



ORIGINAL ARTICLE

Telehealth for gynaecology outpatients during the COVID-19 pandemic: Patient and clinician experiences

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Background: The COVID-19 pandemic has necessitated alterations in provision of health care and how patients access it. Telehealth has replaced traditional face-to-face outpatient clinics in an unprecedented manner. This study aimed to assess overall patient and clinician satisfaction with telehealth consultations, to establish acceptability of telehealth during pandemic and non-pandemic times, and document feedback.

Materials and Methods: A prospective observational study involving women presenting to a general gynaecology outpatient department was performed. Women who attended for consultation between 13 July and 4 September 2020 were invited to participate in a questionnaire following their telehealth appointment. Clinicians consulting in the outpatient department were invited to complete a questionnaire at the end of the eight-week study period. Satisfaction, utility and acceptability data were obtained using visual analogue scales (VAS).

Results: Twenty-six out of 56 (46.4%) clinicians and 124/870 (14.3%) patients completed the questionnaire. Patients who responded were older and more likely to have been born in Australia than women who did not ($P = 0.0355$ and $P = 0.005$, respectively). Overall patient satisfaction with telehealth was high (median VAS (interquartile range), 8.6 (5.6–9.8)). More women found telehealth to be acceptable during a pandemic than afterward (8.9 vs 6.6, $P < 0.0001$). Clinicians were less satisfied with telehealth than patients (7.1 vs 8.6, $P = 0.02$); however, most would be happy to continue using telehealth in non-pandemic times (7.0 (6.2–9.8)).

Conclusion: Telehealth consultations allow provision of gynaecological care at a time when reducing risk of infection to patients and staff is paramount. Telehealth gynaecology consultations are efficient and convenient without significant detriment to patient or clinician satisfaction.

KEYWORDS

telemedicine, remote consultation, gynaecology, outpatients, COVID-19

INTRODUCTION

On 11 March 2020 the World Health Organization declared Coronavirus disease 2019 (COVID-19) an international pandemic.¹ Quarantining, widespread travel restrictions, and ‘social distancing’ were introduced as key strategies to reduce transmission

through reducing person-to-person contact. This necessitated changes in how patients accessed medical care, and how clinicians provided it. Telehealth, defined as a ‘collection of means or methods for enhancing health care, public health, and health education delivery using telecommunications technologies’² (specifically, video or telephone consultations) replaced traditional

face-to-face outpatient clinics in an unprecedented manner. This served to prevent the spread of infection and protect vulnerable members of society from congested hospital waiting rooms and public transport in the short-term, but also raised potential secondary benefits that could extend post-pandemic.

Telehealth presents a number of advantages compared to traditional methods of health care. For patients, it has the potential to improve access to medical specialists for those who are usually prevented by financial, temporal, geographic or mobility barriers, thereby improving health outcomes for those in rural communities, the elderly and those with physical disabilities.³⁻⁵ It is convenient for those who study, work or are primary carers for children or family. Advantages for health services and governments include: easing outpatient logistic pressures; reducing ballooning outpatient waitlists;⁶ and eliminating environmental and financial factors involved with travel.⁷ As such, telehealth aims to provide equivalent quality and safety of care, in a more economic and accessible manner. Concerns about telehealth involve: misdiagnosis due to lack of physical examination; accessibility for those with sensory impairment, language barriers, or limited access to or unfamiliarity with technology such as the elderly or financially disadvantaged; cybersecurity and patient data privacy; and the impersonal nature of consultations resulting in a breakdown of the doctor-patient relationship.^{8,9} These concerns are particularly relevant in gynaecology when considering the sensitive nature of discussions and often invasive examinations required.

Telehealth is not a new concept. Medicare rebates and incentives have been available for telehealth consultations in Australia since 2011. However, outside of emergency situations and remote medicine, the uptake of these technologies has been limited.¹⁰ A pre-pandemic study by Wade et al¹¹ concluded that clinician acceptance is 'the key factor to uptake, expansion, and sustainability of Australian telehealth services'.

This study aimed to assess overall patient satisfaction with the telehealth innovations implemented in an outpatient general gynaecology service. It further aimed to establish patient acceptability of a telehealth service during pandemic and non-pandemic times, and document patient and clinician feedback.

MATERIALS AND METHODS

We performed a prospective observational study involving women presenting to the general gynaecology outpatient department of a tertiary adult women's hospital in Melbourne, Australia. Over eight weeks, between 13 July 2020 and 4 September 2020, we invited all women who attended a general gynaecology video or telephone telehealth appointment to participate in a questionnaire following their consultation. Verbal agreement to be sent the questionnaire either by mail or email was obtained and written consent gained when the questionnaire was returned. A single reminder email or phone call was made if the questionnaire was not returned within four weeks from being sent.

Demographic information was obtained from the Mercy Hospital for Women patient records including presenting complaint, age, country of birth and postcode to assess Socio-Economic Indexes for Areas (SEIFA). SEIFA consists of four indices and ranks Australian postcodes according to relative socio-economic advantage and disadvantage based on the five-yearly National Census. The Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD) was used as a surrogate measure of socio-economic disadvantage within this study, with one representing the most disadvantaged, and ten the most advantaged.¹² Both English- and non-English-speaking women were invited to participate. Non-English-speaking women whose primary languages were Arabic, Persian, Cantonese, Mandarin or Greek were directed to call staff interpreters for assistance.

Clinicians of all experience levels (ie resident, registrar and consultant) who consulted in general gynaecology during the eight weeks were also invited to participate in a questionnaire at the end of the study period. Consultants were considered senior clinicians, while residents and registrars were considered junior.

Questionnaires

The research team developed two self-administered questionnaires: one for patients and one for clinicians (Supp 1 and 2). The patient survey was composed of 18 questions: 12 using a ten-point visual analogue scale (VAS)¹³ where a higher number indicated a more affirmative response; three categorical 'yes' or 'no', and three free-text. The clinician survey included six questions using a VAS, two multiple-choice questions and three free-text questions surrounding the benefits and barriers to the continued use of telehealth. Satisfaction, utility and acceptability data were obtained for analysis.

Statistical analysis

Statistical analyses were performed using GraphPad Prism v9.0 for χ^2 and Mann-Whitney tests. Linear regression analyses were conducted using Stata/IC v16.1. Univariate (unadjusted) models were first constructed for each explanatory variable. The multivariable model included demographic information, presenting complaint, and appointment type. All covariates were included in a multivariable (adjusted) model without adjustment for confounders. These were selected a priori with no explicit variable selection procedure. *P*-values for main effects are shown.

We used a modified thematic analysis with inductive coding to analyse the free-text responses provided by patients and clinicians. Author one familiarised themselves with the data and applied codes for prevailing themes.

Ethics statement

This study was approved Mercy Health Research Ethics Committee, Ethics Approval Number 2020-029. Written informed consent was obtained from all participants.

RESULTS

Patient results

Nine hundred and eight-seven (987) outpatient consultations occurred during the study period, with 117 consultations were excluded, leaving 870 eligible consultations. There were 124 survey responses received (14.3%), 42 women declined to participate, and 704 women did not respond (Fig. 1).

Patients who responded were older and more likely to have been born in Australia than women who did not (45 vs 42, $P = 0.0355$, and 27.8% vs 41.3%, $P = 0.005$, respectively). Between responders and non-responders, there was no difference in socio-economic status, rates of English as a second language or appointment type (Table 1).

The most common presenting complaints during the study period were: heavy or irregular menstrual bleeding (28.2%); pelvic pain (17.8%); post-menopausal bleeding (PMB) (12.6%); and 'other' (14.5%) (Table 1). Those who responded were more likely to have presented for PMB, postpartum review or vulval dermatology and less likely to present for management of ovarian cysts or 'other' issues.

Most patients found telehealth easy to use, convenient, saved time and money, and improved overall access to health care (Table 2; VAS scores 8.95, 8.0, 9.2, 8.6 and 6.5 respectively). Overall, most women felt their gynaecological concern was addressed (VAS 8.6) and were satisfied with their telehealth appointment (VAS 8.6). However, more women found telehealth to be acceptable during a pandemic than afterward, VAS 8.9 vs 6.6 respectively ($P < 0.0001$). Patient-reported emotional responses to the consultations were varied (Table 2).

In unadjusted analyses, there were no explanatory variables associated with patient satisfaction (Supp Table S1). When controlling for all other explanatory variables, there was statistical evidence ($P = 0.03$) of an effect of appointment type. Individuals who were completing their first appointment were less satisfied (adjusted mean difference: 1.334, 95% CI: 0.129–2.539) than individuals who were not completing their first appointment. There was no statistical evidence of an association between effectiveness of communication and age of the responder ($t(120) = 0.008$, $P = 0.94$).

Clinician results

Twenty-six (46.4%) clinicians responded to the questionnaire. All general gynaecology clinics were represented in the respondents. There were relatively equal numbers of senior and junior clinicians who responded (14 vs 12, respectively). All 26 clinicians had conducted a telephone consult during the study, while only 15 clinicians had conducted a video consult. Overall, most clinicians were satisfied using telehealth for outpatient gynaecological appointments and would be happy to continue doing so after the pandemic (Table 3). Clinicians were less satisfied with telehealth

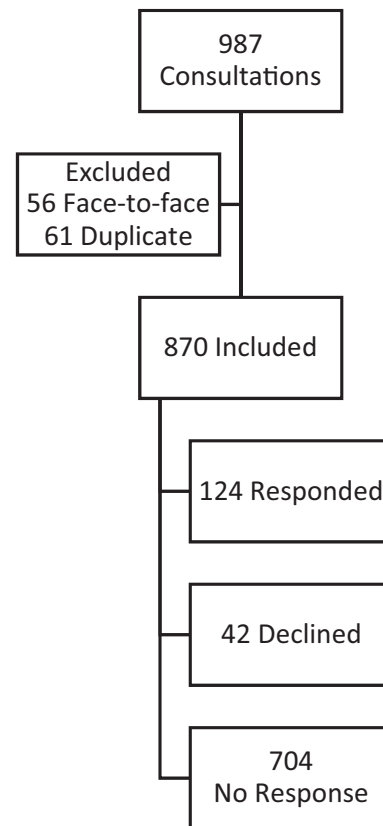


FIGURE 1 Study participants.

than patients (7.1 vs 8.6, $P = 0.02$). There was no difference between senior and junior clinicians (Suppl. Table S2).

Qualitative data

The patient feedback revealed two main themes. The mode of telehealth consult was particularly topical. Many commented they would have preferred video to telephone consultations, stating it would have improved communication and rapport. However, others found the freedom of telephone consultations made the interaction more efficient and convenient. The second theme was patient preference. Patients found that although telehealth consultations were acceptable, if given the option they would have preferred in-person examination.

Three main themes emerged from the clinician feedback. The first was the importance of efficient technology. Clinicians found that consultations were time-consuming and ineffective if both parties did not have a reliable internet connection for video consultations. This was less of a concern with telephone consultations. Some clinicians also felt their unfamiliarity and lack of training with the technology made the consultations inefficient. A streamlined process for giving patient information, requests, and scripts was also lacking. The second theme was difficulty in communication with patients who were non-English speaking. Clinicians found it difficult to create rapport with patients while using telehealth interpreters and were concerned there was

TABLE 1 Demographic and appointment information

| | Response (N = 124) | No response (N = 746) | P-value |
|---------------------------------------|--------------------|-----------------------|---------|
| Age, years | 45 [34–57] | 42 [33–52] | 0.0355* |
| SEIFA | 7 [5.25–9] | 7 [4–9] | 0.0682 |
| English as second language | 24/121 (19.8%) | 176/717 (24.5%) | 0.261 |
| Country of birth other than Australia | 34/122 (27.8%) | 303/734 (41.3%) | 0.005* |
| Appointment type | | | |
| New | 49 (39.5%) | 286 (38.3%) | 0.845 |
| Post-op | 19 (15.3%) | 113 (14.1%) | 0.963 |
| Pre-admission | 2 (1.6%) | 7 (0.9%) | 0.494 |
| Review | 54 (43.5%) | 340 (45.6%) | 0.756 |
| Presenting complaint | | | |
| Pelvic pain (n = 155) | 25 (20.2%) | 130 (17.4%) | 0.504 |
| HMB/AUB (n = 245) | 38 (30.6%) | 207 (27.7%) | 0.573 |
| PMB (n = 110) | 23 (18.5%) | 87 (11.7%) | 0.046* |
| PCB (n = 16) | 1 (0.8%) | 15 (2.2%) | 0.360 |
| Infertility (n = 66) | 6 (4.8%) | 60 (8.0%) | 0.230 |
| Contraception (n = 18) | 1 (0.8%) | 17 (2.3%) | 0.291 |
| Ovarian cyst (n = 80) | 5 (4.0%) | 75 (10.1%) | 0.041* |
| Postpartum review (n = 18) | 6 (4.8%) | 12 (1.6%) | 0.021* |
| Menopause (n = 11) | 3 (2.4%) | 8 (1.1%) | 0.217 |
| Vulval dermatology (n = 11) | 4 (3.2%) | 7 (0.9%) | 0.036* |
| Prolapse (n = 12) | 2 (1.6%) | 10 (1.3%) | 0.811 |
| Continence issues (n = 2) | 0 | 2 (0.3%) | 0.828 |
| Other (n = 126) | 10 (8.1%) | 116 (15.5%) | 0.043* |

Denominators vary due to missing data for language spoken and country of birth.

Median [IQR], Mann-Whitney test; count (%); χ^2 .

AUB, abnormal menstrual bleeding; HMB, heavy menstrual bleeding; PCB, post-coital bleeding; PMB, post-menopausal bleeding; SEIFA, Socio-Economic Indexes for Areas.

*P value <0.05.

poorer communication and understanding when compared to face-to-face. They also felt technological difficulties were exacerbated by the three-way conference calls. The last theme was the ability to triage and appropriately assess clinical presentations obviously requiring examinations, for example cervical polyps, pessary exchange or vulval dermatology. Some also felt that telehealth was inappropriate for a first consultation and for surgical pre-admission assessment where written consent and patient examination cannot occur.

The main perceived benefit of telehealth consultations was the efficiency. Clinicians found telehealth useful for managing simple presentations, relaying of normal results and early post-operative reviews. Many thought the clinics were more efficient and although this was not formally assessed, anecdotally clinicians also noticed fewer patients failed to attend their scheduled appointment.

DISCUSSION

The COVID-19 pandemic has required re-evaluation of the use of communication technology in clinical practice. Having previously

never been used in our centre, telehealth services underwent rapid expansion to make up 94% of general gynaecology consultations during the study period. Overall, both patients and clinicians expressed moderate levels of satisfaction with the telehealth services implemented. The majority of patients and clinicians found telehealth efficient and effective and some would be happy using telehealth for consultations in the future. Telehealth has already been shown to have many specific applications in gynaecology including: contraceptive advice,¹⁴ vulvovaginitis,¹⁵ pre- and post-surgical care,¹⁶ urogynaecology,¹⁷ fertility,¹⁸ medical termination of pregnancy,¹⁹ and management of sexually transmitted infections.²⁰ Furthermore, Khan et al²¹ recently found that telephone consultations in gynaecology are convenient and effective. This study further adds to the evidence that telehealth is acceptable for managing patients with a range of presentations in a general gynaecology outpatient setting.

While modern medicine is increasingly reliant upon investigation, the inability to examine the patient will continue to be a barrier to telehealth acceptance.²² The value of clinical examination is threefold; firstly, it adds objective assessment to the subjective patient experience of an illness, guiding judicious use of

TABLE 2 Patient survey responses

| Question | n/124 | VAS, median (IQR) |
|--|-------|-------------------|
| 1. Telehealth was easy to use | 122 | 8.95 (6.35–9.825) |
| 2. I was able to communicate well with the doctor using telehealth | 122 | 8.85 (5.4–9.9) |
| 3. a) After I spoke with the doctor I felt worried | 115 | 2.3 (0.6–5.3) |
| b) After I spoke with the doctor I felt cheerful | 108 | 6.9 (4.925–8.9) |
| c) After I spoke with the doctor I felt relaxed | 106 | 2.55 (1.0–5.125) |
| d) After I spoke with the doctor I felt worn-out | 110 | 7.3 (5.1–9.025) |
| 4. I felt I was taken care of | 120 | 8.45 (6.8–9.9) |
| 5. Overall telehealth is a convenient form of healthcare delivery for me | 121 | 8.0 (5.1–9.8) |
| 6. Telehealth saved me time when compared with normal face-to-face appointments | 122 | 9.2 (6.875–9.925) |
| 7. Telehealth saved me money when compared with normal face-to-face appointments | 121 | 8.6 (5.15–9.9) |
| 8. Telehealth improved my access to healthcare services | 122 | 6.5 (4.875–9.4) |
| 9. I feel that it is acceptable to be assessed over the telephone NOW during the COVID-19 pandemic | 123 | 8.9 (7.1–9.8) |
| 10. I feel that it would be acceptable to be assessed over the telephone in the future AFTER the COVID-19 pandemic | 123 | 6.6 (2.4–9.5) |
| 11. My gynaecological concern was adequately addressed | 118 | 8.6 (6.2–9.8) |
| 12. Overall, I am satisfied my telehealth appointment | 121 | 8.6 (5.55–9.8) |

VAS, visual analogue scale (higher score indicates affirmative response); IQR, interquartile range Median (IQR).

TABLE 3 Clinician survey responses

| Question | VAS, median (IQR) |
|--|-------------------|
| 1. Telehealth communication was adequate compared with face-to-face | 6.75 (5.1–7.5) |
| 2. The technology available was adequate to conduct the consultation | 6.7 (3.975–8.325) |
| 3. Telehealth was as effective for managing the patient's presenting complaint as face-to-face | 5.05 (3.725–6.9) |
| 4. Telehealth was as efficient for managing the patient's presenting complaint as face-to-face | 7.1 (4.9–8.375) |
| 5. I was able to assess the medical complaint, without feeling I was missing anything | 5.2 (3.6–7.2) |
| 6. Overall, I was satisfied using telehealth for outpatient gynaecological appointments | 7.1 (4.75–7.875) |
| 7. In non-pandemic times I would be happy continuing to use telehealth for outpatient appointments | 7.0 (6.2–9.675) |

VAS, visual analogue scale (higher score indicates affirmative response); IQR, interquartile range Median (IQR).

investigation and treatment; secondly, human touch in itself may have therapeutic value in improving the doctor–patient relationship and alleviating patient and clinician anxiety about possibility of misdiagnosis; and thirdly, examination allows opportunistic screening for other health conditions. Although virtual patient-assisted examination is expanding in response to the uptake of telehealth,²³ there are obvious logistic and privacy limitations with regard to examination of the pelvis and genitalia.

The strength of this study includes the analysis of rapid implementation of telehealth in a single tertiary centre during a public health emergency, allowing real-time feedback. As a result of clinician feedback, it was recognised that existing consent processes were disrupted by the telehealth implementation. In response, women having major surgery were reviewed face-to-face for pre-operative assessment and consent. However, women having minor

procedures were verbally consented via telehealth, and did not undergo formal written consent until the day of surgery. The telehealth implementation also revealed logistic difficulties for the timely distribution of prescriptions, pathology and radiology requests in a health service that continues to primarily be 'paper-based'. While general practice implemented electronic prescriptions to facilitate the supply of medicines during the pandemic,²⁴ public health services without electronic prescribing capabilities were reliant upon downscaled postal services. Patient feedback allowed us to recognise this limitation and subsequently use email or fax where appropriate.

There were three main limitations of this study. The first was the low patient response rate. Raising awareness of the study and obtaining email addresses relied upon individual clinicians consulting in outpatient clinics during the study period. It is understandable that involvement in research may have been a lesser priority during

a pandemic, resulting in a low recruitment and response rate. This may have been improved if we had dedicated research staff to engage participants. However, we were able to obtain demographic information for all patients attending the clinic and therefore confirm those surveyed were a representative population sample. Our questionnaire responders were older and more likely to have been born in Australia than our average outpatient population. There is unlikely to be a clinically significant difference between 42 and 45 years of age; however, we recognise that our population may be younger and have lower rates of socio-economic disadvantage, and subsequently have higher rates of digital literacy and access than some general gynaecology units, which may limit generalisability of these results. The under-representation of women born overseas in our sample is a potential for bias in favour of telehealth.

Secondly, our coding system was unable to differentiate between video and telephone consultations. Given the patient feedback that many found video consultations better for rapport, this would have been useful information. A doctor's ability to communicate effectively and compassionately is imperative to a successful doctor-patient relationship. Video telehealth has the advantage over telephone of providing synchronous remote consultations while retaining non-verbal cues. These cues are a vital component of effective communication as they allow the expression of empathy and conveyance of warmth – helping to fulfil the emotional needs of patient.²⁵ Consequently, reliable equipment and internet connections as well as appropriate clinician education and technical support are also essential.²⁶ It may be tempting for clinicians to revert to telephone consultations due to ease and efficiency; however, they should be encouraged and supported to use video technologies wherever possible.

Lastly, we were unable to identify a validated telehealth questionnaire that specifically suited our needs. The patient questionnaire was constructed from other validated and commonly used questionnaires used to assess telemedicine implementation, and therefore has some comparability²⁷⁻²⁹ (Supp 3).

With telehealth's continued use into the future, guidelines may be useful to streamline triaging of referrals to ensure inappropriate presenting complaints and appointment types are earmarked for face-to-face visits. It is acknowledged that 'technology-enhanced health care delivery opportunities enhance, not replace, the current standard of care'.²⁶ Some level of flexibility will be necessary in non-pandemic situations regarding patients with complex needs and to accommodate patient and clinician preferences.

In conclusion, telehealth is acceptable to both patients and clinicians as an adjunct to traditional face-to-face outpatient care in general gynaecology, both during and, to a lesser extent, following the COVID-19 pandemic.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Table S1. Regression analyses.

Table S2. Comparison of senior and junior clinician responses.

Supinfo S1. Patient questionnaire

Supinfo S2. Clinician questionnaire

Supinfo S3. Patient questionnaire Development



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