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Predictors of Valid Engagement with a Video Streaming Web Study among Asian American and Non-Hispanic White College Students

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Abstract

The study purpose was to determine the predictors of watching most of a Web-based streaming video and whether data characteristics differed for those watching most or only part of the video. A convenience sample of 650 students (349 Asian Americans and 301 non-Hispanic whites) was recruited from a public university in the United States. Study participants were asked to view a 27-minute suicide awareness streaming video and to complete online questionnaires. Early data monitoring showed many, but not all, watched most of the video. We added software controls to facilitate video completion and defined times for a video completion group (≥ 26 minutes) and video non-completion (< 26 minutes) group. Compared with the video non-completion group, the video completion group included more females, undergraduates and Asian Americans, and had higher individualistic orientation and more correct manipulation check answers. The video non-completion group skipped items in a purposeful manner, showed less interest in the video, and spent less time completing questionnaires. The findings suggest that implementing software controls, evaluating missing data patterns, documenting the amount of time spent completing questionnaires, and effective manipulation check questions are essential to control potential bias in Web-based research involving college students.

Keywords

Awareness of suicide; Methodological study; Streaming video; Young adult student; Culture

Introduction

Relatively little is known regarding the suitability of Web-based suicide awareness programs for college students. This gap is surprising because the Internet is an important way for college students in the United States (US) to communicate with each other, engage in social networking, and report health-related information.^{1, 2} There has been an overwhelming need for campus-wide mental health promotion, suicide prevention, and counseling programs for college students with serious mental health problems and suicide risk.³ Web-based suicide awareness program has been proposed as a possible solution because it may provide a safe, cost-effective, and easily accessible suicide prevention program for college students, but first it is imperative to understand the issues related to this approach. The study purpose was to determine the predictors of watching most of a Web-based streaming video and whether data characteristics differed for the groups watching most or only part of the video.

Especially for college students, most of whom have high computer and Internet literacy, Internet technologies offer great potential for researchers to supplement, change, or facilitate traditional healthcare strategies. Researchers can apply complex and advanced interventions over the Internet in a wide range of healthcare fields including treatment of depression and suicide prevention. However, this technology may include undiscovered pitfalls that could undermine rigorous intervention studies. Understanding the possible limitations of using Web-based research approaches for college students could provide important insights that would inform future intervention research. The effectiveness and efficacy of Internet studies focusing on suicide prevention can be intensified by designing studies with an awareness of pitfalls and assuring valid completion of all study components.

Literature Review

Various methodological issues related to Web-based health care intervention studies have been discussed in the literature, including the potential for inadequate recruitment and lack of valid engagement of participants. Addressing potentially inadequate recruitment, the most frequently reported issue related to Web-based intervention studies, involves ensuring the representativeness of a sample and the appropriateness of project marketing.⁴ Most college students in the US have their own computers with high-speed access to the Internet and use them on a daily basis.⁵ Thus, researchers choosing college students as their target population for Web-based studies may have fewer concerns about recruiting a representative sample than those who target other age groups. However, in most Web-based studies, investigators have had difficulties in representing national demographics accurately because probability sampling method may not be feasible when recruiting a sample from the Internet.^{6, 7}

Modalities to market and recruit for Web-based studies include issuing advertisements via e-mail, affiliate Web sites, search engines, other forms of online communication, direct mail, telephone, newspapers, radio, and television.⁴ Marketing strategies with effectively

delivered messages attract prospective participants' attention and allow researchers to recruit an adequate number of representative participants for Web-based studies.⁴ In these marketing materials it is important to address the benefits of participating in a research study and to clearly describe the study process because people tend to be more willing to adopt unfamiliar technologies or programs when the programs look beneficial and accessible.⁸

Another critical methodological issue influencing the internal validity of a Web-based study is achieving an adequate degree of participant engagement in study components. Valid engagement of participants is important for all research studies, but is particularly important for studies conducted without a researcher present during data collection or the intervention delivery, such as occurs in Web-based studies. As examples of valid engagement, participants should thoughtfully follow the questionnaire directions, carefully read questions before providing their responses, and fully focus on the intervention and its activities. Valid engagement of participants can be evaluated by (1) collecting and analyzing participant exposure measures (e.g., evaluating server log files of the Web sites); (2) performing a manipulation check to verify delivery (indicator that participants had access to the intervention) and take of the intervention (indicator of up-take of the intervention, such as recall of information presented); and (3) assessing effectiveness of the intervention. Commonly used measures for assessing participant exposure to Web-based program and intervention delivery are server log files, cookies, Web beacons, and session identifiers.⁹ For example, Web server log files can create measures delineating the duration of participants' exposure time per Web page for both assessment questionnaire (pre- and post-test) and intervention pages.⁴ Based on participant exposure measures, researchers can make a scientific decision regarding how many of study participants have taken the program seriously.⁴ As a check for participants' engagement with an intervention, the take of the intervention can be documented by asking the participants to respond to specific items or open-ended questions associated with the content of the intervention program.^{10, 11} Researchers can also assess participants' satisfaction with the intervention, relevance of the programs, and their willingness to recommend the programs to others^{4, 12-14} as indicators of their engagement.^{4, 11-13}

Despite the growing number of Web-based intervention studies and the advancements in Internet technology, little research is available for the methodological issues related to web-based video streaming studies involving college students. In particular, we were not able to find studies that addressed the predictors for college student groups that were more likely to complete study activities or if study completion was associated with data characteristics such as patterns of missing data. Therefore, the specific aims of our study were (1) to determine the demographic variables that predicted the college student groups who were more likely to watch most of a Web-based streaming video than other groups and (2) to determine whether data characteristics (e.g., patterns of missing data, manipulation check answers, and participant exposure times) differed for those participants who watched nearly all (video completion group, VC-Yes) or only part (video non-completion group, VC-No) of a streaming video on suicide awareness.

Methods

Design

A comparative research design guided our methodological analysis of data from a cross-sectional Web-based study that evaluated the suitability of a suicide awareness video for Asian Americans as compared to non-Hispanic white college students (UIC Suicide Awareness Study). The study was approved by the Institutional Review Board at the University of Illinois at Chicago (UIC).

Setting and Sampling

We used a convenience sampling strategy to recruit participants from five campuses of a public university in the Midwestern US with more than 24,000 students of whom 21% are Asian Americans and 42% are non-Hispanic whites. Inclusion criteria for the primary study were: (1) ethnic heritage was Asian or non-Hispanic white students, (2) English speaking, (3) aged 17 years or older, and (4) access to a computer with components for playing audio and video files (e.g., Adobe Flash Player) which was hosted on YouTube. Students were excluded if they: (1) were currently depressed or suicidal, (2) had recently loss of a friend or family member to suicide, (3) were legally blind or physically unable to complete a computerized questionnaire, or (4) had previously seen the *Truth about Suicide* video. We chose Asian Americans for the target group of the study since suicide is the leading cause of death among Asian Americans aged 15 to 24 years,¹⁵ but they are less likely to seek mental health care than non-Hispanic white students.¹⁶ We recruited non-Hispanic white students as a reference group.

We calculated the desired *a priori* sample size for the primary study whose aims required logistic regression analyses with expected small to medium effect sizes, a power of 0.80, and a significance level of 0.05.¹⁷ Based on these assumptions, we needed 187 participants in each of the two ethnic groups (374 college students in total).

Recruitment—We used electronic media and classroom announcements to recruit participants. We posted an announcement on the listserv for student organizations and the daily UIC announcement system, which was e-mailed to every member of the campus community with a UIC e-mail account. In addition, with the approval of department heads or the director of academic programs, we asked course instructors to announce the study during the classes.

Recruitment and Retention Strategies—An important recruitment and retention strategy was the assurance of anonymity of responses. The participants' university unique identifier (ID) and password were encrypted and not linked to their name or data to keep the participants' responses anonymous. The study process did not require the students to provide their names until they completed an independent program that collected their name and address required to mail gift cards. Another strategy was to allow participants an opportunity to view the video, and complete the questionnaires and video evaluation at their own pace and on their own computer. Therefore, students who registered for the study were able to log-off the computer and return at a later time by retaining their access code and completing

only those parts not finished previously. The anonymity and self-pacing were intended to encourage honest opinions from the students. A third retention strategy was a \$20 gift card in payment for their time.

Study Procedures

We designed a dedicated Web site with limited access and hosted it on secure College of Nursing application and database servers. We pilot tested the study Web site on Internet Explorer version 6 or higher and Firefox with 10 volunteer students for its functionality and user-friendliness before launching the study to check readability, log-in functions, video streaming status, and other technology issues with the Web site.

We directed students who responded to the recruitment announcements to a Web site to complete eligibility screening questions and registration forms using their ID and a unique password that participants created for this study. After completing the online registration, consent process, and pre-screening process, the students answered pre-test questionnaire items. Then, the students accessed the page that hosted the link to the 27-minute streaming video on YouTube. After watching the video, the Web site directions asked the students to complete a debriefing session and post-test questionnaire for video evaluation. Upon successful completion of the study activities, we mailed the participants the gift card. The study questionnaires linked to a web-based SQL database for automatic data collection. We exported the SQL data to an Excel file and then imported the data into SPSS 18 and STATA 12 for data analysis.

Suicide Awareness Video

The American Foundation for Suicide Prevention developed the suicide awareness video entitled “The Truth about Suicide: Real Stories of Depression in College (Truth about Suicide).”¹⁸ The video presents actual recognizable pictures and stories of personal experience with depression and suicide among college students and their family members. The goals of the video are to (1) encourage college students with depression and suicidal behaviors to seek help and treatment, and (2) emphasize the importance of classmates and friends' early recognition of the signs of depression and suicidal behaviors.¹⁸

Software Controls

Early data monitoring revealed that, of the students who had completed the study at that point, 51% of Asian American (n = 122) and 71% of white students (n = 97) did not watch most of the video or the entire video. To ensure that participants watched the entire video and completed all parts of the study, we introduced the following new processes and programmed new functions and messages:

- We monitored the time spent by each participant on each page of the study at the UIC server, not the subject's computer, to ensure we had accurate times.
- We added a function so that, the program would not allow participants to proceed until they agreed to watch and actually watched the whole video.

- A pop-up message on the video page stated that participants would receive a \$20 gift card if they completed the study questionnaires and viewed the 27-minute video and indicated that the page would be monitored.
- When course instructors were asked to promote the study to students, they were asked to stress that the whole video needed to be watched
- We analyzed manipulation check questions at the end of the study to ascertain whether participants seemed to have watched and paid attention to the video

In future Internet studies, we will apply these or similar participant exposure techniques from the beginning to ensure valid participation engagement.

Measures

The study measures included self-report questionnaires, which were presented online. Additionally, server log data provided exposure information.

Acceptability of the video—To check acceptability of the video, we used the modified Video Evaluation Questionnaire.¹⁹ The questionnaire uses a 9-point Likert scale and evaluates video ratings by measuring cultural relevance (5 items), video credibility (10 items), and video appeal (9 items). The questionnaire reliability is acceptable; Cronbach's alpha values (.81-.92).¹⁹ In our study, the alpha values ranged from .78 to .95.

Manipulation check—We included a manipulation check to examine if the awareness video had the intended effect on the participant by assessing participants' post-video knowledge level regarding depression and suicide among college students. Five dichotomous (true/false) questions evaluating participants' knowledge of the video content (e.g., suicide is the fifth leading cause of death among college students) were used to check evidence of engagement in the study. The score of the manipulation check was a sum of the correct answers.

Cultural orientation—We used the Individualism-Collectivism Questionnaire²⁰ to measure the cultural orientation toward individualism (IND) and collectivism (COL). The questionnaire consists of 24 items with a 7-point Likert scale.²⁰ The reliability of the questionnaire is acceptable with Cronbach's alpha values (.67 to .74).²⁰ In our study, the alpha values ranged from .79 to .82.

Attitudes toward suicide—We utilized the Suicide Opinion Questionnaire (SOQ),^{21, 22} which has been administered to college students and graduate students.²² The questionnaire uses a 5-point Likert scale. The reliability of the questionnaire is adequate with Cronbach's alpha values ranging from .73 to .96.²³ For our study, we used the shorter version of the SOQ (10 items) and the alpha values ranged from .72 to .76.

Background information—We obtained self-reported demographic information. Specifically we collected age, gender, education, and race data.

Participant exposure—We captured the duration of time spent viewing the video (i.e., delivery of the intervention) and completing the questionnaires from the Web log. This time indicator was a measure of the participant exposure to the study components.

Data Analysis

To conduct the statistical analyses, we used SPSS 18.0 and STATA 12.0 and defined VC-Yes as the group of participants who watched the video for at least 26 minutes (all of the video except the ending credits) and the VC-No group as the group of participants who watched less than 26 minutes of the video. We performed descriptive analyses to understand the distributions and relationships among the variables. We assessed bivariate relationships using various measures of associations (correlations). By checking item- and scale-level normality of the data, nonparametric data analyses were performed if there were non-normally distributed dependent variables. We conducted a missing value analysis to check for missing value patterns in the data.

We performed logistic regressions to determine factors associated with video completion. We used the Mann-Whitney U test as a nonparametric equivalent of the independent t-test to evaluate whether the medians for the amount of time used to complete the questionnaires and to watch the video differed between the VC-Yes and VC-No groups.

We conducted simultaneous quantile regressions to estimate the varying effects of video completion on the duration of time spent in the questionnaires. The standard error and *p*-values for the simultaneous quantile regression coefficient were estimated by the bootstrapping method²⁴ because this method is preferred as more practical for quantile regressions²⁵ and we had nonlinear dependent variables.

We performed analysis of covariance (ANCOVA) to present the mean differences in correct answers for the manipulation check questions. To minimize preexisting potential confounding factors influencing the outcomes, we adjusted the results of the logistic analysis, ANCOVA, and quantile regression for age, gender, education, race, cultural orientations, and attitudes toward suicide.

Although the VC-Yes group before the software controls and the VC-Yes group after the software controls did not have the same sample characteristics, no overall difference in the results was significant between the two VC-Yes groups. Hence, in this paper, we mainly compared results between the VC-Yes and VC-No groups.

Results

Adequacy of Recruitment

Sample characteristics—A total of 650 college students participated. There were 349 Asian Americans and 301 non-Hispanic whites. Both male (*n* = 183, 28.2 %) and female (*n* = 467, 71.8%) students participated in the study. Their mean age was 24 years (*SD*=7). Other demographic characteristics of the sample appear in Table 1.

Table 1 presents demographic characteristics of the VC-Yes ($n = 431$) and VC-No ($n = 219$) groups (650 college students in total). The 650 participants represent 4.3% of all of the students who were exposed to the listserv and classroom advertisements and received invitation e-mails. About 54% ($n=349$) of the respondents were Asian Americans and 46% ($n=301$) were non-Hispanic whites.

The majority of participants were video completers (66%), women (72%), undergraduates (60%), and in their twenties (64%). The VC-Yes group was significantly younger and included significantly more undergraduate students (66%) than the VC-No group (47%). The VC-Yes group before software controls ($n = 158$) was significantly younger and had significantly more undergraduate (78%) and Asian (75%) students than the VC-Yes group after software controls ($n = 273$).

Modalities of recruitment—Figure 1 shows the completed cases by the week of data collection. Events related to the study advertisement are indicated with vertical lines and defined in the legend. It took 10 weeks to recruit a sufficient number of participants for the study; we had expected a 4-month recruitment period.

Valid Participant Engagement

Predictors of video completion—Table 2 presents predictors of video completion with consideration of the software controls. Significant predictors of video completion were female gender ($OR = 5.17$, $P = .04$), undergraduate ($OR = 2.74$, $P = .001$), Asian ($OR = 7.04$, $P = .01$), higher individualism ($OR = 1.49$, $P = .008$), and more correct manipulation check answers ($OR = 1.43$, $P = .008$).

Participant exposure—The median time spent to complete the post-test was 9.4 minutes for the VC-Yes group and 4.5 minutes for the VC-No group ($P < .0001$). Even before watching the video, the VC-Yes group was significantly more likely to spend more time answering questionnaires than VC-No group (8.2 minutes vs. 2.1 minutes, $P < .001$). Figure 2 presents in detail results of quantile regression for the study Web log analysis examining participant exposure. Quantile regression for the Web log analysis included only estimated coefficients for the 5th to 75th quantiles to exclude extreme values (%) of recorded survey time. At the higher quantiles, the VC-Yes group spent more time completing both pre-and post-questionnaires than the VC-No group (P values $< .001$) (Figure 2). Compared with the 25th and 50th quantiles, the 75th quantiles of both the pre-and post-tests showed the biggest completion time differences between the VC-Yes and VC-No group. At the 75th quantile, the VC-Yes group spent 7.1 minutes more in completing the pre-test and 10.4 minutes longer in completing the post-test than the VC-No group. In quantile regression, there was no significant difference in the time to complete the pre- and post-test questionnaires in the VC-Yes group after software controls than in the VC-Yes before the software controls were implemented.

The median values for the video viewing time (i.e., delivery of the intervention) were 30 minutes for the VC-Yes group and 0.45 minutes for the VC-No group ($P < .001$). The video viewing time was not significantly different between before and after the software controls in the VC-Yes group.

Manipulation check—We conducted a manipulation check with five questions as another way to evaluate the level of participant engagement (i.e., take of the intervention). The VC-Yes group had more correct answers for the manipulation check questions than the VC-No group even after adjusting for age, gender, education, race, cultural orientations, and attitudes toward suicide ($P = .019$). The correct manipulation answers were not significantly different between before and after software controls were implemented in the VC-Yes group.

Data Characteristics

Missing data analysis—There were no items with 3% or more missing values regardless of video completion status. Events of missing data were more common in the VC-No (less than 2.0%) than VC-Yes (less than 0.8%) data. Items commonly skipped in both VC groups belonged to the suicide opinion questionnaire. The most commonly missed item from the suicide opinion questionnaire was “Suicide attempts are typically preceded by feelings that life is no longer worth living.” In contrast to the VC-Yes group's pattern of missing data, which was at random ($P = .21$), the VC-No group's pattern of missing data was not missing completely at random ($P = .01$). Missing was always completely at random both before and after the software controls in the VC-Yes group.

Acceptability of the video—Table 3 presents group differences for the mean score of the acceptability of the video. There was no significant difference in the video acceptability subscales (i.e., cultural relevance, video credibility, and video appeal) between the two VC groups. However, for four individual items of the video acceptability scale, significant adjusted mean differences existed between the two VC groups. Compared to the VC-No group, members of the VC-Yes group (1) expressed more interest in the video, (2) thought that the video was more meaningful to them, (3) were more likely to trust the video, and (4) were able to understand the words used in the video better (P values $< .05$) (Table 3).

Discussion

In this article, we are the first to report the adequacy of recruitment predictors of valid participant engagement in a Web-based video-streaming study involving college students. We were able to recruit a sufficient number of study participants in 10 weeks. This time frame was much less than we expected and indicates that the marketing strategies and compensation amount were appropriate and effective to initiate and complete recruitment after we added the software controls. Preliminary analysis revealed that, without software controls, a significant number of college students did not spend sufficient time on the study's Web-based activities, especially the video task. Significant differences existed in demographics (i.e., age, race, and education), cultural orientation, video interest, time spent to complete the questionnaires, and missing data patterns between the two groups that did or did not spend sufficient time on the video task. Overall, Asian American students were overrepresented in our sample although the VC-Yes and VC-No groups did not differ in their racial distribution.

The study results (e.g. manipulation check and acceptability of the video) provide some evidence that video streaming is a feasible method for delivering a suicide awareness

program to college students. In a longitudinal study, other investigators demonstrated that delivering specialized emergency room (ER) care (e.g., showing a videotape regarding suicidality to adolescent female suicide attempters in conjunction with usual ER care) was feasible and effective in reducing suicide risk among them.²⁶ However, for future studies of Internet-based streaming videos, our findings show that it will be important to apply proper software controls and to use evidence of the level of participant engagement, such as exposure time to a screening video, as a part of screening method for enrolling only participants who are likely to complete the study's activities.

The combined in-person and Web-based recruitment strategies (with the latter predominate) were feasible and highly productive for recruiting college students for the study. In line with previous findings,^{27, 28} we found that it was important to use a string of electronic media (e.g., e-mail, a posted hyperlink to the study Web site, and an online consent process) for successful recruitment and retention of the college student participants. Because we conducted our Web-based study with college students, a known population, it was possible to reach the entire population as other researchers have found.⁴

We used the Web log analysis to check the levels of participants' engagement, as have other researchers who measured Web page viewing time or Web page viewing attempts.^{4, 27} In the previous studies, however, no information was reported regarding the usefulness of Web page viewing times for identifying valid participants. Because we identified the VC-No group, it was clearly evident that the VC-Yes group spent significantly more time completing the survey tools and viewing the video than the VC-No group. Quantile regression results indicate that the effect of the suicide awareness video was more positive for students in the VC-Yes group than those in the VC-No group. Clearly, in future studies, there is a need for consideration of the responder effect that is represented by the survey response time, even if there are software controls for video completion. It is possible that the effects of a suicide awareness video would be more impressive and helpful for students who interact with the survey for a longer time. Additionally, there was solid evidence of the level of engagement in the finding that the VC-Yes group had more correct manipulation check answers than the VC-No group.

However, as noted by other researchers,⁴ it is also important to consider that recorded Web page viewing time could be inflated for college students who might have engaged in multitasking or left their computers with the streaming video playing, while not watching it. We think that this possibility is less of an issue in our study because the manipulation check scores indicate knowledge of the video content; however, participants could have already known the information presented in the video. Future studies will require a sufficient design with pre- and post-test measures to distinguish between prior participant knowledge of the subject matter and participant engagement. Such research could also provide insights about the minimum amount of time that is devoted to completion of the survey items to serve as a proxy for sufficient engagement to achieve optimal effects of an intervention. Such methodological advance will be important for research conducted using computer technologies in which documentation of survey-response time can become a standard practice and may be important for interpretation of study findings.

In contrast to the VC-Yes group, the VC-No group's missing data pattern indicate that the members of the VC-No group may have skipped items in a purposeful manner. This issue is consistent with the VC-No group's insufficient time viewing the video. These findings suggest that non-completers did not engage fully enough in the study activities to provide valid response. The VC-No group spent little time viewing the video (less than a half minute on average) and showed less interest and trust in and understanding of the video than the VC-Yes group. This issue speaks to the importance of a catchy start to the video to overcome any negative preconceived ideas about the video. A catchy and appealing beginning has been recommended for an educational video to improve learners' engagement and learning outcomes.²⁹

In contrast to another study in which the investigators reported that viewing a video via the Internet was the most problematic issue due to trouble using programs such as QuickTime and Windows Media Player,³⁰ we did not experience any issues related to streaming the video of our study. Our success is likely due to the fact that we linked to the video from YouTube and participants were able to watch the video without installing a specific program. In addition, the final version of our study Web site was accessible using any computer operating system; therefore, both Windows and Mac users were able to access the Web site and complete the study activities. Instead, in our study, video completion or non-completion was related to individual preferences regarding the video rather than technical issues. We learned that the college students were more likely to complete the video if they perceived it as beneficial, similar to what other researchers have reported.³¹

There were a few limitations of this study. First, the generalizability of the findings is limited because we conducted the study at one university without a random selection process. This approach was appropriate and cost-effective for the primary study, which was designed to assess the suitability of a Web-based, suicide awareness video intervention for college students. Second, the five manipulation check items were not enough to address all of the video's content, although they were adequate to confirm the level of participant engagement in the study activities. Adding more manipulation check items would be helpful to more accurately check the take of the intervention. Third, it would have been helpful if we gathered additional details for the Web log analyses such as the total number of Web page visits and the total number of times each participant logged onto the study Web site. These functions could be easily implemented in a future study with adequate programming support and effort.

Web-based interventions are a promising and cost-effective way to deliver health-related information to college students when their unique methodological issues are properly addressed. To limit potential bias in and to minimize the cost of Web-based research involving college students, researchers should (1) implement software controls while protecting the participants' right to refuse to answer items or to not participate in research activities, (2) evaluate missing data patterns, (3) incorporate a sufficient number of effective manipulation check questions, and (4) document the amount of time participants spend in completing questionnaires and other study activities. In future studies, we recommend that researchers attend to these types of issues during study design and data collection in order to support the internal validity of their studies.

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Figure 1. Response Profile of Study Completion

Figure 2. Estimated Coefficients of Quantile Regressions on Completion Time Differences in Pre- and Post-tests between VC-Yes and VC-No Groups

Table 1

Demographic Characteristics of the VC-Yes and VC-No Groups

Variable	Category	Total (N = 650) n (%)	VC-Yes (n = 431) n (%)	VC-No (n = 219) n (%)	χ^2, t	P
Race	Non-Hispanic					
	white	301 (46.3)	204 (47.3)	97 (44.3)	0.463	.506
	Asian	349 (53.7)	227 (52.7)	122 (55.7)		
Gender	Male	183 (28.2)	114 (26.5)	69 (31.5)	1.836	.175
	Female	467 (71.8)	317 (73.5)	150 (68.5)		
Year in school	Undergraduate	388 (59.7)	285 (66.1)	103 (47.0)	22.134	<.001
	Graduate	254 (39.1)	141 (33.1)	113 (52.3)		
	Missing	8 (1.2)	5 (1.2)	3 (1.4)		
Age	17–19	136 (20.9)	94 (21.8)	42 (19.2)	28.211	<.001
	20–29	418 (64.3)	296 (68.9)	122 (55.7)		
	30–	96 (14.8)	41 (9.5)	55 (28.1)		
	mean (SD)	24 (7.0)	23 (5.6)	26 (8.8)	-4.326	<.001
	min–max	17–75	17–59	17–75		

VC-Yes: video completion group, VC-No: video non-completion group

Table 2
Predictors of Video Completion (N = 650)

Variable	B	SE	OR	95% CI
Age	-.039	.025	0.96	[0.92, 1.01]
Gender (Female = 1)	1.644	.782	5.17*	[1.12, 23.95]
Education (Undergraduate = 1)	1.009	.309	2.74**	[1.50, 5.02]
Race (Asian = 1)	1.951	.796	7.04*	[1.48, 33.49]
Gender * Race	-1.208	.837	0.30	[0.06, 1.54]
Individualism	.400	.150	1.49**	[1.11, 2.00]
Collectivism	.181	.164	1.20	[0.87, 1.65]
Attitudes toward suicide	.273	.208	1.31	[0.87, 1.98]
Manipulation check	.358	.136	1.43**	[1.10, 1.87]
Software controls (YC-Yes after software controls = 1)	22.292	2305.967	4.801E9	-

CI = confidence interval. OR = odds ratio. VC-Yes: video completion group.

Cox & Snell's $R^2 = .45$.

* $P < .05$.

** $P < .01$.

Table 3
Mean Differences of Acceptability of the Video between VC-Yes (n = 431) and VC-No (n = 219) Groups

Acceptability of the video *	VC-Yes Adjusted Mean	VC-No Adjusted Mean	F	P
Cultural relevance	4.97	4.85	1.981	.160
Q1. How interesting was the video to you?	5.56	5.16	13.900	< .001 **
Q2. How much was the video personally meaningful to you?	4.95	4.72	3.892	.049
Video credibility	5.70	5.63	0.790	.375
Q1. How much did you trust what the video said about college student suicide?	5.95	5.76	4.442	.035
Video appeal	5.27	5.17	1.395	.238
Q8. How well do you feel you understood the meaning of the words used in the video?	6.27	6.09	4.554	.033

* Adjusted for age, gender, education, race, individualism cultural orientation, collectivism cultural orientation, and attitudes toward suicide

** $P < .002$, accepted level of statistical significance adjusted by Bonferroni correction

VC-Yes: video completion group, VC-No: video non-completion group