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There has been an increase in the amount of sexually transmitted diseases (STDs) infecting adolescents in our society today. According to the research article by authors Vamos, McDermott, and Daley (2008), "Human papillomavirus (HPV) has infected approximately 20 million Americans with an estimated 6.2 million new infections each year" (para. 1). At this point in time, it is crucial that those who are most at risk of contracting these viruses are well aware of the measures they can take to protect themselves against contracting STDs. Consequently, this necessitates that the health messages distributed to adolescents through media are designed to be as effective as possible. Research involving message tailoring is vital to this endeavor.

Due to HPV prevalence in adolescents, the primary audiences of these health messages are both adolescents as well as young adults. Studies show that, "The overall prevalence of HPV infection in the United States is 26.8% among females aged 14-59 years, including the following age-specific prevalences: 24.5% for ages 14-19 years and 44.8% for ages 20-24 years" (Vamos, McDermott, & Daley, 2008, para. 3). This demographic is also notorious for sensitivity to certain types of messages, and messages must be tailored carefully toward this age demographic. According to an article by Yeung-Jo Kim (2006) regarding adolescent health messages:

> [When creating messages] there are two distinct sorts of goals: one is to achieve positive consequences by aiming for matches to desired end states (promotion focus), whereas the other is to achieve positive consequences by avoiding mismatches to desired end states (prevention focus). When these

> goals match message frames in terms of regulatory orientation, the messages have greater impact on the persuasive effectiveness. (para. 4)

Accordingly, the way in which a message is manipulated and tailored could have a positive or negative effect on the audience of the message. Prior to publicizing health messages, care should be taken to ensure that the message has been manipulated in such a way as to achieve the intended goal of the message, or in other words, to maximize its effectiveness.

PURPOSE

The purpose of our project is to use various persuasive techniques in order to determine the most effective method to persuade students about the HPV vaccination and the negative effects of the HPV virus. An important component of public health message design is determining the most effective types of messages for a particular audience. The results of this study are intended to be an aid to the creators of health messages regarding HPV and the HPV vaccination, with the ultimate goal of increasing the effectiveness of public health messages to adolescents in regards to these issues.

This experiment was not designed to fully replicate a public service announcement. The videos used in the process of this experiment are only representative of HPV messages and are intended to be utilized solely during the process of this project.

RESEARCH QUESTION

This investigation poses the following question: Will different health message strategies, specifically gain and loss frame and high and low specificity (as independent variables), affect students' reaction to and perceived knowledge about the human papillomavirus (HPV) and the HPV vaccination? The dependent variables will be discussed next.

KNOWLEDGE

A student's perceived knowledge regarding HPV and the HPV vaccination is the familiarity that the individual feels about the subject. Knowledge is an abstract concept that has been defined in a variety of ways. Researchers distinguish between two types of knowledge: information and know-how (see Birkinshaw, Nobel, & Ridderstrale, 2002, para. 2). Information is "knowledge which can be transmitted without loss of integrity once the syntactical rules for deciphering are known" (Kogut, & Zander, 1992, p. 386). Know-how is "the accumulated practical skill or expertise that allows one to do something smoothly and efficiently" (Von Hippel, 1988, para. 3). This study is concerned with information knowledge, or the subject's reported level of understanding about a particular subject matter.

In this study, students are required to report their level of familiarity about HPV and the HPV vaccination prior to and after having watched the video. Unless students reported being very knowledgeable about HPV and the HPV vaccination prior to watching the video, students will have most likely increased their knowledge in the subject matter.

COMPLIANCE

Compliance is the "extent to which the patient will follow the prescribed regimen" (Urquhart, 1996, p. 8). In other world, compliance refers to the likelihood of following medical advice. The complexity of the medical program, financial constraints, accessibility to healthcare, the severity of the illness, the type of health problem being discussed, and personal characteristics are among the factors that affect a patient's compliance with health related advice.

In the present study, compliance refers to the student's reported intent of getting the HPV vaccination, prior to and after having watched the video. The student's intent to comply may be affected by the independent variables, such as the message framing and the message's specificity.

PERSUASIVENESS

"Persuasiveness is generally equated with the speaker's ability to change the recipient's attitude" (Amjarso, 2007, p. 1). Although the ability to persuade may at some have been most relevant to rhetoricians, researchers, across all fields of study, are now very much aware of the importance of persuasiveness in ordinary argumentation. LaCrosse (1974) defined persuasiveness as "the degree to which what a counselor does has the effect of inducing the client to believe some attitudinal and/or behavioral change might be beneficial for him" (para. 1). In this study, persuasiveness refers to the student's motivation for getting the HPV vaccination after having watched the video. The persuasiveness of the videos might

have been affected by the independent variables. People are influenced in different ways, and what one student might consider persuasive another student might not.

MESSAGE FRAMING AND DENOTATIVE SPECIFICITY

According to researcher Rachel Myers (2009), "message tailoring is a health communication strategy that involves the customization of information and interventions to best fit the characteristics and needs of specific target populations or individuals" (para. 2). In fact, "there is empirical evidence that tailored health messages, compared to general, non-tailored health messages, are more persuasive and effective in promoting behavior change" (Myers, 2009, para. 2). In this study, we test the student's perception of denotative specificity. Denotative specificity "enhances the attention given to the message by personalizing and simplifying the message. The listener does not have to consider whether or not the message is relevant because the message contains trigger words that state its relevance" (Parrott, 1995, p. 17). We assume that the students in Group 3 and in Group 4 (videos with high specificity) will find the video to be "tailored" to them, as opposed to Group 1 and Group 2. According to researcher Roxanne Parrott (1995), "this may be due to such messages triggering perceptions of personal responsibility, for example, which may have been found to facilitate active thought or the use of self-references, which increase persuasive effectiveness of appeals" (p. 17).

AVOIDANCE

“If a person holds two cognitions that are inconsistent with one another, he will experience the pressure of an aversive motivational state called cognitive dissonance, a pressure which he will seek to remove, among other ways, by altering one of the two "dissonant" cognitions” (Bem, 1967, p. 183). This idea is the foundation of Festinger’s (1957) Cognitive Dissonance Theory. “Participant avoidance” in this case, refers to the level of discomfort or dissonance a student feels about the vaccine. The level of avoidance a subject might experience is affected by various variables such as: his/her individual characteristics, the severity and the type of illness being discussed, and the communication styles being used. The student’s degree of avoidance might also be affected by other variables, such as the message framing and message specificity.

PARTICIPANT PERCEPTION OF PERSONAL EMPOWERMENT

The concept of “empowerment” has been used “to represent a wide range of concepts and to describe a proliferation of outcomes”(Malhotra, Schuler, & Boendar, 2002, para. 4). The term is often used to promote certain types of policies and governmental strategies. Feminist activists’ writings, for example, often advocate for the empowerment of women, “but vary in the extent to which they conceptualize or discuss how to identify it” (as cited in Malhotra et al, 2002, para. 4). Bennett (2002) proposed a framework where she describes empowerment as “the enhancement of assets and capabilities of diverse individuals and groups to engage, influence and hold accountable the institutions which affect them” (as cited in Malhotra et al.,

2002, para. 4). In this study, participants were asked to report their level of empowerment after having viewed the video. The transmission of HPV-related information and, in particular, the way this information was delivered may have affected the participant's perception of empowerment.

METHOD

Sample

Human papillomavirus is increasing in prevalence among adolescents ages 15-24 (Vamos, McDermott, & Daley, 2008, para. 1). This is the time in which many of those at risk for the virus do not take action against it. For this experiment, the target age group consists of students in this demographic. The subjects of this study will be students from four separate Communication Studies 101/102 classes. By selecting lower division Communication Studies classes, we are hoping to acquire a sample that accurately reflects the current freshman class at Cal Poly. This is because all majors are required to take either Communication Studies 101 or Communication Studies 102. Most students take this class during their freshman year.

A total of 87 participants were selected from four different sections of Communication Studies 101 and 102. There were 41 male participants and 46 female participants. Prior to the experiment, all human subject consent policies were followed and permission was granted from the California Polytechnic State University to conduct this research. All participants agreed to participate in the study. The average age of the participants was 18.71 with a standard deviation of .761. See Table 2a for more information.

Design of the Study

This study utilized four conditions (see Table 1). Thus, the study was constructed using a 2 x 2 factorial design. By using this factorial design, it was possible to test the effects of gain and loss frames, as well as high and low specificity levels.

TABLE 1
The Experimental Conditions

Message Frame	Specificity Level	
	High Specificity	Low Specificity
Gain Frame	Gain Frame, High Specificity	Gain Frame, Low Specificity
Loss Frame	Loss Frame, High Specificity	Loss Frame, Low Specificity

Procedure

In order to complete this study, a short informational video was shown to four separate Communication Studies 101 and 102 classes. Each video was identical except for the manipulation of the four independent conditions in our study. The video contained information about the risks associated with HPV and information about the HPV vaccination. After the conclusion of the video, students filled out a short questionnaire assessing the effectiveness of the video. The questionnaire, which is attached, contains questions about students' intentions to receive the HPV vaccination if they have not already done so. In addition, the questionnaire also assessed students' perceptions of other dependent variables in regards to the video.

Next, the surveys were individually coded and data were entered into a statistical analysis program for further interpretation. These data were then analyzed to determine the most effective health message tactics.

Formulation of the Experimental Materials

The illness. It was important to choose an illness for this experiment that is prevalent during the time of the project. Human papillomavirus is becoming more of a threat to adolescents and college students. Additionally, in the past this virus has been not been publicized to adolescents as much as other STDs. Therefore, there is a need for more research concerning HPV messages. For the purposes of this study, it was also crucial that the chosen illness had some sort of vaccination or other preventive measures available for remedy. The HPV vaccination is a precaution against HPV.

The independent variables. The specificity level (high specificity vs. low specificity) and message framing (gain frame vs. loss frame) were the two independent variables for this study. In order to manipulate the specificity level, the scripts for the videos were edited to contain more or less specific language. For example, in the videos categorized as “high specificity” the audience was directly addressed using words such as “you,” as opposed to the “low specificity” videos, which uses phrases such as “your age group” and “people,” essentially addressing the audience only indirectly.

The gain frame and loss frame conditions consist of placing objective information contained in the videos in a more positive or negative light. According to researcher Rachel Myers (2009), "Gain-framed messages typically present benefits achieved by adopting a target behavior whereas loss-framed messages usually convey costs of not adopting the target behavior" (para. 2). The videos categorized as gain frame contained positive phrases such as "fortunately", whereas the videos characterized as loss frame did not. In addition, the gain frame scripts emphasized the statistics of survivors of the virus as well as those who are not infected with the virus.

The videos. The study used four different video recordings containing messages about HPV and the HPV vaccination. In order to decrease accidental interference from any other independent variable, the subject filmed in the recordings is the same in each of the videos. In other words, the videos are the same except for the intentional manipulation of the verbal script. Each of the four different classrooms saw a different video. The four videos are classified as "Loss frame/low specificity", "Loss frame/high specificity", "Gain frame/low specificity", and "Gain frame/high specificity". Each of the four videos was randomly selected for each classroom prior to the actual experimental procedures.

The questionnaire. Before the video was played in the classroom, students were asked to fill out "Side 1" of a questionnaire, which contains six questions. Two of the questions used a Likert 5-point scale to find out how

knowledgeable participants perceived themselves to be regarding HPV and the vaccination, as well as how likely they were to take action against HPV. Another question asked participants whether or not they had received the vaccination prior to the experiment. There were also three demographic questions inquiring about the age, gender, and ethnicity of participants.

After the video was played, students were asked to fill out "Side 2" of the questionnaire, which also contains six questions and an area for students to provide open-ended comments. Similar to the first side, the six objective questions on side two used a Likert 5-point scale. Two questions inquired about whether the participants' knowledge level or likeliness to take action had changed after watching the video. Two questions were to examine the participants' opinions of how persuasive and tailored the videos were. The last two questions asked how avoidant or empowered the participants feel regarding the HPV vaccination. Lastly, students could provide optional comments at the conclusion of the questionnaire.

Data Analyses to Test the Hypotheses

The statistical program *Statistical Package for the Social Sciences* (SPSS) was used to analyze the data collected from participant surveys. The following tests were conducted on inputted, coded data: paired T-tests, a frequency test, and mean calculations.

RESULTS

We handed out identical questionnaires to all of the students in all four classes. All usable, collected data was inputted into Statistical Package for the Social Sciences Analytical Software (SSPS). Independent t-tests were run on each dependent variable, comparing pre- and post-test answer means. Two tailed-tests for significance were used to determine the conclusiveness of the results. All significant results (results with <0.05 significance outcomes) showed a significant increase in knowledge and/or action.

Table 2a illustrates the mean score for participants' age, gender, and the status of their HPV vaccination. Gender was scored as the following: male were marked as "1", and females, as "2". Status of the HPV vaccination was marked as the following: participants who were unsure about their status were marked as "1", participants who had not been vaccinated were marked as "2", participants who were in the process of getting all three shots were marked as "3", participants who had completed their HPV vaccination were marked as "4".

Table 2b describes the frequency of the answers concerning the status of their HPV vaccination. These results are interesting for later discussion.

Table 3a displays **group one's** (gain frame/low specificity) results for pre- and post- test sample size (N), mean, standard deviation, and two-tailed test of significance. Table 3b displays **group two's** (loss frame/low specificity) results for pre- and post- test sample size (N), mean, standard deviation, and two-tailed test of significance. Table 3c displays **group three's** (loss frame/high specificity) results for pre- and post- test sample size (N), mean, standard deviation, and two-tailed test

of significance. Table 3d displays **group four's** (gain frame/high specificity) results for pre- and post- test sample size (N), mean, standard deviation, and two-tailed test of significance.

Results are further explained and analyzed in the "Discussion" portion of the paper.

Paired T-Test

The paired t-test is used when there is one measurement variable and two nominal variables. One of the nominal variables has only two values. The most common design is that one nominal variable represents different individuals, while the other is "before" and "after" some treatment (McDonald, 2009, p. 191). In this experiment, the treatment was the viewing of the HPV vaccination video. The paired T-Test also shows the standard error mean. In this study, the paired T-Test is used to compare the mean response and standard deviation of two different questions: the participants' knowledge and compliance levels. The paired t-test is only appropriate when there is just one observation for each combination of the nominal values (McDonald, 2009, p. 191). In this case, paired T-Tests were only performed on data taken from questions regarding the participants' knowledge about HPV before and after viewing the video and the participants' compliance before and after viewing the HPV video.

Paired T-Test for Null Hypothesis 1

Null Hypothesis 1: The mean difference between reported pre-knowledge and post-knowledge of the participants is zero for all four videos.

Hypothesis 1: The mean difference will be greatest between reported pre-knowledge and post-knowledge in the loss-frame videos as opposed to the gain-frame videos.

Hypothesis 2: The mean difference will be greatest between reported pre-knowledge and post-knowledge in videos with high specificity as opposed to the videos with low specificity.

Paired T-Test for Null Hypothesis 2

Null Hypothesis 2: The mean difference between reported pre-action and post-action of the participants is zero for all four videos.

Hypothesis 3: The mean difference will be greatest between reported pre-action and post-action in the loss-frame videos as opposed to the gain-frame videos.

Hypothesis 4: The mean difference will be greatest between reported pre-action and post-action in videos with high specificity as opposed to the videos with low specificity.

Means

The mean test is used to find the average answer from the sample population. This is the participants' most frequently reported response. The mean gives a generalization of the students' perceptions of the independent variables in terms of the video.

The following data were collected from the surveys:

Table 2a. Population Sample Statistics

	N	Mean	Std. Dev.
Age	87	18.71	0.082
Gender	87	1.53	0.054
Received Vaccination	87	2.51	0.128

Table 2b. Frequency Table

Have you already received the HPV vaccination?		
	Frequency	Percent
Unsure	20	23.0
No	33	37.9
In progress	4	4.6
Yes	30	34.5
Total	87	100.0

Table 3a. Survey Results for GROUP ONE (Gain Frame/Low Specificity)

How knowledgeable would you consider yourself to be about HPV and the HPV vaccination?				
	N	Mean	Std. Dev.	Significance
Pre-Test	22	2.91	0.971	0.000
Post-Test	22	4.05	0.375	
How likely are you to take action against the HPV vaccination?				
	N	Mean	Std. Dev.	Significance
Pre-Test	14	3.29	0.994	0.435
Post-Test	14	3.43	1.016	
Did you find the video persuasive?				
N	Mean	Std. Dev.		
22	3.91	0.426		
Did the message seem tailored to you?				
N	Mean	Std. Dev.		
22	3.68	0.839		
Do you feel avoidant concerning the HPV vaccine?				
N	Mean	Std. Dev.		
22	2.59	1.221		
Do you feel empowered to protect yourself from HPV?				
N	Mean	Std. Dev.		
22	4.36	0.658		

Table 3b. Survey Results for GROUP TWO (Loss Frame/Low Specificity)

How knowledgeable would you consider yourself to be about HPV and the HPV vaccination?				
	N	Mean	Std. Dev.	Significance
Pre-Test	20	2.65	0.988	0.000
Post-Test	20	3.75	0.550	
How likely are you to take action against the HPV vaccination?				
	N	Mean	Std. Dev.	Significance
Pre-Test	15	3.00	1.069	0.458
Post-Test	15	3.20	1.014	
Did you find the video persuasive?				
N	Mean	Std. Dev.		
20	3.50	0.889		
Did the message seem tailored to you?				
N	Mean	Std. Dev.		
20	3.60	1.142		
Do you feel avoidant concerning the HPV vaccine?				
N	Mean	Std. Dev.		
19	2.47	1.020		
Do you feel empowered to protect yourself against HPV?				
N	Mean	Std. Dev.		

20	3.70	1.081	

Table 3c. Survey Results for GROUP THREE (Loss Frame/High Specificity)

How knowledgeable would you consider yourself to be about HPV and the HPV vaccination?				
	N	Mean	Std. Dev.	Significance
Pre-Test	22	2.64	0.727	0.000
Post-Test	22	3.68	0.477	
How likely are you to take action against the HPV vaccination?				
	N	Mean	Std. Dev.	Significance
Pre-Test	13	3.15	0.222	1.000
Post-Test	13	3.15	0.222	
Did you find the video persuasive?				
N	Mean	Std. Dev.		
22	3.45	0.912		
Did the message seem tailored to you?				
N	Mean	Std. Dev.		
22	3.64	1.093		
Do you feel avoidant concerning the HPV vaccine?				
N	Mean	Std. Dev.		
18	2.67	1.237		
Do you feel empowered to protect yourself from HPV?				

N	Mean	Std. Dev.	
21	3.62	1.071	

Table 3d. Survey Results for GROUP FOUR (Gain Frame/High Specificity)

How knowledgeable would you consider yourself to be about HPV and the HPV vaccination?				
	N	Mean	Std. Dev.	Significance
Pre-Test	22	2.77	1.232	0.000
Post-Test	22	4.14	0.351	
How likely are you to take action against the HPV vaccination?				
	N	Mean	Std. Dev.	Significance
Pre-Test	15	3.00	1.254	0.334
Post-Test	15	3.27	0.884	
Did you find the video persuasive?				
N	Mean	Std. Dev.		
22	3.50	1.058		
Did the message seem tailored to you?				
N	Mean	Std. Dev.		
22	3.59	1.054		
Do you feel avoidant concerning the HPV vaccine?				
N	Mean	Std. Dev.		
21	2.71	0.845		

Do you feel empowered to protect yourself from HPV?			
N	Mean	Std. Dev.	
22	3.77	1.066	

DISCUSSION

Effectiveness of the Experimental Manipulations

The video manipulation attempted to produce results that show a clear distinction between the different health message tactics. This is to aid the creation of new health messages in order to make the messages more effective. According to researcher Rachel Myers (2009), some dependent variables should be strongly affected by the independent variables. “Therefore, people with a predominant approach-orientation respond more to cues of reward or incentive, whereas people with a predominant avoidance-orientation respond more to cues of punishment or threat“ (Myers, 2009, para. 4). However, while some of the dependent variables produced notable results, some of these variables, such as persuasiveness and message framing and denotative specificity, were not affected by the manipulations.

It is also important to note the results in Table 2b, which shows that almost an equal number of students have completed the HPV vaccination series, and have not received any of the three HPV vaccinations. These results could be due to the primarily marketed to females, and many males are not aware that HPV vaccination can be used prevent HPV in males.

Knowledge

Data indicated partial support for this variable's hypotheses. All of the groups showed a statistically significant increase in knowledge after watching the video. Subjects who viewed the gain frame, high specificity video (group four) reported a significantly greater increase in knowledge than the participants who viewed any other video. This fails to prove hypothesis one, but does support hypothesis two. The difference between the pre-test and post-test means was the greater. Subjects who viewed the loss frame, high specificity video (group 3) reported the lowest average increase in knowledge than the participants who viewed any other video. Based on this research, we can conclude that people are more responsive to hearing new information when it is presented in a positive light and when it is specified to them directly. According to Holtgrave, Tinsley, and Kay (1995), "What may appear to be arbitrary choices of wording—even alternative wording with the same underlying meaning—can have profound impacts in terms of the decisions and behaviors they elicit from the target audience" (p. 32). See Table 2a for further reference. More research is needed to examine the effects between message design and the acquisition of health knowledge.

Compliance

Data indicates partial support for this variable's hypotheses. None of the groups showed statistically significant increases in their likelihood of compliance after watching the video. Subjects who viewed the loss frame, high specificity video (group 3) reported no chance in likelihood of compliance. Subjects who viewed the

gain frame, high specificity video (group four) reported the statistically highest increase in likelihood of compliance. This fails to prove hypothesis three, but supports hypothesis four. Although these results are not statistically significant, they are still consistent with the findings of researcher Rachel Myers (2009): "People who received a gain-framed message from a credible source elaborated the message the most and reported the greatest amount of exercise intentions and behaviors" (para. 4). Based on this research, we can assume that health messages presented in a positive light and when it is presented to them directly will have the greatest success in achieving participant compliance. Further investigation is necessary to examine the intricacies of these findings. See Table 2d for further reference.

Persuasiveness

The video with the highest reported average was gain frame/low specificity (group one), with a mean response of 3.91. The video with the lowest reported average was loss frame/high specificity (group three), with a mean response of 3.15. However, all participants, regardless of the group, reported similar level of perceived persuasiveness. Therefore, we cannot confidently assert that any one video was significantly more persuasive than another. More research is necessary in order to understand the effect the independent variables have on persuasiveness. See Tables 2a-2d for further reference.

Message Framing and Denotative Specificity

The video with the highest reported average was gain frame/low specificity (group one), with a mean response of 3.68. The video with the lowest reported average was gain frame/high specificity (group four), with a mean response of 3.59. However, all participants, regardless of the group, reported similar level of perceived message framing and denotative specificity. Therefore, we cannot confidently assert that any one video was significantly more effective in term of the message framing and denotative specificity. See Tables 2a-2d for further reference.

Avoidance

The video with the highest reported average was gain frame/high specificity (group four), with a mean response of 2.71. The video with the lowest reported average was loss frame/low specificity (group two), with a mean response of 2.47. However, all participants, regardless of the group, reported similar levels of avoidance concerning the HPV vaccine. Therefore, we cannot confidently assert that any one video lessened the students' avoidance of the vaccine. More research is necessary in order to understand the effect the independent variables have on avoidance. See Tables 2a-2d for further reference.

Participant Perception of Personal Empowerment

The video with the highest reported average was gain frame/low specificity (group one), with a mean response of 4.36. The video with the lowest reported average was

loss frame/high specificity (group three), with a mean response of 3.62. We found these results to be intriguing. We would expect videos with positive message framing to elicit greater feelings of empowerment in viewers. Our findings confirmed this assumption. Consequently, we would also expect videos with negative message framing to produce lower feelings of empowerment in viewers. Our findings also confirmed this assumption. However, we would expect high specificity to generate greater feelings of empowerment, which was not reported in the study. See Tables 2a-2d for further reference.

Summary

Although the videos produced similar results in terms of the independent variables, we were able to make one statistically significant conclusion. Manipulating message framing and denotative specificity may not significantly affect the dependent variables tested in this study, but they do have the ability to increase the participant's knowledge about the discussed topic. The most advantageous combination in which to manipulate a health message about the HPV vaccination is to use a gain frame/low specificity approach. Messages such as gain frame/high specificity or loss frame/low specificity seem to be the least effected approach to manipulate health messages, based on our population sample. In addition, we found the results of the empowerment question to be logical and conclusive.

We hope that this study can aid health researchers in creating more effective health messages targeted at adolescents at risk of contracting HPV.

Limitations

One possible error that might have contributed to the results is participant unfamiliarity with some words used in the questionnaire. For example, if a student did not know the meaning of "tailored", they might have inaccurately answered the question. Future researchers may want to provide layperson terms along with specialized terms on student questionnaires.

Also, it would have been interesting for discussion purposes to include an open-ended question, asking students to comment on why they chose the answers they did (especially for the pre-and post- questions).

Personal experience with HPV and the HPV vaccination most likely contributed to participant answers to the questionnaire. In addition, there could have been variables outside of the experimenters' control that contributed to specific answers of specific participants.

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APPENDIX A

INFORMED CONSENT TO PARTICIPATE IN: "Using Message Framing and Denotative Specificity to Motivate HPV Vaccination among COMS 101/102 Students"

Senior project research on efficient persuasive tools is being conducted by Arielle Gout and Katie Kays in the Communication Studies Department at Cal Poly, San Luis Obispo, under the direct supervision of Dr. Lorraine Jackson. The purpose of the study is to use various persuasive techniques to determine the best methods of informing students about HPV and motivating to obtain an HPV vaccination if they have not already been vaccinated.

You are being asked to take part in this study by watching a video and filling out two short questionnaires. Your participation will take approximately fifteen minutes during our initial visit, and less than five minutes when we return, towards the end of the quarter, with a follow-up questionnaire. (About 20 minutes, altogether.) Please be aware that you are not required to participate in this research, you may omit any questions you prefer not to answer, and you may discontinue your participation at any time without penalty or loss of benefits.

There are psychological and physical risks associated with participation in this study. We provide explicit information about the HPV virus and vaccination. If you should experience discomfort or emotional distress, please be aware that you may contact Cal Poly Counseling Services at (805) 756-2511, or go to Building 27, Room 136, for assistance. If you have further questions about HPV, you may contact or visit the Cal Poly Health Center, (805) 756-1211. Vaccination against HPV infection does NOT confer 100% immunity, and sexually transmitted infection (STI) and pregnancy remain possible risks of genital contact and intercourse following HPV vaccination, should you elect to become immunized for HPV. HPV transmission is best prevented by abstaining from genital contact with an infected person. As with any vaccination, the HPV vaccination has potential adverse side effects. Should you choose to receive the vaccination, it is important to review all of the side effects associated with this particular group of viruses, and carefully weigh the potential risks against the potential benefits.

Your responses to the surveys will be provided anonymously to protect your privacy. Students may benefit from the study by becoming better informed about HPV and about HPV vaccinations. The study may motivate students into taking action and protecting themselves against the disease. Researchers who read the final study will have more evidence on which to base the formation of future health messages.

If you have questions regarding this study or would like to be informed of the results when the study is completed, please feel free to contact Arielle Gout at (925) 528-9406 or Katie Kays at (408) 410-4694. If you have questions or concerns

regarding the manner in which the study is conducted, you may contact Dr. Steve Davis, Chair of the Cal Poly Human Subjects Committee, at 756-2754, sdavis@calpoly.edu, or Dr. Susan Opava, Dean of Research and Graduate Programs, at 756-1508, sopava@calpoly.edu.

If you agree to voluntarily participate in this research project as described, please indicate your agreement by watching the HPV video and completing the attached questionnaire. Please keep one copy of this form for your reference, and thank you for your participation in this research.

APPENDIX B

SIDE 1

INITIAL PRE-VIDEO QUESTIONNAIRE

Directions: If you consent to participate in this study, please complete the following questionnaire. Remember that all of your answers will remain anonymous.

Please complete side 1 prior to watching the video. Do not complete side 2 until after you have watched the video.

1) Before viewing the video, how knowledgeable would you consider yourself to be about HPV and the HPV vaccination?

Not at all Knowledgeable	Not Knowledgeable	Neutral	Knowledgeable	Very Knowledgeable
O	O	O	O	O

2) Have you already received the HPV Vaccination?

Yes, all 3 shots	In progress (have had at least 1 shot)	No	Unsure
O	O	O	O

3) How likely are you to take action against HPV by getting the HPV vaccination?

Very Unlikely	Unlikely	Neutral	Likely	Very Likely
O	O	O	O	O

4) Age: _____

5) Gender: (Circle) Male Female

6) Ethnicity: _____

SIDE 2

Post-Video Questionnaire

7) After watching the video, how knowledgable would you consider yourself to be about HPV and the HPV vaccination?

Not at all Knowledgeable	Not Knowledgeable	Neutral	Knowledgeable	Very Knowledgeable
O	O	O	O	O

8) If you have not received the HPV vaccination (if you answered "no" to question # 2), how likely are you to take action against HPV by getting the vaccination?

Very Unlikely	Unlikely	Neutral	Likely	Very Likely
O	O	O	O	O

9) Did you find the video persuasive?

Not at all	Not very persuasive	Neutral	Somewhat persuasive	Very Persuasive
O	O	O	O	O

10) Did the message seem tailored to you?

Not at all	Not very tailored	Neutral	Somewhat tailored	Very Tailored
O	O	O	O	O

11) Do you feel avoidant concerning the HPV vaccine?

Not at all	Not very avoidant	Neutral	Somewhat avoidant	Very Avoidant
O	O	O	O	O

12) Do you feel empowered to protect yourself from HPV?

Not at all	Not very empowered	Neutral	A little bit empowered	Very much empowered
O	O	O	O	O

13) If you have any comments for the student researchers, feel free to state them below:

We thank you for your participation.