The Persuasiveness of the Flu Vaccination Campaign Video

Xiaolan Lei

Jiaxin Tong

Shuting Xu

Xizhe Zhao

Master of Science in Communications

Northwestern University

MSC 529: Persuasive Message Design

Dr. Nathan Walter

Date Submitted: 12/05/2022

Abstract

The purpose of this paper is to evaluate the effectiveness and persuasiveness of the health campaign video about flu vaccinations called *No Time For Flu: 30*. A survey that asks for people's attitudes before and after watching the video, targeted to those people who haven't taken the flu vaccines yet. Twenty-six participants were involved in the survey, including six males and twenty females. After watching the video, the result shows no significant change in people's attitudes toward taking the flu vaccines. However, it helps raise people's awareness of flu shots. Failure of the persuasive message designs of "gain-framed message," "source similarity," and "peripheral path" might contribute to the ineffectiveness of the video in persuading people. In future health promotion campaigns, to persuade people to take action, persuasive message designs like "loss-frame message" might be suggested for effectiveness. For future research in measuring the effectiveness of persuasive message design in health promotion campaigns, higher numbers of participants with broader races and occupations are suggested. Also, designing the survey in different periods of time for more generalizable results is recommended as well.

Introduction

Flu has been a common infectious disease in human society in recent years. According to the Centers for Disease Control and Prevention (2022), it is estimated that 9 to 41 million people tested positive for flu between 2010 and 2020. Also, the flu has already caused the hospitalization of 140,000 to 710,000 people and the death of 12,000 to 52,000 in the past decade. To prevent the growing cases of infections by the flu, the promotion of flu vaccination is

necessary for the health departments. Since taking the flu vaccination is a voluntary action for people, the persuasiveness of the advertisement of flu vaccination is to be measured.

A video published by the Centers for Disease Control and Prevention in 2020 aims to convince people to take the flu vaccination. This video presents people with a variety of occupations and their demands for flu vaccination. The slogan "no time for flu" is emphasized in the video to convince people to take action. Both the mentioning of the occupations and repeating the slogan underline the urgency of taking flu vaccinations. Thus, it is demonstrated in the video that various persuasive message designs are presented, trying to change people's attitudes and behaviors toward flu vaccination. In this paper, the persuasiveness of this flu vaccination promotion video will be measured by comparing people's attitudes toward flu vaccinations before and after they watch the video. Finally, a survey will be conducted for the measurement of attitudes.

This paper will be specifically looking at the persuasive message designs of "gain-framed message," "source similarity," and "peripheral path." "Gain-framed message" is the persuasive strategy to persuade people to change their actions by indicating what people can gain after making the decision. "Source similarity" indicates increased relevance when people find similarities with the message, including occupation, interest, and culture. "Peripheral path" introduces the idea that people can use simple cues to help their decisions, which can be applied in persuasive message designs. Overall, this health campaign video has incorporated three persuasive strategies including gain-framed messaging, source similarity, and the peripheral path based on the elaboration likelihood model (ELM). Furthermore, the effectiveness of these three persuasive message concepts in the video to communicate with its audiences will also be analyzed.

Topic and Persuasive Message

Strategy 1: Gain-framed Messaging

From the article, "Message Framing Variations in Health and Risk Messaging," written by Daniel J. O'Keefe, it mentions that "one common way of persuading people to adopt a given health behavior is to make arguments invoking the consequences of an action" (O'Keefe, 2017). In this article, O'Keefe explains that the message can be tailored to different audience groups by using gain-framed and loss-framed messages (O'Keefe, 2017). In addition, O'Keefe also highlights in the article that the gain-framed message emphasizes persuading the audience to achieve certain behaviors by highlighting the aspects of attaining the desired outcome or avoiding the negative outcome (O'Keefe, 2017). On the other hand, the loss-framed message focuses on reaching undesirable outcomes or avoiding positive outcomes to persuade the audience. This health campaign video mainly uses the gain-framed message style as the video highlights the concept of "getting the flu vaccination, so you will not be delayed in your work and life." In this case, the delay caused by the flu is a negative outcome, and the video emphasizes avoiding this interruption of work and life by getting a flu vaccination, so this persuasive message tends to persuade its target audience by implementing the gain-framed message style. Nevertheless, according to the data collected by the survey, it presents the requirement of adjusting the strategies to improve the persuasiveness of the message. In "When, How and Why is Loss-Framing More Effective than Gain- and Non-Gain-Framing in the Promotion of Detection Behaviors," Lucia Bosone and Frédéric Martinez highlight that loss-framed message appears more persuasive in persuading the audience with certain behavior that "presents the risk of possibly discovering a health-issue and individuals are risk-seeking when facing possible losses according to the Prospect Theory principles" (Bosone & Martinez,

2017). Although it is true that non-risky behavior is more suitable for using the gain-framed message to persuade the audience, people have different perceptions of risky behavior, which would affect the implementation of the message style. In this case, the video applies the gain-framed message style because the production team deems taking the flu vaccination as a non-risky behavior to the audience. However, this behavior may be risky to the audience with different aspects like cultures, occupations, and educational backgrounds. The article "Influenza vaccination: protecting the most vulnerable," written by Alex R. Tanner, Robert B. Dorey, Nathan J. Brendish, and Tristan W. Clark, points out that the flu vaccination, Influenza, contains "the issue with repeatedly vaccinating the most at-risk individuals, as counterintuitively, this may put them at greater risk" (Tanner et al., 2021). Because of this, the elderly may perceive the action of taking the flu vaccination as risky, which means that implementing the loss-framed message would be more persuasive in this case. For example, the communication can design the other video by using the loss-framed message style like "the seasonal flu will lead to a 70 percent chance of exacerbating the existing symptoms of disease" tailored to the communities of the elderly in the United States.

Strategy 2: Source Similarity

In addition to the message style applied in the persuasive message, this health campaign video also utilizes source similarity to reach out to its target audience. According to Amy Shirong Lu's "An Experimental Test of the Persuasive Effect of Source Similarity in Narrative and Nonnarrative Health Blogs," source similarity refers to presenting the match of various aspects, including interest, occupation, and experience between the message and the receiver (Lu, 2013). This video presents the personnel from various professional fields like students, medical staff, and cashiers and highlights that these characters would not have any delay in their

work and life because they have received the flu vaccination. Hence, this campaign mainly utilizes the concept of source similarity because it involves creating connections and demonstrating various occupations that would link to the target audience. In "The similarity-attraction paradigm in persuasive technology: effects of system and user personality on evaluations and persuasiveness of an interactive system," Peter A. M. Ruijten explains that "when someone perceives another person as having a personality that is similar to theirs, they are more likely to be influenced in their attitudes and behaviour by that person" (Ruijten, 2021). Because of this, implementing the source similarity would make this message more persuasive because it increases the level of liking towards the characters in the video. Not only that, but it would help the audience feel more secure and motivated to take the flu vaccination as it shows that people from different age groups and work fields have taken it. Because of this, the video should further include more variety of jobs in this video to increase its persuasiveness in the future.

Strategy 3: The Peripheral Path

Despite the implementation of the message style and the source similarity, this video also conveys persuasiveness to the audience by using the peripheral path. According to O'Keefe (2016)'s *Persuasion: Theory and research*, the elaboration likelihood model (ELM) is "based on the idea that under different conditions, receivers will vary in the degree to which they are likely to engage in elaboration of information relevant to the persuasive issue" (p. 235). Hence, the two primary paths that the model demonstrates are the central path and the peripheral path. According to O'Keefe, the central path mainly focuses on presenting the fundamental information and facts which persuades the receivers by going through the contemplative examinations. On the other hand, the peripheral path aims to gain the audience's attention by

presenting the subject's peripheral aspects, like the car's color instead of its horsepower. This campaign relates the significance of receiving the flu vaccination to work and life efficiency. Hence, the campaign highlights the aspect of receiving the flu vaccination to become a responsible and efficient worker instead of presenting the physiological facts of how the flu vaccination helps prevent infection. Because of this, this health campaign implements the peripheral path to persuade its target audience. In addition, the video also uses vibrant music and dynamic editing to make the video more favorable to the audience and help them perceive the action of taking flu vaccination as simple and safe. Even more, although it is debatable that this heal-related campaign video should use the central path to emphasize the components of the vaccination that helps protect individuals, the goal of this video should be increasing awareness of the flu vaccination by considering its target audience. In the article "Tailored Health Communication to Change Lifestyle Behaviors," Seth M. Noar, Nancy Grant Harrington, Stephanie K. Van Stee, and Rosalie Shemanski Aldrich point out that "*tailored communication* refers to information that is customized to the individual, a practice that requires assessing the individual to create the appropriate content" (Noar, Harrington, Van Stee & Aldrich, 2010). Thus, if the primary target audiences for this campaign are not the healthcare providers or the group of people who are already highly aware of the importance of flu vaccination, the peripheral path would be the optimal approach to use in this circumstance to increase the audience's involvement in the issue with the peripheral aspects.

Method

Participants

There were a total number of 26 respondents who participated in the survey regarding their attitudes toward flu vaccination and whether the campaign video changed their decision. Among them, there were six males and 20 females, respectively. The age of the sample ranged from 18 to 44, among which 18-24 constitutes the highest proportion of 80.8%, while people from 35-44 only made up 3.8%. The demographic attributed in our survey include education and occupation. Regarding education, over 85% of the respondents have received higher education, while only 1 got a high school diploma or GED. The occupation of respondents could be divided into four categories, with 5 participants working full time, 18 still studying at school, three as stay-home parents, and one working part-time. Unlike the diversity shown in our demographic attributes, all the participants in this survey were Asian, a limitation that will be further elaborated on in the discussion part.

Procedure

Our team used Qualtrics to collect the data. Before digging into the content of the survey, we provided general instructions to the audience. To illustrate, we informed that the purpose of our survey is to analyze the effectiveness of the medical video campaign that relates to flu vaccination. We also promised that the survey would take less than 10 minutes to finish and would be totally anonymous, which encourages the participants to answer honestly. The survey has four sections: demographic information; the pre-test section, which asks questions concerning the attitudes of participants before watching the campaign video; the video section, asking the audience to watch a persuasive message about flu vaccination; and the post-test

section, which instructs the audience to answer the questionnaire that is the same of the pre-test section, aiming to find out whether the campaign is persuasive based on the results.

Measurement

The survey measured the outcome of the persuasive message based on the attitudes toward behavior. To illustrate, the questions we set in the pre-test and post-test sections mainly focused on whether people who perceive flu vaccination as risky or unnecessary behavior changed their attitudes and whether those who were willing to but had not yet received the vaccination became more convinced about their decision. The variables were measured by bipolar, measuring the understanding of flu vaccination, and 11-point Likert scales, with 0 representing "not at all" and 10 "extremely well."

The questions in the pre-test section are mainly the same as the post-test section, except that we added logic to it since we separated the participants into two groups of "people who have received the flu vaccination before taking the survey (Group 1)" and "people who have not received the flu vaccination before taking the survey (Group 2)." To do so, the survey asked whether the respondents had received the flu shot at the beginning, and only those who selected "no" were directed to answer the likelihood that they would receive the flu shot. Hence, during the calculation process of the p-values for each group, the participants from Group 1 did not answer the question, "how likely would you be willing to receive a flu vaccination." Then, the survey provided four possible sources that may be the channels people get to know about the flu shot, including websites, social media, magazines, and word-of-mouth. Participants can indicate if they receive the news from other channels. Next, we set a question on how much people know about the vaccination, ranging from 0 "not knowing anything about it at all" to 10 "knowing the flu shot extremely well." In addition, the question that focuses on the understanding of people

towards receiving a flu shot has four metrics concerning safety, importance, effectiveness, and the number of people who received the vaccination. Participants can indicate their extent of understanding from 7 levels. Our team selected three questions from the above to analyze the effectiveness of the campaign, which are “How likely would you be willing to receive a flu vaccination,” “how much do you know about the flu vaccination” and “What’s your understanding towards receiving the flu vaccination.”

Results

A paired t-test was used between the pre-test and post-test questions. The flu vaccination would be effective if the p-value is less than 0.05; otherwise, it will be considered ineffective. In the current study, the p-value measured for group 1 is 0.7329, and for group 2 is 0.1008, demonstrating that both results are considered insignificant. For the first question (Figure 1.1 & Figure 1.2), the p-value equals 0.1466, which is higher than 0.05 and indicates the video did not significantly influence the likelihood of people being willing to take the flu shot. For the second question (Figure 2.1 & Figure 2.2), the p-value is 0.0023, with M increasing from 3.63 to 5.71 and SD increasing from 1.24 to 2.80, indicating the video significantly improves people’s understanding of flu shots. Figure 3.1, 3.2, 3.3, and 3.4 shows the following questions. For the third question concerning the safety problem, the p-value equals 0.1703, with M changing from 5.33 to 5.13 and SD from 1.17 to 1.42, implying the video didn’t change much about people’s perception. Similarly, the campaign didn’t change respondents’ ideas on the importance of getting a flu vaccination since the p-value for this question is 0.056, with M rising from 4.85 to 5.31 and SD decreasing from 1.54 to 1.32. For the fifth question regarding whether the flu shot is effective, the p-value is 0.2829, and the M and SD are around 5.3 and 1.2, respectively,

indicating the campaign has an insignificant influence on whether the flu shot is effective. Most people still believe that vaccination is effective. Finally, for the question of how many people received the flu shot, the p-value is 0.2829, with M increasing from 5.08 to 5.35 and SD decreasing from 1.52 to 1.41, showing that the video didn't change people's perception that many people have received the vaccination.

Pre-test:

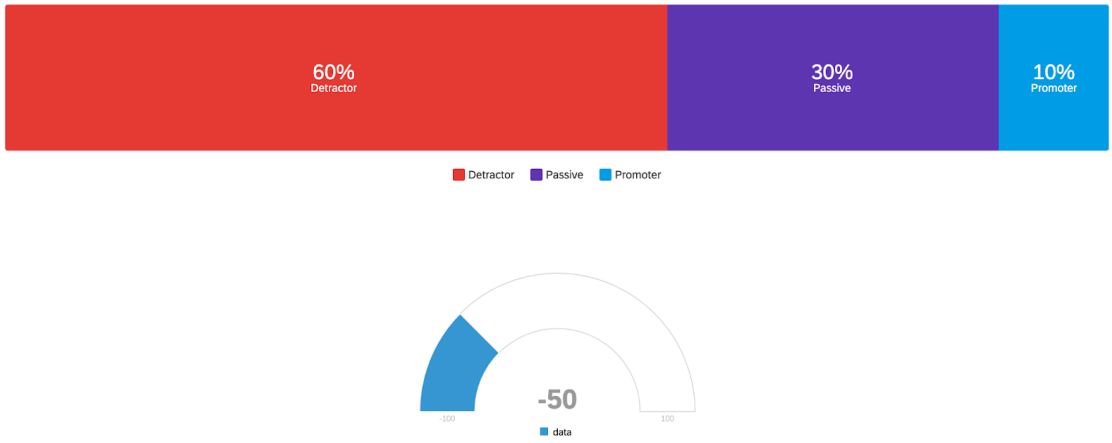

Figure 1.1 Q1: How likely would you be willing to receive a flu vaccination

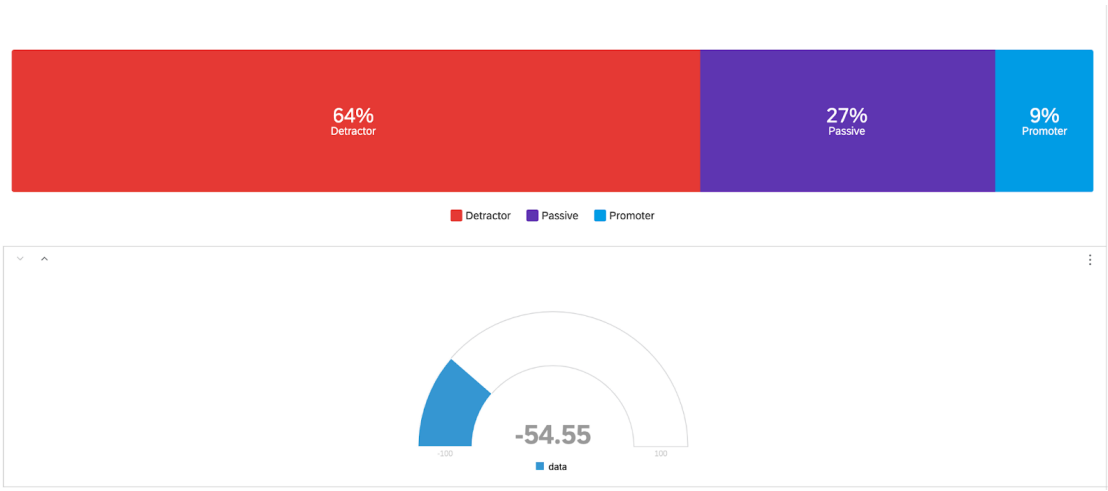

Figure 2.1 Q2: How much do you know about flu vaccination

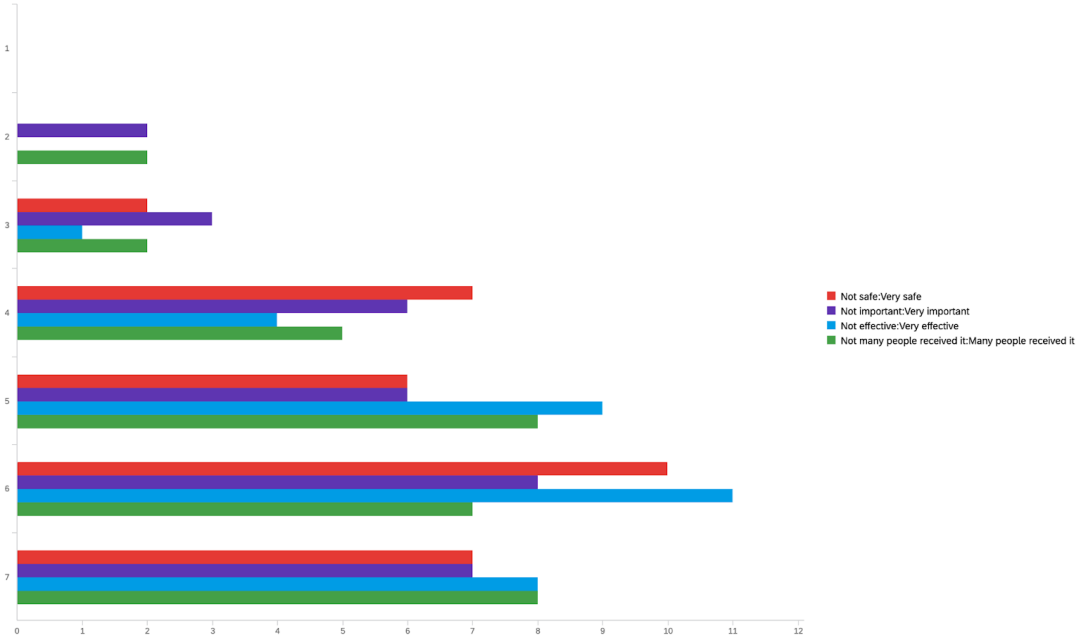

Figure 3.1 Q3-Q6: What's is your understanding towards receiving the flu vaccination

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Not safe:Very safe	3.00	7.00	5.41	1.22	1.49	32
2	Not important:Very important	2.00	7.00	5.13	1.49	2.23	32
3	Not effective:Very effective	3.00	7.00	5.64	1.07	1.14	33
4	Not many people received it:Many people received it	2.00	7.00	5.25	1.46	2.13	32

#	Field	1	2	3	4	5	6	7	Total
1	Not safe:Very safe	0.00% 0	0.00% 0	6.25% 2	21.88% 7	18.75% 6	31.25% 10	21.88% 7	32
2	Not important:Very important	0.00% 0	6.25% 2	9.38% 3	18.75% 6	18.75% 6	25.00% 8	21.88% 7	32
3	Not effective:Very effective	0.00% 0	0.00% 0	3.03% 1	12.12% 4	27.27% 9	33.33% 11	24.24% 8	33
4	Not many people received it:Many people received it	0.00% 0	6.25% 2	6.25% 2	15.63% 5	25.00% 8	21.88% 7	25.00% 8	32

Figure 3.2 Q3-Q6: What's is your understanding towards receiving the flu vaccination

Post-test:

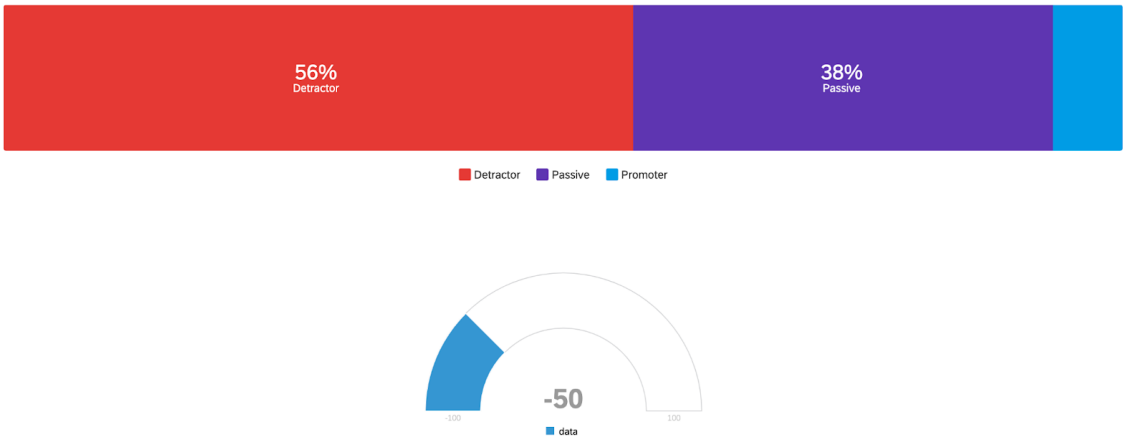

Figure 1.2 Q1: How likely would you be willing to receive a flu vaccination after watching the video

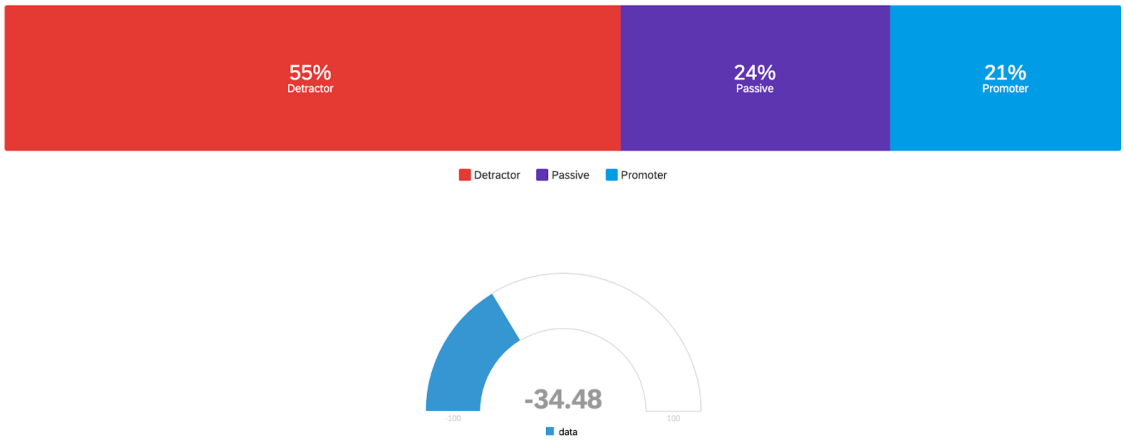

Figure 2.2 Q2: How much do you know about flu vaccination after watching the video

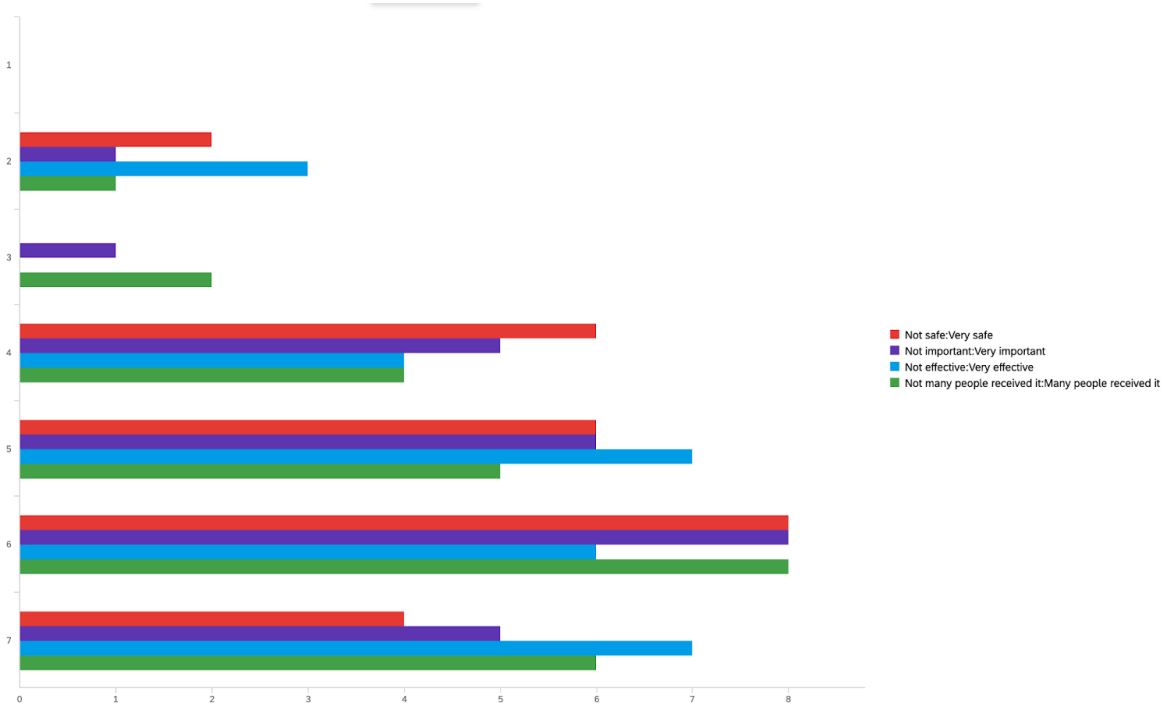

Figure 3.3 Q3-Q6: What's is your understanding towards receiving the flu vaccination after watching the video

#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Not safe:Very safe	2.00	7.00	5.15	1.35	1.82	26
2	Not important:Very important	2.00	7.00	5.31	1.29	1.67	26
3	Not effective:Very effective	2.00	7.00	5.26	1.53	2.34	27
4	Not many people received it:Many people received it	2.00	7.00	5.35	1.39	1.92	26

#	Field	1	2	3	4	5	6	7	Total
1	Not safe:Very safe	0.00% 0	7.69% 2	0.00% 0	23.08% 6	23.08% 6	30.77% 8	15.38% 4	26
2	Not important:Very important	0.00% 0	3.85% 1	3.85% 1	19.23% 5	23.08% 6	30.77% 8	19.23% 5	26
3	Not effective:Very effective	0.00% 0	11.11% 3	0.00% 0	14.81% 4	25.93% 7	22.22% 6	25.93% 7	27
4	Not many people received it:Many people received it	0.00% 0	3.85% 1	7.69% 2	15.38% 4	19.23% 5	30.77% 8	23.08% 6	26

Figure 3.4 Q3-Q6: What's is your understanding towards receiving the flu vaccination after watching the video

Discussion

Overall, the present study's findings do not support the hypothesis that the chosen video would significantly affect people's desire to receive a flu shot, regardless of whether they have previously received a flu shot. Results only show that the video is very useful in raising people's awareness of flu vaccination, but it does not appear to have a substantial impact on people's propensity to get the flu vaccine or their perceptions of its effectiveness and safety. As a result, it is advised that the chosen message may only be effective from an educational standpoint. For a group of people who are unfamiliar with how the vaccination works, for instance, one may use such videos as the first step in a flu vaccination campaign. As the data shows that before watching the video, participants' understanding of the flu vaccination was below the midpoint, the possibility of this message being effective in a campaign if it is provided before the public receives further persuasive messages. Additionally, the message's negligible impact on people's readiness to have a flu shot adds to our comprehension of health campaigns in general. The three messages in the video------gain-framed, source similarity, and peripheral path are among the frequently used techniques in health campaigns. However, businesses may wish to keep in mind the distinction between being persuasive and instructional while creating future advertising. The way the information is presented may need to change if the ultimate objective is to convince viewers to be vaccinated after watching just one video.

In addition to the study's limitations, the communication tactics employed could diminish the study's importance. First off, as the data shows, the mean of individuals' attitudes toward the safety of getting a flu shot was 5.30 before they viewed the movie and did not significantly alter afterward, indicating that people continue to consider getting a flu shot as dangerous behavior. The video, however, uses a gain-framed message style instead of a loss-framed message, which

may be less persuasive to a group of people who consider the advised activity risky. Even though the statistic is relatively neutral, this does not imply that a message with a looser frame is unquestionably more powerful. It's also likely that the video's specific gain-framed message needs further refinement to be effective: The outcome may imply that work is not the most significant factor influencing people's vaccination behavior because the video makes the point that getting the flu shot can help prevent delays at work. Thus, identifying a factor that people care about more in the future is preferable.

Moreover, the characters in the video may not be sufficiently representative of the target community, which would lead to the ineffectiveness of source similarity. The identity of a mother, member of the medical staff, chef, and cashier is used in the video, although none of these roles were present in our participants. Our participants might not have much in common with the characters during the video. Additionally, all of our participants were Asian, unlike the characters in the video, who have Black/African American, White/Caucasian, and Hispanic appearances. As a result, source similarity may be further diminished.

The peripheral path may also potentially be a factor in the unsuccessful delivery of the message. According to the Elaboration Likelihood Model (ELM), communication using a central path necessitates greater cognitive elaboration, while a message using a peripheral way heavily relies on straightforward cues and short assessments of the information. People's involvement in the issue significantly impacts which of the two paths they choose. A central path should be more appropriate than a strategy employing a peripheral path if people feel that the issue significantly impacts their self-concepts or core values. Since people's self-relatedness to the topic was not tested in the current study, we are unable to draw the conclusion that a peripheral path is the most appropriate. Therefore, it's likely that people's substantial engagement in the

decision to get vaccinated against the flu makes the message ineffective because the peripheral path cannot have a significant impact on them.

Limitations and Future Evaluations

There are a number of issues with the current study's limitations that need to be resolved. The study's poor capacity to generalize as a result of the sample size we were given is one obvious restriction. 26 people with the same race or ethnicity, age, educational background, and occupation made up our tiny sample size. The demographic of interest, which consists of Americans who are eligible to receive flu vaccinations, is not represented by the sample. For instance, given that the majority of the participants are students, they may have encountered flu vaccination advertisements more frequently due to the school's recurrent emails and posters reminding students to get their flu shots. Therefore, because the general audience rarely sees videos like these, the impact of the one chosen may not be as great. In the future, a larger sample comprising individuals from all backgrounds should be collected through more ways of recruitment. In order to prevent biases, researchers should administer the survey in a more scientific manner, preferably utilizing a random sampling method.

It's also vital to acknowledge that the measurement utilized has limits as well. Six survey questions were utilized, but as there was no pre-test, they might not be the best ones to gauge how persuasive the message was. Additionally, the pre- and post-test method used the same questions, which could make participants impatient or tired, resulting in replies that were less genuine or valid. Future research on earlier studies should be conducted in greater detail, and better questions should be chosen. Before the actual study, a different group should test the validity of the questions.

Additionally, a third variable effect may exist in the current study. Since there is no control group in the study, factors other than the one being studied may have an impact on the findings. For instance, because the study was conducted during flu season, people may be more receptive or resistant to information about flu shots. If the study is conducted at a different time, the outcomes can be unique. Since getting vaccinated against the flu is more of a preventative measure, perhaps the goal is to make people aware of its significance before flu season. Future research may wish to look at the findings ahead of a flu season. In the future, a control group may be used to counteract the impact of additional third factors that the participants themselves may introduce. A manipulation check can also be performed to ensure that the participants are aware of what they are doing.

General Conclusion

The purpose of this research was to measure the effectiveness of the persuasive techniques of "gain-framed message," "source similarity," and "peripheral path" in health campaign promotion videos. The hypothesis was that the people could be convinced to take action after they watched the video. However, the results from the intervention could not support the hypothesis. Hence, this flu vaccination video tends to be persuasive by incorporating these three concepts, but it would require some adjustments to its strategies to become more effective. Under the evaluation, these three techniques might not be the most appropriate persuasive message designs for a health promotion campaign. Instead, a broader population of participants is suggested for evaluating the effectiveness of the video in persuading people as well. Although the research does not show the effectiveness of the persuasive strategies in the video for people

to take action, they still acted as perfect roles to inform the target audiences with the knowledge about flu.

Overall, it is crucial to know that the use of "gain-framed message," "source similarity," and "peripheral path" is not effective in changing people's behaviors in the health campaign, according to the survey about flu vaccinations. This finding implies that the persuasive message strategies could be adjusted with further research and measurements for the health campaigns aimed at persuading people to take action. This research can serve as a source on how future health campaigns can be designed in order to avoid the spread of infectious diseases in human society while demonstrating that the less effective persuasive message designs can still act as the roles to teach the knowledge to the population.

References

Bosone, L., & Martinez, F. (2017). When, how and why is loss-framing more effective than gain- and non-gain-framing in the promotion of detection behaviors? *International Review of Social Psychology*, *30*(1), 184. https://doi.org/10.5334/irsp.15

Centers for Disease Control and Prevention. (2022, October 4). *Disease Burden of Flu*. Centers for Disease Control and Prevention. Retrieved December 5, 2022, from https://www.cdc.gov/flu/about/burden/index.html

Lu, A. S. (2013). An experimental test of the persuasive effect of source similarity in narrative and nonnarrative health blogs. *Journal of Medical Internet Research*, *15*(7). https://doi.org/10.2196/jmir.2386

Noar, S. M., Grant Harrington, N., Van Stee, S. K., & Shemanski Aldrich, R. (2010). Tailored health communication to change lifestyle behaviors. *American Journal of Lifestyle Medicine*, *5*(2), 112–122. https://doi.org/10.1177/1559827610387255

O'Keefe, D. J. (2016). *Persuasion: Theory and research*. SAGE Publications, Inc.

O'Keefe, D. J. (2017). Message framing variations in health and risk messaging. *Oxford Research Encyclopedia of Communication*. https://doi.org/10.1093/acrefore/9780190228613.013.308

Perloff, R. M. (2021). *The dynamics of persuasion: Communication and attitudes in the twenty-first century*. Routledge.

Ruijten, P. A. (2021). The similarity-attraction paradigm in persuasive technology: Effects of system and user personality on evaluations and persuasiveness of an interactive system. *Behaviour & Information Technology*, *40*(8), 734–746. https://doi.org/10.1080/0144929x.2020.1723701

Tanner, A. R., Dorey, R. B., Brendish, N. J., & Clark, T. W. (2021). Influenza vaccination: Protecting the most vulnerable. *European Respiratory Review*, *30*(159), 200258. https://doi.org/10.1183/16000617.0258-2020