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Extended Abstract

Understanding the Impact of Message Framing on Health Knowledge

Adoption: The Role of Psychological Distance

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Abstract: Effectively communicating health knowledge plays a significant role in promoting health behavior. Messages could be framed to highlight either the benefits of engaging (gain-framed) or the consequences of not engaging (loss-framed) in particular health behavior, yet existing studies have identified mixed findings regarding the impact of gain-framed vs. loss-framed messages. Drawing upon prospect theory and construal level theory, we first examine how gain-framed vs. loss-framed messages affect health knowledge adoption. Then, we investigate how gain- (loss-) framed messages should be paired with psychological distance (proximal vs. distal) to enhance one's processing fluency, which functions as a mediator to influence health knowledge adoption. We conducted two between-subjects experiments. The findings of this research have implications for designing effective public health communication and health information services.

Keywords: Message framing, Psychological distance, Health knowledge adoption

1. INTRODUCTION

The popularization of health knowledge can help the public to make wise health decisions. Especially during the global outbreak of COVID-19, enhancing the public's health knowledge is critical to the success of combatting the pandemic. Health knowledge adoption refers to the extent of recipients' intention to accept and utilize provided health knowledge, signifying recipients' attitudes and cognition toward learning, absorbing, and reserving health-related information^[1]. Prior studies found that information quality and information sources^[2] as well as perceived health threats^[1] can promote health knowledge adoption. However, few studies have discussed how health information can be framed to affect health knowledge adoption. Based on prospect theory and construal level theory (CLT), we study how gain-framed and loss-framed messages affect individuals' health knowledge adoption. We further examine the interaction between gain- and loss- framed messages and psychological distance as well as the mediating role of processing fluency. This research contributes to an enhanced theoretical understanding of message frames in public health communication, and practically, makes suggestions for effective public health information services.

2. THEORETICAL FOUNDATION

According to prospect theory^[3], people are obsessed with small-probability events. Even in the face of small-probability loss events, decision-makers have a risk-averse mentality and choose to reduce losses. Therefore, in the face of the loss-framed message, people will show better knowledge adoption. Therefore, we hypothesize a loss-framed message will lead to a higher level of health knowledge adoption.

CLT suggests that one's psychological representation of events will affect his or her cognition and behavior^[4]. People use broad and abstract thinking (high level of construal) for things that are far away in the psychological distance, and use detailed and specific thinking (low level of construal) for things that are close in the psychological distance^[4]. A gain-framed message can activate abstract thinking modes (high-level construal), and a loss-framed message can activate specific thinking modes (low-level construal)^[5]. Combining consistently

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high (or low) construal levels will lead to better health knowledge adoption. Thus, we hypothesize the impact of gain- and loss- framed messages will interact with psychological distance.

Processing fluency refers to an individual's subjective perception of the difficulty of information processing. Low processing fluency will cause a high cognitive burden, while high processing fluency can ease the cognitive load and enhance one's health knowledge adoption. If a message can make people feel right in understanding, the effect (such as evaluation, attitude, willingness, etc.) is better. Therefore, we hypothesize processing fluency mediates the impact of message framing and psychological distance on health knowledge adoption.

3. RESEARCH METHODOLOGY AND RESULTS

We designed two experiments to test the research hypotheses. Experiment 1 was a between-subjects design (message framing: gain vs. loss vs. no frame), using HPV vaccine as experiment materials. Experiment 2 was a two (message framing: gain vs. loss) by two (psychological distance: proximal vs. distal) between-subjects design, using materials related to COVID-19 booster vaccine. We received 176 valid responses and 121 valid responses, respectively, in two experiments. Then, we used SPSS and Smart-PLS 3.0 for data analysis.

Results of Experiment 1 showed health knowledge adoption under the framed condition, including gain-framed and loss-framed, is significantly higher than under the no-frame condition ($M_{\text{framed}}=6.44$, $M_{\text{no framed}}=3.51$, $F=17.00$, $p<0.001$). The loss-framed message had a significantly higher health knowledge adoption than the gain-framed message ($M_{\text{gain}}=5.43$, $M_{\text{loss}}=7.46$, $F=5.83$, $p<0.05$). Results of Experiment 2 confirmed psychological distance interacted with the gain- or loss- framed messages. In the proximal distance condition, the loss-framed message led to higher processing fluency ($M_{\text{loss}}=5.92$, $M_{\text{gain}}=4.51$, $F=37.23$, $p<0.001$) and health knowledge adoption ($M_{\text{loss}}=9.53$, $M_{\text{gain}}=4.63$, $F=14.50$, $p<0.001$); in the distal distance condition, the gain-framed message resulted in higher processing fluency ($M_{\text{gain}}=5.67$, $M_{\text{loss}}=4.51$, $F=17.07$, $p<0.001$) and health knowledge adoption ($M_{\text{gain}}=7.65$, $M_{\text{loss}}=4.77$, $F=5.47$, $p<0.05$). The partial mediating effect of processing fluency was significant (LLCI=3.781, ULCI=6.795, excluding zero). Thus, our three hypotheses are supported.

4. CONCLUSIONS

We examined the effect of message framing on health knowledge adoption through two experiments. Our findings can inform the information design in public health communication. In future studies, we consider extending the research sample and examining the role of individual characteristics in altering the impact of message framing.

5. ACKNOWLEDGEMENT

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