

Introduction

Breast cancer is a leading cause of morbidity and mortality for women worldwide. In New Zealand breast cancer affects around 2,750 (killing over 600) women annually. The Breast Screening Aotearoa national program offers women aged 45-69 free mammograms biannually

(Kearney & Murray, 2009; National Screening Unit, 2013; Breast Cancer Aotearoa Coalition, 2010).

Practice Issue

Psychological distress for women such as anxiety and stress caused by false positive results and over diagnosis.

Benefits of Mammography Screening:

► Decreased Mortality

- In populations with established mammography screening programs breast cancer mortality has been reduced by 15% to 25% and even up to 51%.

Country	Year	Age of women	Mortality reduction
UK	2010	50-69	28%
Florence Italy	2012	50-59	45%
Florence Italy	2012	60-69	51%
USA	2009	50-69	15%-23%
(Duffy et al., 2010; Puliti et al., 2012; Mandelblatt et al., 2009)			

► Reduced treatment toxicity

- Due to early detection and diagnosis (Schousboe, Kerlikowske, Loh, & Cumming, 2011; Kaplan & Malmgren, 2013).

MAMMOGRAPHY SCREENING:
HARMS VERSUS BENEFITS



Harms of Mammography Screening:

► Over diagnosis

- “The diagnosis of cancer as a result of screening that would not have been diagnosed in the women’s life-time had screening not taken place” (Duffy et al., 2010 p.25).
- Over diagnosis can lead to unnecessary:
 - Lumpectomies
 - Mastectomies
 - Chemotherapy
 - Radiation treatment
 - Psychological distress (Kearney & Murray, 2009).

Country	Year	Age of women	DCIS	Over-diagnosis
Norway	2012	50-69	Exclusive	18%-25%
Canada	2014	50-59	Exclusive	22%
Chicago USA	2010	40-59	Exclusive	35%
Chicago USA	2010	40-59	Inclusive	52%
(Kalager, Adami, Bretthauer, & Tamimi, 2012; Kalager, Adami, & Bretthauer, 2014; Keen, 2010)				

► False positive results

- 50%- 63% of women who undergo mammography screening can expect at least one false positive in their lifetime.
 - Younger women are at greatest risk for false positives because of denser breast tissue.
 - False positive results can lead to:
 - Negative psychological consequences
 - Anxiety
 - Depression
 - Negative impact on sleep
 - Sexuality
- (DeFrank et al., 2012; Brodersen & Siersma, 2013; Mandelblatt et al., 2009).

Recommendations & Conclusion

- Further research to improve understanding of tumor progression. This will allow for the most appropriate treatment to be selected, decreasing the harm of over diagnosis
- Increased education to women regarding harms and benefits of mammography screening. This will allow women to make informed decisions.
- The harms of mammography screening can be minimised and do not outweigh the benefits of screening programs (Kaplan & Malmgren, 2013; Puliti et al., 2012).

References

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The search question has been formulated using the PECOT model.

Question: What harm does mammography screening cause?

PECOT category	Information relating to question	Explanation
Population	45-69	This is the age range recommended by the Ministry of Health for breast cancer screening. It is this population who receive free mammograms under the Breast Screening Aotearoa national program.
Exposure (intervention)	Women who participate in mammography breast cancer screening.	I will look at articles, which study the effectiveness of mammograms, and the effect mammograms have on participants.
Comparison / Control	Do the potential negative side effects of having a mammogram outweigh the benefits?	To explore if mammograms cause more harm to participants than benefits.
Outcome	Mammograms are still recommended despite potential harms and risks.	Mammograms are recommended in New Zealand as well as worldwide through the World Health Organization.
Time	Not applicable	Not applicable

PECOT Question: In women aged 45-69 years as recommended in New Zealand does mammography screening result in more negative side effects than benefits to participants?

Reference

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