Evidence Summary Title:
Interventions to promote mammography among ethnic minority women: Evidence and implications for public health

Review Quality Rating: 7 (strong)

Review on which this evidence summary is based:

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This is an evidence summary written to condense the work of the authors of this systematic review, referenced above. The intent of this summary is to provide an overview of the findings and implications of the full review. For more information on individual studies included in the review, please see the review itself.

Review content summary
This meta-analysis of 14 randomized experimental studies and 9 non-randomized prospective studies (22,849 participants), aimed to determine the effectiveness of interventions to increase mammography screening rates among asymptomatic ethnic minority women. To be included, studies had to: 1) aim to increase use of mammography, alone or in combination with other health behaviours; 2) feature samples with more than 40% of women of an ethnic minority background (i.e. Asian, African American, or Hispanic); 3) measure adherence to mammography screening as the primary outcome; 4) use a experimental or quasi-experimental design; and, 5) cover the period between September 2000 and August 2008. Interventions described in this review included: culturally-tailored printed material, peer or lay health worker education/support, telephone counselling, and provision of low- or no-cost mammograms. The outcome measured – usually by self-report – was the frequency of mammography screening. Authors report that there was an average of 7.8% increase in the rate of mammography use for minority women in the treatment groups receiving a variety of interventions. Access-enhancing interventions yielded the biggest increase in mammography use (15.5%), followed by individually directed interventions (9.9%). The authors stressed the importance of further analyses.

Comments on this review's methodology
This is a methodologically strong meta-analysis. A focused clinical question was clearly identified. Appropriate inclusion criteria were used to guide the search. One limitation was that a comprehensive search was not employed given only health and psychological databases and handsearching were employed, and the search was limited to English language articles. Primary studies were assessed for methodological quality using the following criteria: study design, outcome measure, clarity of outcome definition, and information on attrition. The methods were described in sufficient detail to allow replication and two reviewers were involved in quality appraisal. Any discrepancies in appraisal results were resolved by discussion. The results of this review were transparent. Results were clearly presented narratively and in tables. Heterogeneity was assessed, and appropriate analytical methods (i.e. random effects) were employed to enable the synthesis of study results. Authors completed subgroup and sensitivity analyses in order to assess the effect of study quality and or study characteristics on effect sizes.

Why this issue is of interest to public health
Breast cancer is the most common cancer in Canadian women (other than non-melanoma skin cancer), and is the second-leading cause of cancer deaths.1,2 It is expected that one in nine Canadian women will develop breast cancer during her lifetime.2,3 The Canadian Cancer Society’s estimates that 23,200 Canadian women will be diagnosed with breast cancer in 2010, while 5,300 will die of it.2 In Canada, more than 97% of breast cancers found by organized screening programs are at an early stage, which improves the chance of survival through earlier treatment initiation.3,4 In some cases, mammography detects cancers that would not be felt for another 2 to 4 years.3 Mammography is the most common secondary prevention method, and is still considered the most efficacious screening tool for breast cancer, especially for women between the ages of 50 – 69.3,5,6 A recent literature review, however, found that the most common barrier to breast screening identified in the Canadian literature was membership in an ethnic minority.5

Evidence and implications
Evidence points are not weighted in order of the strength of evidence.
**What’s the evidence?**

1. **Interventions to increase mammography among ethnic minority women (23 studies)**
   1.1. In a pooled analysis, interventions were effective in increasing mammography use among ethnic minority women (23 studies)
   1.1.1. Following an intervention, mammography use increased by 7.8%.
   1.1.2. Mean weighted effect size (MWES) was 7.8% (95% CI 0.043 – 0.113).
   1.2. The largest effect was seen for access enhancing interventions (e.g. mobile vans and reduced-cost mammograms) (6 studies)
   1.2.1. Following an access enhancing intervention, mammography use increase by 15.5%.
   1.2.2. MWES was 15.5% (95% CI 0.087 – 0.223).
   1.3. Individually directed interventions (e.g. one-on-one counselling, tailored and non-tailored letters and reminders, and telephone counselling) had the 2nd largest effect size (19 studies)
   1.3.1. Following an individually directed intervention, mammography use increased by 9%.
   1.3.2. MWES was 9% (95% CI 0.073 – 0.110)
1.4. Effect sizes for interventions involving mass media, community education, or social network interventions were not statistically significant.

2. **Individually tailored interventions to increase mammography use among ethnic minority women (4 studies)**
   2.1. Interventions tailored to the individual’s characteristics based on behavioural theory were more effective than non tailored interventions.
   2.1.1. In 4 of the 23 studies, individually tailored interventions resulted in an increase in mammography use of 10%, compared to a 7.6% increase for non-individually directed interventions.
   2.1.1.1. MWES was 0.101 (95% CI 0.057 – 0.145) for tailored interventions, p<.001
   2.1.1.2. MWES was 0.076 (95% CI 0.035 -0.116) for non tailored interventions, p<.001

3. **Theory based interventions to increase mammography use among ethnic minority women (14 studies)**
   3.1. Theory based interventions resulted in a bigger effect size compared to non-theory based interventions
   3.1.1. In 14 of the 23 studies, theory based interventions (e.g. tailoring interventions to individual characteristics) resulted in an increase in mammography use of 9%, compared to an increase of 6.2% for non-theory based interventions.
   3.1.1.1. MWES was 0.090 (95% CI 0.042 – 0.137) for theory based interventions, p<.05
   3.1.1.2. MWES was 0.062 (95% CI 0.009 – 0.116) for non theory based interventions, p<.05

4. **Cultural strategies to increase mammography use among ethnic minority women (21 studies)**
   4.1. In 14 studies, ethnically matched intervention delivery (e.g. ethnically matched to population) increased mammography use by 6.7% (95% CI 0.015 – 0.120).
   4.2. In 15 studies, culturally matched interventions (e.g. culturally matched to population) increased mammography use by 5.1% (95% CI 0.009 – 0.092).
   4.3. In 5 studies involving community members (as a cultural strategy), the effect size was 7.4%, though this result was non-significant MWES of 0.074, (95% CI -0.055 – 0.203).

5. **Interventions in healthcare and community settings to increase mammography use among ethnic minority women (23 studies)**
   5.1. Interventions in healthcare settings resulted in a bigger effect size compared to interventions in community settings
   5.1.1. In 4 studies, interventions in healthcare settings

**Implications for practice and policy:**

1. **Interventions to increase mammography among ethnic minority women.**
   1.1. Interventions that aim to increase mammography use among ethnic minority women should include access enhancing (e.g. mobile vans and reduced cost mammograms) and individually directed interventions (e.g. one-on-one counselling, tailored and non-tailored letters and reminders, and telephone counselling).
   1.2. Additional syntheses should be conducted to assess the effect of mass media, community education, and social network interventions.

2. **Individually tailored interventions to increase mammography use among ethnic minority women.**
   2.1. Interventions that aim to increase mammography use among ethnic minority women should tailor interventions to individuals’ characteristics (e.g. tailoring intervention materials) using behavioural theory.

3. **Theory based interventions to increase mammography use among ethnic minority women.**
   3.1. Interventions that aim to increase mammography use among ethnic minority women should be theory based (e.g. Health Belief Model).

4. **Cultural strategies to increase mammography use among ethnic minority women.**
   4.1. Interventions that aim to increase mammography use among ethnic minority women should use ethnically matched delivery methods and culturally matched (including interventions involving community members) in interventions.

5. **Interventions in healthcare and community settings to increase mammography use among ethnic minority women.**
   5.1. Interventions that aim to increase mammography use among ethnic minority women should consider implementing interventions in healthcare settings.
5.1.1.1. MWES was 0.113 (95% CI 0.081 – 0.114).

5.1.2. In 19 studies, interventions in community settings increased mammography use by 6.7%.

5.1.2.1. MWES was 0.067 (95% CI 0.027 – 0.107).

6. Interventions for specific ethnic groups to increase mammography use (23 studies)

6.1. Among African American women, interventions increased mammography use by 9.8% (95% CI 0.023 -0.174).

6.2. Interventions increased mammography use by 9.4% among Asian and Pacific Islanders, MWES 0.094, (95% CI 0.000 – 0.189)* and 3.6% among Hispanic women MWES 0.036, (95% CI -0.034 – 0.106)*. * These results are not significant.

6. Interventions for specific ethnic groups to increase mammography use

6.1. Interventions that aim to increase mammography use among African American women in the United States should employ tailored, effective strategies specific to the population of interest.

7. Methodological Issues with the Primary Studies in the Review

7.1. Nine of the 23 studies were non-randomized, community based trials of low methodological quality, although they had large sample sizes.

7.2. Studies in this review were limited to sample populations in the United States of America.

7.3. Several of the analyses in the review included only a few studies.

8. Cost Benefit or Cost-effectiveness Information

8.1. No cost related information was included in this review

8.2. Future research should assess cost benefit or cost-effectiveness of the interventions.

References used to outline issue


Other quality reviews on this topic


**Related links**

- Canadian Cancer Society [http://www.cancer.ca/sitecore/content/Home.aspx](http://www.cancer.ca/sitecore/content/Home.aspx)

**Suggested citation**


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