

Primary healthcare clinicians' positive perceptions of the implementation of telehealth during the COVID-19 pandemic using normalisation process theory

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Abstract. The objective of the study was to measure implementation of telehealth for client consultations from Allied Health and Community Health clinicians' perspectives during the COVID-19 pandemic. Purposeful sampling was used to invite allied and community health clinicians to complete the survey. An online survey design, underpinned by normalisation process theory, utilising the NoMAD tool, which consists of 19 implementation assessment items. Descriptive statistics are reported. A 66% ($n = 24$) response rate was obtained. Fifty-two percent indicated they were using telehealth for the first time. Despite the rapid implementation of telehealth for client consultations due to the pandemic crisis, participants reported positive perceptions of the use of telehealth when measured using the NoMAD. Fifty-eight percent ($n = 14$) of respondents agreed or strongly agreed that telehealth will become a normal part of their work. Despite unplanned and under-resourced implementation of telehealth, Allied Health and Community Health clinicians reported very positive perceptions. However, further education and training to ensure 'normalisation' of this model may be required.

Keywords: primary health, research, rural, telehealth.

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Introduction

In March 2020, the Australian Federal Government and all State Governments introduced widespread social distancing measures in response to the COVID-19 pandemic. Health services across the state of Victoria introduced measures to protect staff and their clients from exposure to people who were potentially infected. Telehealth, video conferencing for health consultations, became the preferred method for health consultations for all clinical disciplines to replace face-to-face consultations.

Telehealth has been used for decades in Australia, though usage has been greater in remote and some rural areas (Newton *et al.* 2012). The COVID-19 pandemic necessitated rapid implementation of telehealth and other forms of tele-conferencing for first time users of the technology. In early March 2020, new telehealth items were added to the Medicare Benefits Schedule for primary care, and their use quickly escalated (Duckett 2020), with over 4 million telehealth consultations by mid-April (Australian Healthcare Week Digital 2020).

Although telehealth is a proven viable model for health care, and there is evidence of client satisfaction with telehealth (Kruse *et al.* 2017), little is known about clinicians' experiences. Negative clinician attitudes toward telehealth have been identified as a key barrier to overall telehealth acceptance and implementation (McClellan *et al.* 2020). Prior to the COVID-19 pandemic telehealth was viewed as a suboptimal method of health

service delivery by many clinicians (Digital Health CRC 2020). A previous study suggests that additional training or knowledge could potentially address clinician apprehension (McClellan *et al.* 2020).

Implementation of any health care intervention is complex, due to the hierarchical nature of health services. Accessing clear, contextualised information about positive and negative experiences of clinicians is a key element in implementing change. Normalisation process theory (NPT) was used as a conceptual basis for the study (Finch *et al.* 2015). The major constructs of implementation theory are: coherence, which considers how individuals attribute meaning to an intervention to make sense of its possibilities and their involvement in the intervention; and cognitive participation, which is defined as individuals legitimising and enrolling themselves and others into the intervention (May 2013). The third construct, collective action, refers to individuals' ability to mobilise skills and resources to enact an intervention and frames how individuals realise and perform the intervention in practice. The reflexive monitoring construct is defined as the way in which one frames, collects and utilises information about the effects of the intervention (May 2013). A validated survey tool to measure these constructs, plus normalisation (NoMAD) has been developed containing 19 implementation assessment items that reflect NPT (Finch *et al.* 2015). The NoMAD is reported to have good face validity, construct validity and internal consistency and

is a highly reliable scale ($\alpha = 0.89$) (Finch *et al.* 2018). NPT has been used in a range of settings where complex health care interventions are implemented and describes respondents' views about how an intervention impacts on their work and identifies areas which require further work to progress implementation of the intervention. The present study aimed to measure implementation of telehealth for client consultations from the perspective of Primary Healthcare clinicians in three small rural health services.

Methods

Setting

The research was undertaken at three small rural health services in Northern Victoria. The health services are located ~40 km from each other and were amalgamated in 2019, sharing a Chief Executive Officer and Medical Director, but having separate Directors of Nursing. Two of the health services are of similar size and offer similar services, such as Urgent Care, Acute care, Aged care, Allied Health, Community Health, Medical, Dental, Surgical and Radiology. One health service is smaller with limited part time Allied Health services and no Radiology, Dental or Surgical services. Community Health, Urgent Care, Acute care, Aged care and Medical services are on par with the other health services for population ratios. All of the health services have a long-standing research collaboration with the University of Melbourne.

Ethics

The research project was approved by the University of Melbourne Human Research Ethics Advisory Committee, project number 2056739.1

Recruitment

Purposive sampling was used. Allied Health and Community Health clinicians at the services were sent an email invitation in April 2020 by their Chief Executive Officer, which included a plain language statement describing the study and a link to an electronic survey. The voluntary nature of the study was made explicit.

Survey tool

An electronic survey asked respondents what their role was at the service, the duration of employment and previous experience using telehealth. Respondents were provided with nineteen statements based on the NoMAD (Finch *et al.* 2015), regarding their understanding of the purpose of telehealth, their attitudes to using telehealth, integration into usual work practices, confidence, training and support in using telehealth, the effects of using telehealth and familiarity with the technology. A five-point Likert response was used ranging from 'strongly agree', 'agree', 'neither agree or disagree', 'disagree' and 'strongly disagree'. A final open-ended response category was provided for respondents to comment on their experience of using telehealth. As indicated earlier the NoMAD has good internal consistency with a Cronbach α coefficient of 0.89 (Finch *et al.* 2018). In our study, the Cronbach α coefficient was 0.88

Analysis

Electronic responses were exported in excel format and responses coded numerically. All data was cleaned in Excel and

transferred to SPSS V24 (IBM Corp. 2016) for further analysis. Descriptive statistics are used for demographic data and NoMAD responses are reported as frequencies. Due to the small sample size, no further analysis is reported. Examples of positive and negative open-ended responses are presented verbatim.

Results

Roles were coded as Allied Health or Community Health. Allied Health, included those who described their roles as dietician, physiotherapist, health promotion, allied health or occupational therapists and Community Health included respondents who described their role as primary health care nurse, chronic disease educator, mental health clinician, social worker, palliative care, case manager.

There were 24 respondents from a potential 36 clinicians employed in Allied or Community Health across the three health service sites, giving a 66% response rate. Eleven (46%) respondents identified as Allied Health clinicians and 13 (54%) as clinicians working in Community Health.

Years of service at the health organisation ranged from 0 to 26 years (zero indicated less than 1 year of employment). The mean length of time at the service was 7 years. More than half (54%) had been employed for 5 years or less, and 46% more than 6 years, with two respondents having worked at the health service for more than 20 years.

When asked about previous use of telehealth to conduct consultations, more than half ($n = 10$, 52%) reported that they had only recently started using telehealth as a result of COVID-19. Thirty-two percent ($n = 6$) had used telehealth before COVID-19 and a further 16 percent ($n = 3$) had used telehealth at a previous organisation. Five respondents did not report their previous use of telehealth. Levels of agreement to the NoMAD statements are shown in Table 1.

Overall, there was a high level of agreement with positive statements about telehealth. The negative statement, 'Telehealth disrupts working relationships' had a low level of agreement with 54% ($n = 11$) disagreeing or strongly disagreeing.

The statements that 'telehealth feels like a very familiar part of my work' and 'I feel telehealth is currently a normal part of my work' showed a combined response of strongly disagree and disagree was 41.7% ($n = 10$). However, 58.3% ($n = 14$) agreed or strongly agreed that they feel telehealth will become a normal part of their work. Slightly more, 79% ($n = 19$), agreed or strongly agreed that telehealth was worthwhile and 100% agreed or strongly agreed that feedback about telehealth could be used to improve it in the future.

Open-ended responses

Staff who participated in the study by completing and submitting an electronic survey were also offered the opportunity to contribute comments about the implementation and utilisation of telehealth. There were 13 comments. Positive comments related to the time savings for clients, such as:

Telehealth for a small rural service is fantastic. The savings in cost and time for the patients and organisation are worthwhile. Frail people do not have to travel to see a specialist and you can still get the face to face interaction with the client, family and nursing staff.

Table 1. NoMAD statements and related constructs and clinicians' level of agreementData are presented as number and percentage, *n* (%)

NoMAD statement	Implementation construct	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Total responses
I can see how telehealth differs from the usual ways of working ^A	Coherence	8 (34)	13 (54)	1 (4)	0	0	22 (92)
Staff have a shared understanding of the purpose of telehealth	Coherence	3 (13)	14 (58)	6 (25)	1 (4)	0	24 (100)
I can see the potential value of telehealth for my work	Coherence	12 (50)	9 (38)	2 (8)	1 (4)	0	24 (100)
I believe that participating in telehealth is a legitimate part of my role	Cognitive participation	10 (42)	11 (46)	3 (12)	0	0	24 (100)
I'm open to working with colleagues in new ways to use telehealth	Cognitive participation	13 (54)	10 (48)	1 (4)	0	0	24 (100)
I will continue to support telehealth	Cognitive participation	10 (42)	13 (54)	1 (4)	0	0	24 (100)
I can easily integrate telehealth into my existing work	Collective action	6 (25)	11 (46)	5 (21)	2 (8)	0	24 (100)
Telehealth disrupts working relationships	Collective action	0	3 (12)	8 (33)	11 (46)	2 (8)	24 (100)
I have confidence in other people's ability to use telehealth	Collective action	0	8 (33)	11 (46)	4 (17)	3 (12)	24 (100)
Sufficient training is provided to enable staff to implement telehealth	Collective action	2 (8)	4 (17)	15 (62)	2 (8)	1 (4)	24 (100)
Sufficient resources are available to support telehealth	Collective action	1 (4)	8 (33)	11 (46)	3 (12)	3 (12)	24 (100)
Management adequately supports telehealth	Collective action	6 (25)	15 (63)	2 (8)	0	1 (4)	24 (100)
Staff agree that telehealth is worthwhile	Reflexive monitoring	2 (8)	17 (71)	5 (21)	0	0	24 (100)
I value the effects that telehealth has on my work	Reflexive monitoring	6 (25)	11 (46)	7 (29)	0	0	24 (100)
Feedback about telehealth can be used to improve it in the future	Reflexive monitoring	11 (46)	13 (54)	0	0	0	24 (100)
I can modify how I work with telehealth	Reflexive monitoring	6 (25)	12 (50)	6 (25)	0	0	24 (100)
Using telehealth feels like a very familiar part of my work	Normalisation	0	6 (25)	8 (33)	7 (29)	3 (12)	24 (100)
I feel telehealth is currently a normal part of my work	Normalisation	2 (8)	5 (21)	7 (29)	7 (29)	3 (12)	24 (100)
I feel that telehealth will become a normal part of my work	Normalisation	3 (12)	11 (46)	7 (29)	3 (12)	0	24 (100)

^AMissing, *n* = 2.

Negative comments are related to the rapid implementation, and included:

I think it has been rushed at this stage and we still have a lot to go to deliver in an ideal manner, e.g. signage for doors, correct introduction and awareness of video to client, and education material for clients.

Poor education ...

Although encouraged to use telehealth, I don't believe the education on its use has been adequate, 'here this is a sheet to follow and one to give your clients' without team discussion on implementation nor enough planning on how to share webcams etc.

There were also comments related to the quality of the IT equipment, such as: '... lack of equipment... Poor network and phone links'.

Discussion

The overwhelming positive responses from respondents is surprising given the rapid implementation of telehealth, combined with the added responsibilities of infection control precautions that staff were required to implement concurrently. May's (2013) implementation theory provides a framework for a more thorough understanding of what worked and how it worked. Implementation theory and frameworks are increasingly being used in contextual analysis and research designs in order to have a greater understanding of how to implement health interventions and policy. The premise of implementation theory is that successful implementation and embedding of new health care practices relies on coordinated, collective behaviour of individuals working within the constraints of health care settings (Finch *et al.* 2018). There are a multitude of implementation frameworks available. The authors were familiar and experienced in using Normalisation Process Theory (NPT), derived from May's earlier implementation theory

framework and find it beneficial in highlighting contextual problems in health service settings. NPT is a theoretical framework that facilitates understanding of experiences of health care work at the individual, as well as the organisational level. Greenhalgh and colleagues (2017) have developed an implementation framework, the non-adoption, abandonment, scale-up, spread, and sustainability (NASSS) framework which is specific to technological implementation in health settings. However, the NASSS framework is more suited to carefully planned or scaled up technological interventions.

In regards to May's (2013) construct of coherence (the first three statements in the survey; Table 1) participants reported very high levels of agreement to these statements, suggesting that telehealth as a model of care and their involvement made sense to them. Rapid implementation of a telehealth model of care in response to the COVID-19 pandemic appears to have assisted implementation, which may not have been so acceptable in normal circumstances. Greenhalgh *et al.* (2020) propose the challenges of scaling up a telehealth model of care at speed is likely to be difficult and resource intensive. However, the findings of this study contest Greenhalgh *et al.*'s (2020) view. It is possible that, in this pandemic setting, clinicians appreciated the protection that telehealth afforded them in avoiding face-to-face contact, and the public health direction for social distancing.

Cognitive participation may account for participants' high levels of agreement with NoMAD statements four, five and six. There are opinions and evidence that some roles can more easily utilise telehealth to its fullest extent (Digital Health CRC 2020; Luo *et al.* 2020) Clearly, primary health clinicians perceive that telehealth is a legitimate model of care, as there were no participants who disagreed or strongly disagreed with these statements.

Predominantly, for the constructs of collective action (survey items nine through to twelve), participants in this study were undecided. The statement, 'Telehealth disrupts working relationships', was the only negatively worded statement and elicited high levels of disagreement. Although participants reported high levels of agreement that there was support from management in implementing telehealth, there were far lower levels of agreement in terms of sufficient resources and training provided to implement telehealth. There were also lower levels of agreement in participants' confidence in other people's ability to use telehealth. Primary care clinicians' responses on this item may have been associated with expressing their confidence in some of their clients' ability to adopt and use telehealth, rather than their peers. Certainly, there is evidence that older clients have a preference for face-to-face consultations (Bradford *et al.* 2015; Cook *et al.* 2016), and that older people in general fear making mistakes when adopting new technologies (Knowles and Hanson 2018).

The high level of neutral responses to statements about being provided with sufficient resources and training may reflect the rapid implementation that was enforced because of the COVID-19 crisis. The lack of agreement is also supported by the open-ended responses, which shows that clinicians would appreciate more education in utilising telehealth, with gaps in preparation to ensure confidentiality, protocols on usage, and appropriate educational material for clients. The general telehealth literature offers cautionary advice on spread and scale-up of innovations

such as telehealth, that it is not merely installing or using new technology. It requires processes to support a major change into a complex health system (Greenhalgh and Papoutsis 2019). However, the rapid implementation of telehealth necessitated by the pandemic, precluded careful planning and preparation.

Surprisingly, there was no disagreement in relation to reflexive monitoring survey items (Table 1). Primary care clinicians expressed positive perceptions that telehealth was worthwhile, they valued it, feedback could be used to improve it, and there is an ability to modify it. This finding is unusual since almost half the clinicians in this study report never having used telehealth before. While telehealth has been available for more than 20 years (Australian Healthcare Week Digital 2020), the initial uptake as a model of care has been slow in many rural and regional areas of Australia (Newton *et al.* 2012). Australia wide, clinicians are reporting the benefits of telehealth for people by negating the need for travel (Digital Health CRC 2020), which clinicians in this study also reported. A recent meta-analysis of telehealth versus face-to-face consultations for mental health consultations found that telehealth was equally effective in client outcomes (Luo *et al.* 2020). Telehealth also improved access by ameliorating barriers for clients, including lengthy wait times and geographical limitations (Luo *et al.* 2020). It is possible that the new adopters of telehealth in this study realised the value and benefits for clients.

Unsurprisingly, there were low levels of agreement with two of the normalisation statements in the survey: how familiar telehealth feels; and whether telehealth is currently a normal part of their work. Participants were surveyed a mere six to eight weeks after widespread implementation of this model of client consultation. However, the statement 'I feel telehealth will become a normal part of my work' elicited higher levels of agreement with more than half (58%) strongly agreeing or agreeing. Thus, suggesting that participants had a sense of embedding this care model post pandemic. Greenhalgh *et al.* (2020) express caution that telehealth should be a supplement, not a replacement for service delivery. This is also supported by other authors, who argue that telehealth should not be used exclusively, but as a supplement to face-to-face consultations (Luo *et al.* 2020). Many clinicians believe that there is still a need for both face-to-face and telehealth models, with both likely to merge into a hybrid model post COVID-19 (Australian Healthcare Week Digital 2020). While our study does not suggest that clinicians will use telehealth exclusively, clinicians around Australia have voiced that telehealth is now perceived as a good business model, yet express fears of the tension between person centred care and financial gain (Australian Healthcare Week Digital 2020). Cost effectiveness may drive telehealth utilisation given that telehealth costs appear to be lower, while still delivering equal or better care (Moore *et al.* 2020).

Implementation of any intervention needs to consider all the complex factors and many moving parts (Finch *et al.* 2015). The implementation and utilisation of telehealth by Allied and Community Health clinicians' post COVID-19 requires further consideration to ensure embeddedness. Indeed, Greenhalgh *et al.* (2020) recommend a research call to ensure we maximise the lessons learnt. Duckett (2020) recently called for telehealth to be integrated as 'business as usual' post COVID-19 and cautions that gains in the extended use of telehealth to multiple

disciplines should not be lost post pandemic. As health services juggle fiscal restraints post-pandemic and with the government's extension of telehealth consultation, further research into the long-term adoption and sustainability is warranted. Certainly, client demand given the value in cost savings of travel, in rural and regional areas, could be a key driver to spread and sustainability of telehealth.

Limitations

Gender and age were not asked in the survey as the nature of the study sites may have made respondents highly identifiable and potentially effect response rates. Similarly, respondents were not asked which service site they were employed at due to the likelihood of identification. This small study was not intended to be generalisable, however other small rural health services may benefit from the overall findings.

Implications

Respondents in this study identified the need for further education and training in the use of telehealth for client consultations. These factors are crucial to implementation of any new health intervention. Despite the rapid uptake of telehealth, addressing this gap is essential for staff support if telehealth consultations become standard work practice post pandemic. The health services in this study have now initiated training and education for telehealth in their broader education plan.

Conclusion

Primary Healthcare clinicians' in this study viewed telehealth favourably. Post COVID-19, telehealth may become the new norm in everyday practice for Allied health and Community Health clinicians. Certainly, as this study found, clinicians reported an expectation in its ongoing use. In moving forward with telehealth there is a need for the health service to adopt clear protocols, education and training for Allied Health and Community Health clinicians to ensure normalisation of telehealth.

Conflicts of interest

The authors declare no conflicts of interest.

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