

A COVID-19-era rapid review: using Zoom and Skype for qualitative group research

Joshua Boland^a, Susan Banks^{a,b,c}, Robin Krabbe^b, Suanne Lawrence^a,
Therese Murray^b, Terese Henning^a and Miriam Vandenberg^b

^a Preventing Elder Abuse Tasmania, University of Tasmania, Hobart, Australia

^b The Anticipatory Care Action Learning Project, University of Tasmania, Hobart, Australia

^c Corresponding author: susan.banks@utas.edu.au

Article history

Publication date: July 2021

Citation: Boland J, Banks S, Krabbe R, Lawrence S, Murray T, Henning T, Vandenberg M. A COVID-19-era rapid review: using Zoom and Skype for qualitative group research. *Public Health Res Pract.* 2021; Online early publication. <https://doi.org/10.17061/phrp31232112>

Key points

- Videoconferencing has many advantages for action research and qualitative group research, including cost-effectiveness and ability to reach disparate populations, which are particularly relevant in the context of COVID-19
- Challenges presented by technical issues, as well as concerns related to planning, privacy and rapport, must be addressed, with equity the essential underpinning
- Processes such as prior communication with participants can help to address videoconferencing challenges

Abstract

Background and objectives: How do qualitative researchers collect meaningful and representative data, and engage in action research, when constrained by cost, distance or unforeseen events? In our work investigating health and older-person services in Tasmania, we had to confront this question in the context of the coronavirus disease 2019 (COVID-19) pandemic, redesigning our methodological approach to support participant engagement in qualitative group research to meet unpredictable pandemic isolation and ethics requirements.

Study type: Rapid review.

Methods: We searched three academic databases, limited to the past 5 years, cross-referencing to identify strategies to support online qualitative group research and assess the suitability of videoconferencing (specifically through Zoom and Skype) as a tool for participant engagement in qualitative group research.

Results: After removing duplicates found across the three databases, 866 articles were screened by title and abstract. After manually searching citations deemed to add to our understanding of online qualitative methods, 66 articles were included in this rapid review. The review found that the strengths of videoconferencing include its cost effectiveness and ability to reach disparate populations, but that several concerns must be addressed to capture its benefits: rapport, technical issues, planning, privacy and equity.

Conclusion: In response to the methodological challenge of engaging with participants without using routine face-to-face qualitative methods, our rapid review identified several advantages of using videoconferencing applications, such as Zoom or Skype, to facilitate research. However, to enhance data quality and the research experience for participants, consideration must be given to technical issues, planning, privacy and rapport. Underpinning these elements is consideration of equity of access.

Introduction

The coronavirus disease 2019 (COVID-19) pandemic was an unforeseen external threat that created a set of extraordinary barriers to qualitative research. In Australia, and in many other countries worldwide, the declaration of the pandemic drove 'lockdowns' that restricted face-to-face contact as part of efforts to control the spread of infection. However, the need remained for research that explored the observations and experiences of individuals, requiring researchers to trial new ways to reach participants.

Qualitative researchers have shown increasing interest in videoconferencing as an alternative to face-to-face data collection methods^{1,2}, particularly as the range of programs and hardware has grown. Videoconferencing is an internet-based audio and visual technology that enables people to "communicate in real time with geographically dispersed individuals via computer, tablet, or mobile device".² The value of videoconferencing was especially evident in the face of COVID-19 restrictions when a socially distant method for data collection became necessary.³ Zoom (San Jose, CA: Zoom Video Communications Inc) and Skype (Redmond, WA: Microsoft Corporation) are two global videoconferencing platforms that have been used extensively for research purposes and both platforms are commonly used in interpersonal communication. The video element of videoconferencing interactions enables researchers to see and respond to non-verbal cues, an important aspect of qualitative data gathering. Further, we were already using Zoom in some of our work with geographically distant project participants and, as the pandemic proceeded, having a working knowledge of this platform became more commonplace.

We are researchers in two action research projects, which seek change by simultaneously doing research and taking action. The first, the Anticipatory Care Action Learning Project (ACP), aims to promote better health outcomes for Tasmanians living with chronic conditions. Working with organisations in four Tasmanian communities, the ACP is mapping the anticipatory care system that can reduce risk of and from chronic illness, and devising policy responses. Our second project, Preventing Elder Abuse Tasmania (PEAT), seeks to instigate an holistic response to elder abuse in the community. PEAT's present research focuses on mapping institutional responses to elder abuse with groups of practitioners. Both projects draw on a participatory action research methodology, engaging stakeholders through interviews, focus groups, workshops, surveying, audits and policy analysis, and involve participants from across regional, rural and remote parts of the state. This reach makes videoconferencing's capacity to span geographical distances particularly valuable.^{2,4-9}

Prior to the pandemic, the ACP had used videoconferencing for some meetings and reflection with local site teams (lead organisation representatives,

project support workers and advisory group members). The COVID-19 lockdown necessitated finding alternative data collection methods for this and the PEAT work that would preserve the richness and intimacy of traditional face-to-face methods and enable interactive group engagement in understanding and improving complex health and social problems. Ongoing COVID-19 restrictions required rapid understanding and adoption of videoconferencing for qualitative group research, a demand that is likely to have been experienced across a range of research areas. This paper reports on a rapid review to identify strategies to support online qualitative group research and assess the suitability of videoconferencing (specifically through Zoom and Skype) as a tool for such processes.

Methods

A rapid review was chosen over a traditional systematic review to streamline production of evidence in a limited timeframe.¹⁰ This decision was informed by the authors' combined experience of systematic and other literature reviewing.

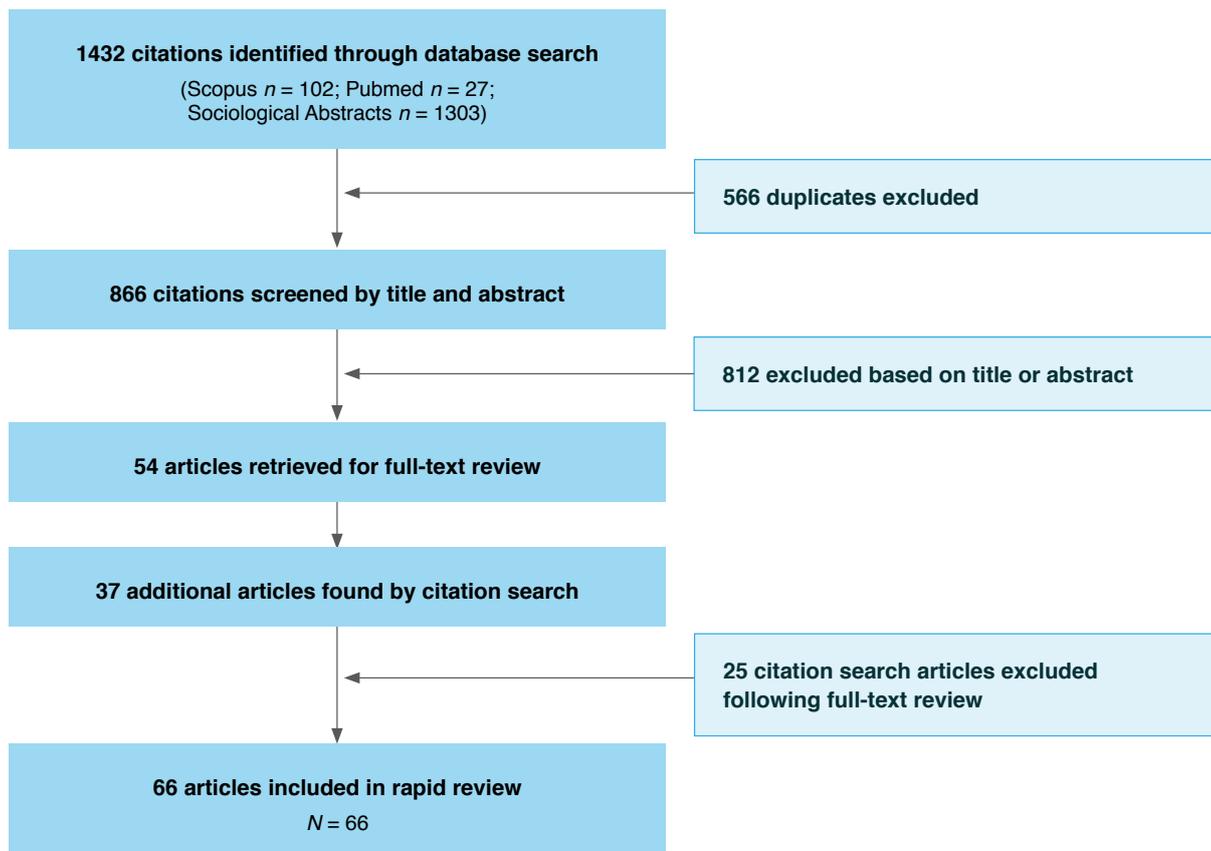
Search strategy

Because of the timeframe, and our interest in social sciences examples, two experienced reviewers (SB, SL) limited the search to three scholarly databases: Pubmed, Scopus and Sociological Abstracts, for research published in English between June 2015 and June 2020. Key words included combinations of the terms 'online research methods', 'video interviewing', 'video conferencing', 'Skype', 'Zoom', 'online qualitative research/focus groups/ interviews/workshops', 'telemedicine' and 'telehealth'. The intention was to find as many papers discussing qualitative work using videoconferencing as possible, although our interest is in group work. The search focused on Skype and Zoom because both software packages are available through our university and Zoom is commonly used in the organisations from which we were recruiting participants. Some pre-2015 literature was included as a result of manually searching the reference lists of papers returned in our searches. We excluded conference abstracts, book chapters or reviews, editorials and grey literature.

Study selection

Figure 1 is a flowchart of article inclusion, exclusion and reviewing. After removing duplicates, three reviewers (SL, SB and JB) screened the remaining 866 articles by title and abstract, discussing all exclusions. Article reference lists were screened for additional relevant articles. A total of 66 articles were included in the rapid review. Supplementary Table 1 lists additional articles included in the review (available from: <https://figshare.com/s/1d72c7b72daa0ee05b9d>).

Figure 1. Flowchart of literature search and assessment process



The 66 included articles were read by three authors (SL, SB, JB) and analysed for methods, enablers and barriers to online qualitative research. Initial results were tabulated and all authors then reviewed the table. A second round of reviewing and tabulation was then conducted, and all authors contributed to writing the paper. The authors of this paper have expertise in law, sociology, health and public health; this enabled the inclusion of articles from multiple disciplines, and for a cross-disciplinary reading and validation of the articles.

Results

Use of videoconferencing tools in qualitative research

Early use of communication technology for qualitative research focused on using email, electronically administered questionnaires and text-based instant messaging¹¹⁻¹⁷, which then expanded to videoconferencing software, such as Skype and Zoom.^{2,18,19} Skype and VoIP (voice over internet protocol) have been used, for example, in qualitative interviewing^{1,2,4-7,16,20-26}, research into sustainable tourism¹⁹, PhD research⁴ and longitudinal ethnographical research with young people and their families.²⁷ Data collection via videoconferencing has been used as a diagnostic tool in healthcare^{21,28,29}, and as an avenue to assess the lives and work of healthcare professionals.^{28,30} Some commentators

provide purely methodological observations about the modality^{22,26}, with Krouwel et al.²¹ arguing that, of all available technologies, videoconferencing most closely replicates face-to-face interaction.

Despite a growing acceptance of videoconferencing technologies, significant apprehension remains about its use as a data-collection tool, especially when seeking information on private matters⁶ including medical histories.^{21,31} Among proponents, support can be surprisingly equivocal because of a myriad practical, theoretical and project-specific issues.^{1,4,20,22,24,27} Prominent concerns that emerged as organisations sought to function remotely during COVID-19 restrictions³²⁻³⁴, include data security and the phenomenon of 'Zoom bombing' – the infiltration of a Zoom session by an uninvited person.

Our review found that the strengths of videoconferencing are its cost effectiveness²¹ and ability to reach disparate populations.¹ COVID-19 restrictions aside, using videoconferencing reduces travel costs (time/car), meeting costs (including venue hire), and enables recording and transcription. These benefits allow researchers to bring together 'time poor' and geographically dispersed research participants.¹ Nonetheless, five recurring areas of concern must be addressed to capture its benefits: rapport, technical issues, planning, privacy and equity. Table 1 sets out these key issues, and possible solutions identified from the review.

Table 1. Potential issues and solutions from the literature

Potential Issues	Suggestions/solutions	Examples	References
Rapport	Simulate face-to-face interaction	Use props to ease the interaction and mirror face-to-face experience (e.g., food and drink)	25, 26
		Screen sharing	2
		Pre-existing relationships	8, Supp. 7, Supp. 23
	Increase comfort	Vary eye-to-eye interactions; a constant focus is unnatural	26
		Participants connect from familiar environment	Supp. 23
Greetings	Interviewer/facilitator in a natural environment (e.g., messy office vs. boardroom)	26	
Technical issues	Disruptions	Make clear to participant/s when the meeting is starting with greetings, like “how are you”	28
		Support familiarity with videoconferencing system; provide emotional and technical support (including on site); training for participants; telephone backup	6, 8, 19, 30, 35-38, Supp. 14,
	Drop outs, video/audio lack of quality	Use laptop/PC rather than mobile devices or tablets	6
	Sound quality	Use headsets and mute microphones when not speaking	7
	All participants need to be equally prepared	Provide written/video instructions or checklist outlining common technical difficulties/troubleshooting Allow time for preparation and practice, or rehearsals	2, Supp. 17 2, 21, 35, 36, 39
Planning	Time/scheduling	Circulate an agenda	29
		Coordinate scheduling with participants (also has implications for privacy)	19
	Establish ‘house rules’	Follow ethical guidelines for research, software and internet providers’ acceptable use policies and relevant privacy laws (e.g., Information and consent material includes agreement that participants will not make recordings, take photographs or reproduce aspects of the session, or share any information from the session.)	14, 40, 41
	Role of facilitator	Improve data quality by reducing/controlling cross-talk Ensure turn-taking is offered	6 28, 42
Privacy	Informed consent and recording	Use appropriate consent methods (form, script) prior to or at start of session (specifying the platform and its characteristics (including recording)); confirm consent verbally (record verbal consent as a separate file); participants notified when recording commences and can opt out	2, 3, 4, 5
	Risk of being overheard or interrupted	Support participants to choose a private setting	6, 39, Supp. 22
		Risk of privacy breaches can be reduced by appropriate scheduling	19
	Awareness of risks of privacy loss	Alert participants in information and consent processes	Supp. 15
	Ensure security	Inform participants of risks to privacy of using Skype over mobile devices	Supp. 14
Skype is encrypted		Supp. 21	
Create project-specific Skype or Zoom accounts; at project completion, remove participants’ data and information before closing the account		5	
Equity	Lack of equipment or internet access, etc.	Provide participants with technology/internet	10, 43, 44
		Direct, frequent, and long-term interactions with one another via Skype can reduce power inequity	45
	Power dynamics	Interviewer/facilitator in a natural environment (e.g., messy office vs. boardroom)	26

Supp. = Supplementary reference, see Supplementary Table 1 (available from: <https://figshare.com/s/1d72c7b72daa0ee05b9d>)

Findings on these areas of concern are further explored below.

Equity must underpin the use of videoconferencing as a qualitative tool

First and foremost, the resolution of issues relating to planning and technology, privacy and rapport needs to ensure equity. Equity includes knowledge, skills and confidence as well as physical access. Banbury et al.¹¹ addressed physical equity access by supplying equipment and an internet connection to participants. Cost savings^{2,3,5,9} from using videoconferencing may help fund such measures. Skype and Zoom are low-cost; for example, Zoom is currently free for sessions of up to 40 minutes with between 3 and 100 participants.

Both the PEAT and ACP projects involve services that work with disadvantaged people, an important target group when considering using videoconferencing.⁴⁶ As Neville et al.¹⁷ have shown, researchers need to be alert to the risks that some populations are hidden or more difficult to engage in research using videoconferencing platforms. Disadvantage can result from poor access to interactive technologies^{47,48}, a lack of up-to-date software and hardware, low literacy (including digital literacy; Tasmania has been ranked lowest nationally for internet access, affordability and digital literacy⁴³) or English-language skills^{1,22}, and low levels of social trust. One concern, expressed by Warschauer⁴⁴, is that the literature tends to recommend purely 'digital solutions' such as provision of computers, neglecting interventions that support social inclusion. There is also evidence that for members of economically, socially and digitally disadvantaged groups, privacy concerns are one of the major reasons for not using the internet generally;⁴⁵ this may translate to greater reluctance to engage in videoconferencing. These are all factors that need to be considered in planning for the inclusion of disadvantaged participants in qualitative research using videoconferencing.

Access and participation rely on planning and addressing technical matters

Planning involves ensuring participant proficiency with the technology and constructing the requisite pre-interview scaffolding to conduct participative processes successfully.³ Commentators stress the importance of planning, especially when attempting to control for participants' varying levels of technical literacy^{1,2,4,6,8,11,24}, and reducing technical difficulties. Tutas¹ suggests problems in using technologies can exclude some participants, which could affect study results. The moderator's proficiency in using the technology is vital, as is overcoming a range of technical issues.¹ The software must be user-friendly and reliable, and familiarising through piloting or practising with the technologies is recommended.^{1-3,7,8,24} Foremost among technical issues is the quality of internet connections for Skype and Zoom. Poor-quality connections may

compromise both the interaction and data quality.^{2,7,24,26,35-7} Despite these obstacles, Archibald et al.² found that technical difficulties did not significantly adversely affect researchers' and participants' satisfaction with the videoconferencing experience, and that the shared experience of resolving technical difficulties may actually build rapport between participants. Streamlining the management of videoconferencing sessions will increase interaction quality and improve recruitment³¹, and piloting or practising is recommended to familiarise research staff and study participants with the technologies^{1,2,7,8}, standardise interview procedures²², and build participant computer literacy.^{4,11,31,38}

Piloting can build the self-confidence of groups that lack the requisite skills to engage with modern technology^{11,39} and counter interviewee hesitation.^{2,22} Despite the literature showing some apprehension about older people's baseline competence with videoconferencing^{21,39}, researchers have found that interview quality is not correlated with age but with each individual's proficiency with the technology.²⁵ This is supported by the work of Neville et al.¹⁷ with other marginalised groups.

There are particular privacy challenges in videoconferencing

Guaranteeing participants' privacy and self-determination is crucial when selecting data collection methods. Superficially, the ethical issues surrounding videoconferencing are similar to those for traditional face-to-face methods. Nevertheless, beyond criteria such as an individual's ability to set clear boundaries or withdraw prematurely, there are privacy issues that are peculiar to videoconferencing. An example is the phenomenon of 'Zoom bombing'.³²⁻³⁴ Another concern is that venues used for interviewing or focus group participation might blur the lines between public, work and private spaces.^{3,7,Supp. 22} Zoom and other videoconferencing platforms allow qualitative researchers to access previously hidden (difficult to engage) or remote individuals and groups^{2-5,7-9,27}, and do so without the significant costs of travel for either party. This convenience may also accommodate participants' schedules.^{1,8,24} But using online methods may effectively invite the researcher into an individual's home, potentially resulting in the participant disclosing visual information (home circumstances or even security, for instance) that is normally hidden.⁶ Participants might choose to disengage completely because their privacy cannot be guaranteed, either during the session or because of the potential of their recorded responses being leaked outside the study agreement.²²

In some circumstances, videoconferencing can enhance participants' privacy, because they are not seen with the researcher and therefore their participation remains discreet⁷ (this does not apply in group videoconferences). Complications can arise when the environment is accessible to nonparticipants who may,

or are likely to, interrupt the session, potentially also contributing to discontinuity and disjointedness.^{4,6,8,24} Accordingly, interviews should be conducted in settings that minimise disruptions to reduce the incidence of self-censorship²⁷, and improve interview flow (for example, see Seitz's recommendations for work locations²²). Further, Teubner and Flath⁴¹ list several ways privacy can be enhanced, including through the use of avatars or blurred photos (rather than live images). These mechanisms may reduce trust, however, and do not mirror face-to-face experiences.⁴

Researchers need to build rapport with participants

A concern for many researchers is whether videoconferencing affects the dynamics of the researcher–subject relationship and, therefore, rapport. Rapport-building is commonly reliant on a researcher's ability to read a subject's emotions, including through facial expressions. For some, videoconferencing reduces the range of non-verbal data that can be observed. Such data can reveal essential qualitative characteristics.²²

Deakin and Wakefield⁴ and Sedgwick and Spiers²⁵ suggest that researchers should build rapport during recruiting, consent and scheduling processes, before the videoconference (e.g., through introductory face-to-face meetings before videoconferencing; thus reducing rather than eliminating face-to-face contact).⁹ Licoppe and Morel⁴² refer to the phenomenon of “talking heads” in maintaining that there is an implicit etiquette to all videocalls that promotes trust and rapport. It relies on people seeing one another, thus approximating “Goffman's ‘eye-to-eye huddle’ of co-present interaction”.⁴² This is supported by Kite and Phongsavan⁸, who argue that the visibility of non-verbal cues means videoconferencing can mirror face-to-face experiences.

According to Weller²⁷, videoconferencing has the potential to nurture “co-presence”; engaging from their own, or chosen, spaces can enhance participants' sense of security and comfort, which may enable increased openness and honesty in the interaction.²⁶ Adams-Hutcheson and Longhurst²⁶ found that fostering rapport or “rhythm” is based on a range of contingent factors unique to each participant. For example, an individual's technical capacity, comfort with the medium and computer literacy are directly connected to rapport. However, no set of sociological or individual characteristics precisely correlates with personal receptivity to videoconferencing. Rapport can only be assessed on a case-by-case basis.

Discussion

This rapid review was conducted to learn about using videoconferencing for qualitative group research; our findings are relevant for all qualitative research of this kind, specifically in group situations. It is essential in this context that we protect the wellbeing of our participants and ourselves. This concern spurred us to

assess the technical, practical and theoretical viability of using videoconferencing software such as Zoom and Skype to collect data from participants and to maintain engagement with research. The review highlighted five issues that must be addressed: planning, technical matters, privacy, rapport and equity.

The accepted strengths of videoconferencing are its cost-effectiveness and ability to provide access to disparate populations.^{1, 2,4,6,8,9,22,24} This presumes that potential participants have the necessary hardware, software and internet access; where this is not the case, some of the research savings generated by videoconferencing could be used to support access for participants.

Formulating simple, uniform scripts, with clear technical requirements, and context-specific ‘house rules’ could help researchers adapt to individual circumstances. In line with Licoppe and Morel's findings⁴², we propose that researchers prepare house rules to explain hardware and software requirements, how to deal with overloading or audio feedback, promote courtesy and ethical behaviour, and ensure equal participation in discussions. Ideally, such rules would be co-designed with participants, and cater for those with low literacy. In addition to providing written explanatory material and piloting, researchers could address some of the potential literacy and numeracy barriers and foster accessibility by recording video tutorials about using the technology, or by conducting one-to-one pre-sessions³ with participants.

Although our two projects engage largely with organisations, agencies and key stakeholders, some participants in the ACP group work may be living with chronic conditions. Our study participants generally have good access to the internet and are familiar with using online communication platforms. Nevertheless, we understand and heed the need for researchers to assess what steps are required to enable participants to use online platforms, taking into account: internet access; familiarity with the online systems; whether they would have assistance available, where necessary, to use online systems; or whether that might be affected by their living circumstances, for example, if they live with a carer – or abuser.

Although some authors counsel against using videoconferencing with certain populations, such as the elderly and people with low technical literacy, the reviewed literature shows that streamlining, transparency and accessibility can reduce deficits or problems. Further, there is increasing anecdotal evidence that older people are now adopting such technologies to maintain contact with family, and for consultations with health professionals, including GPs and specialists.^{11,39-40,46} The rapport implicit in such uses underlines that rapport can be supported by videoconferencing, as long as technical complications are minimised.^{8,26-7} The quality of internet connection and computer hardware is critical. This is a particular concern for our own research because it often includes rural and

regional settings, and there is low bandwidth available in many parts of Tasmania.^{47,48}

The maintenance of privacy and adherence to the highest ethical standards are non-negotiable. Commentators have expressed concerns about lack of privacy stemming from the software itself or the venues in which it is used.^{3,6,22,27} In addition to the problems of data security and privacy, in research involving elderly people, the chronically ill, and those who work with them, self-determination and agency remain matters of concern. Examples include the ethical considerations associated with individuals who require the support of a carer or organisation to participate. Inevitably, the need for such support reduces individuals' ability to participate voluntarily, to answer candidly and to act independently. Concern about coercion extends to the recording process. The risk of additional recordings being made that are not controlled by the researchers presents a serious challenge. What prevents a third party from recording interviews, without the researchers' knowledge when they are not physically present at sessions? This problem remains unresolved.

For pragmatic reasons, we limited this review to relatively recent papers, specific technologies, and the disciplines of immediate concern: we wanted to rapidly implement the lessons from our review into existing COVID-19-affected projects. A deeper and more systematic review across multiple disciplines may further inform practice, help to address outstanding concerns, and provide a basis for realising the benefits of videoconferencing in everyday qualitative research.

The PEAT and ACP researchers are trialling research methods based on this review. The outcomes of these trials will be the subject of a future paper.

Conclusion

The external threat from the COVID-19 pandemic has required that researchers review the strengths and limitations of videoconferencing to facilitate qualitative research. We reviewed the literature to assess the viability of videoconferencing for interactive group engagement in qualitative social sciences research in two current action research projects. This review suggests that videoconferencing is a viable alternative to face-to-face research. Its main strengths are cost-effectiveness and ability to reach disparate populations. Importantly, it appears that its usefulness can be increased if the interaction is carefully designed, planned, standardised and coordinated. We anticipate that ensuring the transparency of the process and piloting with participants will support participant and researcher rapport. We also recognise that potential problems with particular cohorts' ability to exercise self-determination and agency must be addressed to prevent exploitation.

Acknowledgements

The study authors received funding from grants from Preventing Elder Abuse Tasmania, which is funded by Department of Communities, Tasmania and the Anticipatory Care Action Learning Project, which is funded by Department of Health, Tasmania.

Peer review and provenance

Externally peer reviewed, not commissioned.

Competing interests

None declared.

Author contributions

All authors contributed to the design and development of the review, including reviewing literature pertinent to the study design. SB and SL designed the review parameters and JB did the initial search. SB, SJL and JB screened the returned articles and tabulated results. All authors reviewed the table, identified gaps and proposed additions, and contributed to writing and revisions of the manuscript.

References

1. Tuttas CA. Lessons learned using web conference technology for online focus group interviews. *Qual Health Res.* 2015;25(1):122–33.
2. Archibald MM, Ambagtsheer RC, Casey MG, Lawless M. Using Zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *Int J Qual Methods.* 2019;18.
3. Lobe B, Morgan D, Hoffman K A. Qualitative data collection in an era of social distancing. *International Journal of Qualitative Research.* 2020;19.
4. Deakin H, Wakefield K. Skype interviewing: reflections of two PhD researchers. *Qualitative Research.* 2013;14(5):603–16.
5. Gray LM, Wong-Wyllie G, Rempel GR, Cook K. Expanding qualitative research interviewing strategies: Zoom video communications. *The Qualitative Report.* 2020;25(5):1292–301.
6. Lo Iacono V, Symonds P, Brown DHK. Skype as a tool for qualitative research interviews. *Sociological Research Online.* 2016;21(2):103–17.
7. Jenner BM, Myers KC. Intimacy, rapport, and exceptional disclosure: a comparison of in-person and mediated interview contexts *Int J Soc Res Methodol.* 2019;22(2):165–77.

8. Kite J, Phongsavan P. Insights for conducting real-time focus groups online using a web conferencing service. *F1000Res*. 2017;6:122.
9. Flynn R, Albrecht L, Scott SD. Two approaches to focus group data collection for qualitative health research. *Int J Qual Methods*. 2018;17(1).
10. Cochrane. Cochrane's work on rapid reviews in response to COVID-19. Coronavirus (COVID-19) resources. London, UK: Cochrane; 2020 [cited 2020 Aug 31]. Available from: www.cochrane.org/cochranes-work-rapid-reviews-response-covid-19
11. Banbury A, Nancarrow S, Dart J, Gray L, Dodson S, Osborne R, et al. Adding value to remote monitoring: co-design of a health literacy intervention for older people with chronic disease delivered by telehealth—the telehealth literacy project. *Patient Educ Couns*. 2020;103(3):597-606.
12. Brondani MA, MacEntee MI, O'Connor D. Email as a data collection tool when interviewing older adults. *Int J Qual Methods*. 2011;10(3):221-30.
13. Beneito-Montagut R. Ethnography goes online: towards a user-centred methodology to research interpersonal communication on the internet. *Qualitative Research*. 2011;11(6):716-35.
14. Kenny A. Interaction in cyberspace: an online focus group. *Adv Nurs J*. 2005(4):414-22.
15. Stewart K, Williams M. Researching online populations: the use of online focus groups for social research. *Qualitative Research*. 2005;5(4):395-416.
16. Matthews J, Cramer EP. Using technology to enhance qualitative research with hidden populations. *Qualitative Report*. 2008;13(2):301-15.
17. Neville S, Adams J, Cook C. Using internet-based approaches to collect qualitative data from vulnerable groups: reflections from the field. *Contemp Nurse*. 2016;52(6):657-68.
18. Hai-Jew S. Enhancing qualitative and mixed methods research with technology. Hershey, PA: Information Science Reference; 2015.
19. Hanna P. Using internet technologies (such as Skype) as a research medium: a research note. *Qualitative Research*. 2012;12(2):239-42.
20. Mirick RG, Wladkowski SP. Skype in qualitative interviews: participant and researcher perspectives. *Qual Rep*. 2019;24(12):3061-72.
21. Krouwel M, Jolly K, Greenfield S. Comparing Skype (video calling) and in-person qualitative interview modes in a study of people with irritable bowel syndrome—an exploratory comparative analysis. *BMC Med Res Methodol*. 2019;19(1):219.
22. Seitz S. Pixilated partnerships, overcoming obstacles in qualitative interviews via Skype: a research note. *Qualitative Research*. 2016;16(2):229-35.
23. Nehls K, Smith BD, Schneider HA. Video-conferencing interviews in qualitative research. In: Hai-Jew S, editor. *Enhancing Qualitative and Mixed Methods Research with Technology*. Hershey, PA: IGI Global; 2015. p. 140-57.
24. Glassmeyer DM, Dibbs R-A. Researching from a distance: using live web conferencing to mediate data collection. *Int J Qual Methods*. 2012;11(3):292-302.
25. Sedgwick M, Spiers J. The use of videoconferencing as a medium for the qualitative interview. *Int J Qual Methods*. 2009;8(1):1-11.
26. Adams-Hutcheson G, Longhurst R. 'At least in person there would have been a cup of tea': Interviewing via Skype. *Area*. 2017;49(2):148-55.
27. Weller S. Using internet video calls in qualitative (longitudinal) interviews: some implications for rapport. *Int J Soc Res Methodol*. 2017;20(6):613-25.
28. Keesara S, Jonas A, Schulman K. Covid-19 and health care's digital revolution. *N Engl J Med*. 2020;382(23):e82.
29. Shaw SE, Seuren LM, Wherton J, Cameron D, A'Court C, Vijayaraghavan S, et al. Video consultations between patients and clinicians in diabetes, cancer, and heart failure services: linguistic ethnographic study of video-mediated interaction. *J Med Internet Res*. 2020;22(5):e18278.
30. Bruce T, Byrne F, Kemp L. Using Skype to support remote clinical supervision for health professionals delivering a sustained maternal early childhood programme. A phenomenographical study. *Contemp Nurse*. 2018;54(1):4-12.
31. Almathami HKY, Win KT, Vlahu-Gjorgievska E. Barriers and facilitators that influence telemedicine-based, real-time, online consultation at patients' homes: systematic literature review. *J Med Internet Res*. 2020;22(2):e16407.
32. Hern A. Trolls exploit Zoom privacy settings as app gains popularity. London: The Guardian; 2020 [cited 2021 Jun 22]. Available from: www.theguardian.com/technology/2020/mar/27/trolls-zoom-privacy-settings-covid-19-lockdown
33. Paul K. 'Zoom is malware': why experts worry about the video conferencing platform. Australia: The Guardian; 2020 [cited 2021 Jun 22]. Available from: www.theguardian.com/technology/2020/apr/02/zoom-technology-security-coronavirus-video-conferencing
34. Packnam B. Coronavirus: Defence axes Zoom over flaws. Canberra: The Australian; 6 April 2020 [cited 2021 Jul 15]. Available from: www.theaustralian.com.au/nation/defence/coronavirus-sefence-axes-zoom-over-flaws/news-story/532ffd9d8190f4616b95ebceb26d201e
35. Clarke M, Mars M. An investigation into the use of 3G mobile communications to provide telehealth services in rural KwaZulu-Natal. *Telemed J E Health*. 2015;21(2):115-9.

36. Donaghy E, Atherton H, Hammersley V, McNeilly H, Bikker A, Robbins L, et al. Acceptability, benefits, and challenges of video consulting: a qualitative study in primary care. *Br J Gen Pract.* 2019;69(686):e586–e94.
37. Kite J, Phongsavan P. Insights for conducting real-time focus groups online using a web conferencing service. *F1000Res.* 2017;6:122.
38. Ørngreen R, K L. Workshops as a research methodology. *The Electronic Journal of eLearning.* 2017;15(1):70–18.
39. Moyle W, Jones C, Murfield J, Liu F. 'For me at 90, it's going to be difficult': feasibility of using iPad video-conferencing with older adults in long-term aged care. *Aging Ment Health.* 2020;24(2):349–52.
40. Quan-Haase A, Mo GY, Wellman B. Connected seniors: how older adults in East York exchange social support online and offline. *Information, Communication & Society.* 2017;20(7):967–83.
41. Teubner T, Flath C M. Privacy in the sharing economy. *Journal of the Association for Information Systems.* 2019;20(3):213–242.
42. Licoppe C, Morel J. Video-in-interaction: "Talking heads" and the multimodal organization of mobile and Skype video calls. *Research on Language & Social Interaction.* 2012;45(4):399–429.
43. Thomas J, Barraket J, Ewing S, MacDonald T, Mundell M, Tucker J. Measuring Australia's digital divide: the Australian Digital Inclusion Index 2016. Melbourne: Swinburne University of Technology, for Telstra; 2016 [cited 2021 Jun 22]. Available from: www.csi.edu.au/media/uploads/Australian-Digital-Inclusion-Index-2016.pdf
44. Warschauer M. Social capital and access. *Universal access in the Information Society.* 2003;2(4):315–30.
45. Li X, Chen W, Straubhaar JD. Concerns, skills, and activities: multilayered privacy issues in disadvantaged urban communities. *International Journal of Communication.* 2018;12:1269–90.
46. Morrow-Howell N, Galucia N, Swinford E. Recovering from the COVID-19 pandemic: a focus on older adults. *J Aging Soc Policy.* 2020;32(4–5):526–35.
47. Schram A, Friel S, Freeman T, Fisher M, Baum F, Harris P. Digital infrastructure as a determinant of health equity: an Australian case study of the implementation of the National Broadband Network. *Australian Journal of Public Administration.* 2018;77(4):829–42.
48. Tasmanian Council of Social Services Inc. Understanding digital inclusion in Tasmania: report on research findings. Hobart: TasCOSS; 2019 [cited 2021 Jun 22]. Available from: tascoss.org.au/new-submission-to-the-tascoss-vault-11/