



Message Framing for Mammography Use: The Moderating Role of Perceived Risk

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Introduction

How can message framing be used to promote adherence to mammography?

Health messages can emphasize either the benefits of adherence to a health behavior (gain framed message) or the costs of nonadherence (loss framed message). How should communications about mammography be framed to promote adherence based on a woman's perceived risk of breast cancer?

Prospect Theory (Kahneman & Tversky, 1979) proposes that **risk shapes how people respond to gain and loss framed messages**. Prospect Theory predicts that-

- Framing outcomes as **losses** makes people **more risk-seeking** in their choices.
- Framing outcomes as **gains** makes people **more risk-averse** in their choices.

Applied to cancer screening, perceived risk of cancer should shape how "risky" women view a mammogram:

- Women with **high perceived risk** of cancer should view a screening as a **high-risk behavior**.
- People with **low perceived risk** of cancer should view a screening as a **low-risk behavior**.

Aim

The present study aimed to test whether the effectiveness of gain- and loss-framed messages about mammography depend on women's perceived susceptibility to breast cancer.

Hypotheses

Loss framed messages would promote higher rates of screening than gain-framed messages for women who perceived a relatively **high risk** of breast cancer.

Gain framed messages would promote higher rates of screening than loss-framed messages for women who perceived a relatively **low risk** of breast cancer.

To date, no study has tested these predictions in the context of cancer screenings.

Method

Participants were 355 ethnically diverse women aged 40 years and older recruited from a hospital waiting room. The mean age was 51 years, with ages ranging from 40 to 85 years. See **Table 1** for sample characteristics.

To be eligible for the study, women had to be without a personal history of breast cancer, as well as having been nonadherent to national mammography screening guidelines (no mammogram within past 12 months).

Measures of **perceived risk of breast cancer** were obtained with a 4-item scale ($\alpha = .86$) developed specifically for breast cancer (Champion, 1999)

Participants were randomly assigned to view either a loss framed or gain framed video presentation about breast cancer and the importance of mammography (**Figure 1**).

At 3 months post study, **self-reported mammography** was assessed with a single item ("Have you obtained a mammogram within the past 3 months?" YES/NO)

Loss Framed Content:

"When a woman does not get regular mammograms, she is not doing her best to detect breast cancer early. And, *failing to detect breast cancer early can cost her life.*"

Gain Framed Content:

"When a woman gets regular mammograms, she is doing her best to detect breast cancer early. And, *detecting breast cancer early can save her life.*"

Figure 1. Examples of framed message content presented in videos.

Results

Perceived breast cancer risk significantly moderated the effectiveness of framed messages ($p < .05$).

Contrary to predictions, no gain framed advantage was found among women with low (-1 SD) perceived risk of breast cancer.

Among women with average (mean) and high (+1 SD) perceived risk of breast cancer, there was a significant advantage of loss over gain framed messages (p 's $< .05$ and $.01$). See **Figure 2**.

Characteristic	%
Ethnicity	
Caucasian	48.6
African American	48.6
Other	2.8
Education	
No HS Diploma/GED	25.9
High School Diploma/GED	49.6
More than HS Diploma/GED	24.5
Marital Status	
Never Married	22.7
Married	43.1
Separated/Divorced	28.8
Widowed	5.3
Health Insurance	
Yes	64.1
No	31.4

Table 1. Sample Demographic Characteristics (N=355)

Ever had a mammogram?
 Yes → 69.2%
 No → 28.6%

Family history of breast cancer?
 Yes → 17.9%
 No → 82.1%

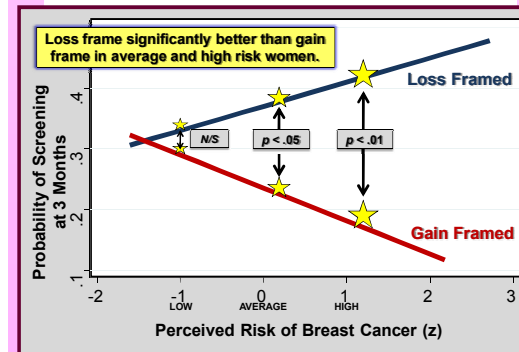


Figure 2. Screening rates at 3 month follow-up.

Conclusion

Our findings support the usefulness of loss framed messages in the promotion of mammography utilization, particularly among nonadherent women with high perceptions of breast cancer risk.

No gain framed advantage was found among women with low perceived risk of breast cancer. Although this finding is contrary to the predictions of Prospect Theory, it may be due to the fact that **even women who perceived relatively low risk of breast cancer still viewed obtaining a mammogram to be a risky behavior**.

Future research is needed to clarify how best to frame mammography communications to promote adherence among women who perceive low risk of breast cancer.

Additionally, the relationship between perceived risk of breast cancer and perceived riskiness of obtaining a mammogram should be examined further in the context of framed health messages.

Literature Cited

- Champion, V.L. (1999). Revised susceptibility, benefits, and barriers scale for mammography screening. *Research in Nursing and Health*, 22, 341-348.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47, 263-291.

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Further Information

Please contact jupdegr1@kent.edu. More information on this and related projects can be obtained at <http://dept.kent.edu/psychology/SHElab/index.html>