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ABSTRACT

Introduction: Insurers, institutional and independent providers of health care have made increasing use of websites for patient communication, in the absence of data indicating that patients, especially older adults, utilize information technology (IT). The Functional Assessment of Currently Employed Technology Scale (FACETS) was designed to determine patient frequency of internet and IT utilization across age groups. FACETS is a 10-item questionnaire assessing 5 functional domains, with high internal consistency reliability, strong general factor validity, and strong factor validity for the five domains. FACETS data indicate that IT utilization declines significantly with increasing age beyond 60 years. Findings also indicate that people over age 65 are not a homogenous population with regard to IT use, nor is IT use a homogenous category. FACETS demonstrates that use of websites for communicating with older adult populations might create a barrier to access to health care. It is suggested that health care protocols for working with older adults should include internet and IT utilization as a specific area of assessment or treatment.

Keywords: Digital inequality; internet; older adults; access to health care.

1. INTRODUCTION

The COVID-19 pandemic has made telehealth a necessary and prominent healthcare delivery modality, inducing CMS and private insurers to liberalize telehealth reimbursement policies [1,2,3,4,5,6,7,8]. However, current telehealth reimbursement policies assume that the patient has IT fluency and makes high utilization of IT, ignoring disparities in IT utilization between groups [9,10,11,12,13]. Telehealth options for low IT users continues to be limited to telephonic (audio-only) contact, which has been singled out for special scrutiny by Medicare and private insurers [14].

Ethnicity, age, educational experience, intellectual and developmental disabilities and socioeconomic status (SES) are among the variables that contribute to significant disparities in internet and information technology (IT) utilization [15,16,17,18,19, 20], despite efforts to engage young adults with intellectual disability with social media and other IT [21]. Disparities in internet use and access to IT have been variously described as the digital divide [22] and digital inequality [23,24].

The universal variable subsuming ethnicity, education, disability, or SES is the process of aging [25,14,12,10,11]. By 2060, the number of American adults over the age of 65 will more than double from 46.5 million today to over 98 million (nearly 25% of the population) [26,27]. People over the age of 65 utilize health care at a significantly higher rate than younger age cohorts: 136% for Emergency Department admissions, 263% for inpatient discharges, and 241% for outpatient office visits [28,29]. Per person healthcare spending for people 65 & older is three times higher than that for working-age adults, and five times higher than for children [30]. Internet and IT use have increased for all age groups over the last twenty years, but older adults continue to utilize the internet and IT at least 20% less than younger age cohorts [16,20,31] a pattern of disparity reported over a decade ago by the U.S. Census Bureau and Bureau of Labor Statistics (U.S. Census Bureau, 2003, [20]).

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Table 1. IT Access and Utilization by Ethnicity, Household Income, and Age: Data from U.S. Census Bureau, 2016

Ethnicity	Access to home high speed internet	Age in Years	Access to home high speed internet	Annual Household Income	Access to home high speed internet
African-American	62.5%	18-34	79.2%	Less than $25,000	49.0%
Hispanic	68.1%	35-44	83.2%	$25,000 to 49,999	69.3%
White non-Hispanic	77.8%	45-64	79.1%	$50,000 to $99,999	84.9%
Asian American	87.2%	65 and older	59.2%	$100,000 to $149,999	92.6%
				$150,000 or More	95.3%

CMS tracks data correlated with access to care, including economic disparity (Center for Medicare Advocacy, 2015). However, CMS has not addressed internet and IT fluency. Although there is a substantial body of research data demonstrating disparities in internet and IT usage between groups associated with numerous variables including age, SES, ethnicity, disability, and in the absence of any data indicating that the populations they serve have fluency using the internet or with IT [9,10,11, 14,12,25,13,32,19], over the past two decades Medicare, private insurers, hospitals, regional health centers, university teaching hospitals, and local medical clinics have increasingly made use of websites for communication with patients (Blue Cross Blue Shield, 2018; Medicare, 2018; United Healthcare, 2018; Cleveland Clinic, 2018; Duke University, 2018).

The documented disparities in internet and IT usage between groups suggest that the default use of websites for communication with all patient groups creates a barrier to care for some patient populations [9,16,20,15,21,22,23,24,31,10,11,14,12,25,13]. The potential consequence is that the patient populations most in need of health care (including older adults) will find it most difficult to access [25].

To date, most of the research exploring acceptance and utilization of information technology (IT) has come from the IT sector [33,34,35,36,37,38,39,40]. The most widely applied model of acceptance and utilization of technology is the technology acceptance model [41]. The TAM has been expanded as the TAM 2 [42,43]. Another popular model is the Unified Theory of Acceptance and Use of Technology (or UTAUT, Venkatesh, Morris, Davis, & Davis, [44]; Venkatesh et al., 2003). The UTAUT has been extended to study acceptance and use of technology in a consumer context (UTAUT2, Venkatesh, Thong, & Xu, [45]).

A few instruments have also been designed to assess self-perceived IT proficiency within specific vocations, including education (University of New York at Albany, [46]; Florida Gulf Coast University, [47]), corporate or administrative settings [48,49,50], and Marriage and Family Therapists [51].

In clinical settings, improved communication with patients has long been known to produce better health outcomes, and increased ratings of satisfaction by patients and providers of care [52,53,54,55]. However, assessment of patient utilization of the internet for the purpose of communication long remained a blind spot in health care. With one exception [12,10,11,25], health care protocols, especially for working with older adults, have not included frequency of internet or IT utilization as a specific area of assessment or treatment [56]. The American Psychological Association’s (APA’s) 21 Guidelines for psychologists working with older adults have yet to include familiarity with the assessment and treatment of technology challenges or barriers for older adults as a guideline [57]. There is a need for an instrument that assess the patient’s level of comfort utilizing different kinds of IT, informing individualized treatment planning and directing choice of media for communicating with each specific patient, which in turn facilitates better treatment outcomes and higher satisfaction ratings. The Functional Assessment of Currently Employed Technology Scale (FACETS) was developed specifically to meet those needs [10,14,25].

FACETS is a brief questionnaire that can be used in a variety of settings to assess the respondent’s level of comfort employing commonplace current information technologies in specific functional areas, or domains [10]. In clinical settings, as part of a structured intake evaluation FACETS provides information that can inform individualized treatment planning. FACETS specifically assesses a patient’s utilization of information technology (IT) in each of five separate IT domains (58,25]. Knowing whether and how an individual person utilizes IT clarifies what technologies are available to them as resources, and can direct choice of media for communicating with them. In clinical settings, this information can also improve treatment outcome. FACETS was designed to be sensitive to numerous variables, including age, gender, ethnicity, educational level, and socio-economic status [10,12,58,25].

2. FACETS: DESCRIPTION, DEVELOPMENT, ADMINISTRATION, AND SCORING GUIDELINES

2.1 Description

FACETS is a 10-item questionnaire that asks two questions in each of 5 functional domains: Home, Social, E-commerce, Health Care, and Technical (see Appendix 1). All but the Technical domain assess internet utilization. There are 6 optional answers for each question, characterizing the respondent's frequency employing a specific type of information technology. Summing the scores for the two questions in each functional domain produces a subtotal score for that domain. The sum of the five domain subtotal scores produces an overall FACETS score. Higher scores are associated with more frequent utilization of technologies across domains. FACETS has demonstrated high reliability and validity including Cronbach's alpha coefficient, McDonald's omega, confidence intervals for alpha and omega, and multiple group factor analysis [58].

2.2 Development

FACETS was developed to be consistent with test structures used in previous, normed technology questionnaires that have robust reliability and validity. The specific FACETS items were selected to be categorically consistent with items from previous technology questionnaires including the Technology Integration Self-Assessment [46], the Technology Skills Self-Assessment [47], the Technology Skills Self-Assessment Survey [50], the Technology Proficiency Self-Assessment Questionnaire (TPSA) [48,49], and the Comfort with Technology in MFT Self-Assessment [51]. However, FACETS does not use specific test items from any of the previous tests. FACETS is different from previous technology questionnaires in several ways:

a) FACETS assesses technology utilization as opposed to self-perceived proficiency using technology.
b) FACETS is designed for the general population with the intention of broad application.
c) Unlike previous technology questionnaires, FACETS items are structured into five functional domains to provide specific information about utilization of specific categories of technology. Specific items within each domain were selected to be consistent within that domain.
d) FACETS is intended to provide information that can be used in a clinical context to inform treatment planning.
e) FACETS is designed to help determine which communication media are most accessible to the respondent, and in clinical settings, which are most effective for communications between health care providers and the patient, to facilitate improved treatment outcomes and higher ratings of satisfaction by patients and providers of care.
f) FACETS is designed for application as a brief, structured clinical intake instrument. Accordingly, the number of items on FACETS was limited to 10, to enable administration and scoring within five minutes.

2.3 Administration

FACETS can be given to the respondent as a paper test on a clipboard for self-administration, or read aloud to the respondent either in person or over the phone. If the respondent has a physical limitation, an informant may be employed to assist in administration. It takes one to three minutes to complete. The clinician can score the FACETS in under one minute.

2.4 Scoring Guidelines

FACETS questions are given to the respondent on paper on a clipboard, or on a computer screen for self-administration, or can be read aloud to the respondent either in person or over the phone. If the respondent has a physical limitation, an informant may be employed to assist in administration.

FACETS asks 10 questions, representing 5 functional domains: Home, Social, E-commerce, Health Care, and Technical. Each question has 6 optional answers that characterize how frequently the respondent employs a specific type of information technology. Scoring is assigned as follows:

Response	Score
Never	0
A few times a year/Tried, but it didn't work	1
A few times a month/Got help but didn't work	2
Once a week/Only with help	3
A few times a week/Myself, with difficulty/Can but prefer not to	4
Daily/Myself easily/Prefer to	5

The scores for the two questions in each functional domain are added to produce a subtotal for that domain.

Each domain is scored on a continuous scale from 0 – 10. Higher scores suggest greater frequency using the information technologies in that domain. FACETS domain subtotal scores differentiate with the following cut-points:

Very Infrequent IT Use	0 – 2
Infrequent IT Use	3 – 4
Moderate IT Use	5 – 6
Frequent IT Use	7 – 8
Very Frequent IT Use	9 – 10

FACETS domain subtotal scores provide a functional assessment of the respondent's relationship with specific technologies.

The five domain subtotal scores are then added to produce an overall total score.

A.	Home Domain Subtotal (Questions 1, 2)
B.	Social Domain Subtotal (Questions 3, 4)
C.	E-commerce Domain Subtotal (Questions 5, 6)
D.	Health Care Domain Subtotal (Questions 7, 8)
E.	Technical Domain Subtotal (Questions 9, 10)
TOTAL FACETS SCORE	

Total FACETS scores range on a continuous scale from 0 – 50. Higher scores suggest greater frequency using information technologies across domains. FACETS total scores differentiate with the following cut-points:

Very Infrequent IT Use	0 – 14
Infrequent IT Use	15 – 24
Moderate IT Use	25 – 34
Frequent IT Use	35 – 44
Very Frequent IT Use	45 – 50

Total FACETS scores provide a functional assessment of the respondent's relationship with technologies across domains.

2.5 Clinical Relevance and Implications of FACETS Scores

The FACETS total score provides a global sense of the respondent's utilization of commonplace technologies, and the FACETS domain subtotal scores provide a functional assessment of the respondent's relationship with specific technologies in each of the five functional domains (Home, Social, E-commerce, Health Care, and Technical). FACETS domain subtotal scores and total score can reduce bias by giving the health care provider or agency a quantitative understanding of the respondent's functional relationship with specific technologies. Higher FACETS domain scores (indicating more frequent utilization) suggest specific technologies that might be utilized as resources for the respondent. If the respondent asks for assistance to increase their utilization of technologies in domains where FACETS scores are low, occupational therapy or other resources can be mobilized. In either event, information becomes available that informs the development of a treatment plan.

For example, scores of 0 to 2 (Very Infrequent IT Use) in the Social domain indicate very limited utilization of email, text messaging, or use of social media. Use of the internet has been associated with less loneliness and lower levels of depression in older adults [59,60]. Conversely, limited utilization of the internet for email, social media, or text messaging are associated with higher levels of loneliness and depression. Among older adults, building greater comfort and facility with current technologies leads to increased feelings of efficacy and connectedness [61,62,63]. Older adults' use of the internet has also been associated with less loneliness and lower levels of depression [59, 64,60,65,66,31].

Clinicians can use this information to determine which communication media are most accessible to patients, and thus most effective for communications between health care providers or agencies and patients to facilitate improved treatment outcomes and higher ratings of satisfaction by patients and providers of care. FACETS scores can also suggest the extent to which the patient's treatment might be enhanced by technological assistance: occupational therapy, tutoring, coaching, mentoring, or personal instruction. Each of these interventions can be arranged in coordination with the various resources and other professionals supporting the patient. FACETS scores might also inform the clinician's decisions about the employment of additional assessment, as well as possible referral to other specialists, including occupational therapists, neuropsychologists, and neurologists.

2.6 FACETS Research

Research has been conducted using FACETS. Using pre-existing deidentified records originally collected for clinical purposes, 423 completed FACETS forms were randomly selected for research assessment [25]. The deidentified respondents varied in age, ethnicity, socio-economic status, household income, and educational level. The respondent sample was screened to exclude respondents who had demonstrated any symptoms of, or been diagnosed with, any neurocognitive disorder, including Frontal Lobe Dementia, Alzheimer's Disease, Neurocognitive Disorder with Lewy Bodies, or Vascular Neurocognitive Disease. No control group was applicable. An Institutional Review Board waiver was granted for use of the data.

Age groups were formed for some analyses, to assess potential nonlinear effects over the span of ages. Age groups were formed by decades, except for respondents at the extreme ends of the age range: those younger than age 30 and those older than or equal to 80. Each of these populations formed their own group. The groups were defined as 18 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69, 70 to 79, and 80 or older. The seven age groups are summarized in Table 2.

Table 2. Age group cut points

Group	Age in years
1	18 to 29
2	30 to 39
3	40 to 49
4	50 to 59
5	60 to 69
6	70 to 79
7	80 or older

Domain scores were markedly bimodal at the extreme values, so domain scores were summarily categorized as Frequent (domain score > 6) or Infrequent (domain score <= 6). Percentages of people within an age group who frequently employed IT in each domain were calculated as proportions using Clopper-Pearson confidence intervals, which allowed intervals even when the proportions were 0 or 1. In order to determine whether age effects differed for domains, a generalized estimating equation (GEE) analysis was performed treating the binary domains (frequency of use) as repeated measurements. The domain by age group interaction was the primary test of interest in order to assess whether age trends differed by domain. In order to allow correlations among domains to vary, an unstructured covariance matrix was used. A negative binomial link function was also utilized in the analysis of data.

3. RESULTS

The majority of respondents were female (59.1%). Most respondents had incomes greater than $100,000 per year (81.2%). The majority of respondents were highly educated, with 79.9% having at least some college education, and 19.1% having only a High School education. The vast majority of respondents had access to a computer (93.3%), and access to high-speed internet (93.5%). The average respondent age was 54.58 years (sd = 18.42). Each of the seven age groups included at least 44 respondents.

In all five domains, frequency of internet and IT utilization was negatively associated with increasing age. Frequency of Home use showed the weakest correlation between age and IT utilization, while frequency of Health Care showed the highest association. The FACETS total score showed the largest negative correlation, as shown in Table 3.

Table 3. Somer's d correlations of age group with frequency of IT use in the five FACETS domains

Domain	Somer's d	p <	95% CI
Home	-0.19	0.001	-0.24 - -0.14
Social	-0.26	0.001	-0.31 - -0.21
E-commerce	-0.45	0.001	-0.49 - -0.41
Health Care	-0.47	0.001	-0.50 - -0.44
Technical	-0.41	0.001	-0.45 - -0.37
Total Score	-0.77	0.001	-0.81 - -0.74

The GEE analysis produced significant effects for Age Group (χ^2 = 64.86, df = 6, p < 0.001) and Domain (χ^2 = 29.86, df = 4, p < 0.001). The overall Age Group effect was expected given the large Somer's d between the FACETS total score noted in Table 1. Of most interest, the interaction of Age Group and Domain was significant (χ^2 = 41.68, df = 24, p < 0.014). This suggests that the pattern of frequency of use over the age groups differs across domains.

Fig. 1 shows the differing patterns of decline in frequency of use for the five domains.

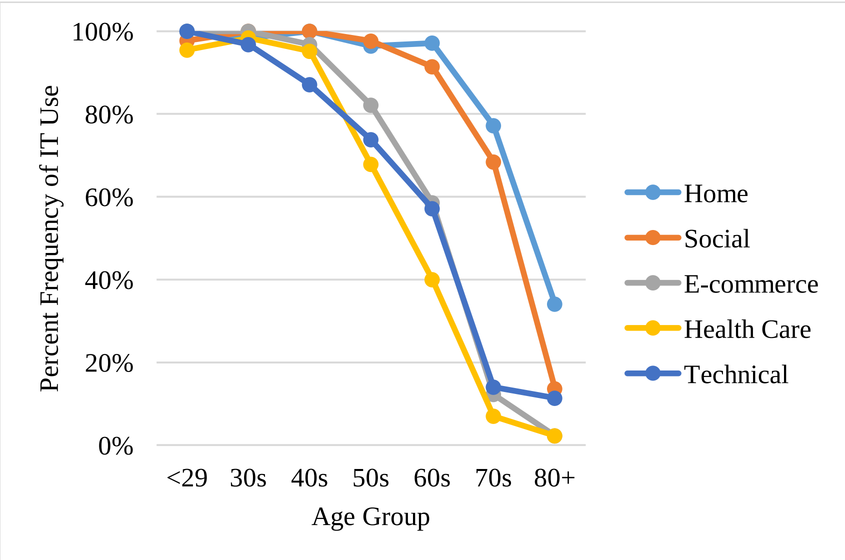

Fig. 1. Frequency of IT use for each functional domain by age group

Although frequency of IT utilization declines with age in all domains, the Health Care domain shows the steepest decline, which occurs earlier than decline in the other domains. The Technical and E-Commerce domains also demonstrate earlier age-related reductions in IT utilization than in the Home and Social domains. While all domains indicate high frequency of use percentages for respondents in their 30s or younger, the domains show high variability in the frequency of IT utilization beginning around age 50. With increasing age, domain scores again begin to converge, with overall low frequency of use levels for those in their 80s or older Lepkowsky & Arndt, [25].

4. DISCUSSION AND CONCLUSIONS

FACETS has demonstrated utility for identifying the extent to which an individual utilizes specific information technologies (IT), and for measuring IT utilization differences between groups [25]. To date, almost all respondents in FACETS research report access to a computer (93.3%) and access to the internet (93.5%). However, consistent with previous data indicating lower internet and IT utilization with increasing age [16,20], older respondents score lower in each functional domain, and the largest statistical differences in internet and IT utilization correlate with differences in age [25].

The COVID-19 pandemic led to unprecedented increases in the use of telehealth. In the first year of the pandemic, over 28 million Medicare beneficiaries (more than 40%) used telehealth, 88 times more frequently than the previous year. Telehealth was used for 43& of behavioral health services, and 3% percent of all medical office visits. The U.S. Department of Health and Human Services stated that CMS “could use findings to inform changes to services allowed via telehealth on a permanent basis” (DHHS, 2022). However, research since 1985 has consistently demonstrated that adults over the age of 65 utilize the internet and IT 20% less than younger groups [31,67,68].

FACETS research data demonstrate that discrepancies in the frequency of internet and IT utilization continue to increase with greater age beyond the age of 65. These findings are the first to suggest that people over 65 years of age are not a homogenous population. For example, in the Home and Social domains, FACETS indicates that people over the age of 60 show minor differences in internet utilization compared with younger age groups (up to age 40). People approaching age 60 show minor declines in frequency of using email, locating, opening and closing files in a computer (Home domain), sending text messages on a smart phone, or posting on social media (Social domain). Between ages 60 and 70, more dramatic decreases in the frequency of internet use in the Home and Social domains begin to appear. For the Home Domain in that age range, there is a decline in the frequency of internet use [(X - Base) / Base] of 21%, increasing to 65% for people over the age of 80. In the Social domain, there is a 25% decline in frequency of internet use between ages 60 and 70, which increases for those over age 80 to 85% [25].

Uniquely, FACETS has also shown that declines in the frequency of IT utilization occur at different rates within each domain, which suggests that IT use is not a homogenous category. Table 4 illustrates the variable advancement of declining utilization for different kinds of IT with increasing age.

Table 4. % of Frequency of IT Use in Each Functional Domain by Age Group

Domain	Age under 29	Age 30 to 39	Age 40 to 49	Age 50 to 59	Age 60 to 69	Age 70 to 79	Age over 80
Home	100	100	100	98	97	77	34
Social	100	100	100	98	91	68	14
E-Commerce	100	100	97	82	59	12	2
Health Care	95	98	95	68	40	7	2
Technical	100	97	87	74	57	14	11

The domains most affected by age appear to be E-Commerce, Technical and Health Care. Even when people up to age 40 are considered as a single group, dramatic declines in IT utilization for people over 60 appear in the E-Commerce domain (39%), the Technical domain (35%), and the Health Care domain (58%). For older age groups, these declines are even more dramatic. Compared with people up to age 40, people over the age of 70 show declines in the frequency of IT utilization for all domains: Home (23%), Social (32%), E-Commerce (88%), Technical (84%), and most of all, Health Care (93%). Compared with the age 40 and under group, people over the age of 80 show even greater discrepancies in frequency of IT use for every domain: Home (66%), Social (86%), E-Commerce (98%), Health Care (98%), and Technical (87%). The data demonstrate that the frequency of IT utilization by people in their 60’s is not homogenous with that people in their 70’s, which in turn is not homogenous with that of people over the age of 80.

In the context of telehealth, perhaps the most significant finding from FACETS research is that the Health Care domain shows the steepest rate of decline with age. Specifically, compared with age groups up to age 40, the frequency of internet use for communicating with doctors and clinics, and insurers declines 28% by age 50, 58% by age 60, 93% by age 70, and 98% by age 80 [25]. Also pertinent to telehealth, respondents aged 50-59 indicate that even though they believe that are capable of doing so, they prefer not to use the internet to communicate with insurers or doctors, a distinction that has not previously been addressed. FACETS data also demonstrate that people over the age of 70 almost never use the internet to communicate with insurers or doctors, which is especially problematic because their health care utilization is highest [28,30,25,69,18].

These FACETS findings suggest that the default use of websites and other IT by insurers, health care agencies and healthcare providers for communicating with patients about their health care are ineffective with adults over age 70, functionally represent a barrier to care, and make healthcare least accessible to those who need it most [70,71,25]. Ineffective methods of communication with patients are associated with poor health outcomes and lower satisfaction ratings by patients and providers of care [72,73,55,53].

FACETS research data are consistent with previous research supporting the ‘digital inequality’ model, conceptualizing IT utilization along a spectrum [11], as opposed to an older model of bipolar IT capability or incapability characterized by the term “digital divide’ [23,24,16]. FACETS research findings suggest that IT utilization and its potential as a resource in treatment might represent a specific area of cultural competence in working with older adults [25]. FACETS findings also findings also suggest that the APA’s 21 Guidelines for psychologists working with older adults might include familiarity with the assessment and treatment of technology challenges or barriers for older adults.

The expansion of telehealth that began during the COVID-19 pandemic will continue, changing the way that healthcare is delivered [74,75]. FACETS and other research data demonstrate the importance of permanent policies protecting reimbursement for audio-only telehealth in the future. The data also emphasize the critical role played by routine intake assessment to determine which modalities of communication are most effective for each individual patient for communication with healthcare providers, healthcare agencies and insurers [14,25].

DECLARATIONS

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REFERENCES

1. Payán DD, Frehn JL, Garcia L, Tierney AA, Rodriguez HP. Telemedicine implementation and use in community health centers during COVID-19: Clinic personnel and patient perspectives. SSM - Qualitative Research in Health. 2022;2:100054.
ISSN 2667-3215.
Available:https://doi.org/10.1016/j.ssmqr.2022.100054.
2. Chang JE, Lai AY, Gupta A, Nguyen AM, Berry CA, Shelley DR. Rapid transition to telehealth and the digital divide: Implications for primary care access and equity in a post-COVID era. The Milbank Quarterly. 2021;99(2):340-368.
DOI: 10.1111/1468-0009.12509
3. Centers for Medicare and Medicaid Services. Additional background: Sweeping regulatory changes to help U.S. healthcare system address COVID-19 patient surge; 2020a.
Available:https://www.cms.gov/newsroom/fact-sheets/additional-backgroundsweeping-regulatory-changes-help-us-healthcare-system-address-covid-19-patient
4. Centers for Medicare and Medicaid Services. Billing for professional telehealth distant site services during the public health emergency — Revised; 2020b.
Available:https://www.cms.gov/outreach-and-educationoutreachffsprovpartprogprovider-partnership-email-archive/2020-04-03-mlnc-se#_Toc36815181
5. Centers for Medicare & Medicaid Services. CMS-1744-IFC: Medicare and Medicaid programs; policy and regulatory revisions in response to the COVID–19 public health emergency; 2020c.
Available:https://www.govinfo.gov/content/pkg/FR-2020-04-06/pdf/2020-06990.pdf
6. Center for Disease Control and Prevention. Coronavirus disease 2019 (COVID-19): People who are at higher risk for severe illness; 2020.
Available:https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html
7. Skillings J. Billing Update: New phone-only billing codes; 2020.
Available:https://www.apaservices.org/practice/clinic/covid-19-audio-only-phone-service-codes
8. U.S. Department of Health and Human Services. Telehealth Was Critical for Providing Services to Medicare Beneficiaries During the First Year of the COVID-19 Pandemic; 2022.
Available:https://oig.hhs.gov/oei/reports/OEI-02-20-00520.asp
9. Anthony DL, Campos-Castillo C, Lim CPS. Who isn't using patient portals and why? Evidence and implications from a national sample of US adults. Health Affairs. 2018;37(12):1948-1954.
DOI: 10.1377/hlthaff.2018.05117
10. Lepkowsky CM. Functional assessment of comfort employing technology scale (FACETS): A brief intake instrument to facilitate treatment planning and communication with patients. Psychology Behav Med Open Access J. 2017a;1(1):9-13.
Available:http://ologyjournals.com/pbmoaj/pbmoaj_00002.pdf
11. Lepkowsky CM. Technological diversity: A cost-saving, person-centered alternative to Systemic technocentrism and technological provider bias. Psychology Behav Med Open Access J. 2017b;1(1):1-7.
Available:http://ologyjournals.com/pbmoaj/pbmoaj_00001.pdf
12. Lepkowsky CM. Functional assessment of currently employed technology scale (FACETS) 4.0: Update on a brief intake instrument to facilitate treatment planning and communication with patients. International Journal of Medical Science and Clinical Invention. 2020b;7(5):4802-4809.
Available:https://doi.org/10.18535/ijmsci/v7i05.03
13. Payán DD, Rodriguez HP. Telehealth disparities. Health Affairs. 2021;40(8):1340.
DOI:10.1377/hlthaff.2021.00940
14. Lepkowsky CM. Telehealth reimbursement allows access to mental health care during COVID-19. American Journal of Geriatric Psychiatry. 2020a;28(8):898-899.
Available:https://doi.org/10.1016/j.jagp.2020.05.008
15. Dobransky K, Hargittai E. The disability divide in internet access and use. Information, Communication & Society. 2006;9(3):313-334.
DOI:10.1080/13691180600751298
16. Hunsaker A, Hargittai E. A review of Internet use among older adults. New Media & Society. 2018;20(10):3937-3954.
DOI:10.1177/1461444818787348

17. Hargittai E, Piper AM, Morris MR. From internet access to internet skills: digital inequality among older adults. Univ Access Inf Soc. 2019;18:881–890.
Available:https://doi.org/10.1007/s10209-018-0617-5
18. Rodriguez JA, Saadi A, Schwamm LH, Bates DW, Samal L. Disparities in telehealth use among California patients with Limited English Proficiency. Health Affairs. 2021;40(3):487-495.
DOI: 10.1377/hlthaff.2020.00823
19. Ross J, Stevenson F, Lau R, Murray E. Factors that influence the implementation of e-health: A systematic review of systematic reviews (an update). Implementation Science. 2016;11(1):146.
DOI: 10.1186/s13012-016-0510-7
20. U.S. Census Bureau. Measuring America: A digital nation; 2016.
Available:https://www.census.gov/content/dam/Census/library/visualizations/2016/comm/digital_nation.pdf.
Accessed June 24, 2017.
21. Davies DK, Stock SE, King LR, Brown RB, Wehmeyer ML, Shogren KA. An interface to support independent use of facebook by people with intellectual disability. Intellectual and Developmental Disabilities. 2015;53(1):30-41.
DOI: 10.1352/1934-9556-53.1.30
22. Hoffman D, Novak T, Schlosser A. The evolution of the digital divide: How gaps in internet access may impact electronic commerce. Journal of Computer-Mediated Communication. 2000;5(3):JCMC534.
Available:https://doi.org/10.1111/j.1083-6101.2000.tb00341.x
23. DiMaggio P, Hargittai E. From the 'Digital Divide' to 'Digital Inequality': Studying Internet Use as Penetration Increases. Center for Arts and Cultural Policy Studies; 2001. Working Paper #15.
Available:https://www.semanticscholar.org/paper/From-the-%27Digital-Divide%27-to-%27Digital-Inequality%27%3A-DiMaggio-Hargittai/dafc2865017233566d415370125286e41fd24ad2
24. Dimaggio P, Hargittai E, Celeste C, Shafer S. Digital inequality: From unequal access to differentiated use. Social Inequality. 2004;255-400.
ISBN 0871546205, 9780871546210
Available:https://www.scholars.northwestern.edu/en/publications/digital-inequality-from-unequal-access-to-differentiated-use
25. Lepkowsky CM, Arndt S. The internet: Barrier to health care for older adults? Practice Innovations. 2019;4(2):124-132.
Available:https://doi.org/10.1037/pri0000089
26. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2016.
Available:https://www.cdc.gov/aging/pdf/cognitive_impairment/cogimp_poilicy_final.pdf.
27. U.S. Census Bureau. Projections of the size and composition of the U.S. population: 2014 to 2060; 2015.
Available:https://pdfs.semanticscholar.org/09c9/ad858a60f9be2d6966ebd0bc267af5a76321.pdf
28. Hayes SL, Salzberg CA, McCarthy D, Radley D, Abrams MK, Shah T, Anderson G. High-need, high-cost patients: Who are they and how do they use health care? A population-based comparison of demographics, health care use, and expenditures. The Commonwealth Fund; 2016.
Available:https://www.commonwealthfund.org/publications/issue-briefs/2016/aug/high-need-high-cost-patients-who-are-they-and-how-do-they-use
29. Health Care Cost Institute. 2016 Health Care Cost and Utilization report; 2017.
Available:http://www.healthcostinstitute.org/report/2016-health-care-cost-utilization-report/.
30. Centers for Medicare and Medicaid Services. NHE by Age Group and Gender, Selected Years 2002, 2004, 2006, 2008, 2010, 2012, and 2014; 2014.
Available:https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NHE-Fact-Sheet#:~:text=Per%20person%20personal%20health%20care,%2Dage%20person%20(%247%2C153).
31. Anderson M, Perrin A. Tech adoption climbs among older adults. Pew Research Center:Internet & Technology. Published online May 17, 2017; 2017.
Available:http://www.pewinternet.org/2017/05/17/tech-adoption-climbs-among-older-adults

32. Rodriguez JA, Betancourt JR, Sequist TD, Ganguli I. Differences in the use of telephone and video telemedicine visits during the COVID-19 pandemic. American Journal of Managed Care 2021;27(1):21-26.
DOI: 10.37765/ajmc.2021.88573
33. Smither JA, Braun CC. Technology and older adults: Factors affecting the adoption of automatic teller machines. The Journal of General Psychology. 1994;121(4):381-389.
DOI: 10.1080/00221309.1994.9921212
34. Chappell NL, Zimmer Z. Receptivity to new technology among older adults. Disability and Rehabilitation. 1999;21(5-6):222-230.
DOI: 10.1080/096382899297648
35. Morris MG, Venkatesh V. Age differences in technology adoption decisions: Implications for a changing workforce. Personnel Psychology. 2000;53(2):375–403.
DOI: 10.1111/j.1744-6570.2000.tb00206.x
36. White J, Weatherall A. A grounded theory analysis of older adults and information technology. Educational Gerontology. 2000;26(4):371-386.
Available:http://dx.doi.org/10.1080/036012700407857
37. Zajicek M. (). Interface design for older adults. Published in: Proceedings of the 2001 EC/NSF workshop on Universal accessibility of ubiquitous computing: providing for the elderly, 60 – 65. New York, NY, Association for Computing Machinery; 2001.
Available:http://dl.acm.org/citation.cfm?id=564543
38. Selwyn N. The information aged: A qualitative study of older adults' use of information and communications technology. Journal of Aging Studies. 2004;18(4):369–384.
DOI: 10.1016/j.jaging.2004.06.008
39. Melenhorst A, Rogers W, Bouwhuis D. Older adults' motivated choice for technological innovation: Evidence for benefit-driven selectivity. Psychology and Aging. 2006;21(1):190-195.
Available:http://dx.doi.org/10.1037/0882-7974.21.1.190
40. Carpenter B, Buday S. Computer use among older adults in a naturally occurring retirement community. Computers in Human Behavior. 2007;23(6):3012–3024.
DOI: 10.1016/j.chb.2006.08.015
41. Davis FD. Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly. 1989;13(3):319–340.
DOI: 10.2307/249008
42. Venkatesh V, Davis FD. A theoretical extension of the technology acceptance model: Four longitudinal field studies. Management Science. 2000;46(2):186–204.
DOI:10.1287/mnsc.46.2.186.11926
43. Venkatesh V. Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. Information Systems Research. 2000;11(4):342–365.
44. Venkatesh V, Morris MG, Davis GB, Davis FD. User acceptance of information technology: Toward a unified view. MIS Quarterly. 2003;27(3):425–478.
45. Venkatesh V, Thong J, Xu X. Consumer acceptance and use of information technology: Extending the Unified Theory of Acceptance and Use of Technology. MIS Quarterly. 2012; 36(1):157-178.
Available:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2002388
46. University of the State of New York at Albany. Technology Integration Self-Assessment; 2017.
Available:http://www.acces.nysed.gov/common/acces/files/aepp/EDITTISASurvey12_04_2012.pdf Accessed on 05/02/2017.
47. Florida Gulf Coast University. Technology Skills Self-Assessment; 2017.
Available:https://survey.fgcu.edu/Survey.aspx?s=311d40c08e234f9181d7f97e6623fbcc. Accessed on 05/02/2017
48. Christensen R, Knezek G. The Technology Proficiency Self-Assessment Questionnaire (TPSA; 2015).
Available:https://www.researchgate.net/publication/291411935_The_Technology_Proficiency_Self-Assessment_Questionnaire_TPSA.
Accessed on 05/02/2017

49. Christensen R, Knezek G. Validating the technology proficiency self-assessment questionnaire for 21st century learning (TPSA C-21). Journal of Digital Learning in Teacher Education. 2017;33(1):20-31.
DOI: 10.1080/21532974.2016.1242391
50. Kerr B. Technology Skills Self-Assessment Survey; 2017.
Available:http://mtweb.mtsu.edu/bkerr/Technology_Skills_Self-Assessment_Survey.asp.
51. Caldwell B. Comfort with technology in MFT self-assessment. 2015 AAMFT Annual Conference | Session 508: How technology will radically change family therapy's future; 2015.
Available:https://cdn.shopify.com/s/files/1/0809/6573/files/508-_Comfort_with_technology_in_MFT_survey.pdf. Accessed on 05/02/2017.
52. Stewart MA. Effective physician-patient communication and health outcomes: a review. CMAJ 1995;152(9):1423–1433.
Available:https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1337906/
53. Haskard Zolnierek KB, DiMatteo MR. Physician communication and patient adherence to treatment: A meta-analysis. Med Care. 2009;47(8):826–834.
DOI: 10.1097/MLR.0b013e31819a5acc
54. Fong Ha J, Longnecker N. Doctor-patient communication: A review. The Ochsner Journal. 2010;10(1):38-43.
Available:http://www.ochsnerjournal.org/doi/abs/10.1043/toj-09-0040.1?code=occl-site
55. Vermeir P, Vandijck D, Degroote S, Peleman R, Verhaeghe R, Mortier E, Hallaert G, Van Daele S, Buylaert W, Vogelaers D. Communication in healthcare: A narrative review of the literature and practical recommendations. Int J Clin Pract. 2015;69(11):1257-1267.
DOI:10.1111/ijcp.12686.
56. Hill R, Betts LR, Gardner SE. Older adults' experiences and perceptions of digital technology: (Dis)empowerment, wellbeing, and inclusion. Computers in Human Behavior. 2015;48:415-423.
DOI: 10.1016/j.chb.2015.01.062
57. American Psychological Association. Temporary changes to federal Medicare telehealth policies; 2020.
Available:https://www.apaservices.org/practice/reimbursement/government/medicare-telehealth-temporary-changes
58. Lepkowsky CM, Arndt S. Functional Assessment of Currently Employed Technology Scale (FACETS): Reliability and Validity. International Journal of Medical Science and Clinical Invention. 2018;5(9):4064-4068.
Available:https://doi.org/10.18535/ijmsci/v5i9.07
59. Sum S, Mathews RM, Hughes I, Campbell A. Internet use and loneliness in older adults. CyberPsychology & Behavior. 2008;11(2):208-211.
DOI: 10.1089/cpb.2007.0010.
60. Forsman AK, Nordmyr J. Psychosocial links between internet use and mental health in later life: A systematic review of quantitative and qualitative evidence. Journal of Applied Gerontology. Article first published online: August 5, 2015; 2015.
Available:https://doi.org/10.1177/0733464815595509
61. Mitzner TL, Boron JB, Fausset CB, Adams AE, Charness N, Czaja SJ, Dijkstra K, Fisk A, Rogers WA, Sharit J. Older adults talk technology: Technology usage and attitudes. Computers in Human Behavior. 2010;26(6):1710-1721.
DOI:10.1016/j.chb.2010.06.020
62. Lee C, Coughlin JF. PERSPECTIVE: Older adults' adoption of technology: An integrated approach to identifying determinants and barriers. Journal of Product Innovation Management. 2015;32(5):747–759.
63. Tsai HS, Shillair R, Cotten SR, Winstead V, Yost E. Getting grandma online: Are tablets the answer for increasing digital inclusion for older adults in the U.S.? Educational Gerontology 2015;41(10):695-709.
DOI: 10.1080/03601277.2015.1048165
64. Cotten SR, Anderson WA, McCullough BM. Impact of internet use on loneliness and contact with others among older adults: Cross-sectional analysis. J Med Internet Res. 2013;15(2):e39. Published online 2013 Feb 28, 2013.
DOI: 10.2196/jmir.2306

65. Chopik WJ. The benefits of social technology use among older adults are mediated by reduced loneliness. Cyberpsychology, Behavior, and Social. 2016;19(9):551-556.
DOI: 10.1089/cyber.2016.0151
66. Lifshitz R, Nimrod G, Bachner YG. Internet use and well-being in later life: a functional approach. Aging & Mental Health. 2016;1-7.
DOI: 10.1080/13607863.2016.1232370
67. Portz JD, Fruhauf C, Bull S, Boxer RS, Bekelman DB, Bayliss EA. Call a teenager... that's what I do!" - Grandchildren help older adults use new technologies: Qualitative study. JMIR Aging. 2019;2(1):e13713.
DOI: 10.2196/13713
68. Reed ME, Huang J, Graetz I, Lee C, Muelly E, Kennedy C. Patient characteristics associated with choosing a telemedicine visit vs office visit with the same primary care clinicians. JAMA Network Open. 2020;3(6):Article e205873.
DOI:10.1001/jamanetworkopen.2020.5873
69. Ramsetty A, Adams C. Impact of the digital divide in the age of COVID-19. Journal of the American Medical Informatics Association. 2020;27(7):1147-1148.
DOI:10.1093/jamia/ocaa078
70. Baras Shreibati J. When low tech wins. New England Journal of Medicine. 2021;385(7):581-583.
DOI:10.1056/NEJMp2104234
71. Kruse CS, Karem P, Shifflett K, Vegi L, Ravi K, Brooks M. Evaluating barriers to adopting telemedicine worldwide: A systematic review. Journal of Telemedicine and Telecare. 2018; 24(1):4-12.
DOI:10.1177/1357633X16674087
72. Gordon HS, Solanki P, Bokhour BG, Gopal RK. I'm not feeling like I'm part of the conversation: Patients' perspectives on communicating in clinical video telehealth visits. Journal of General Internal Medicine. 2020;35(6):1751-1758.
DOI: 10.1007/s11606-020-05673-w
73. Kruse CS, Krowski N, Rodriguez B, Tran L, Vela J, Brooks M. Telehealth and patient satisfaction: A systematic review and narrative analysis. BMJ Open. 2017;7(8):Article e016242.
DOI:10.1136/bmjopen-2017-016242
74. Keesara S, Jonas A, Schulman K. Covid-19 and health care's digital revolution New England Journal of Medicine. 2020;382(23):e82.
DOI:10.1056/NEJMp2005835
75. Shachar C, Engel J, Elwyn G. Implications for telehealth in a postpandemic future: Regulatory and privacy issues. Journal of the American Medical Association. 2020;323(23):2375-2376.
DOI:10.1001/jama.2020.7943

Appendix 1: Functional Assessment of Currently Employed Technology Scale (FACETS)

Age: _______ ◯ Male/ ◯ Female ◯ Hispanic ◯ African American ◯ Asian ◯ Other

Household Income: ◯ < $25,000 ◯ < $50,000 ◯ < $100,000 ◯ < $150,000 ◯ >$150,000

Degree: ◯ N/A ◯ High School ◯ Some college ◯ AA ◯ Bachelor's ◯ Post graduate

A.	Home Domain						
1.	I send email...	◯ **Never**	◯ **A few times a year**	◯ **A few times a month**	◯ **Once a week**	◯ **A few times a week**	◯ **Daily**
2.	I find, open & close files in my computer...	◯ **Never**	◯ **A few times a year**	◯ **A few times a month**	◯ **Once a week**	◯ **A few times a week**	◯ **Daily**
Home Domain Subtotal							
B.	Social Domain						
3.	I send text messages using a smart phone…	◯ **Never**	◯ **A few times a year**	◯ **A few times a month**	◯ **Once a week**	◯ **A few times a week**	◯ **Daily**
4.	I post on social media (e.g., facebook, twitter)…	◯ **Never**	◯ **A few times a year**	◯ **A few times a month**	◯ **Once a week**	◯ **A few times a week**	◯ **Daily**
Social Domain Subtotal							
C.	E-Commerce Domain						
5.	I manage my banking and credit card accounts online…	◯ **Never**	◯ **Tried, but it didn't work**	◯ **Got help but didn't work**	◯ **Only with help**	◯ **Can but prefer not to**	◯ **Prefer to**
6.	I pay bills and make purchases via the internet…	◯ **Never**	◯ **Tried, but it didn't work**	◯ **Got help but didn't work**	◯ **Only with help**	◯ **Can but prefer not to**	◯ **Prefer to**
E-Commerce Domain Subtotal							
D.	Health Care Domain						
7.	I communicate with my doctor or clinic online…	◯ **Never**	◯ **Tried, but it didn't work**	◯ **Got help but didn't work**	◯ **Only with help**	◯ **Can but prefer not to**	◯ **Prefer to**
8.	I communicate with my health insurance company online…	◯ **Never**	◯ **Tried, but it didn't work**	◯ **Got help but didn't work**	◯ **Only with help**	◯ **Can but prefer not to**	◯ **Prefer to**
Health Care Domain Subtotal							
E.	Technical Domain						
9.	I have installed components (monitors, speakers, mice)…	◯ **Never**	◯ **Tried, but it didn't work**	◯ **Got help but didn't work**	◯ **Only with help**	◯ **Myself, with difficulty**	◯ **Myself easily**

10.	I have reset a modem or router in my home…	◯ **Never**	◯ **Tried, but it didn't work**	◯ **Got help but didn't work**	◯ **Only with help**	◯ **Myself, with difficulty**	◯ **Myself easily**
Technical Domain Subtotal							
Total FACETS Score							

Access to a computer at home? ◯Yes/ ◯No **Access to internet at home?** ◯Yes/ ◯ No

Instructions: Check the response that most accurately completes each statement.

Functional Assessment of Comfort Employing Technology Scale (FACETS)

Purpose of Use

Technology has grown rapidly over the last three decades, insinuating itself into almost every aspect of daily life. The ability to understand and interact with digital technologies is fast becoming necessary for functioning in multiple everyday contexts. The Functional Assessment of Comfort Employing Technology Scale (FACETS) was developed to provide a quick, structured assessment of the respondent's comfort using various technologies. FACETS is not intended as a comprehensive assessment of technological proficiency. FACETS is intended as a brief clinical instrument that might reduce provider bias, provide a general sense of the extent to which the respondent is comfortable employing commonly used current technologies, and suggest which of those technologies are available to the respondent as resources. FACETS can be completed and scored in a few minutes, and in a clinical context can be used as part of an initial intake evaluation.

Administration and Scoring Guidelines

The questions are given to the respondent on paper on a clipboard, or on a computer screen for self-administration, or can be read aloud to the respondent either in person or over the phone. If the respondent has a physical limitation, an informant may be employed to assist in administration.

FACETS asks 12 questions, representing 4 functional domains: Social, E-commerce, Travel, and Home. Each question has 5 optional answers that characterize the respondent's comfort with the use of a specific type of technology. Scoring is assigned as follows:

Response	Score
Strongly Disagree (SD)	0
Disagree (D)	1
Undecided (U)	2
Agree (A)	3
Strongly Agree (SA)	4

The scores for the three questions in each functional domain are added to produce a subtotal for that domain. Each domain is scored on a continuous scale from 0 – 9. Higher scores suggest greater comfort using the technologies in that domain. FACETS domain subtotal scores differentiate with the following cut-points:

Severe Technological Discomfort	0 – 3
Moderate Technological Discomfort	4 – 6
Moderate Technological Comfort	7 – 9
High Technological Comfort	10 – 12

FACETS domain subtotal scores provide a functional assessment of the respondent's relationship with specific technologies.

The four domain subtotal scores are then added to produce an overall total score.

Social Domain Subtotal (Questions 1, 2, 3)	
E-commerce Domain Subtotal (Questions 4, 5, 6)	
Travel Domain Subtotal (Questions 7, 8, 9)	
Home Domain Subtotal (Questions 10,11,12)	
TOTAL FACETS SCORE	

Total FACETS scores range on a continuous scale from 0 – 48. Higher scores suggest greater comfort using technologies across domains. FACETS total scores differentiate with the following cut-points:

Severe Technological Discomfort	0 – 12
Moderate Technological Discomfort	13 – 24
Moderate Technological Comfort	25 – 36
High Technological Comfort	37 – 48

Total FACETS scores provide a functional assessment of the respondent's relationship with technologies across domains.

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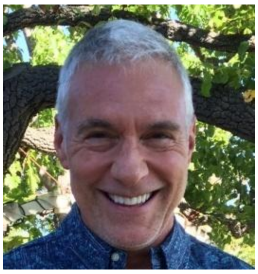

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