

Survey on the use of general practice telehealth services for children during the COVID-19 pandemic

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Received: 7 July 2021
Accepted: 3 May 2022
Published: 15 June 2022

Cite this:

Ramanathan A *et al.* (2022)
Australian Journal of Primary Health, **28**(6),
529–534.
doi:[10.1071/PY21153](https://doi.org/10.1071/PY21153)

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ABSTRACT

In 2020, the Australian Government introduced temporary Medicare Benefits Schedule item numbers for GP telehealth consultations to combat the spread of the COVID-19 pandemic. Patient satisfaction has been positive; however, the paediatric cohort has not been sufficiently investigated. We aimed to explore the rates of satisfaction of paediatric patients undergoing telehealth compared with standard consultations, as well as looking at any barriers faced. We developed and distributed an online survey to eligible patients (or their guardian) aged 0–17 years who underwent a general practice telehealth consultation between March 2020 and May 2020 at 12 participating medical centres in Perth. We received 68 total responses with 35 deemed complete. The mean (s.d.) age of participants was 8.22 (5.34) years. A total of 88.2% of participants indicated that the level of care provided via telehealth was equal to or better than a standard consultation. A total of 70.6% of patients reported no barriers faced, with the most common barrier being lack of examination (20.6%). This study describes high public satisfaction with telehealth GP consultations for paediatric patients, with a good level of patient outcomes and minimal barriers. There may be benefit to widespread and ongoing use of telehealth consultations for the paediatric population and the extension of the temporary Medicare Benefits Schedule items.

Keywords: child health, COVID-19, general practice, online survey, patient satisfaction, Perth, telehealth, temporary MBS.

Introduction

Telehealth has traditionally been utilised in Australia to increase access to healthcare in rural and remote regions where barriers, such as geographical distance, can be overcome. The number of telephone and virtual consultations utilised in Western Australia are continuing to increase on an annual basis ([Australian Government Services Australia 2020](#)). With the outbreak of the COVID-19 pandemic, The Royal Australian College of General Practitioners and the Australian Medical Association strongly advocated for increased use of virtual consultations to minimise face-to-face interaction, which forms the basis of general practice consultations.

To reduce the risk of community transmission of the COVID-19 virus, and to protect patients and healthcare providers alike, the Australian Government introduced temporary Medicare Benefits Schedule (MBS) items to facilitate the provision of community healthcare through telehealth ([Royal Australian College of General Practitioners 2020](#)). These changes were implemented on 13 March 2020, and are continuing to be in effect until 31 March 2021, with a recent announcement of a potential permanent addition to Medicare.

The scope for telehealth services in the provision of general practice community medicine is wide. Evidence of patient satisfaction with telehealth services has been generally high ([Donelan *et al.* 2019](#); [Orlando *et al.* 2019](#)), with improvement in patient outcomes, increase in access to care, improved communication and low cost ([Kruse *et al.* 2017](#)), with no significant loss of patient safety or evidence of poorer outcomes reported ([Car *et al.* 2020](#)). Research examining the effectiveness of telehealth consults,

specifically in the paediatric general practice population, has been limited. In this pilot feasibility study, we aimed to investigate the patient response to telehealth services by GPs during the initial COVID-19 'lockdown' period in Western Australia utilising an online survey.

Methods

This retrospective, qualitative, pilot, questionnaire study was conducted in Perth, Western Australia, and was granted ethical approval by the St John of God Health Care Human Research Ethics Committee (Ref: 1706).

We included all patients aged between 0 and 17 years of age inclusive, who underwent a telehealth consultation at one of the participating medical centres between 21 March 2020 and 31 May 2020. A total of 12 medical centres participated in this study and were spread across the Perth metropolitan region, encompassing a wide patient demographic. A list of the medical centres and locations are provided in [Appendix 1](#).

A telehealth appointment was defined by the recently introduced temporary MBS items for COVID-19 general practice telehealth and telephone services. [Table 1](#) describes the included MBS item numbers used in this study to define the target population group ([Royal Australian College of General Practitioners 2020](#)). Using the software Best Practice (Best Practice Software Pty Ltd, Qld, Australia) a patient search was conducted for each of the medical centres using the filters of: age between 0 and 17 years; consultation between 21 March and 31 May 2020; and the aforementioned MBS item numbers. The contact details on file for the selected patients were identified with the understanding that these details were, in the majority of cases, the details of the patient's parent and/or guardian.

An online survey was developed specifically for this study to assess patient satisfaction rates, outcome and barriers faced. Each of the aforementioned objectives were assessed by a single question using either a Likert scale or specifically designed answer options. Patient satisfaction with telehealth consultations was determined using a five-point Likert scaled approach when compared with a standard consultation (far below to far above). Patient outcome was assessed by a

seven-option question enquiring in regard to resolution of symptoms and any further medical assessment required following the telehealth consult. Responses included: resolved within 3, 7 or >7 days; required additional telehealth consult; required in-person consult, required presentation to ED or admission to hospital. Finally, barriers faced during the telehealth consultation was investigated via six pre-selected options, which reflected the opinions of a number of questioned GPs and non-medical persons. These included options, such as the inability to perform examination, issues with internet connection or network coverage, limited technical skills or no barriers. General information, including child age, sex and presenting complaint, were also collected.

Although comprehensive statistical psychometric analysis was not performed in this feasibility study, the survey questions were reviewed by three GPs prior to distribution, and deemed to have acceptable content validity for the proposed research intention. The distribution and response process was also piloted among a number of trial texts. The authors believed the content and format of the survey, as well as the distribution technique, to likely be the most well received modality by the general public. Response reproducibility was not explicitly tested in this particular cohort of participants.

Participants were given instructions on how to complete the survey and were informed of the study objectives. Responses were collated using the REDCap system (REDCap Consortium, TN, USA), and IBM SPSS Statistics 25 (SPSS Inc, Chicago, IL, USA) was used to perform the statistical analysis. Surveys were distributed to all patients who met the inclusion criteria using an SMS broadcast service (SMS Broadcast, Melbourne, Vic., Australia). A link with a QR code was sent via SMS inviting included patients to complete the online questionnaire. A reminder message was sent in the same manner approximately 1–2 months following the initial distribution. Our study was deemed to be of minimal/negligible risk, which satisfied the condition of waiver of consent.

Ethics approval

This study was granted ethics approval by the St John of God Health Care Human Research Ethics Committee (Ref: 1706).

Results

In this pilot study, a total of 1839 eligible patients were contacted and invited to complete the survey via text message. Of these, 39 SMS messages failed to be received by the recipient, likely due to an incorrect recorded mobile number, resulting in a total 1800 patients approached. The final response rate was calculated as 3.78%, receiving a total of 68 responses, of which 35 were deemed complete responses

Table 1. List of temporary MBS items relating to telehealth.

Service provided	Telehealth items	Telephone items
Attendance for an obvious problem	91 790	91 795
Attendance <20 min	91 800	91 809
Attendance ≥20 min	91 801	91 810
Attendance =≥40 min	91 802	91 811

Table shows the specific list on telehealth/telephone MBS items used as inclusion criteria for the population group.

Table 2. Summary of survey results.

	No. of patients (%)
Sex	
Male	21 (60.0)
Female	14 (40.0)
Age (years)	
Mean (s.d.)	8.22 (5.34)
Presenting complaint	
Coryzal symptoms	21 (42.0)
Wheezing/breathing difficulties	5 (10.0)
Gastrointestinal symptoms	4 (8.00)
Fever	15 (30.0)
Dermatological	2 (4.00)
Others	3 (6.00)
Barriers faced during consult	
Poor internet connection	1 (2.86)
Unable to perform physical examination	7 (20.0)
Limited network coverage	0 (0.00)
Limited technical skills	0 (0.00)
No barriers	24 (68.6)
Others	3 (8.57)
Level of care vs standard consult	
Far below	0 (0.00)
Below	4 (11.8)
No difference	20 (58.8)
Above	6 (17.6)
Far above	4 (11.8)
Patient outcome	
Resolved within 3 days	15 (42.9)
Resolved within 7 days	9 (25.7)
Resolved after more than 7 days	1 (2.86)
Required an additional telehealth consult	4 (11.4)
Required a standard consult	5 (14.3)
Required presentation to ED	1 (2.86)
Required admission to hospital	0 (0.00)

Table shows a summary of survey results. Data presented as *n* (%) or mean (s.d.).

with all required questions answered appropriately. A single response was excluded as a duplicate submission in error.

Table 2 describes the summary of results from the survey. The mean (s.d.) age of participants was 8.22 (5.34) years, with 60% males and 40% females. The most common presenting complaint was runny nose or sore throat (57.1%), followed closely by fever (42.9%). Respiratory difficulties were reported in five (10.0%) patients, and gastrointestinal symptoms in four (8.00%). The majority of those completing the survey reported no barriers faced in relation to telehealth

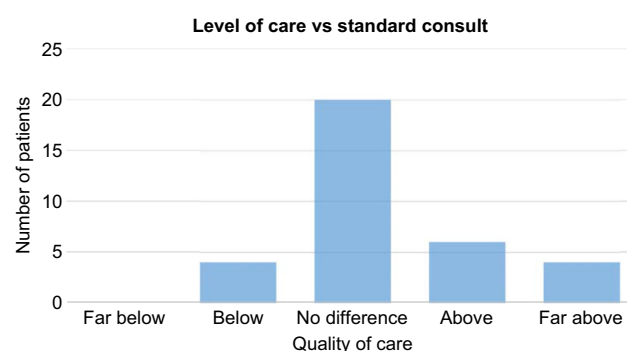


Fig. 1. Level of care versus standard consult. Figure shows the level of care reported by participants who underwent telehealth consults when compared with a standard in-person consultation.

consultations (70.6%). Of those who did report concerns, the inability of the medical professional to perform physical examination was the most commonly indicated (20.6%).

When asked to rate the level of care provided compared with a standard in-person GP consultation (Fig. 1), the majority of responses reported no difference in the level of care provided (58.8%). A total of 17.6% of participants considered a telehealth consultation to be superior in quality to an in-person consult, with an additional 11.8% describing the quality to be far above that of a traditional consult. Only 11.8% found it to be below standard.

The outcome of the initial consultation was also examined (Fig. 2), and participants were asked to describe a timeframe of resolution of symptoms, or state whether an additional telehealth or face-to-face consultation was necessary. A total of 42.9% reported resolution of symptoms within just 3 days post-virtual consultation, and 25.7% reported resolution within 1 week. Four patients (11.4%) required a further telehealth appointment for the same complaint, and five (14.3%) required a standard in-person consultation with the GP after the initial telehealth consult. It was only necessary to present to the ED for one patient (2.86%).

Discussion

Through this pilot study, we aimed to review the public's perception on telehealth in general practice for paediatric patients. Based on the responses, we have importantly shown that the vast majority of patients were satisfied with the quality of care provided by GPs through telehealth means, with >88% of the participants rating the level of care provided by telehealth as equal to or greater than a standard consult. Virtual consultations have been effective in paediatric services, including for burns clinics (Smith *et al.* 2004), parental counselling (Owen 2020) and psychiatric services (Myers *et al.* 2008), and conveyed high levels of patient and parent satisfaction compared with in-person visits. It has been hypothesised that

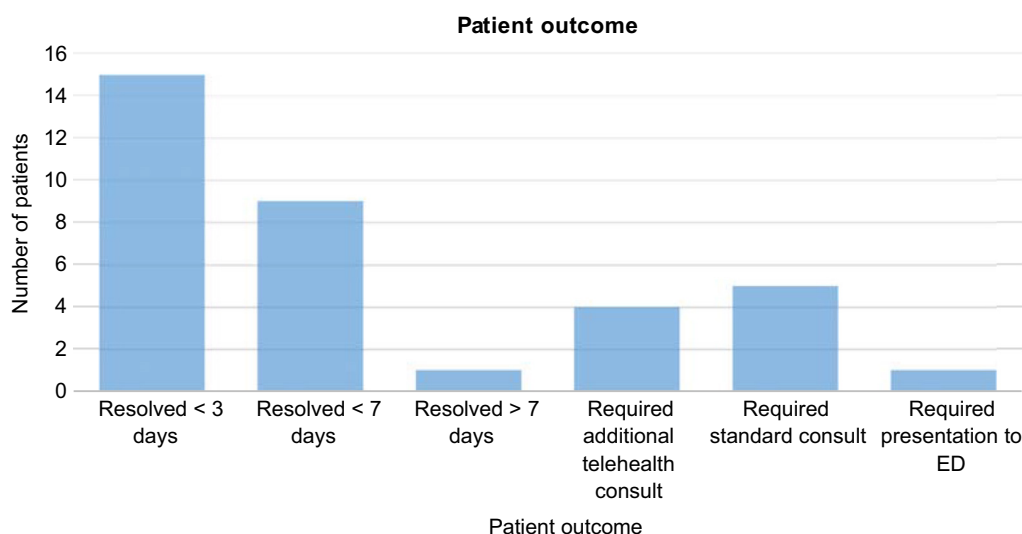


Fig. 2. Patient outcome. Figure shows the patient outcomes post a single telehealth consultation.

high satisfaction rates among telehealth users can be contributed to a number of factors, such as reduced waiting times, increased access to medical practitioners due to the absence of travel, ease of use and low costs (Kruse *et al.* 2017).

Importantly, these high levels of parent satisfaction correlate well with patient outcomes. Our results show that 71.5% ($n = 25$) of telehealth consultations achieved resolution of symptoms within a short timeframe without the need for any further follow up or escalation. Only five patients suggested that a virtual consultation was inadequate to manage the presenting complaint, and a face-to-face visit was required in addition to the initial telehealth session. This is an encouraging finding moving forward, as patients and GPs alike can be reassured that the telehealth modality may provide an effective and safe alternative to standard consultations without compromising on patient outcome and resulting in overwhelming representation.

Only minimal barriers were reported, specifically relating to the inability of the medical practitioner to perform examinations. Simple patient-led examination techniques have been suggested (Benziger *et al.* 2021), as well as the use of 'telemedicine peripherals', which include devices, such as electronic stethoscopes and video-otoscopes, to enhance the clinical examination component of virtual consults (Weinstein *et al.* 2018). Despite these technological advances, this remains an important limitation of telephone or video conference style consultations, as many conventional, yet critical, clinical examinations are not yet amenable to telehealth.

The main limitation to this study was the limited sample size. The response rate was lower than we had expected at <5%, resulting in only 68 total responses. Further to this, a large proportion of the responses were incomplete, again limiting our overall data. Potential recall bias also exists, as participants were asked to comment on their experiences

that may have occurred some months prior. Although the population size was low, the spread over the Perth metropolitan region was encouraging, with participants included from 18 different postcodes.

In light of the low response rate, it is plausible that the survey distribution technique via SMS message was not optimal. In future survey-based studies, other distribution modalities should be considered to increase the overall response rate. These may include physical hardcopy survey forms, email surveys or telephone. A large proportion of the commenced surveys were incomplete, suggesting an issue with the length of the survey, or the content or structure of the questions. We aimed to gain a wide insight into different facets of public impressions and outcomes of telehealth, and our succinct survey structure reflects this. There may be value in rewording or restructuring the question set to encourage full completion, and this will need to be addressed and trialled prior to subsequent studies.

Given the pilot nature of this study, there exists capacity for expansion and improvement for future work in this area. Given the low sample size, caution must be used when interpreting the results; however, the study provides a broad insight into patient perspective. This study can be expanded in the future to include a greater number of medical centres over a larger area, including interstate, where the community restrictions were enforced for longer periods of time. These preliminary results offer opportunities to further clarify and investigate the implications of telehealth consults in this population. Further questions and analysis into reasoning behind the high rate of satisfaction, discussion into overcoming identified barriers or clarification regarding representation triggers would be of great benefit when considering implementation of this service.

Conclusion

We have shown promising insights into the positive public response to the introduction of telehealth consultations within the paediatric population in general practice; however, limitations in response were faced. Within the scope of this feasibility study, telehealth consultations may be a viable option for the provision of medical services in the paediatric population, with good patient satisfaction rates, as well as patient outcomes. Further, more comprehensive studies are required prior to drawing conclusions on the use of telehealth in GP paediatric services; however, we have shown there may be scope to broaden the current use of telehealth in the paediatric population beyond the pre-determined time period, as defined by the Australian Government. There exists potential benefit in implementing the temporary MBS item numbers relating to telehealth on a more permanent or long-term basis.

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Data availability. The data that support this study will be shared upon reasonable request to the corresponding author.

Conflicts of interest. The authors declare that they have no conflicts of interest.

Declaration of funding. This research did not receive any specific funding.

Acknowledgements. We thank Dr Jagadish Krishnan, Dr Kiran Puttapa and Dr Paddy Ramanathan for inclusion of their medical centres in this study and forming of the participant pool. We also acknowledge the work of Devi from Codd Technologies, who provided the technological support with survey delivery and participant identification through the Best Practice system.

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Appendix I. List of medical centres involved in this study

Amherst Medical Centre

Beeliar Medical Centre

Beeliar Family Practice

High Wycombe General Practice

Banksia Grove Family Practice

Lakes Medical Centre

Heights Medical Centre

Willagee Medical Centre

Southern River Family Practice

Woodlake Village Medical Centre

Okley Medical Centre

Wembley Downs Family Practice
