



PATIENT PREFERENCE FOR MEDICAL INFORMATION IN THE EMERGENCY DEPARTMENT: POST-TEST SURVEY OF A RANDOM ALLOCATION INTERVENTION

Authors: Johnathan M. Sheele, MD, MPH, MHS, Jasmin Bhangu, Ayana Wilson, MD, and Ed Mandac, MD, Cleveland OH, and Jacksonville, FL

CE Earn Up to 5.5 Hours. See page 595.

Contribution to Emergency Nursing Practice

- The current literature on emergency department discharge instructions indicates that written information is poorly retained by patients.
- This article contributes research findings that most ED patients prefer receiving information about their medical condition either by video or a combination of video and written formats.
- Key implications for emergency nursing practice from this research are that patient education and discharge processes should consider including video instruction to improve patient comprehension of important medical information.

Abstract

Introduction: Health literacy can create barriers for ED staff attempting to communicate important information to patients. Video discharge instructions may address some of these bar-

riers by improving patients' comprehension of medical information and addressing health literacy challenges.

Methods: One hundred ninety-six patients diagnosed with either hypertension, asthma, congestive heart failure, or diabetes were randomly assigned to 1 of 2 interventions: watching video medical information followed by reviewing written discharge instructions or written instructions first, followed by video education. After the interventions, patients from both groups completed surveys assessing their preferences for receiving medical information.

Results: We found that 44% ($n = 86/196$) of ED patients preferred receiving medical information in video format, whereas 18% ($n = 35/196$) favored the written format, and 38% ($n = 75/196$) of the sample preferred receiving both formats. Fifty-five percent of men ($n = 38/69$) preferred the video format, whereas 42% ($n = 51/122$) of women indicated a preference for both video and written formats. Learning something new from the video was associated with patient preference for receiving medical instructions, ($\chi^2 [1] = 9.39, P = 0.01$) and the desire to watch medical videos or read information at home via the Internet ($\chi^2 [1] = 18.46, P < 0.001$).

Discussion: The majority of ED patients in this study preferred medical information in video or video plus written formats, compared with written-only format.

Key words: Discharge instructions; Emergency department; Video; Health literacy; Medical information

Johnathan M. Sheele is a physician and Assistant Professor at University Hospitals Cleveland Medical Center and Case Western Reserve University, Department of Emergency Medicine, Cleveland, OH.

Jasmin Bhangu is at Case Western Reserve University, Cleveland, OH.

Ayana Wilson is a physician at University Hospitals Cleveland Medical Center and Case Western Reserve University, Department of Emergency Medicine, Cleveland, OH.

Ed Mandac is a physician and Associate Professor at University Hospitals Cleveland Medical Center and Case Western Reserve University, Department of Emergency Medicine, Cleveland, OH.

For correspondence, write: Johnathan Sheele, MD, MPH, MHS, Mayo Clinic, Department of Emergency Medicine, 4500 San Pablo Road, Jacksonville, FL, 32224; E-mail: Sheele.Johnathan@Mayo.edu.

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Introduction

The number of Americans receiving health care in emergency departments is increasing, with approximately 20% of the population receiving care in emergency departments annually.¹ ED visits represent an important opportunity to engage patients in their medical care. Regardless of an ED visit's relation to an acute manifestation of an existing

medical condition or a new diagnosis, it provides an opportunity to educate patients about their medical conditions and promote well-being.¹ Unfortunately, much of the medical literature provided in the emergency department exceeds the average reading level of the majority of patients, and most patients have inadequate understanding of their discharge paperwork.^{2,3} Complicating the lack of understanding is that patients are often unaware that they do not fully understand their discharge instructions. Lacking an understanding about their medical conditions, discharge instructions, and home-care plans increases the chance for medication errors and noncompliance.^{4,5} Unconventional methods of communicating medical information through the use of medical videos could address health literacy barriers, help avoid medical errors, and improve both patient compliance and outcomes.

Effective communication of important medical information to patients and family members in the emergency department is challenging.⁶⁻¹⁰ Studies exploring the use of video discharge instructions in adult ED patients demonstrated improved understanding of their diagnoses and the need for subsequent care.^{11,12} In turn, research involving video discharge instructions in pediatric emergency departments has shown improved caregiver knowledge about the patient's medical condition; however, these studies did not demonstrate improved outcomes or more frequent post-ED primary care follow-up visits.¹³⁻¹⁶ Although videos can communicate medical information effectively, there are few data regarding how ED patients prefer to receive their medical information. The purpose of our study was to assess adult ED patients' preferences for receiving medical information.

Methods

This study received institutional review board approval to enroll 200 ED patients between the ages of 18 and 99 with previous or current diagnoses of hypertension (HTN), asthma, congestive heart failure (CHF), or type 2 diabetes mellitus (DM) in a survey study. A power analysis indicated that 50 patients in each diagnosis group were needed to have a 90% chance of detecting, at a 5% significance level, differences and associations among patients preferring to receive discharge instructions by video compared with video and written or written-only formats.

Enrollment occurred in a single 45-bed urban academic tertiary-care emergency department in downtown Cleveland, Ohio, with 65,000 visits per year. Approximately one third of the patients are admitted for inpatient care.

Participants were recruited between July 2016, and November 2017, between 7:00 AM and 11:00 PM, all days of the week. Inclusion criteria were noted above. Patients excluded from the study included vulnerable populations: those who were critically ill, unable to provide informed consent, encephalopathic, demented, or had an expected ED discharge within 10 minutes.

Each ED treatment room contained a television, allowing patients to choose to watch a preloaded video about CHF, HTN, type 2 DM, and asthma. These medical videos, professionally produced by Emmi Solutions, LLC (Wolters Kluwer, Philadelphia, PA), use a simplified conversational format to help lay persons understand complex medical diseases. For written instructions, our facility, as well as this study, used ExitCare (RELX, Elsevier, New York, NY), peer-reviewed and evidence-based discharge documents that communicate medical information in an intuitive and patient-friendly manner.

Upon obtaining informed consent, an alternating 1:1 format was used to randomize the patients from all 4 diagnoses groups to 1 of 2 discharge instruction arms. Participants randomized to instruction arm 1 watched an Emmi video about their medical condition and then reviewed the corresponding ExitCare written instructions. Participants randomized to the other instruction arm reviewed the ExitCare instructions first and then watched the Emmi video. After reviewing both the video and written information, each participant completed a verbal survey administered by an undergraduate research assistant. The survey consisted of demographic enquiries and the following 6 questions:

1. Have you ever been provided an instruction video or written instructions on your medical condition by a doctor?
2. Did you learn anything new from the video?
3. Do you think watching this video will help you better care for your medical condition?
4. Do you prefer the video format, written format, or would you like to see both?
5. Do you have Internet access at home?
6. If you could watch videos or read information at home via the Internet, would you like to?

For all survey questions, participants were asked to answer either "yes" or "no," with the exception of indicating their preference for receiving medical information as "video," "written," or "both." The answers were transcribed by a research assistant onto a survey form and then entered by that person into a REDCap (Vanderbilt University, Nashville, TN) database.¹⁷ Descriptive statistics, χ^2 analyses, independent sample t-tests, and analysis of variance

(ANOVA) were used to determine associations with preference for receiving medical information. Jamovi software, version 0.9.6.8, was used for the analyses.

Results

Ninety-eight percent ($n = 196/200$) of patients meeting the inclusion criteria agreed to participate in this study, and 4 people declined. Missing data included 3 patients without specified genders, the absence of education level documentation for 1 participant, and 1 patient had not answered all the survey questions. Despite the absence of these data points, the research team included the rest of the patients' responses in the analyses. An overview of participant demographics revealed a mean age of 57 years (range: 18 to 98 years, standard deviation [SD] = 18), 64% of participants were female ($n = 122/191$), and 17% (33/190) of the sample indicated that they had 4 or more years of college (Table). We found differences between the mean ages of patients in the HTN, asthma, CHF and type 2 DM groups ($P < 0.001$). No significant relationships were found among the study intervention order (receiving the Emmi video or reading the ExitCare instructions first) and patient responses to the survey questions, medical diagnoses, or education levels (Supplementary Table 1).

QUESTION 4: DO YOU PREFER THE VIDEO FORMAT, WRITTEN FORMAT, OR WOULD YOU LIKE TO SEE BOTH?

The majority of our sample (44%, $n = 84/191$) favored video instructions, 17% ($n = 33/191$) of participants preferred the written-only format, and the remaining 39% ($n = 74/191$) opted for both formats. Fifty-five percent of the male participants ($n = 38/69$) preferred video, compared with 38% ($n = 46/122$) of the women ($\chi^2 [1] = 5.40, P = 0.02$). Although no other gender differences were noted among the 3 preference groups, the aggregate preference variable by gender was significantly different ($\chi^2 [2] = 5.86, P = 0.05$, Supplementary Table 2).

Patient preferences for receiving medical information in the video-only format were associated with learning something new by watching the Emmi video ($\chi^2 [1] = 3.90, P = 0.05$) and reporting that the video helped them better care for their medical conditions ($\chi^2 [1] = 8.64, P = 0.003$). Patients preferring the written-only format, compared with the video-only and video and written cohorts, reported lower interest in watching medical videos or reading medical information at home via the Internet

($\chi^2 [1] = 24.31, P < 0.001$), were less likely to learn something new by watching the video ($\chi^2 [1] = 8.69, P = 0.003$), and less likely to report that the video would help them better care for their medical conditions ($\chi^2 [1] = 32.19, P < 0.001$, Supplementary Table 2).

Patients preferring both the video and written formats reported that they were more likely to have previously received medical information about their conditions from physicians or instructional videos ($\chi^2 [1] = 4.09, P = 0.04$) and expressed desire to watch medical videos or read medical information at home via the Internet ($\chi^2 [1] = 3.86, P = 0.05$). Within-group comparisons of the aggregate preference variables for each of the 5 survey questions revealed significant differences among patients, indicating that they would or would not learn something new from watching the Emmi video ($\chi^2 [1] = 9.39, P = 0.01$), have better care for their medical conditions after watching the video ($\chi^2 [1] = 32.63, P < 0.001$), and have the desire to watch medical videos or read medical information at home via the Internet ($\chi^2 [1] = 24.33, P < 0.001$).

QUESTION 1: HAVE YOU EVER BEEN PROVIDED AN INSTRUCTIONAL VIDEO OR WRITTEN INSTRUCTIONS ON YOUR MEDICAL CONDITION BY A DOCTOR?

Fifty percent of the entire sample ($n = 97/196$) indicated that, before this study, a physician had provided them with instructional videos or written information about their conditions. No significant relationships were noted between previously receiving video or written information and gender ($\chi^2 [1] = 0.65, P = 0.42$, Supplementary Table 1), the aggregate variables for age ($\chi^2 [4] = 2.58, P = 0.63$), education level ($\chi^2 [2] = 0.6, P = 0.74$), medical conditions ($\chi^2 [3] = 2.02, P = 0.57$), or responses to the other 4 survey questions (Supplementary Table 3).

QUESTION 2: DID YOU LEARN ANYTHING NEW FROM THE VIDEO?

Although the majority of the sample (69%, $n = 136/196$) reported that they learned something new about their medical conditions by watching the Emmi video, no significant relationships were found between acquiring new knowledge and gender ($\chi^2 [1] = 0.57, P = 0.45$, Supplementary Table 1) or the aggregate variables for age ($\chi^2 [4] = 8.04, P = 0.09$) and education levels ($\chi^2 [2] = 0.68, P = 0.71$, Supplementary Table 3). Exploring the participant group that learned something new by the aggregate medical conditions variable yielded no significant associations

TABLE 1
Patient demographics (N = 196)

Characteristic	N (%)
Age	
18-33 years	24 (12%)
34-49 years	32 (16%)
50-65 years	72 (37%)
66-81 years	50 (26%)
82-98 years	18 (9%)
Gender	
Female	122 (64%)
Male	69 (36%)
Education	
High school	105 (54%)
<4 years' college	57 (29%)
≥4 years' college	33 (17%)

($\chi^2 [3] = 5.80, P = 0.12$). However, individual analysis of the learning variable, and by each medical condition, revealed that 82% of participants in the CHF group were more likely to learn something new about their illnesses from viewing the video, compared with cohorts indicating that they did not acquire new knowledge from the video ($\chi^2 [1] = 4.61, P = 0.03$, [Supplementary Table 3](#)).

QUESTION 3: DO YOU THINK WATCHING THIS VIDEO WILL HELP YOU BETTER CARE FOR YOUR MEDICAL CONDITION?

Ninety-one percent of both male ($n = 63/69$) and female ($n = 111/122$) patients indicated that watching the video would help them better care for their medical condition ([Supplementary Table 1](#)). There were no significant differences between the “better care variable” and gender ($\chi^2 [1] = 0.01, P = 0.14$) or the aggregate variables of age ($\chi^2 [4] = 1.51, P = 0.82$), medical conditions ($\chi^2 [3] = 2.05, P = 0.56$), or education level ($\chi^2 [1] = 3.81, P = 0.15$, [Supplementary Table 3](#)).

QUESTION 5: DO YOU HAVE INTERNET ACCESS AT HOME?

Sixty-four percent (124/195) of patients reported home Internet access ([Supplementary Table 1](#)). Home Internet access was associated with the survey question regarding desire to watch medically oriented videos or read medical informa-

tion on the Internet ($\chi^2 [1] = 4.40, P = 0.04$) and the aggregate education level variable ($\chi^2 [2] = 16.67, P < 0.001$, [Supplementary Table 3](#)). Educational level had significant associations between patients with home Internet access and a high school education ($\chi^2 [1] = 16.48, P = 0.001$) and participants indicating that they had less than 4 years of college ($\chi^2 [1] = 9.75, P = 0.002$). The likelihood of home Internet access was also related the aggregate age variable ($\chi^2 [4] = 15.68, P = 0.003$). Further analyses revealed that younger participants were more likely to have Internet access at home ($M = 54$ years of age, $SD = 18$) compared with those without home Internet access ($M = 64$ years of age, $SD = 15$).

QUESTION 6: IF YOU COULD WATCH VIDEOS OR READ INFORMATION AT HOME VIA THE INTERNET, WOULD YOU LIKE TO?

Eighty-one percent (158/196) of patients reported an interest in watching medical videos or reading medical information at home on the Internet. Comparing genders ([Supplementary Table 1](#)), both women (75%, $n = 91/121$) and men (90%, $n = 62/69$) reported interest in watching medical videos or reading material at home on the Internet. It is interesting that statistical significance was noted between genders, possibly supporting the above data point that both male and female patients in this study had interest in using the Internet to learn more about their medical conditions ($\chi^2 [2] = 6.01, P = 0.01$). No significant relationships were found between this “interest” and the aggregate variables of age ($\chi^2 [4] = 5.30, P = 0.26$) or medical condition ($\chi^2 [3] = 1.04, P = 0.79$, [Supplementary Table 3](#)). However, significant findings existed between the “interest” variable and having learned something new by watching the Emmi video ($\chi^2 [1] = 18.46, P < 0.001$). In addition, a significant relationship existed between reporting that the video helped patients better care for their medical condition and the “interest” variable ($\chi^2 [1] = 22.90, P < 0.001$).

Discussion

Although many patients discharged from emergency departments typically are given paper instructions, previous research indicated that this information frequently is misunderstood and poorly retained.²⁻⁵ Whereas much of the past research has focused on children watching laceration and sprain videos in the emergency department or viewing information at home, a need exists for further exploration into the various facets of discharge instructions in the

adult ED patient population. Moreover, research assessing how patients want to receive their discharge instructions may play a key role in addressing health care literacy barriers, having positive impact on compliance and potentially reducing medical errors at home.

The findings from this study demonstrate that the majority of patients in this sample preferred to receive discharge instructions about their medical condition by video or a video plus written format. Although the evidence is limited, our results are consistent with previous studies evaluating both patient preference for receiving information as well as how patients best retain medical information.^{3,8,11} The results from this study, combined with the rise of technologically savvy patients, present a call for emergency departments to devote more research to assess the efficacy of discharge instruction options and allow ED team members to more effectively meet the needs of those we serve.

Limitations

A convenience sample of patients presenting during daytime hours likely affected the representative nature of this sample. The lack of a control group, combined with conducting this research at 1 site, limits the generalizability to other facilities. The time from first receiving the discharge information until the survey was administered varied by disease. For instance, the CHF video and written information required almost twice the time to complete as the information for asthma, and these time differences could have had an effect on the results. The video and written instructions were provided by different companies and did not communicate identical information; this could have affected the findings. Although an ANOVA determined group differences among the mean ages of patients with HTN, asthma, CHF, and type 2 DM, a post-hoc analysis was not conducted to further assess within-group differences. In turn, owing to the nature of the survey responses and demographic variables, some of the sample sizes for the breakout groups were small, and this could have had impact on the findings. The number of statistical tests, without applying a multiple testing correction, increased the likelihood of spurious results.

Implications for Emergency Nurses

Accommodating preferences for receiving medical information and modifying discharging processes could aid patients' understanding about their diseases, address potential health

care literacy challenges, and improve both compliance with follow up and health outcomes.

Conclusion

Regardless of age, education level, or access to home Internet, the majority of patients in this study indicated preference for receiving medical education by video or a combination of video plus written instructions. Video instructions, supplemented with written instructions, may be the optimal way to improve patient comprehension upon ED discharge. Based on previous research, as well as our findings, future studies exploring the best ways to meet the learning needs of ED patients should examine video and written discharge instructions both as independent educational tools and used in combination for cost effectiveness, ED feasibility and timeliness, patient and family comprehension, and health outcomes.

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Author Disclosures

Conflicts of interest: none.

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Supplementary Material

To access the supplementary material accompanying this article, visit the online version of the *Journal of Emergency Nursing* at www.jenonline.org.

Appendix

SUPPLEMENTARY TABLE 1

Survey questions, medical condition, education level by participant, age, gender, and intervention order descriptive statistics and χ^2 .

	Age in years	Gender	Study intervention given first
Were provided an instructional video or written instructions on your medical condition by a doctor	Mean: 59 Median: 60 SD: 17 N: 196	Female: 48% (58/122) Male: 54% (37/69) χ^2 (1) = 0.65 P = 0.42	Written: 43% (43/97) Video: 55% (54/99) χ^2 (1) = 2.05 P = 0.15
Learned something new from watching the video instructions	Mean: 59 Median: 60 SD: 17 N: 196	Female: 67% (82/122) Male: 73% (50/69) χ^2 (1) = 0.57 P = 0.45	Written: 64% (62/97) Video: 75% (74/99) χ^2 (1) = 2.71 P = 0.10
Watched the video helped them better understand their medical condition	Mean: 58 Median: 59 SD: 18 N: 196	Female: 91% (111/122) Male: 91% (63/69) χ^2 (1) = 0.01 P = 0.14	Written: 92% (89/97) Video: 90% (89/99) χ^2 (1) = 0.20 P = 0.65
Have Internet access at home	Mean: 54 Median: 55 SD: 18 N: 195	Female: 65% (78/121) Male: 62% (43/69) χ^2 (1) = 0.09 P = 0.77	Written: 59% (57/96) Video: 68% (67/99) χ^2 (1) = 1.45 P = 0.23
Want to watch medical videos or read medical information at home via Internet	Mean: 58 Median: 58 SD: 18 N: 195	Female: 75% (91/121) Male: 90% (62/69) χ^2 (1) = 6.01 P = 0.01	Written: 78% (75/96) Video: 84% (83/99) χ^2 (1) = 1.03 P = 0.31
Hypertension	Mean: 62 SD: 17 N: 47	Female: 25% (30/122) Male: 22% (15/69) χ^2 (1) = 0.32 P = 0.57	Written: 53% (25/47) Video: 47% (22/47) χ^2 (1) = 0.34 P = 0.56
Asthma	Mean: 46 SD: 18 N: 50	Female: 28% (34/122) Male: 20% (14/69) χ^2 (1) = 1.35 P = 0.25	Written: 48% (24/50) Video: 52% (26/50) χ^2 (1) = 0.06 P = 0.81
Congestive heart failure	Mean: 64 SD: 15 N: 49	Female: 28% (34/122) Male: 20% (14/69) χ^2 (1) = 1.35 P = 0.25	Written: 55% (27/49) Video: 45% (22/49) χ^2 (1) = 0.82 P = 0.36
Type 2 diabetes mellitus	Mean: 59 SD: 16 N: 50	Female: 22% (27/122) Male: 32% (22/69) χ^2 (1) = 2.20 P = 0.14	Written: 42% (21/50) Video: 58% (29/50) χ^2 (1) = 1.51 P = 0.22

continued

SUPPLEMENTARY TABLE 1

Continued

	Age in years	Gender	Study intervention given first
High school level education	Mean: 58 SD: 19 N: 105	Female: 62% (63/101) Male: 38% (38/69) $\chi^2 (1) = 0.32$ $P = 0.57$	Written: 49% (51/105) Video: 51% (54/105) $\chi^2 (1) = 0.13$ $P = 0.72$
< 4-year college education	Mean: 53 SD: 16 N: 57	Female: 63% (35/56) Male: 38% (21/56) $\chi^2 (1) = 0.10$ $P = 0.75$	Written: 51% (29/57) Video: 49% (28/57) $\chi^2 (1) = 0.04$ $P = 0.83$
\geq 4-year college education	Mean: 63 SD: 16 N: 33	Female: 73% (24/33) Male: 27% (9/33) $\chi^2 (1) = 1.26$ $P = 0.26$	Written: 51% (16/33) Video: 48% (17/33) $\chi^2 (1) = 0.05$ $P = 0.82$

SD, standard deviation

SUPPLEMENTARY TABLE 2

Patients' preference for receiving their medical information by gender, study intervention order, medical condition, and education level: Descriptive statistics and χ^2 analysis results

	Video preference	Written preference	Video + written preference	Total
Gender	Overall: 44% (84/191) Female: 38% (46/122) Male: 55% (38/69) χ^2 (1) = 5.40 $P = 0.02$	Overall: 17% (33/191) Female: 24% (25/122) Male: 12% (8/69) χ^2 (1) = 2.44 $P = 0.12$	Overall: 39% (74/191) Female: 42% (51/122) Male: 33% (23/69) χ^2 (1) = 1.33 $P = 0.25$	Female: 64% (122/191) Male: 36% (69/191) χ^2 (2) = 5.86 $P = 0.05$
The medical instructions that were given first to the patient	Written: 52% (45/86) Video: 48% (41/86) χ^2 (1) = 0.49 $P = 0.48$	Written: 43% (15/35) Video: 57% (20/35) χ^2 (1) = 0.75 $P = 0.39$	Written: 49% (37/75) Video: 51% (38/75) χ^2 (1) = 0.00 $P = 0.97$	Written: 49% (97/196) Video: 51% (99/196) χ^2 (1) = 0.89 $P = 0.64$
Was provided an instructional video or written instructions on your medical condition by a doctor	45% (39/86) χ^2 (1) = 1.05 $P = 0.31$	40% (14/35) χ^2 (1) = 1.54 $P = 0.22$	59% (44/75) χ^2 (1) = 4.09 $P = 0.04$	50% (97/196) χ^2 (2) = 4.38 $P = 0.11$
Learned something new from watching the video instructions	77% (66/86) χ^2 (1) = 3.9 $P = 0.05$	49% (17/35) χ^2 (1) = 8.69 $P = 0.003$	71% (53/75) χ^2 (1) = 0.09 $P = 0.76$	69% (136/196) χ^2 (1) = 9.39 $P = 0.01$
Watching the video helped them better understand their medical condition	98% (84/86) χ^2 (1) = 8.64 $P = 0.003$	66% (23/35) χ^2 (1) = 32.19 $P < 0.001$	95% (71/75) χ^2 (1) = 2.16 $P = 0.14$	91% (178/196) χ^2 (1) = 32.63 $P < 0.001$
Have Internet access at home	66% (56/85) χ^2 (1) = 0.34 $P = 0.56$	54% (19/35) χ^2 (1) = 1.59 $P = 0.21$	65% (49/75) χ^2 (1) = 0.16 $P = 0.69$	64% (124/195) χ^2 (1) = 1.60 $P = 0.45$
Want to watch medical videos or read medical information at home via Internet	87% (74/85) χ^2 (1) = 3.57 $P = 0.06$	51% (18/35) χ^2 (1) = 24.31 $P < 0.001$	88% (66/75) χ^2 (1) = 3.86 $P = 0.05$	81% (158/195) χ^2 (1) = 24.33 $P < 0.001$
Hypertension	36% (17/47) χ^2 (1) = 1.49 $P = 0.22$	19% (9/47) χ^2 (1) = 0.07 $P = 0.79$	45% (21/47) χ^2 (1) = 1.08 $P = 0.30$	24% (47/196) χ^2 (1) = 1.56 $P = 0.46$
Asthma	52% (26/50) χ^2 (1) = 1.80 $P = 0.18$	14% (7/50) χ^2 (1) = 0.68 $P = 0.41$	34% (17/50) χ^2 (1) = 0.52 $P = 0.47$	26% (50/196) χ^2 (1) = 1.89 $P = 0.39$

continued

SUPPLEMENTARY TABLE 2

Continued

	Video preference	Written preference	Video + written preference	Total
Congestive heart failure	45% (22/49) $\chi^2 (1) = 0.03$ $P = 0.87$	16% (8/49) $\chi^2 (1) = 0.10$ $P = 0.75$	39% (19/49) $\chi^2 (1) = 0.01$ $P = 0.93$	25% (49/196) $\chi^2 (1) = 0.11$ $P = 0.95$
Diabetes	42% (21/50) $\chi^2 (1) = 0.10$ $P = 0.76$	22% (11/50) $\chi^2 (1) = 0.79$ $P = 0.38$	36% (18/50) $\chi^2 (1) = 0.15$ $P = 0.70$	26% (50/196) $\chi^2 (1) = 0.79$ $P = 0.67$
Total for all diseases	44% (86/196) $\chi^2 (3) = 2.57$ $P = 0.46$	18% (35/196) $\chi^2 (3) = 1.22$ $P = 0.75$	38% (75/196) $\chi^2 (3) = 1.32$ $P = 0.73$	$\chi^2 (6) = 3.26$ N = 196 $P = 0.78$
High school level education	47% (40/85) $\chi^2 (1) = 2.79$ $P = 0.09$	63% (22/35) $\chi^2 (1) = 1.39$ $P = 0.24$	57% (43/75) $\chi^2 (1) = 0.60$ $P = 0.44$	54% (105/195) $\chi^2 (2) = 3.09$ $P = 0.21$
< 4-year college education	32% (27/85) $\chi^2 (1) = 0.47$ $P = 0.49$	23% (8/35) $\chi^2 (1) = 0.84$ $P = 0.36$	29% (22/75) $\chi^2 (1) = 0.00$ $P = 0.98$	29% (57/195) $\chi^2 (2) = 0.95$ $P = 0.62$
≥ 4-year college education	21% (18/85) $\chi^2 (1) = 1.94$ $P = 0.16$	14% (5/35) $\chi^2 (1) = 0.21$ $P = 0.65$	13% (10/75) $\chi^2 (1) = 1.12$ $P = 0.29$	18% (33/195) $\chi^2 (2) = 1.95$ $P = 0.37$
Total for all educational levels	44% (85/195) $\chi^2 (2) = 3.23$ $P = 0.20$	18% (35/195) $\chi^2 (2) = 1.41$ $P = 0.49$	39% (75/195) $\chi^2 (2) = 1.20$ $P = 0.55$	$\chi^2 (4) = 3.72$ N = 195 $P = 0.45$

SUPPLEMENTARY TABLE 3

The relationships of age, survey responses, medical conditions, and education level to patient survey responses using χ^2 analysis

	Was provided an instructional video or written instructions on your medical condition by a doctor	Learned something new from watching the video instructions	Watching the video will help them better care for their medical condition	Have Internet access at home	Want to watch medical videos or read medical information at home via Internet
Age 18-33 years	42% (10/24)	50% (12/24)	88% (21/24)	88% (21/24)	71% (17/24)
Age 34-49 years	44% (14/32)	81% (26/32)	91% (29/32)	81% (26/32)	94% (30/32)
Age 50-65 years	56% (40/72)	68% (49/72)	93% (67/72)	59% (42/71)	79% (56/71)
Age 66-81 years	46% (23/50)	76% (38/50)	88% (44/50)	54% (27/50)	80% (40/50)
Age 82-98 years	56% (10/18)	61% (11/18)	94% (17/18)	44% (8/18)	83% (15/18)
Total for all age groups	50% (97/196) χ^2 (4) = 2.58 $P = 0.63$	69% (136/196) χ^2 (4) = 8.04 $P = 0.09$	91% (178/196) χ^2 (4) = 1.51 $P = 0.82$	64% (124/195) χ^2 (4) = 15.68 $P = 0.003$	81% (158/195) χ^2 (4) = 5.30 $P = 0.26$
Was provided an instructional video or written instructions on your medical condition by a doctor		36% (71/196) χ^2 (1) = 1.31 $P = 0.25$	45% (88/196) χ^2 (1) = 0.00 $P = 0.96$	34% (66/195) χ^2 (1) = 2.17 $P = 0.14$	41% (80/195) χ^2 (1) = 0.66 $P = 0.42$
Learned something new from watching the video instructions			67% (132/196) χ^2 (1) = 20.76 $P < 0.001$	46% (89/195) χ^2 (1) = 0.67 $P = 0.41$	62% (121/195) χ^2 (1) = 18.46 $P < 0.001$
Watching the video will help them better care for their medical condition				58% (113/195) χ^2 (1) = 0.05 $P = 0.82$	77% (151/195) χ^2 (1) = 22.90 $P < 0.001$
Have Internet access at home					54% (106/195) χ^2 (1) = 4.40 $P = 0.04$
Hypertension	49% (23/47) χ^2 (1) = 0.01 $P = 0.93$	66% (31/47) χ^2 (1) = 0.34 $P = 0.56$	92% (43/47) χ^2 (1) = 0.03 $P = 0.86$	67% (31/46) χ^2 (1) = 0.38 $P = 0.54$	80% (37/46) χ^2 (1) = 0.01 $P = 0.91$
Asthma	42% (21/50) χ^2 (1) = 1.51 $P = 0.22$	60% (30/50) χ^2 (1) = 2.79 $P = 0.10$	92% (46/50) χ^2 (1) = 0.11 $P = 0.73$	64% (32/50) χ^2 (1) = 0.01 $P = 0.94$	78% (39/50) χ^2 (1) = 0.40 $P = 0.53$
Congestive heart failure	51% (25/49) χ^2 (1) = 0.06 $P = 0.80$	82% (40/49) χ^2 (1) = 4.61 $P = 0.03$	94% (46/49) χ^2 (1) = 0.73 $P = 0.39$	57% (28/49) χ^2 (1) = 1.17 $P = 0.28$	86% (42/49) χ^2 (1) = 0.94 $P = 0.33$

continued

SUPPLEMENTARY TABLE 3

Continued

	Was provided an instructional video or written instructions on your medical condition by a doctor	Learned something new from watching the video instructions	Watching the video will help them better care for their medical condition	Have Internet access at home	Want to watch medical videos or read medical information at home via Internet
Type 2 diabetes mellitus	56% (28/50) $\chi^2 (1) = 1.14$ $P = 0.29$	70% (35/50) $\chi^2 (1) = 0.01$ $P = 0.91$	86% (43/50) $\chi^2 (1) = 1.87$ $P = 0.17$	66% (33/50) $\chi^2 (1) = 0.17$ $P = 0.68$	80% (40/50) $\chi^2 (1) = 0.05$ $P = 0.83$
Total for all diseases	50% (97/196) $\chi^2 (3) = 2.02$ $P = 0.57$	69% (136/196) $\chi^2 (3) = 5.80$ $P = 0.12$	91% (178/196) $\chi^2 (3) = 2.05$ $P = 0.56$	64% (124/195) $\chi^2 (3) = 1.30$ $P = 0.73$	81% (158/195) $\chi^2 (3) = 1.04$ $P = 0.79$
High school level education	47% (49/105) $\chi^2 (1) = 0.60$ $P = 0.44$	70% (73/105) $\chi^2 (1) = 0.01$ $P = 0.92$	92% (97/105) $\chi^2 (1) = 0.71$ $P = 0.40$	51% (53/105) $\chi^2 (1) = 16.48$ $P < 0.001$	80% (84/105) $\chi^2 (1) = 0.13$ $P = 0.72$
< 4 -year college education	53% (30/57) $\chi^2 (1) = 0.37$ $P = 0.54$	72% (41/57) $\chi^2 (1) = 0.28$ $P = 0.60$	93% (53/57) $\chi^2 (1) = 0.47$ $P = 0.49$	80% (45/56) $\chi^2 (1) = 9.75$ $P = 0.002$	89% (50/56) $\chi^2 (1) = 3.56$ $P = 0.06$
≥ 4-year college education	52% (17/33) $\chi^2 (1) = 0.08$ $P = 0.77$	64% (21/33) $\chi^2 (1) = 0.58$ $P = 0.45$	82% (27/33) $\chi^2 (1) = 3.80$ $P = 0.05$	76% (25/33) $\chi^2 (1) = 2.62$ $P = 0.11$	70% (23/33) $\chi^2 (1) = 3.25$ $P = 0.07$
Total for all education levels	49% (96/195) $\chi^2 (2) = 0.60$ $P = 0.74$	69% (135/195) $\chi^2 (2) = 0.68$ $P = 0.71$	91% (177/195) $\chi^2 (2) = 3.81$ $P = 0.15$	63% (123/194) $\chi^2 (2) = 16.67$ $P < 0.001$	81% (157/194) $\chi^2 (2) = 5.29$ $P = 0.07$