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DATAWATCH

Use Of And Willingness To Use Video Telehealth Through The COVID-19 Pandemic

We examined use of and willingness to use video telehealth during the COVID-19 pandemic in a longitudinally followed cohort. Between February 2019 and March 2021, use and willingness to use increased among nearly all subgroups, with large increases among Black adults and adults with lower educational attainment. In March 2021 Black adults, adults ages 20–39, and high-income adults reported the greatest willingness to use video telehealth.

The COVID-19 pandemic changed telehealth from a rare service to one that is widely available, including from patients' usual providers.[1,2] Before the pandemic, certain populations, including Black and lower-income adults, as well as adults with lower educational attainment, were less willing to engage in video telehealth.[3] Lack of willingness may be related to distrust of telehealth (including privacy concerns), preference for in-person care, limited digital literacy and access to devices and broadband, or concerns about the value or quality of telehealth.[4–6] Persistent differences in willingness as telehealth becomes increasingly ubiquitous could contribute to large disparities in use.

Using a nationally representative survey panel, we conducted a longitudinal cohort study to examine changes in willingness to use video telehealth. We found that willingness increased overall from 50.8 percent in February 2019 to 62.2 percent in March 2021 (data not shown). As shown in exhibit 1, increases in willingness were especially pronounced among Black adults and adults with lower educational attainment.

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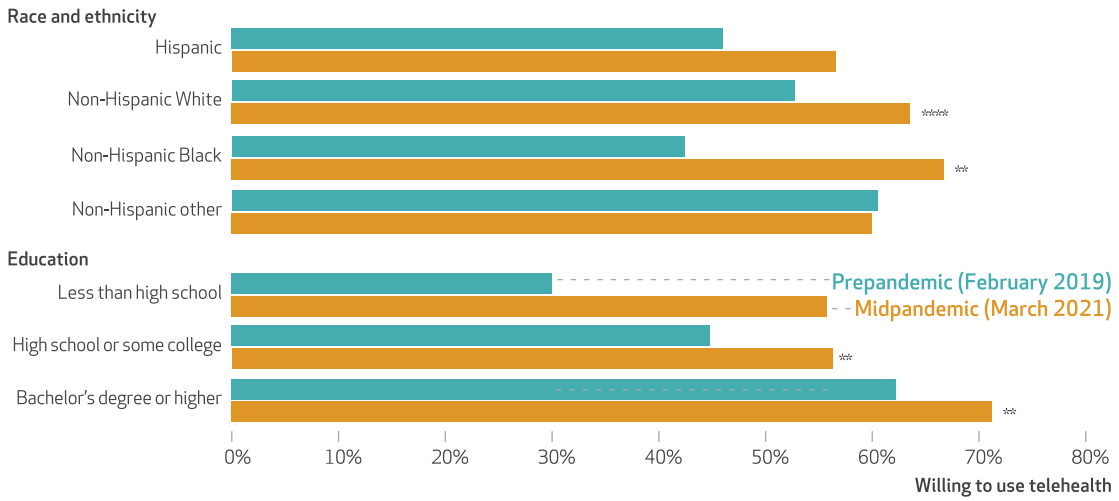
EXHIBIT 1

Percent of American Life Panel survey respondents willing to use video telehealth prepandemic versus midpandemic, by race, ethnicity, and education level, February 2019–March 2021



SOURCE Authors' analysis of data from four American Life Panel Omnibus Surveys, 2019–21. **$p < 0.05$ ****$p < 0.001$

Black adults were less willing to use telehealth than those of other races or ethnicities before the pandemic, with only 42 percent reporting willingness to use telehealth in February 2019. However, a year into the pandemic, 67 percent of Black adults were willing to use telehealth, which was as high as or higher than any other racial or ethnic group.

Study Data And Methods

The RAND Corporation's American Life Panel is a probability-based sample of the US adult population ages twenty and older who are provided with internet-connected devices and are compensated for their participation in the survey (details about the American Life Panel are reported in the online appendix[7] and elsewhere[8]). Data in this study came from four waves of the American Life Panel Omnibus Survey, which were fielded in February 2019, May 2020, August 2020, and March 2021. We created a longitudinal sample from the 2,555 respondents to the first survey (February 2019) and tracked them through three additional surveys, ultimately analyzing the 1,604 panel members who responded to the telehealth questions on all four waves (sample retention: 1,604/2,555 panel members, or 62.8 percent). Analyses used sampling weights to match sample demographics to the US population and to account for nonresponse.[9,10] Attrition from the sample was not related to telehealth use. Weighting processes are described in appendix A.[7]

We asked respondents both before and during the pandemic about their experience using audio-only and video telehealth; their willingness to use such tools; the barriers to use; and their preference for in-person, audio-only, and video modalities moving forward. In February 2019 we asked about telehealth use during the previous year; in the three pandemic-era surveys, we asked about use since the pandemic began, which meant looking back two months, five months, or one year. Information about demographics, including race and ethnicity, income, education, and geography, was collected in February 2019. Willingness to use video telehealth was captured in a question that asked respondents to rate their willingness on a 1–5 scale, with 1 being unwilling and 5 being very willing. We created a dichotomous variable for willingness, categorizing respondents who reported a 4 or 5 as "willing."

Questions for each survey round are in appendix B.[7]

We calculated descriptive statistics and cross-tabulated frequencies and percentages. We used Rao-Scott chi-square tests for bivariate comparisons and adjusted logistic regressions for analyses of binary outcomes. We performed three regressions. The first explored associations between demographics and use of video telehealth as of March 2021, and the second explored factors associated with willingness to use video telehealth in March 2021. The third regression explored factors associated with a change in willingness to use video telehealth over time (from February 2019 to March 2021) among those who reported that they were very unwilling, unwilling, or neutral in February 2019. This analysis helped identify characteristics of respondents who were "movable" (that is, respondents whose attitudes about and interest in telehealth improved in response to the conditions of the pandemic). We controlled for baseline (prepandemic) levels of willingness, so that the odds ratios measure relative risks holding constant prior willingness and thus effectively reflect change in willingness. Item nonresponse was limited (<1 percent of all variables) and likely random; entries with missing values (people missing the outcome or any of the covariates) were dropped from the analysis. Analyses were generated using SAS Base, version 9.4, and SAS/

EXHIBIT 2

Demographic characteristics of respondents to the American Life Panel survey on telehealth use, February 2019–March 2021

Variables	Frequency	Weighted frequency	Percent (SE)
Sex			
Female	857	1,338	54.1 (2.3)
Male	747	1,135	45.9 (2.3)
Age, years			
20–39	169	748	30.3 (2.3)
40–59	521	848	34.3 (2.0)
60 and older	914	877	35.5 (1.8)
Race and ethnicity			
Hispanic	172	520	21.0 (2.3)
Non-Hispanic White	1,228	1,573	63.6 (2.4)
Non-Hispanic Black	124	239	9.7 (1.4)
Non-Hispanic other	80	142	5.7 (1.0)
Census region			
Northeast	279	447	18.1 (1.6)
South	543	803	32.5 (2.0)
Midwest	324	466	18.8 (1.6)
West	457	758	30.7 (2.3)
Education			
Less than high school	36	157	6.4 (1.3)
High school or some college	692	1,334	54.0 (2.2)
Bachelor's degree or higher	876	982	39.7 (2.1)
Insurance status			
Insured	1,542	2,333	94.3 (1.6)
Uninsured	62	140	5.7 (1.6)

SOURCE Authors' analysis of data from four American Life Panel Omnibus Surveys, RAND Corporation, 2019–21. **NOTE** $N = 1,604$.

STAT, version 15.1, software for Linux; weights were generated using Stata, version 17. RAND's Institutional Review Board approved the study.

This study had several limitations. First, some subgroups in our sample were small (for example, uninsured participants). Second, because we only fielded a few questions at each survey wave, we could not detail all barriers and attitudes over time. Last, we were limited by the demographic information gathered by the American Life Panel Omnibus Survey, which does not include health status or whether participants had conditions not amenable to telehealth treatment.

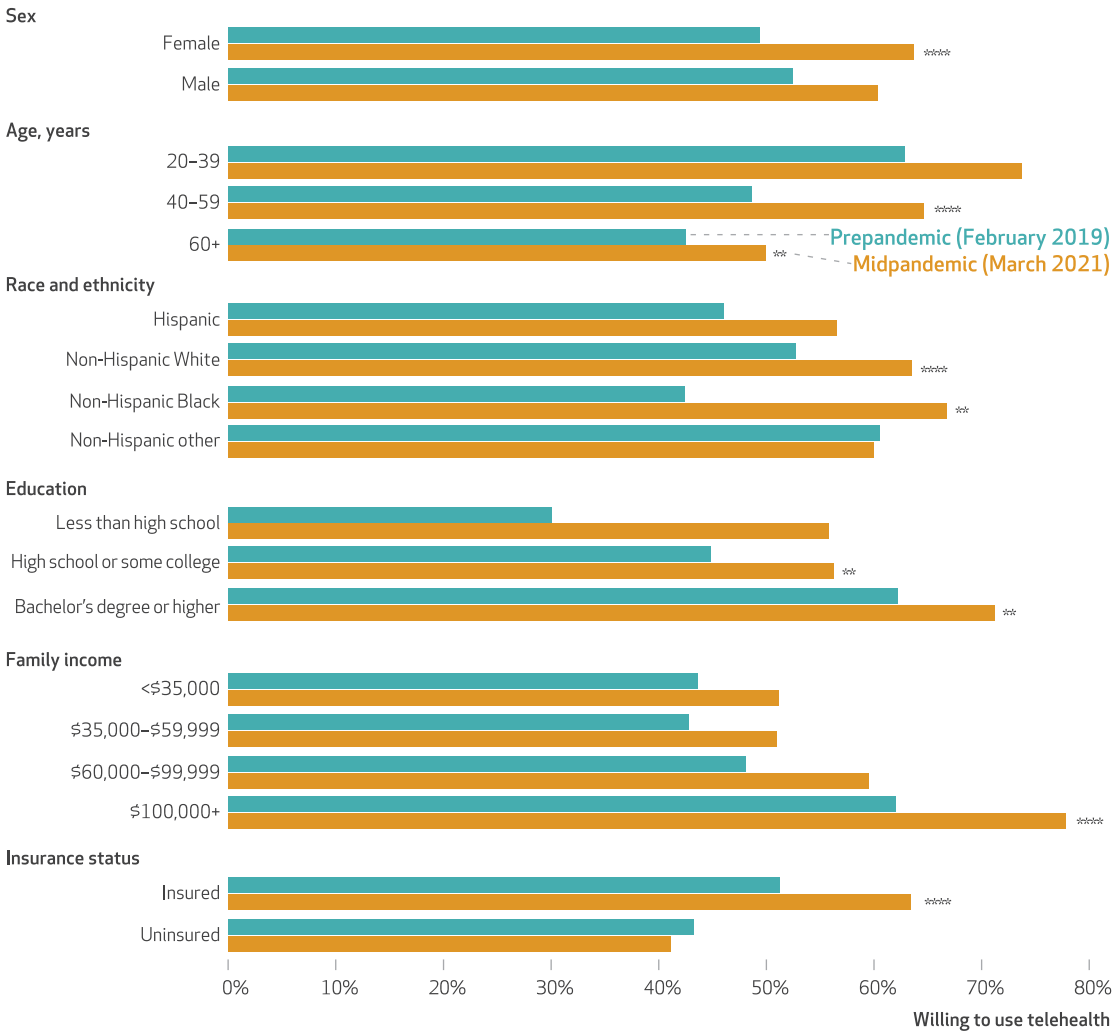
Study Results

After weighting, the sample was 54.1 percent female, almost equally divided by age group (20–39, 40–59, and 60 and older), and 63.6 percent Non-Hispanic White, with 94.3 percent having health insurance (see exhibit 2).

As mentioned above, in subgroup analysis of changes in willingness to use telehealth from the prepandemic (February 2019) to the midpandemic (March 2021) periods, increases were pronounced for Black respondents and respondents with lower educational attainment (exhibit 1). Considering all subgroups, we found that willingness to use telehealth increased among all subgroups, with the exception of people who were uninsured and those in the non-Hispanic other race and ethnicity category (exhibit 3).

EXHIBIT 3

Percent of American Life Panel survey respondents willing to use video telehealth prepandemic versus midpandemic, all subgroups, February 2019–March 2021



SOURCE SOURCE Authors' analysis of data from four American Life Panel Omnibus Surveys, 2019–21. **$p < 0.05$ ****$p < 0.001$

VIDEO TELEHEALTH USE In May 2020, 12 percent of people had used video telehealth since the beginning of the pandemic, which was more than three times the proportion who had reported having used it within the prior year when asked in February 2019. The percentage of those who reported having video telehealth visits during the pandemic increased to almost 20 percent by August 2020 and 45 percent by March 2021 (data not shown). Exhibit 4 presents unadjusted analyses of use by subgroup. The groups who reported the highest use of telehealth by March 2021 were Black adults (57 percent), adults ages 20–39 (52 percent), adults with less than a high school education (62 percent), and low-income adults (52 percent).

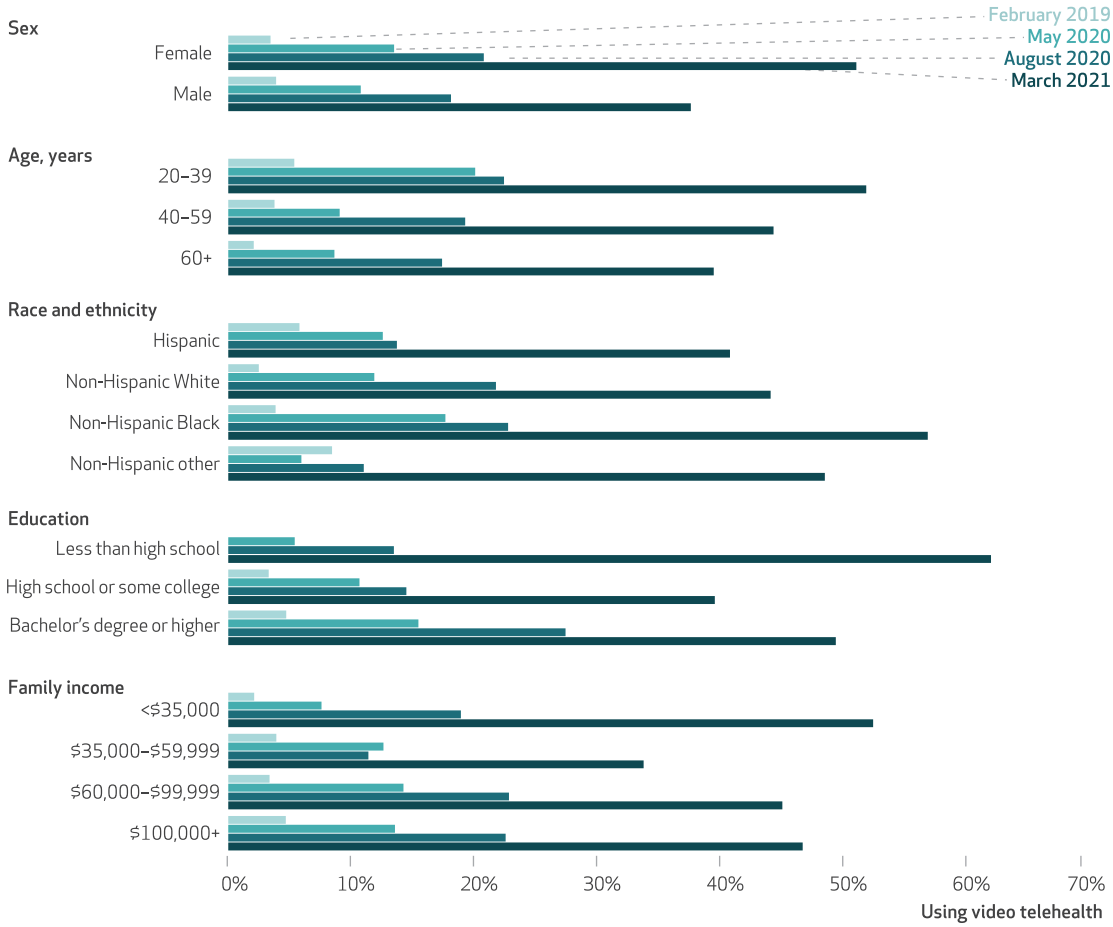
In adjusted analyses, female sex ($p < 0.01$), non-Hispanic Black race and ethnicity (versus non-Hispanic White; $p < 0.05$), and location in the Northeast ($p < 0.05$ for difference from South and West; difference from Midwest was not significant) were associated with greater telehealth use by March 2021 (exhibit 5). Further, expressing a willingness to use telehealth before the pandemic was associated with telehealth use within the first year of the pandemic ($p < 0.01$).

WILLINGNESS TO USE VIDEO TELEHEALTH In adjusted analyses, respondents who were older (age sixty and older compared with those younger than age sixty; $p < 0.001$), were of Hispanic ethnicity (versus non-Hispanic White; $p < 0.05$), or reported a lack of experience with telehealth during the first year of the pandemic ($p < 0.001$) were all less likely to be willing to use telehealth in March 2021 (exhibit 5).

Factors associated with an increase in willingness to use telehealth over time among the 771 respondents who were neutral or unwilling in

EXHIBIT 4

Use of video telehealth among survey respondents at four points before and during the COVID-19 pandemic for selected demographic groups, February 2019–March 2021



SOURCE Authors' analysis of data from four American Life Panel Omnibus Surveys, 2019–21. **NOTES** Surveys were conducted with start dates of February 2019, May 2020, August 2020, and March 2021. This figure displays the use of video telehealth for each subgroup at each point in time.

February 2019 included being younger (versus older than age sixty) and insured (exhibit 6). Further, respondents who used telehealth during the pandemic had 5.6 greater odds ($p < 0.001$) of becoming more willing over time. Other demographic characteristics were not associated with greater willingness to use telehealth over time.

Discussion

This longitudinal study provides insight into how use and willingness to use video telehealth changed during the COVID-19 pandemic. We found increased use among almost all groups by March 2021 compared with 2019. In addition to use, we demonstrated that willingness to use video telehealth increased significantly among the population as a whole, as well as within most demographic subgroups. Notably, some of the largest changes occurred in subgroups that had the lowest levels of willingness to use video telehealth before the pandemic (for example, Black adults and adults with lower educational attainment).

We suggest that US adults became more willing to use video telehealth during the pandemic for several reasons. First, our results show that many patients had their first experiences with video telehealth during this time. This new uptake was likely out of necessity, either because patients were reluctant to seek in-person care in the first year of the pandemic and needed safe alternatives or because their providers encouraged telehealth (in 2019 only half of video telehealth was with a familiar provider, but in 2020 the overwhelming majority was).[1] Increased exposure as well as positive experiences may have positively influenced willingness. Further, people may have become more willing to use video telehealth because telehealth was suddenly delivered by patients' trusted providers and in the context of hybrid (in-person and telehealth) care models that could leverage the advantages of both modalities.

Although it is noteworthy that racial, ethnic, and socioeconomic differences in willingness to use telehealth seem to have narrowed since the start of the pandemic, other studies have shown that disparities in use remain.[11–13] Further, our results show that a significant minority of the US remained neutral or unwilling to engage in telehealth as of March 2021. This is not entirely surprising, given that our prior research has shown that most patients still report a preference for in-person care.[5] With recent policy changes (for example, Medicare reimbursement for video and audio-only visits for behavioral health without originating site or geographic restrictions)[14] carving out a permanent place for telehealth in care delivery, it will be important to address sources of unwarranted variation in patients' willingness to ensure equitable access. It is promising that our results show that willingness to use telehealth can and does change over time in response to changing circumstances. ■

EXHIBIT 5

Characteristics of American Life Panel survey respondents associated with use of video telehealth and willingness to use video telehealth, March 2021

Characteristics	Use of video telehealth (odds ratio)	Willingness to use (odds ratio)
Sex		
Female	1.6***	1.1
Age, years		
20–39	1.6	2.8****
40–59	1.1	2.1****
60+	Ref	Ref
Race and ethnicity		
Hispanic	1.2	0.5**
Non-Hispanic White	Ref	Ref
Non-Hispanic Black	2.0**	1.0
Non-Hispanic other	1.1	0.5
Census region		
Northeast	Ref	Ref
Midwest	0.8	0.8
South	0.6**	1.2
West	0.5**	1
Education		
Less than high school	1.7	0.7
High school or some college	0.7	0.8
Bachelor's degree or higher	Ref	Ref
Uninsured	0.4	0.5*
Prepandemic willingness to use	1.2***	3.6****
Use of video telehealth during the pandemic	—[a]	4.1****

SOURCE Authors' analysis of data from the American Life Panel Omnibus Survey, RAND Corporation, March 2021. **NOTE** Reference groups are shown for categorical variables (value = 1.0); for binary variables, the reference group is the complement of the category shown. [a]Not applicable. *$p < 0.10$ **$p < 0.05$ ***$p < 0.01$ ****$p < 0.001$

EXHIBIT 6

Factors associated with a change from neutral or unwilling to use telehealth to willing to use telehealth among respondents to the American Life Panel survey between February 2019 and March 2021

Factors	Odds ratio
Sex	
Female	1.2
Age, years	
20–39	3.0***
40–59	2.2***
60+	Ref
Race and ethnicity	
Hispanic	0.6
Non-Hispanic White	Ref
Non-Hispanic Black	1.0
Non-Hispanic other	0.5
Census region	
Northeast	Ref
Midwest	1.1
South	1.5
West	1.6
Education	
Less than high school	1.9
High school or some college	0.8
Bachelor's degree or higher	Ref
Uninsured	0.2**
Use of video telehealth during the pandemic	5.6****

SOURCE Authors' analysis of data from the American Life Panel Omnibus Surveys, RAND Corporation, 2019–21. **NOTE** Reference groups are shown for categorical variables (value = 1.0); for binary variables, the reference group is the complement of the category shown. **$p < 0.05$ ***$p < 0.01$ ****$p < 0.001$.

NOTES

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7 To access the appendix, click on the Details tab of the article online.

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