

Positive Framing: Does It Work for Promoting Healthier Food Choice?

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Abstract

The increase in overweight and obesity in Indonesia, along with its negative impact on individual health, such as the risk of chronic diseases and reduced life expectancy, cannot be separated from unhealthy food choices. Unhealthy food choices can negatively impact health, including increasing the risk of overweight and obesity. The aim of this study is to investigate potential differences in the impact of positive message framing on healthy eating behavior. The sample of this study involved student participants aged 18-24 years. This study used an experimental design. In this study, participants were divided into experimental and control groups. The experimental group was given positive framing messages, while the control group did not receive any framing messages. Participants conducted a shopping simulation in a virtual supermarket using virtual reality devices. After that, the participants' food choices and shopping scores were analyzed. The results of this study show a significant difference in food choices between participants given positive health cues framing and those who were not. This means that participants in the experimental group who received positive framing messages had healthier food choices than the control group. The use of positive framing strategies, such as through posters, can be effective in promoting healthy eating behavior. The implications of this study provide insights to the community that positive framing messages can be an influential way to encourage healthy eating behavior among the public.

Keywords: positive framing; food choice; positive framing messages; healthy food choices.

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Introduction

Food choice has an influence on individual health (Wongprawmas et al., [2021](#)). Unhealthy food choices can potentially lead to several health problems, one of which is overweight or obesity (Christensen et al., [2022](#)). According to Al-Jawaldeh, & Abbass, ([2022](#)) an unhealthy diet can increase the risk of various health issues, including obesity, type 2 diabetes, heart disease, and cancer. Consumption of foods high in

saturated fats, added sugars, and high sodium has been shown to be associated with increased risks of these conditions.

According to research conducted in 2018, over 1 billion people worldwide are obese – 650 million adults, 340 million adolescents, and 39 million children. This number continues to rise and is expected to increase by around 167 million adults and children by 2025 (WHO, [2018](#)). Similarly, in Indonesia, based on data from the Basic Health Research (Rokom, [2023](#)), the prevalence of overweight and obesity in individuals aged 18 years and older was 21.8% in 2018. Among adults (>18 years), the prevalence of overweight has been increasing from 19.1% in 2007, 21.7% in 2010, to 26.3% in 2013 (Sari & Amaliah, 2014). People who are overweight and obese have a shorter lifespan compared to those with normal weight (Djalalina, [2015](#)). Therefore, to reduce the incidence of these conditions, it is necessary to examine the factors influencing food choice.

When choosing food, individuals are influenced by several factors, one of which is exogenous (external) factors (Bruce et al., [2015](#)). External factors such as environmental cues affect food choice (Hollands et al., [2016](#); Cialdini, [2001](#)). Environmental cues are signals from an individual's surroundings that inform them about what is happening and how to respond (Zhu et al., [2013](#)). Environmental cues have an impact on a person's eating and drinking decisions (Wansink, [2004](#)). One example of using cues is the promotion of vegetables, fruits, chocolate, and other foods through attractive posters (Brunner, [2010](#); Papies & Hamstra, [2010](#); Gaillet et al., [2013](#)). Attractive cues can trigger food consumption (Papies, [2019](#)). Another study found that when individuals were exposed to various types of posters, such as nature posters, activity posters, fun exhibition posters, and Giacometti sculptures (slim silhouette statues), those exposed to Giacometti sculptures had the highest percentage of choosing healthy foods (Stöckli et al., [2016](#)). External factors play an important role in food choice; therefore, to influence someone to consume healthy food, efficient strategies are needed, one of which is using message framing (Chen et al., [2020](#); Garg et al., [2021](#)).

Messages framing is suspected to influence individual behavior (Covey, [2014](#); Gallagher & Updegraff, [2012](#); Rothman et al., [2006](#)). Framing is defined as a method of changing attitudes (Bartholomew et al., [2000](#)). The use of positive and negative framing will affect the process of information processing (Kuvaas & Selart, [2004](#)). This is because negative framing emphasizes the undesirable consequences if someone does not buy the product, while positive framing emphasizes the desired benefits or advantages of purchasing the product. Previous studies on framing have shown mixed results: some indicate that positive framing is more persuasive (Van de Velde et al., [2010](#)). This is in line with research in Europe showing that positive framing with posters and Giacometti sculptures on vending machines is effective in influencing people to choose healthy food (Stöckli et al., [2016](#)). However, in Indonesia, negative framing with images and videos is effective in reducing the purchase of fast-food fried chicken (Nurbaya & Caninsti, [2015](#)). This research is important because of the unresolved knowledge gap regarding the influence of positive health cues framing on food choices in Indonesia. Although there is evidence that positive message framing can be effective in influencing healthy eating behavior in some contexts, such as in Europe, research specifically applying this concept in Indonesia is still very limited (Nurbaya & Caninsti, [2015](#)). The novelty of this research lies in its focus on the use of positive health cues framing in the context of Indonesia's unique cultural and societal preferences. Unlike previous studies showing the effectiveness of negative framing in reducing fast food purchases in Indonesia, this study will explore the potential of positive framing in inspiring healthier food choices. Therefore, these inconsistent results need to be further examined regarding the effect of positive health cues framing on food choice in Indonesia. This study will use an experimental study approach through virtual reality (VR) media to measure food choice by providing positive framing. This research is expected to comprehensively contribute to understanding the psychological factors that influence food choice, particularly for developing more effective intervention strategies in promoting healthy eating patterns.



Method

Research Design

This study uses an experimental design with a Pre-post Control Group Design. In this design, there are two groups compared: the experimental group (framing) and the control group. Participants in both groups are tested in the initial condition (before the intervention) and then tested again after the intervention is performed. This design allows for measuring the direct effect of positive framing messages on healthy food choices.

Subjects

The research participants are students aged 18-24 years who do not have dietary restrictions such as veganism, special diets, or food allergies, and are selected using random sampling techniques. Before participating in this study, subjects agreed to informed consent, understanding that their involvement was voluntary and that they could withdraw from the study at any time.

Procedure

Participants are invited individually to the laboratory, where they are asked to fill out informed consent and read the research information sheet. After that, they will use VR devices to simulate shopping in a virtual supermarket (Waterlander et al., [2011](#)). Participants are randomly divided into two groups: the experimental group receiving positive framing messages and the control group not receiving the intervention. After shopping, their purchase data will be counted and analyzed. Upon completion, participants will be debriefed about the research objectives and given a reward as appreciation for their participation.

Measurement Tools

The measurement tools used include VR devices for the virtual supermarket shopping simulation and an application that allows participants to choose products and read nutrition labels.



Randomization

Randomization is conducted to ensure that the assignment of participants to the experimental or control group is done randomly, thereby minimizing bias in the research results. We used simple randomization through random number tables to divide the research subjects into control and experimental groups.

Intervention Module

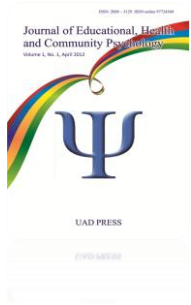
The intervention is carried out through positive framing messages provided to the experimental group. These framing messages are designed to emphasize the benefits or advantages of choosing healthy foods in the virtual supermarket. The measurement related to the selection of healthy food by subjects was conducted using the Food Choices scale, which employs a Likert scale. The reliability coefficient alpha for the Food Choices scale is .790.

Data Analysis

Data will be analyzed using an independent sample t-test with the assistance of SPSS Ver. 26 software to compare the differences between the experimental and control groups in food choices. Prior to this, normality tests will be conducted using the Kolmogorov-Smirnov test and homogeneity tests using the Levene Test to verify the necessary statistical assumptions.

Research Ethics

This research has been approved by the Research and Community Service Team of Semarang State University in accordance with research ethics principles. Research ethics number and participant consent were obtained before starting the experiment. Participants were informed in detail about the research objectives, experimental procedures, their rights as research subjects, and the consequences of their participation or refusal. Informed consent was signed by each participant before they were involved in this research.



Results

The calculation of the mean scores revealed that the experimental group ($M = 69.762$, $SD = 15.62678$) had a higher score compared to the control group ($M = 62.5865$, $SD = 17.08423$). Subsequently, the researcher conducted normality and homogeneity tests as prerequisites for performing an independent sample t-test. Based on the Kolmogorov-Smirnov test, it was found that $p = 0.200$ for the experimental group and $p = 0.063$ for the control group, indicating that the assumption of data normality was met for parametric analysis and research data.

The homogeneity test results showed $p = 0.36$, indicating that the data are homogeneous. After conducting the normality and homogeneity tests, it can be concluded that the research data are normally distributed and homogeneous. Then, the hypothesis test on the effect of Positive Health Cues Framing on Food Choice between the experimental and control groups was conducted using an Independent Sample t-test.

The results of the independent t-test analysis showed a highly significant difference in healthy food choices between the participants in the experimental group and the control group ($t\text{-test} = 2.566$, $p = 0.011$, Cohen's $D = 0.059$). This means that the experimental group, which was given positive health cues framing, chose healthier food compared to the control group that was not given positive health cues framing ([Table 1](#)).

Table 1

Results of Hypothesis Testing Analysis

Variable	Experiment		Control		t	p	95% CL	Cohen's D
	M	SD	M	SD				
Scores	69,763	15,6267	62,586	17,0842	2,56	0,011		0,059

M = Mean; SD = Standar Deviation

Discussion

The aim of this study is to examine the effect of positive message framing on healthy eating behavior. The results of this study indicate that the hypothesis stating the influence of positive health cues framing on food choice is accepted. This means that individuals who received positive framing were more likely to choose healthy foods compared to those who did not receive positive framing. This finding is supported by research from Carfora et al., (2022), which suggests that positive framing is more effective in promoting healthy eating patterns comprising various food choices. Additionally, a similar study by Dijkstra et al. (2011) found that gain-framed messages are more persuasive than loss-framed messages in encouraging individuals to consume fruits and vegetables, but only if the messages are personalized to increase self-relevance.

Positive framing can increase healthy eating behavior through the lens of prospect theory, as proposed by Kahneman and Tversky (1979). Prospect theory suggests that individuals tend to make decisions based on potential gains and losses relative to a reference point. Positive framing focuses on the benefits and advantages of adopting healthy eating habits. For example, messages that highlight the long-term health

benefits of consuming fruits and vegetables can be framed positively. According to prospect theory, individuals are more likely to be motivated by the prospect of gaining health benefits, such as improved well-being and disease prevention.

Positive framing also helps reduce the perception of losses associated with healthy eating. Messages that emphasize what individuals stand to gain rather than what they might miss out on (such as unhealthy but tempting foods) can shift the decision-making process towards healthier choices. Prospect theory suggests that people are more averse to losses than they are driven by potential gains. By framing health choices positively, individuals are less likely to perceive healthy eating as sacrificing enjoyment or taste.

When positive framing is effectively used, it can influence behavioral intentions and actual behavior towards healthier choices. Messages that promote positive outcomes, such as increased energy levels, weight management, and overall health improvement, align with individuals' desire for gains and minimize the perceived risks associated with healthy eating. Positive framing taps into cognitive biases identified by prospect theory, such as the tendency to avoid losses and seek gains. By presenting health choices in a positive light, individuals are more likely to engage in health-promoting behaviors as they perceive these actions as beneficial and rewarding.

In summary, positive framing leverages prospect theory by emphasizing gains, minimizing perceived losses, and aligning with individuals' cognitive biases towards decision-making. This approach encourages healthier eating behaviors by making health choices appear more appealing, achievable, and rewarding. When individuals are given positive framing in the form of a poster, they tend to behave in accordance with the provided framing. These findings are consistent with prospect theory (Kahneman and Tversky, [1979](#)). This theory explains that in decision-making, individuals seek information sources to form several decision concepts and then make a decision by choosing the most beneficial concept. Prospect theory shows that people, who tend to be irrational, are more reluctant to gamble with gains than with losses.

A limitation of this study is that during the experiment, the researchers did not measure the participants' hunger levels, which could influence food choice. Therefore, further research is needed to explore the impact of hunger levels on food choice. A more comprehensive understanding could aid in developing more effective strategies for selecting healthier foods, and future research should delve deeper into understanding the phenomenon of positive health cues framing on food choice. This research provides a theoretical contribution to positive health cues framing by proving that positive framing influences food choice. Practically, it can be used by health professionals as an intervention method using positive health cues framing to promote healthy eating.

Conclusion

Positive message framing is an efficient strategy to influence individuals in selecting healthy foods. The effective positive message framing strategy used in this study is the poster. This study also utilized a virtual reality supermarket that realistically depicted shopping activities as in everyday life.

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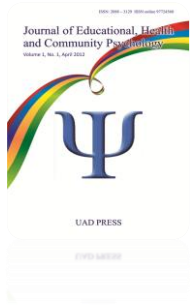
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