

Communicating CVD Prevention to
Young Women:
The Role of Risk Factors and Message
Frames

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Abstract

Awareness of cardiovascular disease (CVD) as a serious health threat and knowledge of how to prevent it are low among young U.S. women (aged 18 – 24 years). Few studies have investigated to what extent women with CVD risk factors differ in how they process prevention information and the role of message framing strategies in educational and behavioral outcomes. **Methods:** This study employed a 2 (gain vs. loss) x 2 (present vs. future) pre-test/post-test factorial design to assess the main and interactive effects of risk factors (personal and family history) and message framing variables on changes in knowledge, attitudes, beliefs, and behavioral intentions after exposing 395 young women at random to one of four prevention messages. **Results:** Participants had low knowledge about how to prevent CVD and were unsure of the personal relevance of CVD information at pre-test. Message frames and risk factors significantly interacted such that women with at least one personal risk factor had the greatest increase in self-efficacy if they were exposed to a gain-framed message. By contrast, loss-framed messages among women with a family history of high blood pressure or cholesterol had greater increases in behavioral intentions compared to women with a similar history exposed to a gain-framed message. An opposite trend was found among women with no parental history; those exposed to a gain-framed message showed a greater increase in intent compared to those exposed to a loss-framed message. **Conclusion:** Results imply that message designers should evaluate the potential role of risk factor history and message frames to identify the optimal conditions to achieve desired behavioral outcomes among those at elevated risk.

Overview

- Purpose
- Theoretical Framework
 - Elaboration Likelihood Model
 - Independent and dependent variables
- Method
 - Message development and evaluation
 - Before/after experimental design
- Results
- Implications

Purpose

- Under what circumstances are young women motivated and able to process information about heart disease prevention?
 - What are important characteristics of the person?
 - What are important characteristics of the information exposure (the message)?

Theoretical Framework: Elaboration Likelihood Model

- The greater a person's motivation and ability to process information, the more likely that information will be carefully evaluated / elaborated. (Petty & Cacioppo, 1986)
 - Two routes to information processing
 - Peripheral route (low motivation / low ability)
 - Central route (high motivation / high ability)

Motivation and Ability Variables:

- Motivation Variables:

- **Risk factor status: personal and family history**

- Smoking, overweight, high blood pressure and cholesterol, heart attack, stroke, diabetes

- **Heart disease risk perceptions:**

- Is heart disease information relevant to me?
 - Am I susceptible to heart disease?

- Ability Variables:

- Prior knowledge about heart disease prevention

- Emotional distractions: State positive / negative affect

Information Processing

Outcome Variables

- Changes before/after exposure to heart disease prevention message:
 - Heart disease knowledge
 - Perceptions of CVD risk and prevention
 - Self-efficacy to prevent CVD
 - Intentions to change health behaviors
 - Intent to monitor blood pressure and cholesterol

Method:

Two Phase Approach

● **Phase One: Message Development**

- 90-minute in-depth individual interviews (n = 11)
 - Qualitative methods used to transcribe, code, and analyze audio-tape recorded interviews
 - Focus on perceptions of heart disease information relevance
 - Themes used to design experimental messages

- Messages pilot-tested, focus group discussions (n = 24)
 - 4 print messages, 2 x 2 factorial design:
 - Positive vs. negative frame
 - positive (gains associated with preventing heart disease)
 - negative (losses associated with not preventing heart disease)
 - Present vs. future time orientation
 - Gains or losses associated with today vs. long-term future

Method continued

- Phase Two: Experimental Design (n= 395)

**Pre-test → (random assignment) *
Message Exposure (2 minutes) →
Post-test**

- *random assignment to one of four messages, exposure was a timed 2-minute reading task in a controlled environment

Qualitative Interview Results: Message Development

- **Qualitative Interview Themes:**

- **“What does being healthy mean to you?”**

- (Gains associated with prevention activities)**

- independence, optimum performance,
- motivation to socialize,
- psychological well-being, and
- receiving reinforcement for doing healthy activities.

- **“What does not being healthy mean to you?”**

- (Losses associated with not being healthy)**

- lacking energy, feeling depressed,
- negative feedback about appearance, and
- feeling regret.

Results:

Message Evaluation

- Phase Two study participants (n= 395):
 - Convenience sample of eastern U.S. college females (n= 4 colleges)
 - Mean age 18 years, 65.7% white
 - Majority reported family history of heart disease:
 - 67.5% had a Parent History (PH) or Grandparent History (GPH) of heart attack, stroke, or diabetes
 - 60% had a PH of high blood pressure or cholesterol
 - 50.4% had a PH of smoking
 - 48.7% had a PH of overweight
 - 39% had one or more personal risk factors

Results continued:

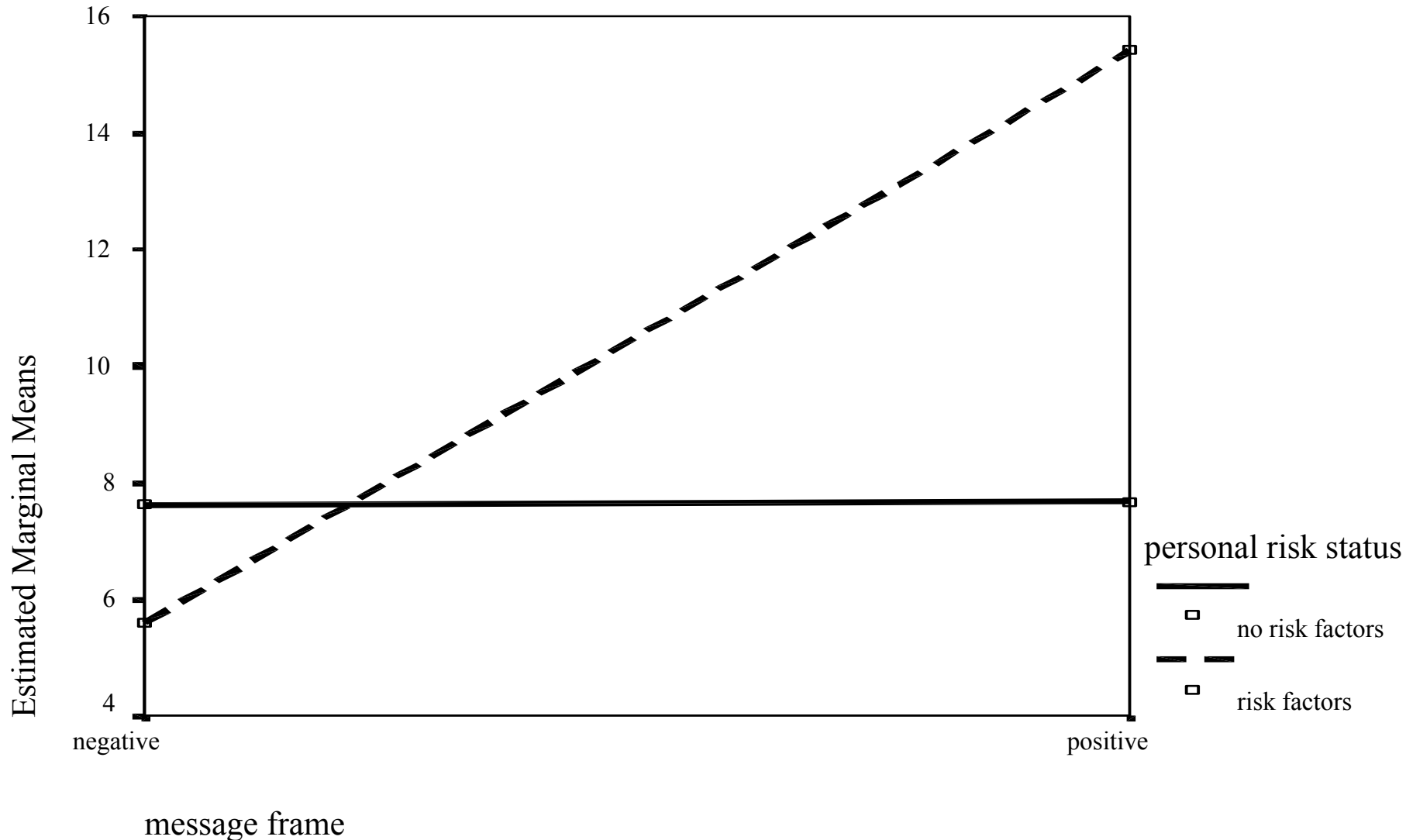
Motivation and Ability

- Low knowledge, awareness and perceived relevance at pre-test
 - Uncertain about personal relevance of CVD information
 - < 9% rated “very well” or “well” informed about CVD
 - 53% exposed to CVD info. within past 12 months.
- Perceptions of the personal relevance of CVD info. was positively correlated with:
 - Perceptions of being well informed
 - Having a family history
 - perceptions of greater susceptibility

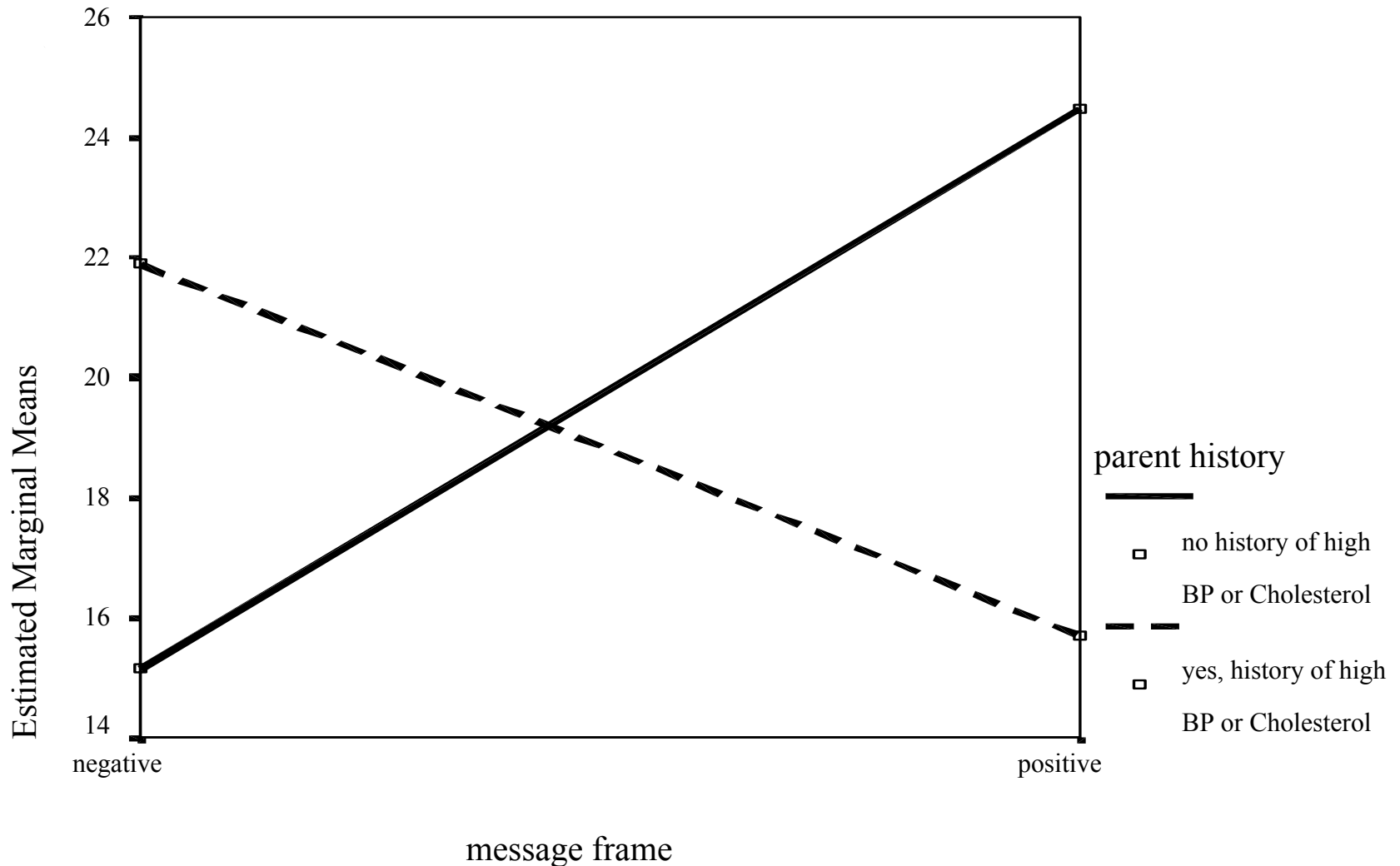
Results continued:

- Health history and message frames significantly interacted on change in health perceptions following message exposure:
 - Change in self-efficacy perceptions
 - Positive framed messages more effective for women with personal risk factors for heart disease
 - Change in behavioral intentions
 - Negative framed messages more effective for women with parental history of heart disease
 - Positive frame messages more effective for women with no parental history of heart disease

Change in Perceived Self-Efficacy to Prevent Heart Disease: Personal Risk Status X Message Frame



Change in Intent to Monitor BP or CHOL: Parental History Status X Message Frame



Results continued:

- **Change in Health Perceptions:**

- Greater increases in the perceived relevance of heart disease information was significantly correlated with more cognitive and affective elaborations.
- Greater increases in perceptions of heart disease susceptibility correlated with greater increases in state negative affect and more affective statements (not cognitive).

- **Greater increase in state negative affect:**

- correlated with greater information processing.

Implications

- Researchers and message designers should determine the optimal message frames to achieve desired outcomes, using risk factor status as an audience segmentation variable
 - Health history influences health risk and health information relevance perceptions
 - Health history interacts with processing of heart disease prevention messages
- Health communication and health behavior change experts should study affective as well as cognitive processes leading to changes in attitudes and behavior
 - Health perceptions can be changed through cognitive and affective processes, although dominant theories of health behavior change tend to focus on cognition