

Effects of Message Framing on Diabetes Screening Attitudes and Behavior

Summary: Loss framed messages were more effective than gain framed messages in encouraging completion of the diabetes screening quiz. Although the results for attitudes toward the screening quiz followed the trend, they did not reach the conventional criterion for statistical significance (i.e., $p < .05$). Relative to the other two types of message, loss framed messages increased participants' perceptions of their susceptibility to diabetes.

Notes: Loss framed messages outline the negative consequences of failing to comply with a message or highlight the benefits that will be missed by failing to comply. Gain framed messages highlight the benefits for complying or the negative consequences that will be avoided through complying. In this case, the control message simply described the history of diabetes research.

Hypotheses/Research Questions

H1: Loss framed messages will produce (a) more positive attitudes towards to diabetes screening and (b) greater screening participation than gain framed messages or a control message.

RQ1: Are there any differences in the effects positive and negative outcomes in gain or loss framed messages on (a) attitudes and (b) screening participation?

H2: Loss framed message will foster greater perceptions of diabetes (a) susceptibility and (b) severity than gain framed messages or a control message.

Design and Procedure

A 2 (kernel language: gain /loss) X 2 (outcome: desirable/undesirable) between participants design with an offset control condition was used in his study. Participants were randomly assigned to one of the five conditions. In each condition, participants were informed that they would aiding in the development of a health message about diabetes. They were asked to read a brief messages about diabetes screening and then complete a questionnaire containing measures of the dependent variables.

Results

H1: The Effects of Message Framing on Screening Attitudes and Behaviors

Planned comparisons were conducted in order to test the hypothesis that loss framed messages would foster (a) more positive attitudes and (b) greater screening behavior than gain framed messages or a control messages. Prior diagnosis of diabetes was included as a control variable in all of the analyses. The results offer support for H1b. Participants who read the loss framed messages were more likely to complete the 7-item screening quiz developed by the ADA than participants who read the loss framed or control message about the history of diabetes research, $F(1, 361) = 4.553, p = .034$. Although the means followed the predicted trend for attitudes toward screening, the contrast model was not statistically significant, $F(1, 361) = 3.220, p = .074$. Hypothesis 1a was not supported. The means and standard errors for the dependent variables across the three experimental conditions can be found in Table 2.

H2: The Effects of Message Framing on Perceived Susceptibility and Severity of Diabetes

Planned comparisons, controlling for a prior diagnosis of diabetes, were again conducted for perceptions of diabetes (a) susceptibility and (b) severity. Consistent with H1a, participants who read

the loss framed message felt more susceptible to developing diabetes than participants who read the gain framed message or the control message, $F(1, 361) = 5.217, p = .023$. Participants who read the loss framed message did not perceive diabetes to be more severe than participants who read the gain framed message or the control message, $F(1, 361) = 1.675, p = .196$. H1b was not supported. The means and standard errors for perceived susceptibility and severity can be found in Table 2.

RQ1: Differences in the Effects of Positive and Negative Outcomes in Gain and Loss Framed Messages

Analysis of covariance (ANCOVAs) were conducted to examine the effects of outcome valence in gain and loss framed message. As in the previous analyses, prior diabetes diagnosis was included as a control variable. The analyses were conducted separately for gain and loss framed messages. For gain framed messages, there was no difference in attitudes toward screening, $F(1, 155) = 0.015, p = .901$, or quiz participation, $F(1, 145) = 0.594, p = .442$, when the outcomes described in the message were desirable ($M_{attitude} = 5.77, SE_{attitude} = .18; M_{quiz} = .51, SE_{quiz} = .06$) or undesirable ($M_{attitude} = 5.80, SE_{attitude} = .17; M_{quiz} = .45, SE_{quiz} = .06$). The same trend was observed for loss framed messages. There were no differences in attitudes, $F(1, 143) = 1.763, p = .186$, nor quiz participation, $F(1, 143) = 0.424, p = .516$, for participants who received a loss framed message focused on desirable ($M_{attitude} = 6.16, SE_{attitude} = .14; M_{quiz} = .61, SE_{quiz} = .06$) or undesirable outcomes ($M_{attitude} = 5.88, SE_{attitude} = .15; M_{quiz} = .56, SE_{quiz} = .06$).

Table 1

Message Framing Manipulation

Message stem (seen in all conditions)
<p>Diabetes is a preventable chronic disease affecting how the human body processes the sugar from the food we eat. It is serious. Prediabetes – higher than normal blood sugar - is a sign that a person is on the path to diabetes. 86 million adult Americans have prediabetes – but most do not know it.</p>
Framing manipulations
<p><i>Gain kernel/desirable outcome.</i> There are many benefits you may experience from getting tested for diabetes. When diagnosed early and treated, people with prediabetes and diabetes can live long and fulfilling lives. Early detection of diabetes is the first step toward achieving optimal health. Determining your risk of prediabetes and diabetes is as easy as completing a 7-question screening quiz.</p>
<p><i>Gain kernel/undesirable outcome.</i> There are many problems you may avoid if you get tested for diabetes. When diagnosed early and treated, people with prediabetes and diabetes are less likely to face serious complications. Early detection of diabetes is the first step toward preventing major health problems. Determining your risk of prediabetes and diabetes is as easy as completing a 7-question screening quiz.</p>
<p><i>Loss kernel/undesirable outcome.</i> There are many problems you may experience if you do not get tested for diabetes. Left undiagnosed and untreated, people with prediabetes and diabetes are more likely to face serious complications. Failing to detect diabetes early is the first step toward major health problems. Determining your risk of prediabetes and diabetes is as easy as completing a 7-question screening quiz.</p>
<p><i>Loss kernel/desirable outcome.</i> There are many benefits you may miss out on if you do not get tested for diabetes. Left undiagnosed and untreated, prediabetes and diabetes can make it difficult for people to live long and fulfilling lives. Failing to detect diabetes early makes it impossible to achieve optimal health. Determining your risk of prediabetes and diabetes is as easy as completing a 7-question screening quiz.</p>
<p><i>Control.</i> The discovery of diabetes has been traced back to the ancient Egyptians. However, the roots of current diabetes research can be traced back to the arrival of experimental medicine in the mid-1800s. Doctors worked to understand how diabetes functions in the human body. Determining your risk of prediabetes and diabetes is as easy as completing a 7-question screening quiz.</p>

Table 2

Means and Standard Errors for Dependent Measures across Message Framing Conditions

	Gain frame		Loss frame		Control	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Attitude toward screening quiz	5.78	.12	6.03	.12	5.72	.17
Screening quiz completion	.48	.04	.59	.04	.46	.06
Perceived susceptibility to diabetes	3.53	.13	3.95	.13	3.56	.19
Perceived severity of diabetes	6.09	.08	6.34	.08	6.32	.12
Weights for planned comparisons		-1		+2		-1

Note. Tests were conducted controlling for prior diabetes diagnosis.