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Research Article

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Patient Perspectives on Telemedicine Use for HIV Care

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Abstract

Linkage and retention in care are key factors in ending the HIV epidemic, yet barriers to accessing care in person. Telemedicine may provide an option for those looking to seek care who cannot physically travel to an HIV clinic yet data on patient perspectives on telemedicine are limited.

Objectives: *Understanding patient perspective is key to maximizing the uptake of telemedicine and improving care.*

Methods: *In 2017, University of Florida (UF) Health Jacksonville was funded by the Centers for Disease Control and Prevention to expand its telemedicine program to persons with HIV (PWH). The project employed quantitative and qualitative methods to assess patient perspectives on participation in VV.*

Results: *The results of the qualitative analysis found the following themes: awareness/acceptance, convenience, access, quality of care, privacy, stigma, COVID- 19, and other challenges, including technical barriers.*

Conclusions: *Addressing these concerns, practical recommendations were offered to mitigate technological challenges, increase VV use, improve navigation of patient portals, and improve patient-provider communication and virtual connections.*

Practice Implications: *VV-PWH participants offered recommendations to improve the implementation of the telemedicine program. Responses are summarized across three domains: 1) organizational processes, 2) provider behaviors, and 3) staff behaviors at each point of contact with the health system.*

Keywords: *HIV, Telemedicine, Patient, Satisfaction, Virtual Visit.*

Introduction

HIV remains an epidemic in the United States, with an estimated 1.2 million people affected as of 2019. Despite declines seen in new infections over the past few years, there are still some groups disproportionately affected by HIV including those living in the southern United States, who account for more than half of new HIV infections, and Black/African American and Hispanic/Latino people face higher rates of infection compared to White people.[1] Linkage and retention in care are key factors in ending the HIV epidemic, yet barriers to accessing care exist including: lack of HIV specialists in certain regions of the United States, transportation, time away from work or school, lack of childcare, etc.

Telemedicine may provide an option for those looking to seek care who cannot physically travel to an HIV clinic to seek care. During the COVID-19 pandemic, use of telemedicine for HIV care increased. However, this is still a relatively new area in HIV care for most clinics. Questions remain regarding best practices for telemedicine in HIV care[2]. Garnering patient perspectives on the use of telemedicine is key to determining best practices and maximizing uptake.

Methods

In 2017, the Centers for Disease Control and Prevention funded a team at UF Health in Jacksonville to modify the existing telemedicine program for persons with HIV (PWH). This 3-year project offered PWH the opportunity to receive their HIV care through virtual visits (VV), or live synchronous telehealth services with their University of Florida Center for AIDS/HIV Research, Education and Service (UF CARES) provider. UF CARES is the specialty department that provides majority of HIV care at UF Health Jacksonville. The project offered PWH access to VV through the patient portal, MyChart. PWH who had their own accessible devices could access their VV from anywhere with an internet connection. For those patients who lacked a smart device with which to connect to their VV, alternative sites were established throughout the city of Jacksonville, FL to allow PWH to connect with their HIV provider.

In addition to collecting data on how many PWH used VV during this project, focus groups were conducted to examine barriers and facilitating factors of telemedicine use for both Virtual Visit Persons with HIV (VV-PWH) and Non-Virtual visits (Non-VV PWH). The researchers explored telemedicine and patient-provider engagement, opportunities to improve telemedicine and in-person visit implementation through the lens of both patient groups.

The project employed both quantitative and qualitative methods to assess patient perspectives on participation in VV. Quantitative patient satisfaction surveys were given to all PWH who received both in-person care and those who received care via VV during the project period. Patients were invited to complete surveys at the end of their VVs via a link sent through the patient portal or approached in person by a study team member at the end of their in-person visit. Obtaining an

appropriate sample size of PWH completing a survey after an in-person visit was not possible due concerns surrounding clinic workflow disruption, patients declining to participate, and the intensive nature of time demands on study staff surrounding such an effort. The number of responses received to the electronic VV patient survey were also very low.

Qualitative data on the patient experience was obtained through focus groups with PWH that participated in VV and PWH that did not participate in VV. A qualitative team was constructed to assure data collection and quality. Specifically, the qualitative core team consisted of one external qualitative expert facilitator, an observer, and a data recorder who attended each focus group to assist with fidelity and consistency. Two other project team members also attended certain focus groups to assess fidelity and consistency.

Focus group questions were developed from the starting point of the quantitative survey and were molded to the focus group venue through input from specialists at the Caring Voices Coalition and our grant partner, Health HIV. We used a bank of 15 questions for VV participants and 8 for non-VV participants. These two groups met separately with multiple groups consisting of unique individuals. There were at least 4 dates at varying times of day or day of the week offered to participants to maximize opportunities for participation. All of the groups were facilitated by one specialist from the Caring Voices Coalition and supported by varying other members of the qualitative team. Each group meeting was scheduled to last 2 hours. The first few minutes were used to introduce the project, discuss the waiver of informed consent, and set the stage for a confidential and affirming discussion. Participants were given the option to select an alias during the discussion, with the knowledge that the session would be recorded. The facilitator guided the discussion using the question bank developed for each specific participant group (VV or non-VV), a note taker wrote key points or items for further discussion on an idea board, and an assistant recorded the meeting and completed administrative tasks, such as maintaining a sign in sheet. After all of the focus group meetings were conducted, recordings and idea boards were transcribed and analyzed by the qualitative team.

PWH were recruited for focus groups using various approaches: referrals from clinical staff including providers, flyer distribution within clinics, and solicitation from the electronic medical record to eligible participants.

Approval for waiver of informed consent (ICF) under regulation 45 CFR 46.116 (Section C) was granted by UF's Institutional Review Board (IRB) for conducting these focus groups. Due to the COVID-19 public health emergency, the majority of focus groups took place in an online environment; participants could join the videoconference or phone line from anywhere they chose. One group was conducted in person just prior to the PHE.

Results

Specifically, 130 patients completed a survey following an in-person (n=28) or virtual (n=102) visit to assess their experiences with their visit. Thus, patients having an in-person visits were asked to rate their in-person visit regarding satisfaction, comfort, privacy, travel time, convenience, money spent and whether they would prefer to travel to the clinic for future visits. All the surveys received from patients having an in-person visit were collected from patients having a visit at UF CARES, while 89% of surveys received from patients having a VV were collected from patients having a visit at UF CARES, and 11% were from patients having a VV at UF CHFM. To increase anonymity, patient demographics like race/ethnicity, age and gender were not collected as part of satisfaction surveys. The differences between the two groups were determined by Fisher's exact test. A p-value of less than or equal to 0.05 was found to be significant.

As seen in Table 1, regardless of visit type, patients were overwhelmingly satisfied with their healthcare visit. Patients who had a VV were more likely to agree that they saved time (p=.003) and that they would recommend this type of visit to others (p=.0002) compared with patients who had an in-person visit (see Table 1). Patients who had an in-person visit were more likely to agree that they would prefer to travel to the clinic (p<0.0001) for their next visit compared with patients who had a VV. Patients having a VV were more likely to agree that they were satisfied with the visit, not worried about privacy, felt they saved money, were more comfortable, felt the visit was convenient, and that they were able to develop a friendly relationship with their provider compared to patients who had an in-person visit. On the other hand, patients who had an in-person visit, felt that they received good care, that everything was covered during the visit, and that they were able to explain their problems to the provider more than patients who had a VV. Interestingly, the percentage of patients reporting having difficulty hearing or seeing their provider was higher for patients having in-person visits compared to patients having VVs.

Table 1: Patient Satisfaction with Their VV or In-Person Visit.

Item	Virtual Visit N (%)	In-Person Visit N (%)	*p-value*
Satisfied with Visit Strongly Agree/Agree Neutral Disagree/Strongly Disagree	97 (95.1) 5 (4.90) 0	26 (92.8) 1 (3.60) 1 (3.60)	0.154
Worried About Privacy Definitely Yes/ Yes, I think So Maybe Yes/Maybe No No, I Don't Think So/ Definitely No	12 (11.9) 6 (5.9) 83 (82.2)	8 (28.6) 1 (3.6) 19 (67.9)	0.09
Received Good Care Definitely Yes/ Yes, I think So Maybe Yes/Maybe No No, I Don't Think So/ Definitely No	83 (83.0) 12 (12.0) 5 (5.0)	26 (92.9) 0 2 (7.1)	0.15
Visit Saved Travel Time Definitely Yes/ Yes, I think So Maybe Yes/Maybe No No, I Don't Think So/ Definitely No	100 (99.0) 0 1 (1.0)	24 (85.8) 2 (7.1) 2 (7.1)	0.003

Visit Saved Money Definitely Yes/ Yes, I think So	89 (88.1)	20 (71.4)	0.07
Maybe Yes/Maybe No	9 (8.9)	5 (17.9)	
No, I Don't Think So/ Definitely No	3 (3.0)	3 (10.7)	
Comfortable Talking (via video for VV) to Provider			0.62
Definitely Yes/ Yes, I think So	99 (98.0)	27 (96.4)	
Maybe Yes/Maybe No	2 (2.0)	1 (3.6)	
Difficulty Hearing &/or Seeing During Visit			0.47
Definitely Yes/ Yes, I think So	13 (12.9)	6 (21.4)	
Maybe Yes/Maybe No	1 (1.0)	0	
No, I Don't Think So/ Definitely No	87 (86.1)	22 (78.6)	
Everything Covered During Visit			0.75
Definitely Yes/ Yes, I think So	96 (95.1)	27 (96.4)	
Maybe Yes/Maybe No	3 (2.9)	1 (3.6)	
No, I Don't Think So/ Definitely No	2 (2.0)	0	
Develop Friendly Relationship with Provider			0.47
Definitely Yes/ Yes, I think So	98 (97.0)	27 (96.4)	
Maybe Yes/Maybe No	2 (2.0)	0	
No, I Don't Think So/ Definitely No	1 (1.0)	1 (3.6)	
Clearly Explain My Problem to Provider			0.36
Definitely Yes/ Yes, I think So	96 (95.0)	27 (96.4)	
Maybe Yes/Maybe No	4 (4.0)	0	
No, I Don't Think So/ Definitely No	1 (1.0)	1 (3.6)	
Visit Was Convenient Definitely Yes/ Yes, I think So	98 (97.0)	26 (92.8)	0.54
Maybe Yes/Maybe No	1 (1.0)	1 (3.6)	
No, I Don't Think So/ Definitely No	2 (2.0)	1 (3.6)	
I Would Recommend This Visit/Clinic to Others			0.002
Definitely Yes/ Yes, I think So	96 (95.0)	25 (89.3)	
Maybe Yes/Maybe No	4 (5.0)	0	
No, I Don't Think So/ Definitely No	0	3 (10.7)	
Prefer to Travel to Clinic and Have In-Person Next Visit			< 0.0001
Definitely Yes/ Yes, I think So	12 (11.9)	19 (67.9)	
Maybe Yes/Maybe No	18 (17.8)	4 (14.3)	
No, I Don't Think So/ Definitely No	71 (70.3)	5 (17.9)	

Qualitative data was gathered through the use of focus groups. A total of 6 focus groups were conducted. Three focus groups were conducted with PWH who completed VV and 3 with PWH who did not complete a VV. A total of 21 (PWH) participated in the telemedicine focus groups, twelve (12) virtual visit PWH and nine (9) non-virtual visit PWH. Table 2 describes focus group demographics. The demographics of the focus group participants are found in Table 2.

Table 2: Focus Groups Participant Demographics.

	VV PWH N (%)	Non-VV PWH N (%)	CBOs N (%)	TP N (%)	EAP N (%)	LAP N (%)	CSS N (%)
Total #	12	9	3	4	6	6	6
Average Age (n)	45.3	49	50	51	48.5	44.2	46.7
Age range	22 - 69	35 - 64	37 - 63	40 - 59	40 - 63	31 - 65	33-58
Gender							
Female	8 (67%)	6 (67%)	1 (33%)	3 (75%)	3 (50%)	4 (67%)	6 (100%)
Male	4 (33%)	3 (33%)	2 (67%)	1 (25%)	3 (50%	2 (33%)	0
Race							
Black	8 (67%)	8 (89%)	1 (33%)	0	0	1 (17%)	6 (100%)
Other	1 (8.3%)	0	0	1 (25%)	1 (17%)	2 (33%)	0
White	3 (25%)	1 (11%)	2 (67%)	3 (75%)	5 (83%)	3 (50%)	0
Ethnicity							
Hispanic	2 (17%)	0	1 (33%)	2 (50%)	2 (33%)	2 (67%)	0
Non-Hispanic	10 (83%)	9 (100%)	2 (67%)	2 (50%)	4 (67%)	4 (33%)	6 (100%)

The results of the qualitative analysis are grouped by the following themes: awareness/acceptance, convenience, access, quality of care, privacy, stigma, COVID- 19, and other challenges. Selected quotes from respondents are located in Tables 3-8.

Table 3: Selected Quotes from Focus Group Participants: Initial Thoughts About VV.

VV-PWH

"I never heard of it at all, I did not know that…you could have contact with a doctor on the phone, you know what I'm saying?"

"The virtual visit could be a little awkward… that could be a little weird, but I'd be willing to try it."

"I live pretty far, so I figured that it would be cool, just not having to commute all the way to the hospital."

Non-VV PWH

Privacy

"I work 10 hours of the day, so I'm mostly at work all day. So, I prefer to be at the doctor's office because I don't want my business to be all everywhere by me working around other people."

"And privacy was the utmost important for me because I really, you want to be private about your situation and you don't want it to be out…"

Although, one Non-VV PWH stated that the VV may be beneficial in discussing uncomfortable topics with the doctor, maintaining privacy, and in accessing test results.

"…sometimes you don't want to ask your doctor some things in person, you know what I'm saying? Whereas with a VV, you can discuss it….in some informal fashion…if you've got a provider that you can confide in and tell them stuff, that (VV) would be better than just coming into the doctor. Coming in, when you'd rather do it on the phone…Whereas sometimes your doctors make another change to do some more tests, where they didn't tell you what's going on. with the VV, the computer and everything is right there. You can see what's going on."

Technology Skills

Non-VV PWH also reported challenges with using VVs because of their technology skills. Some non-VV PWH described themselves as late adopters of change.

"Well, I just turned 60, and I'm old school. So, all this new technology stuff, I'm just not into it. All of my kids are genius smart with all this technology stuff, but I'm not."

Physical Limitations

Physical limitations such as disability due to stroke and vision problems were described as challenges to using VVs.

"Two years ago, I had a stroke, and my right side is pretty much numb…and I really can't use…I had to write again and sign my name and stuff again, and I'm really not good at it, but there's no feeling on the right side of my body"

"I don't even text, because the numbers and the letters are too little…"

Knowledge about VV use

Some non-VV PWH assumed that a computer or sophisticated equipment is required for VVs.

"I prefer in person contact with my doctor and I do not have a computer."

PWH-Provider Engagement

Several non-VV PWH perceived that patient-provider engagement would be negatively impacted i.e. rushed visit, time not valued, reduced time with patients having VV.

".During in-person visit, the provider sits down and listens to you, revisits past history, more of a "doctor-mother" relationship, for example telling you to stop smoking."

"I feel comfortable with that, and I you have questions, they always ask, " Do you have any questions?" They're right there in the room with you, and you ask the question and they explain everything to you…And they give you the time that you need, and they make sure that you feel comfortable, and I believe that is what is all about being a doctor. And the patient and the doctor have a good relationship."

"..There's a whole lot that you can't do with the virtual call, and I just feel better when I go in and see my doctor face to face… Well with the virtual call we can't really see each other."

" I just like seeing my doctor, I like going through all the procedures, the breathing tests, and whatever else, just, you know.."

" I think it's more (in-person) personal."

Table 4: Selected Quotes from VV PWH Focus Group Participants: Convenience of VV.

Convenience of VV
"Well, I saw the convenience of it, and how I have a busy schedule due to being in school."
"..you're at home, so it's like a house call. It's like the doctor's coming to you. Get up, wash your face, put your robe on. I'll roll over."
" ..it'd still be convenient because like I said, sometimes you really don't have to come in, because they are telling a test result or something like that, to me, it's unnecessary to come all the way in to here, when you could just hear it over the phone. "
"I will say, it's convenient, because I don't have to worry about physically going."
"I live far from the hospital…Oh cool, I don't have to drive in."
"You didn't have to worry about.. parking, just all that at the hospital. Getting validated, stuff like that.."
Reducing Transportation Barriers
" The lack of transportation that I had before and I thought that this would be a good thing to do instead of trying to wait on your insurance, transportation, or waiting on somebody to take me. I think that this was a good thing that happened."
" I do have a hard time getting back and forth to the doctor. Because sometimes the cabs be late, and then you miss your appointment and have to reschedule your appointment and I don't like it."
Wait Time Reduction
"Because it's so much better than actually going. Because sometimes you go there, a couple of times, or certain doctor's office, and I waited for over an hour. And I was like, Oh my god, I got to…because I've got to pick up.."
Healthcare Navigation
"So sometimes I have gone to the wrong one, thinking that's where my appointment was, but being told that, " Oh you're only supposed to come here on Tuesday, so go to the center." And so, the fact that I had to go back and forth or not really knowing if I'm even going to the right location…but on the phone it's like that confusion is taken out."
Reducing Childcare Needs
"..Then I have four kids and it's a convenience for me to do virtual visits then versus bringing me and all my four kids to the doctor. Because it be hard to get a babysitter, especially when you're a single mom."
"I have to be at home to my kids…so I like virtual visit.."

Table 5: Non VV PWH Focus Group Participants: Privacy of VV.

"Me personally, that's that I would have to know that the security level is like Fort Knox and The White House."
"..in my experience there's been a couple of breaches within the ____ hospital to where they've said whether a folder or a laptop or something was left unattended or in a place that it shouldn't have ben and they mailed out letters to everyone to let know that your information may have been exposed and may not have been exposed, but this is the procedures that they're taking…"
"..because I don't want my business to be all everywhere by me working around other people."
"You cannot be aware of who's on the other line…Somebody may have been tapped in because now these days there's so many computer frauds and so many computer whizzes out there…"
"…but some cases some people know about your business, then you find out that somebody else know about your business, you're wondering how they know? Well, it's hard because you're working in a facility at the hospital, you get what I'm saying?"

Table 6: VV PWH Focus Group Participants: Stigma, Medical Records, Communication.

VV Minimizing Stigma "When you say HIV, they still think full-blown AIDS. Or they just don't want to touch you or be around you." "It's when you do bring up the subject or when the subject does come up… if you see something on the news and you try to get an opinion from other people, and just seeing what they initially think, and then thinking back to what if this were to come out about you, and how people would initially end up treating you, so that's just like you wouldn't be seen as the same person anymore…A little bit. I do understand people will try to keep the same relationship, but in the back of their mind, it's still like, they might be a little stand-offish because it's just now that they know they don't really see the same person they once seen" " ..I've had nurses to even treat you like.. and it's hard.. It is really like, sometimes you just like, I don't even know why I'm here…You know, you don't get any respect.." "…people look at me really crazy on that third floor. I'm sure they know what floor or why I'm going there, and also in the doctor's office, I don't like being stared at.." **Increased Access to Medical Records** "I think having the ability to see our lab is good, even if we might not completely understand them." "Because I don't know how to read them (labs).. Sometimes I'll be like, What that mean…Because I don't know what they mean.." " I don't want to sound misinformed or sometimes, I hold back on what I want to say, try not to.. I feel like maybe it's something I should already know and asking would just make me seem like I'm lacking knowledge.. So, I would appreciate maybe if asking, Hey do you want to know more about your lab work?" **VV Enhance Patient-Provider Communication** "With the app, you can just send a message directly to your doctor and that way they can directly contact you." "I think the virtual visit gave me more personalized time with the doctor than in the office.." "I like having to connect, talk through the app with, or get confirmation through the app if something is needed of me, I get a message on the app. And then it goes to my email, so that my email notifies me something I have to do on the app… but having to communicate through the app jut makes it a whole lot easier."

Table 7: VV and COVID-19.

VV PWH "…because of the virus and stuff. Things that's going on it's better to do it on the virtual visit.."
Non-VV PWH "I find VVs to be the best option to see the doctor in the current climate." "Right now, I prefer not to be in the hospital with all that's going on. And what I got going on as well…I prefer not to go and get all that mixed up by going in. I don't want to take that chance. I don't want to do that." "Yes, some of my visits yes, I could take those over the phone (VV). But as far as my more sensitive issues, my neurologists, my endocrinologist, my podiatry, those I would like to see in person because those they need to see…I'm pretty sure that self can take the proper precautions as well as the doctor." "I still say I still would rather go in.. going into the hospital, to your appointment in hospital to see a doctor, that's just one thing. But going into, say for instance, a grocery store or any other appointments, that's different. But I don't have a problem with it, going into the hospital."

Table 8: Hindering Factors for VV.

VV PWH

Technical Challenges

"the first time it was crappy, but every other time it's smooth sailing. It's been good. "

"one time it was kind of off, because I guess where she was sitting at…So, I really couldn't see her, but it's like when she would talk, it was like a robot. So, she had to be like sitting in a certain angle, so you could hear her real good. I could barely understand what she was saying, and we had to hang up and the new did again and it was right."

Duration of VV

"The last couple of visits which were virtual visit, I mean I got one was 45 minutes, one was an hour and 15 minutes, so I did get adequate time."

"I feel like for my first time, I wish it would been longer. But I feel like maybe she was busy and just tried to give me the relevant information, rather than taking the time out to carefully execute how my first appointment should go. Maybe she wasn't aware it was my first virtual appointment. So, she just told me what I needed to know and if everything was going well with my medication and that concluded the appointment and that was over.. I just wish maybe when she did ask it I did have any questions, it was kind of like rushed. So, I didn't want to extend it too long. It felt like I was stealing away her time."

Technology Literacy

Early Adopters

"but it's the new thing."

"Oh, this is Star Trek style stuff."

"And it may be easier for me, because I know how to log-on, whether it is laptop or on your phone."

Late Adopters

"Because new technology… don't really work anyway. Even with my telephone, my grandson has to tell me what to do with it."

"I'm not a computer person. I'm a telephone person…but it works well."

"but I'm really just not familiar with all the technologies and all this stuff. Like this is amazing, this is great, but I'm just old school."

"Yes, yes. I was, like I said, I'm 60 years old. I just turned 60, and I've never been computer smart."

"…and I don't know how to do FaceTime or none of that. I wouldn't even know how to set up Face Time and all that. Like I said, I am illiterate to this new technology stuff."

Patient Portal Navigation

"…I didn't know it (lab results) was there, because I hadn't really played with it before the call too much. And then, after we hung up, I was looking like, Wow's this stuff's there."

"Maybe it's reeducating patients about here's how to log on by phone, by laptop, and type of device (Android or iPhone) and any needed software."

"But you know how you look at the app and it's there, well, the only thing is, I don't really know what it means. Not all of it, you know what I mean?"

Patient-Provider Communication

"So, I was excited to get to jump on it. But it did take away the personal space, like the connection you would have with one on one, in person with a doctor."

"It takes away the relationship part, that you would have if you were to talk in-person."

Patients expressed a desire for providers to speak slower, to explain lab results and required vaccinations more thoroughly, and to avoid medical jargon or explain medical terms.

"…so maybe slowing down."

"I would have liked a bit more information and would have liked to go more in depth."

"Oh, you need this type of shot…but it would be nice to have a little bit of explanation…You're taking this shot because of this right here.."

Patient-Staff Communication
"If the doctor is delayed, I feel like they she should call you, you know what I'm saying? Or text or somebody to call you to let you know. I'm going to be 15 or 20 minutes, a little late. Do they want to still do the visit can we reschedule? that way you won't be just getting on there and nobody is there."

"The only thing is the one time I did miss my appointment; I wasn't given a notification about maybe what I should do after the fact. I wasn't even aware if the doctor had tried to contact me. So maybe something between if you're not able to or if you're not on at that specific time, maybe a reminder might help."

Non-VV PWH

Patient-Provider Communication
"Well, when my doctor, he approached me and told me about the virtual and I told him, "No" because for me personally I like to see my doctor face-to-face. Where he will be able to assess you better and according to what the symptoms you have a better communication"

"the doctor is sitting with you and revisiting things in detail."

Physical Exam and Assessment
"There's a whole lot you can't do with a virtual call…"

"Sometimes I don't feel certain things that they expect me to feel when my pressure is up high, but with them looking at me, they're able to see something within my eyes or they can see spasms that I'm not able to see or even feel, but they're able to detect. So, I think some issues can be done over virtual, but then some issues that are more important or should need visual should be done basically in person."

"…what you can do in person cannot be matched in a virtual visit…"

Multidisciplinary Coordination
"The doctor goes over everything including other doctor's notes."

"…Yeah that's also another thing because I've been with UF and Shands for over 10 years now for the simple fact that you're able to get all your doctors in the same network. So that makes it more convenient, and it helps with the doctors being able to task things to each other, so the doctors are able to communicate better with each other when they're in the same network."

Privacy
"And that way you know none of your sensitive materials, whether it's your personal information or your medical health is being leaked to someone that you don't want it to be."

"I work 10 hours of the day, so I'm mostly at work all day. So, I prefer to be at the doctor's office because I don't want my business to be all everywhere by me working around other people."

"So, I don't feel that there's 100% security, and unless I do know that there's 100% security, which I doubt that there will ever be since they're able to tap into our phones and do certain things…so as far as me ever using MyChart, I doubt I'll ever use MyChart."

Lack of Equipment
"Mine is the dog gone internet situation. One day the internet works, one day it won't work. So maybe I need to save some money, get me a better internet system or maybe that's my fault. Because sometimes like I said, that part there doesn't have to do with you guys. It's the technology system."

Physical Limitations
"Two years ago, I had a stroke, and my right side is pretty much numb…and I really can't use…I had to write again and sign my name and stuff again, and I'm really not good at it, but there's no feeling on the right side of my body."

..Me myself, I have a couple of brain aneurysms. I've had a prior surgery. So, there are times where there's swelling. There are times where there are sensitive points."

"I don't even text, because the numbers and the letters are too little…"

Awareness and Acceptance

VV PWH reported that VV was not initially a novel concept for most of the VV PWH. One VV patient had never heard of the virtual visit concept initially. VV PWH respondents described their initial thoughts about VV as awkward, uncertain if they would benefit from a VV, but were willing to try the VV. Several VV PWH mentioned VV as an opportunity to avoid commuting to the hospital. One VV PWH had experienced using VV prior to the UF telemedicine program. VV PWH heard about the VV at the doctor's office or telephonically when calling to make an appointment. The VV opportunity was offered to patients by nurses, case managers, clinic administrative staff, and doctors.

Access

A few patients discussed occasional confusion over their appointment location: the hospital clinic or the children's medical services building. VVs eliminate confusion about the location of clinic appointments.

Convenience

VV PWH respondents voiced that VV were convenient, offering the option to save time, effort, commute time, and parking hassles. As one respondent noted,

".. it'd still be convenient because like I said, sometimes you really don't have to come in, because they are telling a test result or something like that, to me, it's unnecessary to come all the way in to here, when you could just hear it over the phone."

Respondents also noted that VV helped overcome some transportation barriers.

"The lack of transportation that I had before and I thought that this would be a good thing to do instead of trying to wait on your insurance, transportation, or waiting on somebody to take me. I think that this was a good thing that happened."

Several VV PWH respondents also noted the wait time reduction associated with VV.

"Because it's so much better than actually going. Because sometimes you go there, a couple of times, or certain doctor's office, and I waited for over an hour. And I was like, Oh my god, I got to…because I've got to pick up...".

According to respondents, the need for child care was reduced with the use of VV.

Quality of Care

Respondents commented on how VV impacted communication with clinical staff and access to medical records. Several study participants mentioned the benefit of direct access to their provider through the MyChart app. VV PWH value the ability to message their doctor directly. Patients also mentioned that using the app reduces the hassle of coordinating appointment scheduling.

"I like having to connect, talk through the app with, or get confirmation through the app if something is needed of me, I get a message on the app. And then it goes to my email, so that my email notifies me something I have to do on the app… but having to communicate through the app just makes it a whole lot easier."

There were mixed responses about the appropriate duration of the VV with the provider. Some patients felt the amount of time was sufficient, whereas others thought it was too quick.

"I feel like for my first time, I wish it would been longer. But I feel like maybe she was busy and just tried to give me the relevant information, rather than taking the time out to carefully execute how my first appointment should go. Maybe she wasn't aware it was my first virtual appointment. So, she just told me what I needed to know and if everything was going well with my medication and that concluded the appointment and that was over. I just wish maybe when she did ask it I did have any questions, it was kind of like rushed. So, I didn't want to extend it too long. It felt like I was stealing away her time."

Communication issues with the clinical staff during the VV emerged as an important topic. Patients reported a lack of acknowledgment by the clinical staff once connected to the VV. A patient mentioned that she felt the staff had forgotten that she was on the call. Several respondents noted that there were not informed of provider delays. Participants expressed the need for better communication about missed appointments and instructions on rescheduling a missed appointment.

VV PWH appreciated the accessibility to medical records and lab results through the MyChart app. VV PWH voiced that access to medical information promotes patients' active participation in their own health care management. Although, some patients described concerns about not understanding their lab results and lacking self-efficacy to ask providers about their medical records.

Despite increased access to their providers, most PWH reported that VV reduced the patient-provider connection compared to an in-person visit.

"Well, when my doctor, he approached me and told me about the virtual and I told him, "No" because for me personally I like to see my doctor face-to-face. Where he will be able to assess you better and according to what the symptoms you have a better communication."

Non-VV patients strongly voiced the preference for an in-person visit because of the need for a physical examination so that the doctor can assess skin changes, swelling, subtle changes in appearance, and other health concerns. Additionally, a few respondents expressed that they preferred in-person visits because they could discuss other providers' notes with their doctor and coordinate health care across providers within the same network.

Privacy

Overwhelmingly, VV PWH identified privacy as a major benefit of VV. Although, one participant described limitations to privacy when using VV. The respondent stated that privacy might be limited by the patient's environment. A patient may live in a space in which one's HIV status has not been disclosed, and privacy could be compromised.

"Depending on where you're at with your computer and you're speaking to your doctor and there's personal stuff you really don't want other people to hear. That's why I said private to an extent…My immediate family knows about my status or

whatever, but she does not. So, I was little concerned…But I was afraid the doctor would ask me something…she might be able to hear."

Throughout the focus groups, Non-VV PWH respondents voiced the importance of ensuring the privacy of health information for VV and protections against computer fraud.

"So, I don't feel that there's 100% security, and unless I do know that there's 100% security, which I doubt that there will ever be since they're able to tap into our phones and do certain things…so as far as me ever using MyChart, I doubt I'll ever use MyChart."

Non-VV PWH respondents described in-person visits as private in comparison to VV. Respondents expressed concerns about data breaches, possible disclosure of status, and computer hacking with VV. Some respondents also described administrative staff behaviors that demonstrated efforts to ensure confidentiality during the check-in process. A non-VV PWH expressed concerns about computer/cell fraud.

Stigma

Both VV and non-VV PWH respondents voiced that VVs reduce HIV stigmatization. Stigmatization was described across three domains: 1) stigma from the general public/community members, 2) stigma from medical staff, and 3) stigma associated with clinic location.

COVID-19 Infection

COVID-19 also had an influence on the uptake of VV. Some VV PWH respondents mentioned that a current and immediate benefit of VVs is the reduced risk of COVID-19 infection. Some non-VV PWH reported that they would be more likely to use VV because of possible COVID-19 infection risk while at the hospital. A few respondents stated that in-person visits were still preferred during the current COVID-19 situation. One respondent expressed that the use of VVs during the current COVID-19 pandemic was conditional on the type of visit and if a physical examination was needed. Another respondent voiced that they would use VVs during the pandemic, but in-person visits were preferred.

Other Challenges

A few respondents indicated that they did not have the technology (i.e., computer or tablet) to participate in VVs. The perception that a computer or tablet is required indicates a need for additional education about VV and other technology options to participate in VVs, such as smartphone use. Participants indicated that the lack of a dependable internet service influenced their decision to use VVs.

Those with the necessary equipment also reported technical challenges such as 1) visual glitches, 2) sound glitches, and 3) poor connectivity when logging in. Technical difficulties tend to occur during the initial VV.

PWH that described themselves as adopting new technology quickly and as technologically savvy were more comfortable using virtual visits. Conversely, patients that reported characteristics of the late adopter groups had more challenges with virtual visit technology. A few patients expressed challenges downloading the MyChart app for VV use. Most late adopter patients that were experiencing technical challenges were able to resolve issues with assistance from medical staff or family members and participate in their VV.

In addition to technical and knowledge-based barriers, respondents' physical functioning influences their decision to use VV. Several respondents reported having experienced major medical complications such as strokes and brain aneurysms which have led to physical disabilities, hence, limiting their ability to use technology proficiently. In addition, a respondent mentioned vision as a hindrance.

Discussion and Conclusion

Discussion

Telemedicine utilization has not been uniform across populations. Understanding patients' preferences is vital if clinicians and other stakeholders hope to increase TM utilization, especially among vulnerable populations such as PWH. This study found that overall, patients are satisfied with their initial choice of appointment type. VV-PWH participants reported overall satisfaction with using VV, while non-VV PWH participants reported that they prefer in-person visits. Although, non-VV PWH participants reported considering having a VV given the current COVID-19 pandemic. Both qualitative and quantitative analyses supported these findings.

Our study found that perceived impact on the provider-patient relations was a driver for visit type preference. Quantitative findings show that non-VV PWH participants felt more time with their providers. The results for VV-PWH participants were mixed. Interestingly, one perception from VV PWH participants was that VV gives providers more time to see patients with more complex needs in person and that VVs are more appropriate for non-urgent visits such as reviewing labs or basic follow-up.

Additionally, non-VV PWH participants felt that communication and access are better for in-person visits than VVs. Furthermore, patients acknowledged that they should ask questions during VVs, although a few patients were unsure about how to ask questions or how providers may perceive them if certain questions were asked. Self-efficacy is a critical factor in patients asking questions of their providers. Self-efficacy is defined as one's belief in one's ability or confidence to succeed in specific situations or accomplish a task.[3] It is critical that providers create a welcoming virtual space so that patients are comfortable asking questions. Also, patients reported the importance of writing down their questions for the provider before the VV. This preparation for VVs demonstrates patients' desire to be equal partners in the patient-provider encounter using their patient voice to be advocates for their health care.

Despite a preference for in-person visits, non-VV PWH participants have some positive reactions to VVs. Non-VV PWH participants felt VVs have some benefits, including reduced/eliminated travel time, increased convenience, and increased privacy. Some non-VV PWH participants expressed an interest to have certain visits by phone (i.e., VV) but stressed that VV use would depend on the type of visit or the specialist being seen. This finding could be due to non-VV PWH participants recognizing that VV might be the only option for the upcoming months due to COVID-19. Further study would be needed to determine which type of specialist the non-VV

PWH would prefer to see using VV. It is also important to note; many non-VV PWH participants reported opting to delay care rather than having a VV.

Telemedicine has also been proposed as a method to reduce stigma. The responses from VV-PWH participants reconfirmed the potential for VV to minimize stigma. However, this theme did not emerge from non-VV PWH participant discussions. This finding may be due to non-VV PWH participants' concern about the privacy of VVs.

Several patients expressed the importance of being active participants in their health care experience. In addition, some patients decided to use VVs because they wanted to be early adopters and perceived VVs as cutting-edge technology.

Conclusion

Overall, patients view VVs as a beneficial technological tool in addressing their health care needs and removing sociocultural barriers to health care. However, health systems and clinicians must continue to address the concerns of hesitant patients to maximize telemedicine uptake. Addressing these concerns, practical recommendations were offered to mitigate technological challenges, increase VV use, improve navigation of the MyChart app, and improve patient-provider communication and virtual connections. In addition, telemedicine program implementation may be strengthened through strategic marketing, communication strategies such as VV training courses, consistent messaging from the entire clinic staff, and improved virtual bedside manner.

Practice Implications

VV-PWH participants offered the following recommendations to improve the implementation of the telemedicine program. Responses are summarized across three domains: 1) organizational processes, 2) provider behaviors, and 3) staff behaviors at each point of contact with the health system before the virtual visit, during the virtual visit, and following the virtual visit. Organizational processes are procedural, structural changes, communication strategies, or activities that organizational leaders and their teams plan, implement, or evaluate. Provider behaviors are specific actions that doctors may execute to improve the virtual visit experience, patient-provider relationship, or telemedicine program. Finally, staff behaviors are specific actions administrative staff and health care team members may apply to increase virtual visit use and to improve the quality of the patient experience. In conclusion, patient actions or behaviors to bolster virtual visits are summarized.

Organizational processes

- Create a patient checklist for patients to list questions or discussion points before VV.
- Create a provider checklist to discuss and review specific patient medical information during VV.
- Create a feature that allows for viewing two screens simultaneously, the health care provider, and the lab results.
- Create a virtual chat option to assist with navigating MyChart, particularly during the first time logging in to a VV.
- Initiate a helpline for VV patients.
- Use telemedicine as a triage tool to determine if a patient should go to the emergency room, manage a medical issue at home, or schedule an in-person visit with a health care provider.

Provider Behaviors

- Mention the opportunity for VV during in-person visits to patients that have not enrolled in the telemedicine program.
- Take time to explain lab results thoroughly.
- Avoid the use of medical jargon or explain what terms mean.
- Avoid rushing VV.
- Slow down when speaking with patients.
- Providers should ask if the patient is in a private place.
- Providers should ask the patient to pull over if driving.
- Providers should encourage patients to ask questions.
- Providers should cultivate a therapeutic virtual connection with patients by building rapport, i.e. referencing information shared during the last visit or asking about patients' social dimensions.

Staff Behaviors

- Distribute and post flyers about the telemedicine program.
- Provide an appointment reminder 24 hours prior to the VV with messaging to review labs and to write down questions prior to the visit.

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