ORIGINAL ARTICLE

A tale of two patients – How did the pandemic impact patients' usage of health portals

La Vonne A. Downey*

Health Sciences Administration, Roosevelt University, United States

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ABSTRACT

Objective: The study examines whether patient health portal usage significantly increased during the COVID-19 pandemic between 2019 and 2022.
Methods: In order to measure patient usage of patient portals before and during the first year of the COVID-19 pandemic, this study used the Health Information National Trends Survey results for 2019, 2020, 2021, and 2022. It was compared, using a least square regression model, to see if there was a significant relationship between increased use of telehealth, the usage of health portals, and the number of times seen by a regular healthcare provider.
Results: The number of patients who saw their health care provider thrice a year and used their patient portal pre- and post-pandemic increased. However, the overall increase in patients using their portals before and during the first two years of the pandemic remains below 50%.
Conclusions: Overall, the pandemic increased patients' use of telemedicine but only significantly increased their usage of patient portals for those patients who saw their provider three or more times a year. These findings indicate that more interaction with providers might impact future portal usage.

Key Words: Health portals, Telehealth, COVID-19, Pandemic

1. INTRODUCTION

The use of patient portals has been found to impact patient outcomes.[1–5] Kim et al. and Irizarry et al. found that patient engagement was related to improving health outcomes and reducing costs.[1]

The use of patient portals has been found to impact patient outcomes. Forbat et al. found 2009 evidence that patient engagement improves health outcomes and reduces healthcare costs.[1] Forbat et al. showed that the use of health portals could positively impact patient health outcomes, lower the use of duplicate testing, and improve the patient's ability to be a partner in their health care.[1]

As part of the Affordable Care Act, there has been an additional push to have providers and patients use patient portals to promote efficiency, quality, and safety in healthcare.[2] Healthcare institutions, with Medicare and Medicaid funding, focused on patient portals as the primary access point for personal health information and patient-provider communication.[3] To engage patients with portals, many healthcare systems added features such as prescription refills and appointment scheduling to make it an ongoing place to engage with their providers.[3,4] That has meant that patients' adoption of portals is increasingly critical for receiving quality health care, including interactions with health providers

*Correspondence: La Vonne A. Downey, Director, Prof.; Email: Ldowney@roosevelt.edu; Address: Director of Health Sciences Administration, Roosevelt University, 430 S Michigan Ave., Chicago, IL 60605, United States.

outside of clinical visits and quick access to one's health information. However, the next question is whether patients use them to engage with their providers.

The results have been mixed in part due to the perceived complexity of the portal process. The two-step process of signing up and using healthcare portals depends on several factors. Several studies have shown that numerous factors determine whether a patient signs up for and then uses patient portals.[5–7] They include various items such as previous computer experience, adequate health literacy, and numeracy. It has been shown that these factors strongly contribute to successfully performing health management tasks using a patient portal.[8–12] Research has shown that racial minorities and older patients are often less likely to use patient portals, in part due to a lack of access to home-based high-speed internet and concerns about the security of portals.[2,13,14] These findings have illustrated how disparities in access to technology have impacted health information portals from being able to address and or reduce existing health inequalities.[1–11]

More recent work by Jackson et al., Preston et al., and Park et al. have shown some correlation between patients' previous and current internet use and engagement with health information technology such as portal.[8,11,15] They found that demographic characteristics such as being female, having higher education levels, being non-Hispanic, having a regular healthcare provider, and being ages 35-44 were predictors of using patient portals to communicate with healthcare providers and track personal health information.[8,11,15] Several studies have identified ways to engage patients in portal usage. They included using every physician interaction to talk about portal usage, turning physicians into portal advocates, not undervaluing the importance of physicians for driving usage, considering physician attitude a primary indicator of adoption, using portals to schedule visits, pay bills, and promoting patient interactions with health care providers.[3–14]

The expansion of mobile phone technology, such as smartphones, to more patients could have been a way to reduce some of the barriers to access, such as the lack of high-speed internet and or home computer systems. However, as Finnely et al. have shown in their study, despite the increase in cellular access, there still needs to be gaps in who and how they are used to access health information via the patient portal.[13] Their study showed that despite the increase of over 50% of the population in the United States having a smartphone from 2014 to 2018, there was only a six percent (25.5% to 31.4%) increase in the U.S. population's use of health portals.[13–17]

The question of who and how health information was accessed and used became even more critical during the first years of the COVID-19 pandemic. According to a study by Lee et al., the use of telehealth increased by 157% during that time.[15] It was thought that switching to using health care technology via telehealth visits would impact the patient's usage of health portals as patients could have better access and the ability to use their health information. However, several studies have shown that during the first year of the pandemic, there was only a slight increase in the usage of patient portals from 31.4% to 39%.[15] This raises the question of where this increase occurred. That finding raised whether this pandemic increased within the population or those with more frequent interactions with the healthcare system and preferred providers.

The study examines whether the COVID-19 pandemic and the use of telehealth impact portal usage, focusing on the periods 2019 and 2022. It tested whether there was a significant relationship between those who saw their medical providers more often, defined as more than three times a year, and the usage of patient portals and health information technology before and during the COVID-19 pandemic.

2. METHODS

In order to measure patient usage of patient portals before and during the first year of the COVID-19 pandemic, this study used the Health Information National Trends Survey done in 2019-2022; HINTS is done using a U.S. non-institutionalized adult population (aged 18 years and older), which collects data on health-related information and health-related knowledge, attitudes, and behaviour.[17]

This study used measures of health information seeking, health care use, and access and technology use. Core constructs used to measure demographics, health information seeking, health care use and access, and technology use and access in the Health Information National Trends Survey (HINTS) were measured by the following questions per construct: See below for how constructs were measured.

Please see the core constructs and their measures below in the Health Information National Trends Survey (HINTS) (see Table 1).

Due to variations in the number of times people visit their healthcare providers, whether they see a specific provider or not, a least square regression model was used to look for a significant relationship between technology use and access, usage of health portals, and times seen by a regular healthcare provider. An alpha of .05 or less was used for significance levels for all variables.

Table 1. The core constructs and their measures below in the Health Information National Trends Survey (HINTS)

Items	
Sociodemographics	Age, sex, race, ethnicity, income, home ownership status, financial strain, health insurance coverage, education, marital status, employment status, country of origin (U.S. vs other), health status
Health information-seeking	Ever sought health information, health information sources, trust in health information sources, confidence in health information-seeking, information-seeking experiences, internet use for health information
Healthcare use, portal use, and access	The usual source of care, the cost barrier to care, patient-provider communication, telehealth usage, portal use of methods to look up medical tests, communicate with providers, prescription refills, make appointments, reasons for not using portals- including lack of trust, concerns over privacy, not having access and ability to use a computer to access portal, rather speak to the provider directly
Technology use and access	Internet access through dial-up, broadband, cellular network, and wireless network; use of the internet for health-related reasons; ownership of tablet computers, smartphones, and basic cellphones; use of health-related apps; use of social media for health-related reasons

3. Results

There was some consistency in responses from 2019 to 2022. For all years. A total of 90% of respondents had and used smartphones. Over half of those respondents used their phones, computers, and other electronic means to look up medical information. The majority, 80%, did know that their medical records were available electronically, and half, within all times seen, did recall being offered online access to their medical record. The data found no statistically significant difference based on the racial group in patient portal use with those who stated they were offered and then used their health portal. However, over half of all respondents for each year had yet to access their online medical records. The reasons for not using varied with privacy concerns (95% CI [-0.29, -0.14]); they preferred speaking to their provider directly (95% CI [-0.46, -0.32]), and had difficulty accessing the portal (95% CI [-0.29, -0.14]). Most patients, at 80% or more, of all times seen categories know their provider has their medical records electronically.

The use of telehealth increased from 2019 at 11% to a range of 46% in 2020 to 39% in 2022. There was a significant relationship (p = .01, 95% CI [2.59, 2.81]) between using telehealth in the past 12 months and using a health portal. The reasons for not using telehealth were similar to those for not using health portals. They included 84% having a preference for in-person visits, 19% having difficulty and or no access to the technology needed, and 17% stating privacy concerns.

However, there were some differences between the three years. In 2019, pre-pandemic, there was a significant relationship between respondents' number of times they see a regular healthcare provider, their knowledge that their medical records are electronic (p = .01, 95% CI [1.15, 1.23]), and the encouragement of providers to use online medical records (p = .01, 95% CI [1.11, 1.19]).

For the first years of the pandemic, there was a difference for those with a provider and the times seeing a provider with knowledge of online records (p = .01, 95% CI [1.15, 1.23]) and accessing the records (p = .02, 95% CI [0.47, 0.57]). There was a significant change in patients who saw their doctor more often, three or more times and used their records to review results (p = .02, 95% CI [0.53, 0.63]), and make appointments and messaging with their provider (p = .03, 95% CI [1.46, 1.34]). These findings were seen across all racial groups (see Table 2 for differences by year).

The percentage of those who knew their provider maintained their medical records electronically increased, with over 90% of respondents having this knowledge in all number of times seen categories. Half of all respondents were offered online access to the medical records. The more times a respondent went to a health provider, the more likely they were to view their medical records. This increase was seen in those who saw their provider more than two times. Despite that increase, the number of those not accessing their records remained at 40% to 50%, no matter how many times they visited a provider. The most stated preference for speaking with a health care provider directly and perceived lack of need to access online medical records were the most common reasons provided for not accessing a portal. The main reason is that over 50%, 95% CI [-0.46, -0.32] of the respondents wanted to speak to their healthcare provider directly. Within the 2020 data, Black individuals were significantly more likely than White individuals to indicate that they did not access the portal because they preferred to speak with their provider directly or were concerned about the privacy or security of the website.

Table 2. Differences between those who visited the provider less or more than three times a year

Survey Questions	Year 2019		Year 2022	
	More than 3 times	Less than 3 times	More than 3 times	Less than 3 times
Q1 Knowledge of MD Medical Records	40%	20%	60%	30%
Q2 Offered Online Access	60%	23%	63%	37%
Q3 Used Online Access	50%	30%	60%	38%
Q5 Prefer Direct Physician Interaction	49%	50%	46%	54%
Q6 Accessing Medical Records within 12 months	50%	30%	64%	20%
Q9 Concern of Privacy	51%	38%	50%	50%
Q10 Difficulty Accessing EMR	62%	45%	55%	48%

4. Discussion

There was an increase in the number of patients who used telehealth and their patient portal pre- and post-pandemic. This is similar to what Asan et al. found: the more patients engage with their healthcare provider, the more likely they are to use their portal.[5] Despite this finding, the overall increase for all patients using their portals before and during the first two years of the pandemic remains below 50%. The reasons for all patients not using telehealth and the portal were similar to what Grossman et al. and Griffin found, with many citing needing more privacy and wanting to speak directly with their healthcare provider.[8, 11]

The study's findings indicate that more progress needs to be made to move most patients toward using health portals. The study did see that if patients see their preferred provider more often, they are more likely to use the health portal. The impact of the pandemic appears to have been that those who see the provider more increased their use of health portals specifically, from looking at test results to including messaging providers. These findings indicate the provider must still do more at each visit to engage the patient with their portals.

As previous studies have found, the physician is vital, and hospitals and healthcare settings need to use every physician interaction to talk about portal usage, turn physicians into portal advocates, and pay attention to the importance of physicians for driving usage.[13, 14]

Limitations

This three-year study was conducted before and during the first years of the pandemic. The results might have been different if the study had been expanded to include more than one year of the pandemic. The survey data was not available for 2023, which would be the third year after the pandemic. Future studies could examine what, if any, changes occurred in patient portal and telehealth use over the current three years of the pandemic.

5. Conclusions

Overall, the pandemic increased patients' use of telemedicine but did not significantly increase their usage of patient portals. It did impact those who saw their providers more than three times a year. They were more likely to use the portal to look up test results and to test the provider. These findings indicate that more interaction with providers might impact future portal usage. 14 Hospital and practice administrators should consider physician attitude and patient portal engagement as a primary indicator of adoption, using portals to schedule visits, pay bills, and promote patient interactions with health care providers.[3–14]

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Data availability statement

Data availability HINTS is available at this site (which is the terms of use) `https://hints.cancer.gov/data/download-data.aspx`

DATA SHARING STATEMENT

No additional data are available.

REFERENCES

[1] Forbat L, Cayless S, Knighting K, et al. Engaging patients in health care: an empirical study of the role of engagement on attitudes and action. Patient Educ Couns. 2009; 74(1): 84-90. https://doi.org/10.1016/j.pec.2008.07.055

[2] Kim S, Fadem S. Communication matters: Exploring older adults' current use of patient portals. International Journal of Medical Informatics. 2018. https://doi.org/10.1016/j.ijmedinf.2018.10.004

[3] Maserat E, Alizadeh M, Mohammadazdeh Z, et al. Effect of Education on the Adoption of Patient Portals by Health-related Non-Governmental Organizations Using the Technology Acceptance Model. JMIS. 2022; 8(2): 140-151

[4] Mielonen J, Kuusisto H, Kinnunen UM, et al. Older adults' experiences of eHealth in health and social care. Finnish Journal of eHealth and eWelfare. 2023; 15(3). https://doi.org/10.23996/fjhw.125122

[5] Asan O, Yu Z, Crotty B. How clinician-patient communication affects trust in health information sources: Temporal trends from a national cross-sectional survey. PLoS One. 2021; 16(2): e0247583. https://doi.org/10.1371/journal.pone.0247583

[6] Johnson K, Esselmann J, Purdy A, et al. Patient Use of Pathology Reports via Online Portals: What Have We Learned and Where Are We Going? Archives of Pathology & Laboratory Medicine. 2020; 146(9): 1053-1055. https://doi.org/10.5858/arpa.2021-0579-ED

[7] Hong YA, Lui J. The use of patient portals for electronic health records remains low from 2014 to 2018, as shown by a national survey and policy implications. Am J Health Promot. 2020; 34(6): 677-680. https://doi.org/10.1177/0890117119900591

[8] Grossman LV, Masterson Creber RM, Benda NC. Interventions to increase patient portal use in vulnerable populations: a systematic review. J Am Med Inform Assoc. 2019; 26(8-9): 855-870. https://doi.org/10.1093/jamia/ocz023

[9] Johnson K, Esselmann J, Purdy A, et al. Patient Use of Pathology Reports via Online Portals: What Have We Learned and Where Are We Going? Archives of Pathology & Laboratory Medicine. 2022; 146(9): 1053-1055. https://doi.org/10.5858/arpa.2021-0579-ED

[10] Robinson L, Cotten SR, Ono H, et al. Digital inequalities and why they matter. Inf Commun Soc. 2015; 18(5): 569-582. https://doi.org/10.1080/1369118X.2015.1012532

[11] Griffin AC. Conversational Agents and Connected Devices to Support Chronic Disease Self-Management. 2021. Available from: https://doi.org/10.17615/jmxh-ym83

[12] Zarcadoolas C, Vaughn W, Czaja S, et al. Consumers' Perceptions of Patient-Accessible Electronic Medical Records J Med Internet Res. 2013; 15(8): e168. https://doi.org/10.2196/jmir.2507

[13] Mathai N. Factors influencing health care consumer adoption of electronic health records: An empirical investigation. 2019. Available from: https://core.ac.uk/download/267807057.pdf

[14] Chepke C, Shaughnessy L, Brunton S, et al. Using Telemedicine to Assess and Manage Psychosis Among Outpatients with Neurodegenerative Disease. International Journal of General Medicine. 2021; 14: 10271-10280. https://doi.org/10.2147/IJGM.S335739

[15] Lee EC, Grigorescu V, Enogieru I, et al. Updated National Survey Trends in Telehealth Utilization and Modality: 2021-2022 (Issue et al., HP-2023-09). Office of the Assistant Secretary for Planning and Evaluation, U. S. Department of Health and Human Services. April 2023.

[16] Trends and Disparities in Health Portal Usage Number 45. 2021. Accessed May 2024 Available from: https://hints.cancer.gov/docs/Briefs/HINTS_Brief_45.pdf

[17] The Health Information National Survey Database 2019-2022. National Institutes of Health. Accessed May 2024. Available from: https://hints.cancer.gov/data/download-data.aspx