored navigation intervention improved the theorized mediator variables, perceived susceptibility and self-efficacy, which contributed to direct effects of the intervention.
- Study was bolstered by a diverse sample; small subgroup sample sizes (e.g. for Blacks) limited ability to discern between-group changes in our theorized mediator variables and subgroup analyses.
- Impact of tailored navigation coaching session varied by race, place of residence, health literacy level, and family history of breast and ovarian cancer
- Health coaches in tailored navigation served as trusted informational resources, well-positioned to encourage genetic counseling and testing and cue increases in CGRA intentions.
- Future directions include assessing how CGRA intentions vary by levels of provider communication and social support.









Multi-Mediation+ Analysis for TCN, Baseline to One-Month Follow-U