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Keywords

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Cover Page Footnote

Acknowledgements: Tom Wasser for data analysis, Shawna Henry for obtaining clinic data

Use of Telemedicine in an OBGYN Residency Clinic During COVID

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ABSTRACT:

INTRODUCTION: Telemedicine can address healthcare disparities by improving access to care and eliminating barriers to in-office appointments. The primary goal of this study is to compare the number of completed telemedicine appointments to the number of completed in-office appointments for an OBGYN residency clinic during the early months of the COVID pandemic. The study also aims to evaluate patient demographics and types of visits performed using telemedicine.

METHODS: All OBGYN residency clinic visits at a single institution from March 2020 – May 2020 were included and reviewed. Proportions of the visit type were evaluated for completion as well as the inability to complete the appointment through the telemedicine format. Information collected for the telemedicine visits includes the patient age, primary language spoken, and use of an interpreter during the visit. For patients who were a “no show” to a telemedicine appointment, appointments were reviewed to assess if the patient rescheduled or was lost to follow up. Overall appointment completion rates were compared between telemedicine and in-office visits using a Chi-squared test.

RESULTS: Between March - May 2020, there were 598 telemedicine visits at the residency clinic, with 479 (80.1%) completed and 119 (19.9%) not completed. By comparison, in-office visits totaled 3,158 visits, with 78% (2,473) completed and 22% (685) not completed. Chi-squared test comparing telemedicine versus in office visits resulted in a non-significant p-value of 0.32.

CONCLUSION: The overall visit completion rate between telemedicine and in-office visits from March - May 2020 was similar. The p-value comparing the completion rates was non-significant at 0.32, suggesting the telemedicine visit completion rate is comparable to in-office appointment completion rate.

KEYWORDS: telemedicine, residency clinic, obstetrics and gynecology

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INTRODUCTION

The World Health Organization declared coronavirus infectious disease, 2019 (COVID-19) a global pandemic in March of 2020.¹ The pandemic presented an unprecedented challenge for healthcare, prompting the implementation of telemedicine in attempts to control the spread of the virus.¹ Telemedicine was most readily implemented in the ambulatory care setting.¹ Telemedicine served to minimize exposure between patients in waiting areas and protected the physician work force from exposures in patient encounters.¹

Telemedicine is an established method of patient interaction in the field of medicine. Modern telemedicine was first employed by Massachusetts General Hospital in 1968, with the use of remote examinations to people traveling and working at the Logan International Airport.² The use of telemedicine has developed over time and has a role in both inpatient and outpatient settings. Telemedicine allows for better monitoring of patients in intensive care units, allows for increased surveillance of certain disease processes, and provides access to specialty and subspecialty services that may not otherwise be available.³ Telemedicine can improve access to care, decrease cost of care (directly or through reducing role functioning losses), and to improve quality of care by allowing the patient access to the appropriate provider.³ The use of telemedicine in the ambulatory setting reduces the distance patients need to travel for care and can help eliminate care disparities in rural or underserved settings.^{2,3}

There are a limited number of randomized controlled trials which address clinical outcomes with telemedicine. Theoretically, patient outcomes should be no different as that of in-person care if standard of care is followed in the telemedicine encounter.³ Prior research also indicates overwhelming patient satisfaction with telemedicine appointments due to increased communication, decreased wait time, ease of use and patient empowerment.³ The main limitation of telemedicine is the inability to perform a hands-on physical examination of the patient.³

Telemedicine has applications in the field of obstetrics and gynecology (OBGYN). For example, prenatal genetic counseling can be done through videoconferencing, allowing illustration of diagrams and pictures for patient education.⁴ Ultrasound can be performed in real-time with a consultant viewing the images and counseling the patient simultaneously.⁴ Other visits suited for telemedicine include preconception counseling, reviewing results and medication follow up. Interpreting services can be linked to the visit as well.⁴ Management of comorbid conditions such as diabetes and hypertension, as well as review of non-stress tests can be performed via telemedicine.⁴ Telemedicine can also be used to improve patient access to obstetrical counseling and extended subspecialty services not offered at many locations.⁴ There is little published research in the field of OBGYN regarding telemedicine, and even less regarding the use of telemedicine in an OBGYN residency program. This project aims to assess the effectiveness of telemedicine visits in an OBGYN residency clinic by evaluating completion/show rate for telemedicine appointments as compared to in-office appointments. Telemedicine visits will be more specifically analyzed to review patient demographics as well as type of problem addressed during telemedicine visits. The hypothesis for this study is that telemedicine is an effective alternative to in-office visits for appropriately selected patient visits, with anticipated improved visit completion. Given that residency clinics often serve the underserved and marginalized communities, the expansion and integration of telemedicine in residency training has the potential to reach underserved communities and improve the overall health of women in our community.

MATERIALS AND METHODS

This is a retrospective cohort study. All visits performed by residents, attending physicians and advanced practice providers in an OBGYN resident clinic during March 2020 – May 2020 were reviewed. Prior to this time period, telemedicine had

not been used in the resident clinic. Patients were deemed to be appropriate for a telemedicine appointment after the scheduled office visit and chief complaint were reviewed by the most-senior resident in clinic and identified patients whose complaints were unlikely to require physical examination. Telemedicine appointments were evaluated for type of visit, completion rate, as well as the need for the patient to present for an in-person visit due to inability to complete the appointment virtually. Demographic information collected for the telemedicine visits included patient age and primary language spoken. Additional information included use of an interpreter during the telemedicine visit. For patients who were marked as “no show” to a telemedicine appointment, appointments were reviewed to assess if the patient rescheduled their appointment or was lost to follow up for that encounter. Overall telemedicine appointment completion rate was compared to in-office clinic visit completion rate over the same timeframe using a Chi-square test.⁵ Sample size calculation was not performed as the number of clinic visits in the mentioned time frame is fixed.

RESULTS

The total number of telemedicine visits between March - May 2020 completed at the OBGYN residency clinic was 598 visits. Of these visits, 479 (80.1%) were completed and 119 (19.9%) were not completed. *Table 1* summarizes the total number of patients for each visit type. The mean age for patients was 30.75 years, with a median of 28 years and a range of ages 11 to 90 years.

The most common telemedicine visit type was a gynecology (GYN) visit with 334 appointments (55.9%), followed by obstetric (OB) visits at 141 appointments (23.6%), then postpartum at 73 appointments (12.2%) and results follow-up at 50 appointments (8.4%). There were 151 Spanish speaking patients (25.3%), with Spanish being the only non-English language used by patients in this cohort. An interpreter was documented as being used for 102 of these encounters (67.5% of Spanish speaking patients). Only 16 (2.7%) of all telemedicine appointments resulted in the patient being asked to present for same-day in-person evaluation. Of these 16 visits, 10 were GYN and the remaining 6 were OB visits (*Table 2*).

117 appointments of the total 119 not completed/ “no show” telemedicine appointments were successfully re-scheduled. Of these re-scheduled appointments, only 27 did not show for the re-scheduled visit (*Table 3*).

In comparison, the total number of in-office visits for residents, attending physicians and advanced practice providers during this time frame was 5,050 – this total number did not include nursing or medication administration visits. The total number of completed visits was 2,473 (49%). A total of 1,892 visits (37.5%) were cancelled, either by the patient or by office staff. Reason for cancellation was not documented for these visits. The number of not-completed visits was 685 (13.6%). As cancelled visits were not tracked in the telemedicine data review, removing these visits from the in-office total results in a total of 3,158 visits, with 78% completed and 22% not completed (*Table 4*). Chi-squared analysis performed comparing the overall completion rate between telemedicine and in-office appointments during this time frame (*Table 5*), resulted in a non-significant p-value of 0.32.

DISCUSSION

The overall visit completion rate between telemedicine and in office visits from March - May 2020 was similar, as demonstrated by an 80.1% completion rate for telemedicine and a 78% completion rate for in-office visits. The p-value comparing the completion rates was non-significant at 0.32, suggesting the telemedicine visit completion rate is comparable to in-office appointment completion rate. Only 2.7% of telemedicine visits resulted in a patient being called in for an in-office appointment the same day. Appropriately selecting patient visit types for telemedicine appointments resulted in a high percentage completed virtually. Additionally, nearly all patients whose telemedicine visit was not completed initially were re-scheduled (98.3%) to either an in-office or telemedicine appointment (*Table 3*). If these re-scheduled visits are counted in the completed total, only 27 (4.5%) of the 598 telemedicine patients ultimately were lost to follow up care.

Interpreter use for Spanish speaking patients was documented for 102 of 151 encounters. One advanced practice provider who provided care during this time frame did not use interpreters for her encounters as she is fluent in Spanish and preferred to carry out these visits without the use of interpretation services. For the encounters that did use an interpreter, no difficulties were documented regarding need to call for multiple interpreters during an encounter or having to change midway through a conversation due to technical difficulties.

A limitation of this study includes inconsistent tracking between telemedicine and in-office visits with regards to cancellations. Cancelled visits were

Table 1: Telemedicine Appointment Visit Type

Visit Type	Total Number of Patients	Overall Percentage
Gynecology	334	55.9%
Obstetric	141	23.6%
Postpartum	73	12.2%
Results	50	8.4%
Total	598	100%

Table 2: Outcome of Rescheduled Not-Completed Telemedicine Visits

Appointment Outcome	Number of Patients	Overall Percentage
No show to rescheduled appointment	27	23.1%
In office GYN	41	35%
In office OB	22	18.8%
Telemedicine	20	17.1%
Postpartum	4	3.4%
Transferred care	3	2.6%
Total	117	100%

Table 3: In-Office Appointment Completion Rate

Appointment Completion	Number of Patients	Overall Percentage
Completed	2,473	78%
No Show	685	22%
Total	3,158	100%

not included in the telemedicine data review totals. Also, the information assessed in depth for the telemedicine visits such as encounter type and patient demographics were not reviewed for in-office appointments in the same time frame, limiting overall ability for comparison of the visit types. Additionally, patient satisfaction was not assessed with this project, which may be an avenue of further study. Finally, revenue and cost relating to telemedicine appointments were not assessed.

Table 5: Chi-square Analysis of Telemedicine and In-Office Visit Completion⁵

	Completed Visit Chi-squared statistic	No Show Visit Chi-squared statistic	Visit Chi-squared statistic	P value
Telemedicine	0.17	0.63		
In-Office	0.03	0.12		
			0.96	0.32

CONCLUSION

Telemedicine is likely to become a more widely offered service given social distancing practices with the advent of COVID-19. It is important to evaluate the effectiveness of telemedicine encounters and generate thoughts on improvement moving forward for revenue generation and enhancement of patient access to care. This study shows that telemedicine encounters are similar in terms of completion to in-office appointments, and with appropriately selected visit types have a low likelihood of a patient being brought in for evaluation. Telemedicine allows for comparable visit completion rates, as well as a new avenue for resident education.

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