Telehealth Utilization Among Hispanic Group During COVID-19: A Retrospective Observational Study

Di Shang, Cynthia Williams, Hera Culiqi

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Di Shang[1*] PhD; Cynthia Williams[2*] PhD; Hera Culiqi[1*]

[1]University of North Florida Jacksonville US
[2]University of Central Florida Orlando US
[*]these authors contributed equally

Corresponding Author:
Cynthia Williams PhD
University of Central Florida
528 W. Livingston Street Ste 401
Orlando
US

Abstract

Background: The Hispanic community represents a sizeable community that experiences inequities in the United States healthcare system. As the system has moved toward digital health platforms, it is critical that evaluate the potential impact for Hispanic communities

Objective: The study aimed to investigate demographic, socioeconomic, and behavioral factors that contribute to low telehealth utilization in Hispanic communities.

Methods: A retrospective observation study design was employed to examine the study objectives. The COVID-19 Research Database Consortium provided the AnalyticsIQ Peoplecore Consumer data and Office Alley claims data. The study period was from March 2020 to April 2021. Multiple logistic regression was used to determine the odds of using telehealth services.

Results: We examined 3,478,287 unique Hispanic patients, of whom 16.63% used telehealth. Results suggested that patients aged 18-44 were more likely to use telehealth [OR: 1.07 (C.I.: 1.05, 1.1); p<.001]) than patients aged 65+. Across all age groups, patients with high incomes were at least 20% more likely to use telehealth than patients with lower incomes (p <.001); patients who had a primary care physician, exhibited high medical utilization, or were interested in exercise were more likely to use telehealth (p < .05); patients who had unhealthy behaviors such as smoking and alcohol were less likely to use telehealth (p < .001). Male patients were less likely than females to use telehealth among patients aged 65 and above [OR: 0.94 (C.I.: 0.93, 0.95); p<.001], while male patients aged 18 to 44 were more likely to use telehealth [OR: 1.05 (C.I.: 1.03, 1.07); p < .001]. Among patients younger than 65, full-time employment was positively associated with telehealth use (p<.001). Patients aged 18-44 with high school or less education are 2% less likely to use telehealth [OR: 0.98 (C.I.: 0.97, 0.99); p = .005]. Results also revealed a positive association with using WebMD among patients above 44 years old (p<.001), while there was a negative association with online prescriptions among those who are under 65 years old (p< .01).

Conclusions: To prevent exacerbation of the health inequities in telehealth, we recommend interventions to bolster education, income, employment, and health behaviors. We make the following recommendations: increase access to health insurance and primary care providers and provide fiscal and educational resources.

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Background: The Hispanic community represents a sizeable community that experiences inequities in the United States healthcare system. As the system has moved toward digital health platforms, evaluating the potential impact on Hispanic communities is critical.

Objective: The study aimed to investigate demographic, socioeconomic, and behavioral factors contributing to low telehealth utilization in Hispanic communities.

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Results: We examined 3,478,287 unique Hispanic patients, 577,396 (16.6%) of whom used telehealth. Results suggested that patients aged 18-44 were more likely to use telehealth [OR: 1.07 (C.I.: 1.05, 1.1); *P*<.001]) than patients aged 65+. Across all age groups, patients with high incomes were at least 20% more likely to use telehealth than patients with lower incomes (*P* < .001); patients who had a primary care physician (*P*=.01), exhibited high medical utilization (*P*<.001), or were interested in exercise (*P*=.03) were more likely to use telehealth; patients who had unhealthy behaviors such as smoking and alcohol were less likely to use telehealth (*P* < .001). Male patients were less likely than females to use telehealth among patients aged 65 and above [OR: 0.94 (C.I.: 0.93, 0.95); *P*<.001], while male patients aged 18 to 44 were more likely to use telehealth [OR: 1.05 (C.I.: 1.03, 1.07); *P* < .001]. Among patients younger than 65, full-time employment was positively associated with telehealth use (*P*<.001). Patients aged 18-44 with high school or less education are 2% less likely to use telehealth [OR: 0.98 (C.I.: 0.97, 0.99); *P* = .005]. Results also revealed a positive association with using WebMD among patients above 44 years old (*P*<.001), while there was a negative association with online prescriptions among those who are aged 18 to 44 (*P*=.009) and aged 45 to 64 (*P*=.004).

Conclusions: Our study demonstrates that telehealth use among Hispanic communities is dependent upon factors such as age, gender, education, socioeconomic status, current healthcare engagement, and health behaviors. To address these challenges, we advocate for interdisciplinary approaches involving medical professionals, insurance providers, and community-based services to actively engage with Hispanic communities and promote telehealth utilization. We propose the following recommendations: enhance access to health insurance, improve access to primary care providers, and allocate fiscal and educational resources to support telehealth use. As telehealth increasingly shapes healthcare delivery, it is vital for professionals to facilitate the utilization of all available avenues for accessing care.

Introduction

Health inequities among people of racial and ethnic minority groups are a significant concern across the United States. The Hispanic/Latino (thereafter “Hispanic”) population is a community that experiences inequities in access to care. However, health inequities in the United States are primarily compared between non-Hispanic White and non-Hispanic Black populations, with some positioning of the Hispanic population. Therefore, we must highlight the needs of the Hispanic community as a matter of priority. A prior study suggested that health inequities between non-Hispanic Blacks and Hispanics are similar in health risks and outcomes [1]. Boen and Hummer [1]attributed much of the similarities to the influence of socioeconomic status and stress in these communities. Social determinants of health significantly impact health and wellness in people of color. In addition, the inequity in health outcomes is confounded by challenges in access to care. Gaining access to and using healthcare services are essential to mitigate adverse health outcomes and promote equity in quality care [2]. Low access to healthcare services is due to a complexity of factors, which include a lack of insurance, education, and fiscal resources [2]. Non-Hispanic White women and men experienced greater utilization of care, 83% and 74%, respectively; among Hispanic individuals, women had higher utilization rates than men, 68% and 50%, respectively; however, they still fall short of their non-Hispanic White counterparts [2].

While there are considerable efforts to decrease inequities in healthcare access, recent events such as the proliferation of technology in healthcare and the global coronavirus (COVID) pandemic of 2019 eclipse equity in access efforts. COVID-19 accelerated the use of telehealth, which was essential to access healthcare information and services [3]. Telehealth was highly encouraged to mitigate the ill effects of the contagion and support lockdown measures. While other racial and ethnic communities experienced telehealth growth, the Hispanic population experienced relatively lower amounts of telehealth increases and had a disproportioned rise in the use of healthcare resources [4-7]. When compared to non-Hispanic White individuals, Hispanic patients had lower utilization of telehealth services, 27% and 6.8% respectively [8]. Telehealth utilization among Hispanic people fell below their non-Hispanic Black counterparts. Hispanic people showed lower adjusted odds of using telehealth when compared to non-Hispanic Black persons before and during the pandemic [9,10]. However, Hispanic patients and people in low-income positions had increased levels of telehealth utilization during the pandemic [11]. People who experience inequities in access are more likely to have unmet healthcare needs and have a higher prevalence of morbidity and mortality rates [12]. The lack of telehealth utilization was a critical issue during this time. Qian and

colleagues [13] found higher rates of COVID-19 cases in regions with low telehealth use. Given the lack of telehealth utilization and reduced access to in-person services during the pandemic, it is reasonable to assume that overall health outcomes were compromised.

Research suggested that telehealth utilization differed by demographics such as gender, age, and education [14]. Studies noted gender differences in telehealth utilization, as males are less likely to use telehealth than females [3,9,15,16]. Among racial and ethnic groups, Hispanic patients often opted for in-person rather than telehealth visits [5,10]. Whether a patient has access to and knowledge to utilize telehealth depends on socioeconomic factors [5]. Ramirez et al. [5] observed that the Hispanic community had lower telehealth utilization due to cultural perceptions, inadequate financial resources, and digital literacy barriers. Health inequities are concerning as research suggested that health outcomes are favorable across racial and ethnic groups when services are used [17,18]. The persistence of inequity in healthcare suggests that access to care is complex and should consider economic and social factors. To effectively incorporate factors influencing care, we comprehensively assess the components contributing to lower utilization among Hispanic people. This study aims to examine the socioeconomic, demographic, and behavioral factors that influence telehealth use among persons who identify as Hispanic.

Methods

Data Source

The study period was from March 2020 to April 2021. The COVID-19 Research Database Consortium provided access to Office Ally and Analytics IQ PeopleCore Consumer databases. Office Ally database provided access to U.S. claims data from 100 million unique patients and 3.4 billion medical claims. The Analytics IQ PeopleCore Consumer database provides individual-level data across demographics, behaviors, and economic indicators and is a national representation of 242.5 million U.S. adults aged 19 and older. We joined the Office Ally claims data with Analytics IQ PeopleCore Consumer data via an identifier, which enabled us to retrieve patient claims data during the study period and examine telehealth utilization from socioeconomic and behavioral perspectives, as shown in Table 1.

Ethical Considerations

The COVID-19 research database was established by complying with regulatory standards to protect patient privacy. The COVID-19 research database received a waiver of patient consent certified from the Western Institutional Review Board for using HIPAA-certified de-identified data on April 20,

2020. The Western Institutional Review Board granted exemption status for HIPAA-limited data sets and non-HIPAA-covered data on May 14, 2020. This exemption covers all research performed in the COVID-19 Research Database. In addition, researchers with approved study proposals are granted access only to specific data sets necessary to answer their research question(s). Only de-identified and limited data sets are made available through the database and certified before access was granted. Individual project institutional board approval was optional.

Results

We retrieved 16.43 million Office Ally claim records of Hispanic patients during the study period, and 3,478,287 unique Hispanic patients were included to investigate telehealth utilization. A descriptive summary of the patients included in the analyses is in Table 1. Telehealth claims were identified by screening for the procedure modifier codes 95, GT, and GQ. Among the patients, 578,945 (16.6%) had one or more telehealth claims during the study period. Female patients had slightly higher telehealth utilization (338,795 out of 1,958,350; 17.3%) than male patients (240,150 out of 1,519,937; 15.8%).

Table 1. Characteristics of participants in the study

Characteristic	Definition	n (%)
Total number of patients		3,478,287
Sex	Binary	Female: 1,958,350 (56.3%) Male: 1,519,937 (43.7%)
Age	Mean: 56 Standard Deviation: 17.61	65+: 1,018,479 (29.3%) 45-64: 1,326,391 (38.1%) 18-44: 1,133,417 (32.6%)
Education	Highest degree completed	Bachelor or higher: 922,435 (26.5%) High school or less: 2,555,852 (73.5%)
Employment	Employment status	Unemployed: 1,227,541 (35.3%) Part-time: 634, 818 (18.2%) Full-time: 1,615,928 (46.5%)
Income	Household's annual income Low: < $46,000 (1st quartile) Medium: $46,000-$144,000 High: >$114,000 (4th quartile)	Low: 941,294 (27.1%) Medium: 1,670,747 (48.0%) High: 866,246 (24.9%)
Primary Care Doctor	Having a primary care doctor	No: 695,696 (20.0%) Yes: 2,782,591 (80.0%)
Medical Utilization	Exhibit high medical utilization	No: 2,806,938 (80.7%) Yes: 671,349 (19.3%)

Exercise Fan	Interest in exercise	No: 2,777,596 (79.9%) Yes: 700,691 (20.1%)
Alcohol	Measure of alcohol consumption	No consumption: 353,921 (10.2%) Some consumption: 2,855,276 (82.1%) High consumption: 269,090 (7.7%)
Smoking	Frequency of smoking	Never: 413,982 (11.9%) Some: 2,919,447 (83.9%) Daily: 144,858 (4.2%)
Online RX	Using online prescription services	No: 2,899,519 (83.4%) Yes: 578,768 (16.6%)
WebMD	Using WebMD	No: 2,650,027 (76.2%) Yes: 828,260 (23.8%)
Total Claims	Total number of claims during the study period	Mean: 4.73 Standard deviation: 4.71

Logistic Regression Analysis

The data were aggregated at the patient level to investigate telehealth utilization and determine whether a patient used telehealth during the study period. A patient with one or more telehealth claims during the study period was assigned a value of one for the dependent variable; otherwise, the value was assigned as zero. Categorical variables were created to stratify patients into groups by their demographics and socioeconomic status, as listed in Table 1. We conducted a multiple logistic regression to determine the odds of patients using telehealth. Each patient's total number of claims during the study period was included as an offset variable in the logistic regression to control its potential impact on the dependent variable. Results suggested that compared to patients aged 65+, patients aged 18-44 are 1.07 times [OR: 1.07 (C.I.: 1.05, 1.1); P<.001] likely to use telehealth, while patients aged 45-64 showed a non-significant difference (P=.49).

Results from our logistic regression analysis of the three age groups are shown in Table 2. Male patients in the group aged (65+) are 6% less likely to use telehealth [OR: 0.94 (C.I.: 0.93, 0.95); P<.001], while male patients in the young group (18-44) are 5% more likely to use telehealth [OR: 1.05 (C.I.: 1.03, 1.07); P < .001]. Patients with a primary care doctor (P=.01) or high medical utilization (P<.001) are significantly more likely to use telehealth, especially in the 65+ age group. Patients who use WebMD are significantly (P <.001) more likely to use telehealth among those who are above 44 years old. In comparison, the negative association with Online prescriptions (RX) is significant among those who are aged 18 to 44 (P=.009) and aged 45 to 64 (P=.004). Patients aged 18-44 with high school or less education are 2% less likely to use telehealth [OR: 0.98 (C.I.: 0.97, 0.99); P = .005]. Patients with high incomes across all age groups were more likely to use telehealth

than patients with lower incomes: age 18-44 [OR: 1.25 (CI., (1.23, 1.28); P<.001)]; age 45-64 [OR: 1.33 (CI., (1.3, 1.35); P<.001)]; and age 65+ [OR: 1.2 (CI., (1.18, 1.22); P < .001)]. Patients under 65 with full-time employment (*P*<.001) are significantly more likely to use telehealth.

Patients with unhealthy behaviors such as alcohol use and smoking are significantly less likely to use telehealth (*P*<.001). In the 65+ age group, patients with high alcohol consumption are 39% less likely to use telehealth than patients with no alcohol consumption [OR: 0.61 (C.I.: 0.56, 0.65); *P* < .001]. Patients 65 years and older who smoke daily are 36% less likely to use telehealth than patients who never smoke [OR: 0.64 (C.I.: 0.6, 0.69); *P* < .001]. Meanwhile, patients interested in exercise were significantly more likely to use telehealth (*P* =.03).

Table 2. Odds ratios from logistic regression analysis by age groups

Variable	Odds Ratios (95% C.I.) P value		
	Age 65+	Age 45-64	Age 18-44
Sex (reference: Female)			
Male	0.94 (0.93, 0.95) *P* < .001	0.99 (0.98, 1.01) *P* = .35	1.05 (1.03, 1.07) *P* < .001
Primary care doctor (reference: No)			
Yes	1.19 (1.1, 1.29) *P* < .001	1.02 (1, 1.04) *P* =.01	1.06 (1.05, 1.08) *P* < .001
Medical utilization (reference: No)			
Yes	1.09 (1.07, 1.1) *P* < .001	1.07 (1.06, 1.08) *P* < .001	1.03 (1.02,1.05) *P* < .001
WebMD (reference: No)			
Yes	1.07 (1.04, 1.1) *P* < .001	1.05 (1.04,1.07) *P* < .001	1.01(0.99, 1.02) *P* = 0.32
Online RX (reference: No)			
Yes	1 (0.99, 1.02) *P* =.46	0.97 (0.95, 0.99) *P* =.004	0.93 (0.87, 0.98) *P* = .009
Education (reference: Bachelor or higher)			
High school or less	1.01 (0.98, 1.04) *P*=.34	1 (0.99, 1.01) *P* =.61	0.98 (0.97, 0.99) *P* = .005

Employment (reference: Unemployed)			
Full time	1.02 (0.97, 1.07) *P*=.40	1.07 (1.06, 1.09) *P* < .001	1.05 (1.02, 1.08) *P* < .001
Income (reference: Low)			
High	1.25 (1.23, 1.28) *P* < .001	1.33 (1.3, 1.35) *P* < .001	1.2 (1.18, 1.22) *P* < .001
Exercise fan (reference: No)			
Yes	1.04 (1, 1.08) *P*=.03	1.05 (1.03, 1.07) *P*< .001	1.03 (1.02, 1.05) *P* < .001
Alcohol (reference: No consumption)			
High consumption	0.61 (0.56, 0.65) *P* < .001	0.79 (0.77, 0.82) *P* < .001	0.81 (0.78, 0.85) *P* < .001
Smoking (reference: Never)			
Daily	0.64 (0.6, 0.69) *P* < .001	0.85 (0.82, 0.88) *P* < .001	0.93 (0.89, 0.97) *P* < .001

Discussion

Our study found that among Hispanic persons, males aged 18 to 44 are more likely to use telehealth than females, but males over the age of 44 were less likely to use telehealth than females. Across all age groups, people with high income, primary care physicians, current users of the healthcare system, used WebMD, and reported full-time employment are more likely to use telehealth. Patients aged 18-44 with high school or less education are 2% less likely to use telehealth. There is a negative association with online prescriptions among those aged 18 to 44 and 45 to 64. In addition, regardless of age, people with unhealthy behaviors, such as smoking, alcohol consumption, and a lack of interest in exercise, were less likely to use telehealth services.

Telehealth and Demographic Factors

The presented analyses represent factors contributing to telehealth use among Hispanic persons. Like other studies, people over 65 were less likely to use telehealth than people in younger age groups [3,9]. Male patients in the 65+ age group are 6% less likely to use telehealth, while male patients in the youngest group are 5% more likely to use telehealth. Saeed & Masters [16] indicated that females

have higher telehealth utilization due to caregiver burdens that make attending in-person visits more challenging. Furthermore, our findings indicate that the positive influence of healthcare utilization factors (such as having a primary care doctor, medical utilization, and use of WebMD) and the detrimental effects of unhealthy behaviors (alcohol consumption and smoking) are more pronounced among patients aged over 65 compared to younger age groups. Our findings suggest the necessity of considering various age groups when examining utilization differences between age and gender groups.

Telehealth and Socioeconomic Factors

Our study results on educational background align with other studies that suggested that people with more than a high school diploma have higher telehealth utilization [18]. A lack of education contributes to low health and digital literacy and interferes with a person's inability to access and use health-related information [19, 20]. Our study suggests that people with a primary care physician and those using the healthcare system (medical utilization) are more likely to use telehealth [9,21]. These characteristics describe people who already have access to the healthcare system and are perhaps representative of the segment of the Hispanic population who experience more health-related equity [22]. This has implications for increasing convenient access to care rather than increasing access for persons who do not already have access to care. Research suggested that a primary care physician was critical to accessing traditional, in-person services, having access to a primary care physician provides an avenue to get telehealth services; therefore, we can reasonably speculate that people who have access to in-person healthcare will have access to telehealth [16,23]. People who live in low-income communities are particularly vulnerable due to a lack of resources [14]. Darrat et al [15] suggested that among people with incomes less than $30,000 annually, 29% lacked a smartphone, 44% did not have home broadband access, and 46% did not own a computer. The lack of internet access exacerbates the inequity in service access [18]. Jain et al. [24] suggested that 84% of telehealth users had broadband internet access [27]. Chau & Pathak's [25] study indicated that 30% of Hispanic persons do not have a computer in their home and are ten years behind non-Hispanic White people regarding broadband internet access. Researchers suggested that cultural perspectives influence technology use even when Hispanic individuals have similar technologies [2,26,27]. Our study results indicate that Hispanic persons who used the internet for health information, such as WebMD, were more likely to use telehealth services; however, there was no relationship with online prescription behavior. Haun et al. [28] also suggested no statistically significant relationship exists between telehealth use and online prescription behavior as the provider, not the patient, initiates this service. Among Hispanic patients who used telehealth, they had the highest rate of missed telehealth

visits at 42% [3]. Ghaddar et al [6] study suggested that 60% of Hispanic individuals access the internet and/or send/receive emails. However, only 24% communicate electronically with healthcare providers, and 40% report having low digital literacy [6].

Telehealth and Health Behaviors

In our study, people with unhealthy behaviors, such as smoking, alcohol consumption, and a lack of interest in exercise, had significantly lower odds of using telehealth across all age groups. Researchers suggested that smoking disproportionately affects people of low income and educational status, and alcohol misuse is increasing among people of color and persons over the age of 60 [29,30] . Health behaviors often include factors such as smoking, drinking, and physical activity and contribute to health inequity [31,32]. In addition, health behaviors have a significant effect on healthcare utilization [33,34] The association between telehealth use and smoking and alcohol is not conclusive in the body of literature. Jaffe and colleagues [35] suggested that smoking has no relationship between exercise behavior, alcohol use, smoking, and telehealth. They suggested that 12% of people who smoked had a telehealth visit, as compared to 61% of people who never smoked and had a telehealth visit; however, it was not statistically significant (P=.45) [35]. The authors also suggested that alcohol consumption was not a deterrent to telehealth use, as 69% of alcohol users experienced a telehealth visit. One study indicated that there were minimal to no differences in telehealth use among people who reported alcohol use or smoking [3]. However, another study indicated that exercise and alcohol use were associated with telehealth acceptance, whereas smoking status was not [36]. One study noted that during the pandemic, the stay-at-home order was more predictive of telehealth use than race or ethnicity among smokers [37]. Among persons with alcohol use disorders, researchers reported no differences in preference for telehealth or in-person treatment [38,39]. While beyond the scope of this study, it is imperative to note the rapid utilization of telehealth and other digital technologies for smoking and alcohol cessation programs and exercise promotion. Given the aforementioned socioeconomic status of people who engaged in unhealthy behaviors, it is not surprising that challenges were noted in access to technology, digital literacy, and quiet session locations [29].

Recommendations

Glasgow et al [40]suggested that socioeconomic factors, cultural perceptions, and patient preferences significantly impact healthcare use. By considering patient health behaviors and preferences, providers and decision-makers can support “individual health and public health through enhanced care” [40] and gain a comprehensive understanding of the complex factors contributing to low

telehealth access. We make several recommendations based on the results of this and other studies. First, primary care providers serve as point of care and cost-efficient entry into the healthcare system [41]. Primary care supports access to other physician specialties, and its services are relatively more amenable to telehealth compared to other physician specialties, 42% and 35%, respectively; 73% of primary care services could be offered via telehealth [42]. Community-based primary care clinics can close the health equity gap [43]. Primary care clinics are uniquely positioned to engage communities in the socio-content of their environment and culture. Using this strategy, local clinics can promote culturally relevant educational strategies and encourage positive behavior change for health outcomes. Secondly, as we consider supporting telehealth in primary care, it is imperative that we support a digital public health infrastructure. Primary care providers serving people vulnerable to health inequities report that the lack of digital access remains a barrier. Chang et al. [14] study suggested that primary care providers report that as much as 70% of their patients lack digital/internet access, and 50% are uncomfortable with the technology. Digital access provides a gateway to education and employment; thus, with effective interventions, we can mitigate this social determinant of health [44]. This suggests that discussions about including digital access in the public health infrastructure and as a social determinant of health warrant priority consideration [45].

Limitations

The current study employed a unique population-based data source. This allowed us to examine the Hispanic population in the Office Ally and Analytics IQ databases. We studied socioeconomic, health behavior, and demographic factors in the Hispanic community and determined the odds of using telehealth during a public health crisis. The results may not be reproducible as the data collection was during COVID-19 and patients may not have gained proficiency with the technology or lack internet access. The study used the COVID-19 research database and is subject to the limitations of administrative databases. The validity of the data is reliant upon the facilities to report accurate data and code visits correctly in the Office Ally database. Analytic IQ PeopleCore Consumer data relies on the accuracy of reporting by the consumer. In this study, the Hispanic population considered all persons of Hispanic or Latino identification. In addition, data were not available on geography (rural and urban), access to home internet, and ability to read and write English proficiently. In future research, it is imperative to account for variances in utilization patterns between urban and rural populations, given the potential impact of geographic disparities, technological infrastructure, and internet accessibility on healthcare utilization. Future studies should consider measures of English health literacy and its association with healthcare access. Furthermore, future studies should consider patient and provider relationships in local communities to explore additional information not

captured in surveys and claims data that explicate attitudes and challenges with telehealth access and use.

Conclusions

Telehealth supports favorable health outcomes across populations. However, without equity in utilization these benefits are not realized across communities. Our study highlights that telehealth use among Hispanic communities can be influenced by demographics, socioeconomic, and health behavioral factors. Telehealth use among Hispanic communities is dependent upon several important factors such as age, gender, education, socioeconomic status, current healthcare engagement and health behaviors. To overcome these barriers, we recommend interdisciplinary strategies that call for medical professionals, insurance providers, and community based services to engage meaningfully with Hispanic communities to support telehealth use. As telehealth becomes increasingly prevalent in our society, it is imperative that we support this method for accessing the healthcare system.

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Data Availability

The data sets generated and/or analyzed during the current study are not publicly available due to the Consortium restrictions and governance policies. The database can be accessed by academic, scientific, and medical researchers from covid19researchdatabase.org. Potential users must register as approved researchers and submit the proposal, including a request to access a specific database. The submitted proposal will be reviewed by the scientific steering committee and a privacy and governance review board. If approved, access will be granted to install the database environment where researchers must conduct the analysis.

Author’s Contribution

CW contributed to the study's conception and design, interpretation of results and drafting/revising of the work. DS contributed to the study's design, interpretation, and analysis, and revising of the data. HQ contributed to the writing and editing of the manuscript. All authors approved the final version of the manuscript.

Conflicts of Interest

1. None Declared.

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Supplementary Files