

**RESEARCH LETTER**

# Factors Associated with Never Having Had A Video Visit

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**Introduction:** Disparities in access to video-visit services have been described during the COVID-19 pandemic. Thus, we aimed to examine factors associated with not having a video-visit among a medically high-risk ambulatory population.

**Methods:** In this cross-sectional study, our telephone-based survey was designed to understand the health-related challenges, social needs, and access to and attitudes toward video-visit.

**Results:** In the multivariable analysis, having fewer symptoms unrelated to COVID, more barriers to medications, and less confidence with video-visit software were significantly associated with an increased prevalence of not having a video-visit.

**Conclusions:** Our findings suggest that additional efforts are needed to eliminate disparate video-visit use. (J Am Board Fam Med 2022;35:634–637.)

**Keywords:** Chronic Disease, COVID-19, Cross-Sectional Studies, Disease Management, Multimorbidity, Pandemics, Primary Health Care, Telemedicine

## Introduction

The COVID-19 pandemic necessitated the increased scale and scope of virtual care, a safe and effective alternative to in-person clinical visits.<sup>1</sup> As reports of non-COVID related morbidity and mortality emerge, supporting and delivering video-visit services, especially to patients with multiple chronic medical conditions, continues to be of paramount importance. However, disparities in access to such video-visit services have been described.<sup>2</sup> Thus, we aimed to examine factors associated with not having

a video-visit among a medically high-risk population at our primary care practice.

## Methods

This study took place as part of a larger 45-question survey conducted from May 2020 to March 2021 at a large, academic, hospital-based primary care practice. The cross-sectional telephone-based survey, which included novel and validated questions, was designed to understand the health-related challenges and social needs of our multi-morbid, high-risk patients during the COVID-19 pandemic. The novel questions were guided and informed by the Andersen and Aday model of factors influencing health services utilization. The validated questions included selected questions from the Accountable Health Communities (AHC) Health-Related Social Needs (HRSN) Screening Tool. We defined high-risk patients using a validated EPIC risk model for hospitalization and ED visits, which is based on 55 variables such as number of chronic medical conditions, medication burden, and prior health care

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**Table 1. Characteristics of Study Participants, Stratified by Video Visit Status**

Characteristics	Ever had a video visit?			p-Value
	Overall (n = 214) n (%)	Yes (n = 62) n (%)	No (n = 152) n (%)	
<b>Demographics</b>				
Age				0.008
Under 60	52 (24.3%)	22 (35.5%)	30 (19.7%)	
60 to 79	113 (52.8%)	33 (53.2%)	80 (52.6%)	
80 or older	49 (22.9%)	7 (11.3%)	42 (27.6%)	
Female	142 (66.4%)	45 (72.6%)	97 (63.8%)	0.22
Race				0.57
Other	83 (38.8%)	27 (43.5%)	56 (36.8%)	
Mixed	6 (2.8%)	2 (3.2%)	4 (2.6%)	
Black	55 (25.7%)	17 (27.4%)	38 (25.0%)	
White	70 (32.7%)	16 (25.8%)	54 (35.5%)	
Hispanic/Latino	65 (30.4%)	24 (38.7%)	41 (27.0%)	0.090
Insurance				0.013
Other	35 (16.4%)	10 (16.1%)	25 (16.4%)	
Medicare	142 (66.4%)	34 (54.8%)	108 (71.1%)	
Medicaid	37 (17.3%)	18 (29.0%)	19 (12.5%)	
<b>Social risk factors</b>				
Feel lonely	34 (15.9%)	12 (19.4%)	22 (14.5%)	0.38
Has enough food at home	197 (92.1%)	59 (95.2%)	138 (90.8%)	0.41
Has a steady place to live today	200 (93.5%)	57 (91.9%)	143 (94.1%)	0.55
Has help in home with daily activities	110 (51.4%)	35 (56.5%)	75 (49.3%)	0.35
<b>Clinical risk factors</b>				
Feel anxious or sad	42 (19.6%)	12 (19.4%)	30 (19.7%)	0.95
Currently has medications that need to be refilled	83 (38.8%)	24 (38.7%)	59 (38.8%)	0.99
Had symptoms unrelated to COVID (during the COVID pandemic since March 2020)	102 (47.7%)	35 (56.5%)	67 (44.1%)	0.10
Number of symptoms unrelated to COVID, median (IQR <sup>a</sup> )	0 (0, 2.0)	1.0 (0, 3.0)	0 (0, 1.0)	0.011
<b>Practice level and health care system related factors</b>				
Type of primary care provider: Attending	109 (50.9%)	28 (45.2%)	81 (53.3%)	0.28
Test/Procedure canceled/rescheduled	68 (31.8%)	22 (35.5%)	46 (30.3%)	0.46
Comfort <sup>a</sup> with in-person health visit, median (IQR)	1.0 (1.0, 3.0)	1.0 (1.0, 3.0)	1.0 (1.0, 4.0)	0.47
Difficulty getting care at our practice (Very/Extremely)	36 (16.9%)	9 (14.8%)	27 (17.8%)	0.60
How well-connected to PCP at WCIMA (Very well/Somewhat)	169 (79%)	52 (83.9%)	117 (77.0%)	0.26
Experienced any barriers to receiving your medications	29 (13.6%)	3 (4.8%)	26 (17.1%)	0.017
Had a contact with a doctor/health care system for non-COVID related symptoms	65 (64.4%)	28 (80%)	37 (56%)	0.017

*Continued*

**Table 1. Continued**

Characteristics	Overall (n = 214) n (%)	Ever had a video visit?		p-Value
		Yes (n = 62) n (%)	No (n = 152) n (%)	
<b>Technology-related factors</b>				
Confidence in installing video software on computer/smart phone				<0.001
Very confident	75 (35%)	36 (58.1%)	39 (25.7%)	
Somewhat confident	32 (15%)	12 (19.4%)	20 (13.2%)	
Not confident/unsure how to install	107 (50%)	14 (22.6%)	93 (61.2%)	

<sup>a</sup>A value of 1 indicates “Completely comfortable” and 5 indicates “Completely uncomfortable”.  
Abbreviations: IQR, Inter-quartile range; PCP, Primary care provider; WCIMA, Weill Cornell Internal Medicine Associates.

utilization.<sup>3</sup> As part of this survey, we included questions on access to and attitudes toward video-visit. Twenty-three questions from the larger survey are incorporated into this investigation. Trained medical students and care managers administered the survey using a prewritten script.

To assess differences between video-visit users versus Nonusers we used Chi-Squared, Fisher’s Exact, and Wilcoxon Rank-sum tests as appropriate. To examine which factors were associated with never having a video-visit, we used multivariable robust Poisson regression, including those that were significant at  $P < .10$  in the univariate analyses. Model results were significant at  $P < .05$ . As a quality improvement initiative, institutional review board approval was not required.

**Results**

299 high-risk ambulatory patients were identified for outreach. 85 patients were excluded because they were failed to be reached by phone after 3 attempts (n = 59), declined to participate (n = 12), were seeking primary care elsewhere (n = 7), and had passed away (n = 7). A total of 214 high-risk ambulatory patients participated in the study. A total of 214 patients participated. The majority were more than 60 years old (75.7%), 66.4% were female, 25.7% were Black, 30.4% were Hispanic/Latino, and 66.4% had Medicare (Table 1). Among them half (51.4%) required help at home, 8% had food insecurity, and 6.5% reported housing insecurity.

Overall, 71% (n = 152) of participants reported never having a video-visit. Participants who never had 1 tended to be older, Non-Hispanic/White, and have

Medicare insurance. Other factors in the univariate analysis significantly associated with not having a video-visit included having: fewer medical symptoms, less contact with the doctor or health care system, more barriers to medication, and less confidence with video software. Social risk factors were not associated with video-visit utilization (Table 1).

**Table 2. Results of Multivariable Robust Poisson Regression Analysis to Identify Factors Associated with Never Having Had a Video Visit**

Characteristics	PR (95% CI)
<b>Demographics</b>	
Age (years)	
Under 60	1.06 (0.75, 1.50)
60 to 79	Reference
80 or older	1.28 (0.95, 1.72)
Hispanic	0.97 (0.71, 1.33)
Insurance	
Medicare	Reference
Medicaid	0.68 (0.40, 1.16)
Other	1.32 (0.91, 1.91)
<b>Clinical risk factors</b>	
Counts of non-COVID-related symptoms	0.86 (0.76, 0.99)
<b>Practice level and health care system related factors</b>	
Experienced barriers to medication receipt	1.62 (1.22, 2.15)
Non-COVID: No contact doctor/health care system	1.20 (0.94, 1.53)
<b>Technology-related factors</b>	
Confidence in installing video software	
Not confident/unsure how to install	Reference
Somewhat confident	0.80 (0.45, 1.41)
Very confident	0.68 (0.47, 0.99)

Abbreviations: PR, Prevalence ratio; CI, Confidence interval.

In the multivariable analysis, having fewer symptoms the patient identified as unrelated to COVID (PR: 0.86; 95% CI: 0.76, 0.99), more barriers to medications (PR: 1.62; 95% CI: 1.22, 2.15), and less confidence with video-visit software (PR: 0.68; 95% CI: 0.47, 0.99) were significantly associated with an increased prevalence of not having a video-visit (Table 2). In addition, approximately 20% of those who never had a video-visit reported a lack of access to technological resources or other barriers including: lack of awareness about video-visit availability and general discomfort toward using video-visits for health-related problems.

## Discussion

Despite efforts to expand video-visit access and utilization, our study suggests that a digital divide persists among our high-risk, multi-morbid patients.<sup>4</sup> In addition, it seems that patients who might benefit from increased access to care – such as those with greater difficulty accessing medications – were less likely to have participated in video-visits.

Our findings expand on a recent study by Wray et al (2021) which found that more than 1 in 6 US adult are not telemedicine ready, with older, minoritized adults with government insurance at even higher risk.<sup>4</sup> We also found that low confidence with video-visit software was associated with decreased video-visit utilization. According to the Pew Research Center, 61% of seniors, 76% of low-income Americans, and most racial and ethnic minorities (83% Black and 85% Hispanic) have smartphones and broadband access. This, along with our findings, suggests that not having hardware may only be part of the problem. Rather, system and clinic level policies that not only advertise video-visit services, but also help with video-visit readiness, are needed to eliminate disparate use of video-visits.<sup>5</sup>

Some limitations of our study should be noted. In addition to a small sample size, participants were from a single practice in NYC, which limits generalizability.

In conclusion, our findings suggest that additional efforts to increase video-visit use among multi-morbid patients in primary care are needed. Focusing outreach strategies on multi-morbid patients with barriers to accessing medications, and those with low confidence with telemedicine software may be warranted.

*To see this article online, please go to: <http://jabfm.org/content/35/3/634.full>.*

## References

1. Robinson J, Borgo L, Fennell K, Funahashi TT. The COVID-19 pandemic accelerated the transition to virtual care. *NEJM Catalyst*. <https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0399>. Publication date Sept 10, 2020. Access Date January 6, 2021.
2. Gonzalez D, Karpman M, Kenney G, Zuckerman S. Delayed and forgone health care for nonelderly adults during the COVID-19 pandemic. The Urban Institute. <https://www.urban.org/research/publication/delayed-and-forgone-health-care-nonelderly-adults-during-covid-19-pandemic>. Publication date Feb 16, 2021. Access date March 9, 2021.
3. Epic. cognitive computing model brief: risk of hospital admission or ED visit (Version 2). [www.epic.com](http://www.epic.com). Publication date May 1, 2020. Access date May 5, 2020.
4. Wray CM, Tang J, Shah S, Nguyen OK, Keyhani S. Sociodemographics, social vulnerabilities, and health factors associated with telemedicine unreadiness among US adults. *J Gen Intern Med* 2021;1–3. [published online ahead of print, 2021 Jul 30].
5. Sinha S, Kern LM, Gingras LF, et al. Implementation of video visits during COVID-19: lessons learned from a primary care practice in New York City. *Front Public Health* 2020;8.