Katapodi MC1,2, Ming C1, Northouse LL2, Duffy SA3, Duquette D4, Mendelsohn-Victor KE3, Million KJ4, Merajver SD5, Dinov ID6, Janz NK6

1University of Basel, Department of Clinical Research; 2University of Michigan, School of Nursing; 3Ohio State University, College of Nursing; 4Northwestern University, Feinberg School of Medicine; 5University of Michigan, School of Public Health; 6Statistics Online Computational Resource, School of Nursing, University of Michigan

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Background

- Women w/ breast cancer younger than 45 years old (YBCS) are about 25% of new cases; more likely to be hereditary breast and ovarian cancer (HBOC) syndrome cases
- National guidelines for YBCS recommend genetic evaluation (counseling and testing) to determine HBOC and annual clinical breast exams (CBE) and mammograms
- Underutilization of cancer genetic services and mammography, especially for Black YBCS
- 1st- and 2nd- relatives of YBCS have a 2.3 and 1.5 increased relative breast cancer risk respectively. Relatives of HBOC cases should initiate MRI screening at age 25 (MRI) or earlier based on family history.
- The challenges concerning YBCS and at-risk relatives are: identify them in large numbers and racially diverse sample
- low-resource ways to identify for genetic evaluation and cancer surveillance

Aims

Compare efficacy of two low-resource interventions delivered via postal mail, including targeted (more generic) versus tailored (person-specific) messages

The outcomes presented are

- Initiation of genetic testing for YBCS and cascade genetic testing for relatives
- Surveillance (CBE and mammography) based on national guidelines for YBCS and relatives
- Satisfaction, acceptance, and perceived usefulness of the interventions

Methods

Two-arm cluster randomized trial (RCT)
Stratified sample of 3,000 YBCS (1500 Black vs. 1500 White/other) Random selection from Michigan Cancer Registry w/ computer algorithm

- 25-64 y.o. at the time of study
- 20-45 y.o. diagnosed w/ invasive breast cancer or DCIS
- Michigan residents at the time of diagnosis
- Able to read English, provide informed consent
- Willing to invite one of their 1st or 2nd female relatives

Relatives had to be:

- Female and Cancer-free
- 25-64 y.o. at the time of study
- Able to read English, provide informed consent

Outcomes assessed at baseline and 8-month follow-up

<table>
<thead>
<tr>
<th>Outcomes for YBCS**</th>
<th>Black/White/Other n=87</th>
<th>Baseline</th>
<th>Follow-up**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had Genetic Testing</td>
<td>79 (9.0%)</td>
<td>107 (26.50%)</td>
<td>90 (24.87%)</td>
</tr>
<tr>
<td>Had CBE according to NCCN*** Guidelines</td>
<td>342 (85.32%)</td>
<td>333 (82.67%)</td>
<td>361 (90.50%)</td>
</tr>
<tr>
<td>Had mammography according to NCCN*** Guidelines</td>
<td>293 (74.89%)</td>
<td>272 (67.16%)</td>
<td>292 (74.05%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcome for Relatives</th>
<th>Black/White/Other n=344</th>
<th>Baseline</th>
<th>Follow-up**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Had Genetic Testing</td>
<td>52 (15.05%)</td>
<td>155 (44.00%)</td>
<td>66 (19.19%)</td>
</tr>
<tr>
<td>Had CBE according to NCCN*** Guidelines</td>
<td>268 (82.72%)</td>
<td>407 (118.03%)</td>
<td>286 (82.87%)</td>
</tr>
<tr>
<td>Had mammography according to NCCN*** Guidelines</td>
<td>194 (56.28%)</td>
<td>210 (58.58%)</td>
<td>186 (52.40%)</td>
</tr>
</tbody>
</table>

Results

- Tailored n = 308 and Targeted n = 808
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Conclusions

- Uptake of genetic testing in both arms increased approximately 5% (short-term follow-up, lack of referral from a healthcare provider, YBCS on average 11 years post-diagnosis)
- YBCS in the tailored arm more likely to report higher self-efficacy for genetic testing (not shown)
- Cascade genetic testing depends on YBCS having genetic testing first and identified with an HBOC-associated pathogenic variant
- 5% to 10% increase in CBE and mammography rates for YBCS and relatives
- Black YBCS reported higher self-efficacy and intention for genetic testing, higher satisfaction with intervention materials (data not shown)

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Please contact Prof. Dr. Maria C. Katapodi maria.katapodi@unibas.ch to discuss this poster