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Factors Affecting Family Caregivers' Satisfaction During Virtual Care Visits

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Abstract. There are 18 million caregivers in the US who are essential in the care process for patients to facilitate scheduling appointments, administer medication, and assist with care coordination. The objective of this study was to examine the facilitators and barriers to a positive virtual care experience for caregivers. examined the satisfaction levels among caregivers using a virtual care service at a Southeastern Medical Center in the U.S. We analyzed 231 virtual care visits completed by caregivers. We found that insurance status and medication prescription played a significant role in caregivers' ratings of their virtual care experience. Caregivers reported that virtual care can improve their quality of life, while mixed opinions were reported with regard to the use of virtual care, and the quality of care provided.

Keywords. Virtual, care, caregivers, satisfaction

1. Introduction

In the U.S., approximately 18 million caregivers provide care and support for patients because of their age-related dependency or limitations in their cognitive, physical, or mental functions [1]. Caregivers are essential in the patient care to facilitate scheduling appointments, administer medication, and assist with care coordination. The responsibilities of caregivers vary based on the age, of the patient, the availability of resources, and the severity of the disability [2]. As a result of caregiver responsibilities, difficulty accessing or utilizing healthcare services can result in a substantial decline in the quality of care provided for patients, coupled with an increased burden on caregivers to find time for self-care [3].

Virtual care has facilitated access to healthcare services for underserved and rural populations [4,5]. Furthermore, extensive efforts have been made to investigate the factors affecting patient satisfaction after virtual care visits [6,7] .One of the determining factors for satisfaction among the underserved and rural patients was ease of use, as well as time and cost savings [8]. However, little research has been conducted to examine ways to improve the user experience for caregivers in the virtual care space. Lack of knowledge about the facilitators and barriers to virtual care among caregivers can lead to delayed care for patients, which may in turn reduce health outcomes and increase health-related costs. Therefore, there is a critical need to characterize the factors that improve or impede the use of virtual care by caregivers. The objective of this study was to examine the facilitators and barriers to a positive virtual care experience for caregivers.

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2. Methods

This cross-sectional study examined the satisfaction levels among caregivers using a virtual care service at a Southeastern Medical Center in the U.S. The virtual care service utilizes telehealth to provide on-demand tele-urgent care visits to individuals using board-certified physicians. The 24-hour virtual urgent care service was developed to aid individuals with medical needs who may or may not be far from an in-person urgent care, need help when walk-in clinics are closed, or have limited independent mobility. The online, on-demand service is available to the public regardless of their demographics.

After every virtual encounter, caregivers and patients received a satisfaction survey through the same portal, they had accessed to receive the virtual care. A total of 231 satisfaction survey responses were received between 2018-2022 from the caregivers while the remaining 1651 were from other patients who received care from the 24-hour virtual care service. The results of the survey include the general information related to the encounter (i.e., wait time, visit duration, previous use of service, medication prescription), the overall rating of the virtual care encounter, and open comments about their overall experience. Institutional Review Board approval was obtained for this study.

Data was collected through the web-portal and imported into a secure, HIPAA compliant business intelligence server. The server provides a flexible architecture that enables the research team to run complex queries, generate reports, and run analysis. Data extraction, cleaning, and wrangling was conducted in Microsoft Excel.

2.1. Data Analysis

All the statistical analysis were performed using IBM SPSS software version 28.0. We conducted descriptive analysis on the virtual care visit data. Descriptive analysis was sought to explore relationship between selected predictors and satisfaction rate. The 8 predictors were age, gender, insurance status, previous visit count, prescription count of the patients and wait time, encounter duration, and medium (i.e., Phone/ Video) of the visit. We then constructed a binary dependent variable (outcome), that assigned each of the visit to be either 'Satisfied', or 'Unsatisfied'. To achieve this, we defined the caregivers who rated their satisfaction as either, 'Excellent', 'Very Good', or 'Good' (n = 203) as satisfied caregivers, and caregivers who rated their satisfaction as either 'Fair', or 'Poor' as unsatisfied ones (n = 28). We then, performed a binary logistic regression on the 8 predictors and our binary dependent variable to identify factors that affected the satisfaction rate of family caregivers. Statistical significance was determined at the p-value < 0.05.

Further, we conducted thematic analysis of open-ended comments received from caregivers about their overall experience. Patient quotes were reviewed by a qualitative expert and thematic analysis was conducted to identify the facilitators and barriers to caregivers' satisfaction when using virtual care. We used the Benson framework to classify quotes into patient-reported outcome and experience measures [9].

3. Results

Of the 231 patients seen, the average (SD) age of patients was 20.7 years (18.1), 117 (50.8%) were female, 130 (56.5%) uninsured patients, and 120 (52.2%) patients between the ages of 2 and 18 years. The average (SD) wait time for virtual care visits was 12.8

(31.5) minutes, and the average (SD) duration for those visits was 5.9 (3.2) minutes. For caregivers, 203 (87%) reported positive satisfaction after using virtual care compared to 28 (12%) who reported negative experience with virtual care.

Two factors were statistically significant predictors of caregiver satisfaction: insurance status, prescription count, Table 1. Those two predictors associated with high satisfaction within caregivers were insurance status (OR: 4.2, p-value<0.05, 95% CI interval: 1.6-10.9), prescription count (OR:3.4, p-value<0.05, 95% CI interval: 1.5-7.4). Virtual care satisfaction was positively associated with virtual care satisfaction such that patients who had health insurance reported higher satisfaction levels. Similarly, patients who received medication prescriptions reported significantly higher satisfaction.

Table 1. Factors Associated with Telehealth Satisfaction among Caregivers: Multi-variate Logistic Regression Results.

Patient Demographics	Odds Ratio (Exp (B))	P-value	95% C.I. Lower	Upper
Age	.989	.399	.965	1.014
Gender	.742	.519	.300	1.837
Insurance	4.277	.003*	1.666	10.980
Customer Wait Time	.989	.095	.977	1.002
Encounter Duration	.947	.403	.835	1.075
Previous Visit Count	1.521	.380	.596	3.883
Prescription Count	3.450	.002*	1.589	7.489
Medium	2.232	.135	.780	6.389

3.1. Facilitators and Barriers to Satisfaction

Caregivers found merit in virtual care when it came to improving their quality of life, care provided, and the innovation behind virtual care, Table 2. Some caregivers voiced that the ability to seek care outside of business hours provided additional flexibility and convenience, which influenced the caregiver and the patient quality of life. Additionally, enabling caregivers to choose between video or telephone visits improved the quality of care provided. Caregivers who provide care to multiple patients or to patients with special needs found great merit in the use of virtual care to seek care for one sick patient while monitoring and caring for other patients in the same household.

Table 2. Survey Responses from Caregivers who were Satisfied with their Telehealth Experience.

Category	Quote	Patient Demographic
Quality of Life	It was convenient, on a Sunday evening when everything was closed, and the physician was awesome.	9 years, Insured
Innovation	Our connection wasn't great, but the doctor persisted, and we made it through the conversation. The prescription was ready at the pharmacy just 20 minutes later, and I was so grateful.	47 years, Uninsured
Quality of Life	I love this is offered I have had to use it twice already once was on Christmas day when nothing was open and then yesterday when I didn't want to take my sick son out in the nasty weather.	2 years old, Insured
Care Provided	Happy to also have the option for a phone call, since I could not make the video work.	46 years old, Uninsured
Quality of Life	Thank you for this service. It saved us time, with 3 disabled kids and missing work.	2 years old, Uninsured

Caregivers also voiced frustration with virtual care mainly because of factors associated with the integration and usability of virtual care, and quality of care provided, Table 3. Particularly, caregivers complained of not receiving prescription medication, which resulted in the caregiver going to an urgent care for the same health condition. Another impeding factor was technical issues related to specific smartphones where their operating systems were blocking incoming virtual care calls. Language barriers of the providers coupled with the duration of some of the virtual visits were factors that caregivers reported as frustrating in their experience. Lastly, in some cases, caregivers experienced extended wait times that could impede the efficiency of virtual care and affect the user experience.

Table 3. Survey Responses from Caregivers who were Unsatisfied with their Telehealth Experience.

Category	Quote	Patient Demographic
Care Provided	A pediatrician told me my son likely had a bacterial infection but refused to prescribe treatment for that and suggested I go into an urgent care	2 years, Uninsured
Innovation	The call center essentially told me that my iPhone was blocking the call from the physician because of a spam feature. They said this happens with everyone who has an iPhone.	37 years, Uninsured
Innovation	Asked for video but connection couldn't be made. After 10 attempts, I finally got a call, but it was very hard to do without video. Should have a way to message the provider if issues persist	2-year-old, Insured
Care Provided	Dr spent less than 5 minutes with us. I couldn't understand what he was saying. Thankfully they do an after-visit summary so I could read what he said.	20 years old, Insured
Care Provided	Increase the estimated wait time if the approximate wait time is significantly less than the actual wait time. The estimated wait time for my appointment was 10 minutes and it was between 20-30 before I received a phone call. This is still supreme	22 years old, Insured

4. Discussion

In this cross-sectional study, we examined the factors influencing the satisfaction levels of family caregivers using virtual care. We report that family caregivers sought healthcare services through virtual platform. We found that insurance status and medication prescription played a significant role in caregivers' rating of their virtual care experience. We report that receiving medication prescription was a strong predictor for caregivers to have a positive virtual care experience. This study shows that patients who received medication prescription had a higher satisfaction level compared to those who reported lower satisfaction levels. Prior research has shown that medication prescription varied by provider specialty and experience [10] however, more research is needed to examine further examine over prescription behaviors in the virtual care realm and mitigation strategies that can be used to educate patients about the consequences of overprescribing on patients' health conditions. Reflecting on the strong association of medication prescription and patient satisfaction, a major concern in virtual care is to overprescribe medication to keep patient satisfaction levels high. This is return can adversely affect the quality of care provided virtually and directly impact health outcomes for patient receiving care virtually.

Caregivers assisting patients with health insurance coverage reported more positive user experience. This could be because a virtual care encounter for an insured patient

will cost less when compared to a visit to emergency departments or urgent care. Prior research has shown that the cost of urgent care visit is more costly compared to virtual care and hence, satisfaction can be relatively higher among virtual care patients [11].

This study had limitations. We did not assess patients' health conditions and whether they should have received prescription medication or not. Moreover, we only asked users whether they are seeking care for themselves or for a dependent and so, we did not account for the different types of caregivers. Future work should involve the assessment of unstructured responses from providers using telehealth, which will provide a holistic understanding of the current areas of limitation in telehealth.

5. Conclusions

This study found that family caregivers', in general, found merit in the use of virtual care to seek care for their dependents. Having insurance coverage as well as receiving prescription medication were strong predictors of high satisfaction levels. Caregivers reported that virtual care can improve their quality of life, while mixed opinions were reported about the use of virtual care, and quality of care provided. Integrating caregiver experiences in virtual care improves access and equity for underserved populations.

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