Population Study of Ovarian Cancer Risk Prediction for Targeted Screening and Prevention

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Figure S1. Distributions of the remaining lifetime ovarian cancer risks given by different model versions. Model predictions after excluding the identified BRCA1 mutation carrier and always considering family history information and that women do not carry a rare pathogenic ovarian cancer susceptibility variant. Models considered: Full – predictions under the full model; Polygenic Risk Scores (PRS) only – predictions considering the PRS only; Risk Factors (RF)- predictions considering only the epidemiological risk factors.
Table S1. Perceived benefits, risks, limitations or panel genetic testing/ovarian cancer risk assessment measured at baseline.

| Benefits                                                                 | Not at all important | Somewhat important | Very important | Does not apply |
|--------------------------------------------------------------------------|----------------------|--------------------|----------------|----------------|
|                                                                           | %  N                 | %  N               | %  N           | %  N           |
| To be reassured                                                          | 4.9 5/102            | 46.08 47/102       | 48.04 49/102   | 0.98 1/102     |
| To enhance cancer prevention                                             | 1.96 2/102           | 16.67 17/102       | 80.39 82/102   | 0.98 1/102     |
| To learn about my children’s risk.                                       | 3.92 4/102           | 15.69 16/102       | 54.95 56/102   | 25.49 26/102   |
| To make a decision about surgery to have my ovaries and tubes removed before cancer arises. | 13.27 13/98          | 32.65 32/98        | 44.90 44/98    | 9.18 9/98      |
| To benefit research or improve the health of other women                 | 1.01 1/99            | 17.17 17/99        | 80.81 80/99    | 1.01 1/99      |
| To make childbearing decisions                                           | 20.62 20/97          | 10.31 10/97        | 14.43 14/97    | 54.64 53/97    |
| To know if I need to get cancer screening tests more often.              | 8 8/100              | 28 28/100          | 61 61/100      | 3 3/100        |
| To make childbearing decisions                                           | 11.11 11/99          | 38.38 38/99        | 49.49 49/99    | 1.01 1/99      |

Table S2. Decision aid question responses for women who consented and who did not consent to the study.

| Decision aid questions                                                                 | Responses to individual questions | p-value (Fisher's exact test) |
|---------------------------------------------------------------------------------------|----------------------------------|-------------------------------|
|                                                                                       | Individuals who consented         | Individuals who did not consent|                                |
|                                                                                       | Against taking part | In favour of taking part | Neither in favour nor against taking part | Against taking part | In favour of taking part | Neither in favour nor against taking part |                                |
|                                                                                       | %     N    | %     N    | %     N   | %     N    | %     N     | %     N     | %     N    | %     N     |                                |
| My current worries about ovarian cancer make me feel...                              | 0 0/103 | 83.5 86/103 | 16.5 17/103 | 0 0/20 | 75 15/20 | 25 5/20 | 0.353 |
| Having genetic testing as part of this programme makes me feel.                       | 0 0/103 | 93.2 96/103 | 6.8 7/103  | 0 0/20 | 95 19/20 | 5 1/20  | 1     |
The possibility of learning about my risk of ovarian cancer as part of this study makes me feel...

|          | Disagree | Agree | Uns cute | Disagree | Agree | Uns cute |
|----------|----------|-------|----------|----------|-------|----------|
|          | %        | N     | %        | N        | %     | N        |
|          | 9.71     | 1/103 | 95.15    | 98/103   | 3.88  | 4/103    |
|          | 0        | 0/20  | 95       | 19/20    | 5     | 1/20     |

Although most women will be reassured that they are at low risk for ovarian cancer as part of participating in this programme, some women may learn that they are at high risk. This makes me feel.

|          | Disagree | Agree | Uns cute | Disagree | Agree | Uns cute |
|----------|----------|-------|----------|----------|-------|----------|
|          | %        | N     | %        | N        | %     | N        |
|          | 1.94     | 2/103 | 88.35    | 91/103   | 9.71  | 10/103   |
|          | 0        | 0/20  | 80       | 16/20    | 20    | 4/20     |

The possibility of learning genetic information that may be important for my family members makes me feel.

|          | Disagree | Agree | Uns cute | Disagree | Agree | Uns cute |
|----------|----------|-------|----------|----------|-------|----------|
|          | %        | N     | %        | N        | %     | N        |
|          | 0        | 0/103 | 94.17    | 97/103   | 5.83  | 6/103    |
|          | 0        | 0/20  | 95       | 19/20    | 5     | 1/20     |

The benefits of taking part in this programme make me feel.

|          | Disagree | Agree | Uns cute | Disagree | Agree | Uns cute |
|----------|----------|-------|----------|----------|-------|----------|
|          | %        | N     | %        | N        | %     | N        |
|          | 0        | 0/103 | 98.06    | 101/103  | 1.94  | 2/103    |
|          | 0        | 0/20  | 95       | 19/20    | 5     | 1/20     |

The risks of taking part in this programme make me feel.

|          | Disagree | Agree | Uns cute | Disagree | Agree | Uns cute |
|----------|----------|-------|----------|----------|-------|----------|
|          | %        | N     | %        | N        | %     | N        |
|          | 3.88     | 4/103 | 64.08    | 66/103   | 32.04 | 33/103   |
|          | 0        | 0/20  | 60       | 12/20    | 40    | 8/20     |

My fears/worries/concerns about screening make me feel.

|          | Disagree | Agree | Uns cute | Disagree | Agree | Uns cute |
|----------|----------|-------|----------|----------|-------|----------|
|          | %        | N     | %        | N        | %     | N        |
|          | 0.97     | 1/103 | 67.96    | 70/103   | 31.07 | 32/103   |
|          | 5        | 1/20  | 65       | 13/20    | 30    | 6/20     |

My fears/worries/concerns about the possibility of having surgery to remove my ovaries make me feel.

|          | Disagree | Agree | Uns cute | Disagree | Agree | Uns cute |
|----------|----------|-------|----------|----------|-------|----------|
|          | %        | N     | %        | N        | %     | N        |
|          | 9.71     | 10/103| 63.11    | 65/103   | 27.18 | 28/103   |
|          | 20       | 4/20  | 55       | 11/20    | 25    | 5/20     |

If I decide not to take part, I may regret my decision if I develop ovarian cancer in the future.

|          | Disagree | Agree | Uns cute | Disagree | Agree | Uns cute |
|----------|----------|-------|----------|----------|-------|----------|
|          | %        | N     | %        | N        | %     | N        |
|          | 9.71     | 10/103| 88.35    | 91/103   | 1.94  | 2/103    |
|          | 10       | 2/20  | 75       | 15/20    | 15    | 3/20     |

Mean of total scores *

|          | Disagree | Agree | Uns cute | Disagree | Agree | Uns cute |
|----------|----------|-------|----------|----------|-------|----------|
|          | %        | N     | %        | N        | %     | N        |
|          | 8.1      |       | 7.4      |          | 0.14  | **       |

23/123 individuals viewed the decision aid more than once. For these 23 cases, the responses to the first view are included in this table. * The responses to the individual decision aid questions were scored accordingly: 1 = in favour of taking part, −1 = against taking part, 0 = neither in favour or against taking part, 1 = agree, −1 = disagree, 0 = unsure. Women with total scores between −10 and −1 were considered to be “leaning-against taking part”; scores between 0 and 5 “undecided”; and scores between 6 and 10 “leaning-towards taking part”. ** Wilcoxon rank-sum test.
Table S3. Mean scores at repeat viewings for participants who viewed the decision aid on multiple occasions.

| DA viewing attempt | Number of participants viewing DA on multiple occasions according to number of attempts (N) | Mean score (SD, range) at each attempt |
|--------------------|-------------------------------------------------------------------------------------------|-----------------------------------------|
| 1st attempt        | 23                                                                                        | 7.739 (SD = 2.378, range 3–10)          |
| 2nd attempt        | 23                                                                                        | 8.348 (SD = 2.058, range 2–10)          |
| 3rd attempt        | 17                                                                                        | 8.588 (SD = 1.906, range 4–10)          |
| 4th attempt        | 13                                                                                        | 7.846 (SD = 1.819, range 4–10)          |
| 5th attempt        | 6                                          | 8 (SD = 2.449, range 4–10)              |
| 6th attempt        | 3                                           | 9 (SD = 1.732, range 7–10)              |
| 7th attempt        | 1                                           | 10                                      |

DA – decision aid; SD – standard deviation. 23/123 individuals viewed the decision aid on more than one occasion. This table depicts the mean scores of these 23 individuals at baseline (first attempt) and at repeat viewing attempts.

Table S4. Linear random-effects mixed models for trends in decision aid scores in participants viewing the decision aid on multiple occasions.

| Mixed models for trends | Coef. | Std. Err | p > |z|  | 95% CI       |
|-------------------------|-------|----------|-----|---|----------------|
| BL attempt vs. attempt 2 | 0.609 | 0.273    | 0.03| 0.054 to 1.111 |
| BL attempt vs. attempt 3 | 0.68  | 0.305    | 0.03| −0.002 to 1.294|
| BL attempt vs. attempt 4 | 0.356 | 0       | 0.295| −0.331 to 0.939|
| BL attempt vs. attempt 5 | 0.715 | 0.456    | 0.123| −0.183 to 1.599|
| BL attempt vs. attempt 6 | 0.701 | 0.615    | 0.259| −0.535 to 1.936|
| BL attempt vs. attempt 7 | 0.584 | 1.019    | 0.569| −1.308 to 2.655|

BL – baseline; Coef. – coefficient; Std. Err – standard error; Univariate analysis comparing mean decision aid scores at baseline (first attempt) to repeat attempts for the 23/123 individuals who viewed the decision aid on multiple occasions.