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HEALTH CARE POLICY AND LAW

Assessing Telemedicine Unreadiness Among Older Adults in the United States During the COVID-19 Pandemic

There has been a massive shift to telemedicine during the coronavirus disease 2019 (COVID-19) pandemic to protect medical personnel and patients, with the Department of Health and Human Services and others promoting video visits to reach patients at home.[1,2] Video visits require patients to have the knowledge and capacity to get online, operate and troubleshoot audiovisual equipment, and communicate without the cues available in person. Many older adults may be unable to do this because of disabilities or inexperience with technology. This study estimated how many older adults may be left behind in the United States in the migration to telemedicine.

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Methods | We completed a cross-sectional study of community-dwelling adults (N = 4525) using 2018 data from the National Health and Aging Trends Study, which is nationally representative of Medicare beneficiaries aged 65 or older, to assess the prevalence of telemedicine unreadiness. The institutional review board of the University of California, San Francisco, deemed this study not to be human subjects research because the data are deidentified and publicly available. *Telemedicine* is defined as the use of communications technology to deliver health care to patients at a distance. Envisioning telemedicine as direct-to-patient video visits, we defined *unreadiness* as meeting any of the following criteria for disabilities or inexperience with technology: (1) difficulty hearing well enough to use a telephone (even with hearing aids), (2) problems speaking or making oneself understood, (3) possible or probable dementia, (4) difficulty seeing well enough to watch television or read a newspaper (even with glasses), (5) owning no internet-enabled devices or being unaware of how to use them, or (6) no use of email, texting, or internet in the past month. National prevalence was determined using analytic weights.[3]

If a family member or caregiver cannot facilitate physician visits, an alternative is telemedicine by telephone. We thus assessed telemedicine unreadiness under 4 scenarios: (1) video visits as described above; (2) video visits assuming patients who have social supports (defined as having a child in the household or at least 2 individuals in one's social network) are telemedicine ready; (3) telephone visits with disability criteria reduced to difficulty speaking, difficulty communicating, or dementia and with technology criteria reduced to absence of any telephone; and (4) telephone visits assuming patients with social supports are telemedicine ready.

We used multivariable logistic regression to assess the adjusted odds of not being ready for video visits by age, sex, race/ethnicity, rurality, marital status, educational level, income, and self-rated health.

Results | Of the 4525 adults included in this study, 1925 (43%) were men, 2600 (57%) were women, and the mean (SD) age was 79.6 (6.9) years. The cohort consisted of 3119 (69%) non-Hispanic White individuals, 952 (21%) non-Hispanic Black individuals, and 273 (6%) Hispanic individuals. An additional 181 individuals (4%) self-identified as non-Hispanic other, which consisted of persons who reported their race/ethnicity as American Indian, Asian, Native Hawaiian, Pacific Islander, other, do not know, or more than 1 race/ethnicity.

Table 1. National Prevalence of Telemedicine Unreadiness in US Adults Older Than 65 Years in 2018 by Mode of Telemedicine Visit[a]

Reason for unreadiness	No., millions (%)			
	Video visits	Video visits with social support[b]	Telephone visits	Telephone visits with social support[b]
Any unreadiness	13.0 (38)	10.8 (32)	6.7 (20)	5.5 (16)
Unreadiness owing to any inexperience with technology	10.1 (30)	8.3 (25)	0.3 (1)	0.2 (1)
Has no internet-enabled devices or does not know how to use them	1.9 (6)	1.5 (4)	NA	NA
Has not emailed, texted, or gone online in a month	8.2 (24)	6.8 (20)	NA	NA
Has no telephone (cell phone or other)	NA	NA	0.3 (1)	0.2 (1)
Unreadiness owing to any physical disability	6.8 (20)	5.5 (16)	6.6 (20)	5.4 (16)
Difficulty hearing	0.8 (2)	0.7 (2)	0.8 (2)	0.7 (2)
Difficulty communicating	2.1 (6)	1.6 (5)	2.1 (6)	1.6 (5)
Probable dementia	2.5 (7)	1.8 (5)	2.5 (7)	1.8 (5)
Possible dementia	2.3 (7)	1.9 (6)	2.3 (7)	1.9 (6)
Difficulty seeing	0.5 (1)	0.4 (1)	NA	NA

Abbreviation: NA, not applicable.

[a] Estimates used complete case analysis for missingness; the number of missing cases never exceeded 16 (<0.2% of sample) for any criterion.

[b] *With social support* assumes that older adults are telemedicine ready if they have a child in the household or 2 or more people in their social network.

Table 2. Adjusted Odds of Telemedicine Unreadiness 5 for Video Visits by Demographic and Clinical Factors

Factor	Percentage unready (survey weighted)	Adjusted odds ratio (95% CI)
Age, y		
65-74	25	1 [Reference]
75-84	44	2.3 (1.8-3.0)
≥85	72	7.0 (5.3-9.1)
Sex		
Women	38	1 [Reference]
Men	39	1.7 (1.3-2.1)
Race/ethnicity		
White, non-Hispanic	32	1 [Reference]
Black, non-Hispanic	60	1.8 (1.4-2.3)
Other, non-Hispanic[a]	45	1.0 (0.6-1.5)
Hispanic	71	2.4 (1.6-3.6)
Rurality		
Metropolitan	38	1 [Reference]
Nonmetropolitan	42	1.2 (0.9-1.5)
Marital status		
Married	30	1 [Reference]
Separated or divorced	42	1.5 (1.1-2.0)
Widowed	52	1.7 (1.3-2.2)
Never married	58	2.7 (1.4-5.1)
Educational level		
>High school	24	1 [Reference]
High school	48	2.1 (1.7-2.5)
<High school	74	3.9 (2.9-5.3)
Income quintile[b]		
Highest	17	1 [Reference]
Higher	23	1.2 (0.9-1.7)
Middle	34	1.5 (1.0-2.1)
Lower	43	1.9 (1.3-2.9)
Lowest	67	3.2 (2.2-4.6)
Self-rated health		
Excellent	22	1 [Reference]
Very good	26	1.0 (0.7-1.4)
Good	40	1.4 (1.0-1.9)
Fair	60	2.5 (1.8-3.5)
Poor	77	4.5 (2.7-7.6)

[a] The category of other, non-Hispanic included persons who reported their race/ethnicity as American Indian, Asian, Native Hawaiian, Pacific Islander, other, do not know, or more than 1 race/ethnicity.

[b] Income ranges were determined using the 2010 and 2013 Survey of Consumer Finance samples to create weighted distributions of individuals 65 years or older. Income quintiles for single households were defined as follows: highest, more than $56 000; higher, $36 000 to $55 999; middle, $22 000 to $35 999; lower, $18 000 to $21 999; and lowest, less than $18 000. Income quintiles for joint households were defined as follows: highest, more than $109 000; higher, $66 000 to $108 999; middle, $43 000 to $65 999; lower, $30 000 to $42 999; and lowest, less than $30 000.

Table 1 shows the prevalence of unreadiness by reason for not being ready and under different scenarios for delivering telemedicine. For 2018, we estimated that of all older adults in the United States, 13 million (38%) were not ready for video visits, predominantly owing to inexperience with technology. Assuming individuals in the role of social supports knew how to set up a video visit, the estimated number of older adults who were still unready was 10.8 million (32%). Telephone visits may reach more patients. Nonetheless, an estimated 20% of older patients were unready for telephone visits because of difficulty hearing, difficulty communicating, or dementia.

Table 2 shows demographic and clinical factors associated with telemedicine unreadiness. Unreadiness was more prevalent in patients who were older, were men, were not married, were Black or Hispanic individuals, resided in a nonmetropolitan area, and had less education, lower income, and poorer self-reported health; altogether, 72% of adults who were 85 years or older met criteria for unreadiness.

Discussion | Older adults account for 25% of physician office visits in the United States and often have multiple morbidities and disabilities.[4] Thirteen million older adults may have trouble accessing telemedical services; a disproportionate number of those may be among the already disadvantaged. Telephone visits may improve access for the estimated 6.3 million older adults who are inexperienced with technology or have visual impairment, but phone visits are suboptimal for care that requires visual assessment.[5]

Policies should recognize and bridge this digital divide. As of early 2020, the Centers for Medicare & Medicaid Services was reimbursing telephone visits at rates matching in-person and video visits, aligning reimbursement with reality for those who cannot use video visits.[2] As telemedicine becomes ubiquitous, telecommunication devices should be covered as a medical necessity, especially given the correlation between poverty and telemedicine unreadiness. Furthermore, accessibility accommodations, such as closed captioning for those with hearing impairment, should be extended to virtual visits. A major limitation of this study was selection bias resulting from loss to follow-up, which would underestimate the prevalence of unreadiness if loss to follow-up was associated with poor adherence to telemedical care. Although many older adults are willing and able to learn to use telemedicine,[6] an equitable health system should recognize that for some, such as those with dementia and social isolation, in-person visits are already difficult and telemedicine may be impossible. For these patients, clinics and geriatric models of care such as home visits are essential.

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Gender Differences in Endowed Chairs in Medicine at Top Schools

Although women are increasingly represented in academic medicine, gender inequities persist in senior positions. Endowed chairs are among the most distinguished roles in a university setting and typically provide funding that can support salary, novel research, or staff for the chair holder.[1] Previous research has documented gender differences in compensation, funding, authorship, and leadership positions in medicine.[2-4] To our knowledge, no prior studies have examined whether inequities exist in the allocation of endowed chairs within academic medicine. Thus, we examined the gender distribution of endowed chairs in departments of medicine and determined if gender is associated with holding an endowed chair after controlling for other relevant characteristics.

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Methods | We considered departments of medicine from the top 10 schools of medicine based on National Institutes of Health (NIH) funding in 2018 (http://www.brimr.org/NIH_Awards/2018/NIH_Awards_2018.htm). Endowed chair and full professor lists were obtained directly from department chairs between November 2019 and January 2020 and subsequently coded using publicly available sources (eg, institutional websites, NIH Reporter, Scopus [Elsevier], and state licensing boards) for gender, graduate degree, years since completion of graduate degree, subspecialty, publication and citation number, H-index, and total NIH grant funding as a principal investigator. Because no identifiable private information was included about the individual members of the organizations who were the participants in the research, the research plan was filed with the University of Michigan institutional review board, which did not consider it to require regulation or informed consent.

Table. Characteristics of Male and Female Full Professors With and Without Endowed Chairs at Top 10 US Medical Schools[a]

Characteristic	Full professors (N = 1654), No. (%)			
	Women (n = 461)		Men (n = 1193)	
	With endowed chairs (n = 76 [16.5%])	Without endowed chairs (n = 385 [83.5%])	With endowed chairs (n = 335 [28.1%])	Without endowed chairs (n = 858 [71.9%])
Subspecialty				
Cardiology	7 (14.9)	40 (85.1)	67 (26.2)	189 (73.8)
Endocrinology, metabolism, and diabetes	9 (23.7)	29 (76.3)	27 (38.0)	44 (62.0)
Gastroenterology and hepatology	6 (17.1)	29 (82.9)	29 (27.6)	76 (72.4)
General internal medicine and hospital medicine	9 (9.8)	83 (90.2)	31 (22.6)	106 (77.4)
Geriatrics and palliative medicine	3 (10.0)	27 (90.0)	10 (26.3)	28 (73.7)
Hematology and oncology	13 (23.6)	42 (76.4)	58 (33.7)	114 (66.3)
Infectious diseases	6 (12.2)	43 (87.8)	21 (20.0)	84 (80.0)
Nephrology/kidney	1 (4.5)	21 (95.5)	27 (31.8)	58 (68.2)
Other	4 (12.9)	27 (87.1)	18 (39.1)	28 (60.9)
Pulmonary and critical care	10 (30.3)	23 (69.7)	23 (20.4)	90 (79.6)
Rheumatology/allergy/immunology	8 (27.6)	21 (72.4)	24 (36.9)	41 (63.1)
Degree				
MD or equivalent	58 (16.2)	299 (83.8)	265 (27.7)	690 (72.3)
MD and other doctorate	11 (30.6)	25 (69.4)	54 (36.2)	95 (63.8)
Doctorate, non-MD, or equivalent	7 (10.4)	60 (89.6)	15 (17.6)	70 (82.4)
Other	0 (0)	1 (100)	1 (25.0)	3 (75.0)

(continued)