Doing interprofessional research in the COVID-19 era: A discussion paper

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Abstract

The COVID-19 pandemic, and ensuing physical distancing measures, poses challenges for interprofessional researchers. Pandemic management has highlighted the centrality of interprofessional working to effective healthcare delivery during crises. It is essential to find ways to maintain interprofessional research that has commenced, while also designing research to capture important learning from pandemic management and response. However, it also creates opportunities for new research projects and novel research designs. This discussion paper explores ways of adapting existing research methodologies and outlines potential avenues for new research. Specifically, considerations to bear in mind when designing interprofessional research during the pandemic include research ethics and integrity, research design, data collection methods, research opportunities, implications, and limitations. Interprofessional research can continue to make a valuable contribution in informing global responses to COVID-19 and in planning for future global health crises. Insofar as possible interprofessional research should continue to be developed during this time.

Introduction

Due to the COVID-19 pandemic, many interprofessional research projects have been disrupted, paused or abandoned. This is due to many traditional data collection methods becoming unfeasible during physical distancing, alongside investment being redirected to developing COVID-19 treatment or vaccination options. Academic and research staff are working from-home, often through a skeletal workforce which can hamper progression of research projects. While many research plans will need to be paused and amended, this unprecedented situation also provides a space in which to consider new research projects and methods that are relevant.

Research remains paramount to pandemic management, both to inform current response and to prepare for future health emergencies. Interprofessional collaborative working has emerged as a key ingredient in successfully managing the current pandemic (National Centre for Interprofessional Practice and Education, 2020). Measures required to manage the COVID-19 pandemic warrant continued scholarship from an interprofessional research standpoint, both in terms of interprofessional teaching and practice. This paper represents the collective effort of the Centre for the Advancement of Interprofessional Education (CAIPE) research group seeking to inform and inspire new ways of continuing research during the COVID-19 pandemic, despite the restrictions and challenges this imposes.

Background

Interprofessional research, encompassing interprofessional education (IPE) and collaborative practice, is reconsidering how it can be designed at present and in the future while keeping in mind the impact and disruption caused by the pandemic. Such research can make a valuable contribution to the scholarship of IPE and collaborative practice**.** During the pandemic,

interprofessional research and sharing of ideas between different professionals has enabled collaborative working in different areas such as genetic sequencing and vaccine development; modelling the spread of infectious diseases; and preparing and presenting scientific evidence within advisory committees to governments, thereby informing policy and practices around COVID-19. Interprofessional collaborative practice has never been so important as during this time.

Given the restrictive measures implemented due to COVID-19, traditional ways of conducting research require modification. For instance, collecting data through physical face-to-face interviews and focus groups, collaborative working to analyse data, and dissemination of findings at conferences may not be feasible. Changes in the process of ethical review and prioritisation of studies directly impacting on COVID-19-related outcomes may also pose a challenge to interprofessional researchers. Researchers and collaborators themselves may be experiencing uncertainty in terms of funding, frontline redeployment, ongoing employment security and changed personal circumstances. In spite of these challenges, there has perhaps never been a more opportune time to learn about interprofessional collaborative research. During the COVID-19 pandemic, researchers are learning about the research methodologies used by professions outside their own, and working together towards a common goal of improving health outcomes and practice. Taking into account the changed and challenging circumstances of the current situation, the suggestions below-convened through the international and interprofessional membership of the CAIPE research group - consisting of researchers, practitioners and educators from different professional backgrounds (nursing, speech-pathology, occupational therapy, pharmacy, and medicine) - offer the potential for continuing some existing interprofessional research projects and developing new research, adjusting to the novel circumstances of the response to COVID-19.

While the impact of COVID-19 can be quite daunting for interprofessional researchers, there are opportunities to explore and be creative when it comes to pursuing research projects amid the current pandemic. Not only is interprofessional research essential in upholding scientific and scholarly pursuits, it can inform both higher education and health and social care practice. In higher education, interprofessional research can support the need to redesign health professions education curricula by emphasizing modules on health security and emergency preparedness (Aruru, et al., 2020). IPE can showcase teaching innovation through tailoring instructional designs for developing IPE competencies through remote means (Evans, et al., 2020). In practice, interprofessional research has the potential to provide evidence-based practice guidelines on how to facilitate interprofessional collaborative practice and improved health outcomes in times of emerging health issues such as epidemics and pandemics from the individual, community, and population levels (Hager, et al., 2016; Paradis & Reeves, 2013; World Health Organisation, 2010).

While practical guidance is available for early career researchers commencing interprofessional scholarship (O'Carroll, et al., 2020), the current article encourages scholars to consider new and untapped designs, methods, and approaches to continue interprofessional research amid pandemics and crises. Specifically, this discussion paper aims to:

- Outline options for conducting qualitative, quantitative or mixed methods interprofessional research using online or remote approaches; and,
- Identify new research-related opportunities for researchers amid the COVID-19 pandemic.

This is necessary to ensure that amidst the many innovations and demands in education and healthcare research, essential interprofessional research continues during and beyond the current pandemic crisis.

Research Ethics and Integrity

Whether a researcher is about to submit a study protocol for ethics review or has received ethical approval to conduct research, the effects of COVID-19 to population mobility may require interprofessional researchers to amend their research methods (American Psychological Association [APA], 2020). For example, face-to-face focus groups may have been the approved data collection method. The current situation may warrant adaptation to focus groups via teleconferencing, and in this type of situation an amendment will be required. Similarly, if data analysis will now require digital data transmission between researchers who cannot access physical data, an amendment will also be required. It is also important to consider the digital literacy of potential research participants in terms of providing informed consent. Researchers may need to consider how to adapt research information sheets and consent forms to ensure that participants understand what they are agreeing to. For example, making sure that participants have an option for audio or audio and video recording if a platform that supports both is being used. Easy read and smartphone compatible versions of these documents would support this as well. Electronic signing of consent forms may be a technical challenge for some participants so including a "how to" guide as part of recruitment materials may be helpful. As with any form of research it is imperative that participants are fully aware of how anonymity and privacy will be protected, as well as the limits or potential risks to confidentiality (Rodham & Gavin, 2006).

The impact of digital data collection on sample representativeness need to be considered. It may lead to an over-representation of a sub-group with greater access to technology and under-representation of those with less access or for whom it represents a greater challenge. For instance, in an evaluation of student and patient experiences of an interprofessional intervention for people with neurological conditions, interviews over the phone or video calling may not be feasible due to communication difficulties. If the final

study is primarily based on the student experiences of the intervention then a key stakeholder group is missing and the premise of the study has changed.

A shift to remote data collection may require an assessment of participants' understanding of and ability to use technological devices or applications. Many of these changes would come under the heading of 'minor amendments' and may not require full committee review. If seeking initial approval for a COVID-19 related project, these are being expedited in some cases or in others designated review ethics committees or sub-committee are assigned to specifically review these proposals. For new, non-COVID-19-related ethics applications, most research ethics committees are continuing to meet virtually and review applications. Contacting the ethics committee administrator or chair may be useful in terms of channelling applications and amendments most expeditiously. It is also important to bear in mind that both researchers and participants may be dealing with unprecedented circumstances in their personal and professional contexts because of the pandemic. Decisions about continuing and amending research will require careful and ongoing considerations of the welfare and best interests of researchers and participants.

Adapting current research: Innovative interprofessional research methods during the COVID-19 era

Quantitative research

Even prior to physical distancing measures coming into place, online data collection methods were gaining prominence (Strickland, et al., 2003). While personal distribution of surveys can be desirable in terms of improving response rate, online distribution is a very feasible adaptation given current restrictions. There are many online development tools and some may be available via institutional subscriptions. For example, Microsoft Office packages can include access to Microsoft Forms which can be used to develop online surveys or

questionnaires. Other tools that have been used by researchers include Qualtrics (Vernon, et al., 2018) and Survey Monkey (Ulrich, et al., 2019). Important considerations in switching to an online platform would include ensuring compliance with privacy legislation such as the General Data Protection Regulation (GDPR) within the European Union. It is also worth considering the tool's compatibility with mobile technology such as smartphones. Piloting of the survey via the online platform can highlight content or technical issues, prior to distributing to participants. Also, real-time digital polls such as Mentimeter© can be used to garner participant opinions and self-rating on specific topics. Online surveys, with either open- or close-ended questions, can give valuable insights on perceptions and attitudes concerning interprofessional collaborative practice during the current pandemic. Moreover, these can play a key role in the evaluation of innovative pedagogies and assessment methods now proliferating as a result of physical distancing measures.

Qualitative research

Direct observations and face-to-face interviews (individual or groups) represent bedrocks of qualitative research. However, there are means to mitigate the challenges of physical distancing and enhance the toolbox of research methods. For example, remote data collection methods can reduce some of the costs and logistical challenges of face-to-face data collection methods. Remote methods may also be more accessible for some participants such as those with mobility issues. When considering remote data collection methods, there is a need to examine how well researchers can garner the information required to answer the research questions and this will differ for each person. Questions to consider include:

- Are you using remote methods to augment previously collected data, as your sole data collection method or as a preliminary method to inform further data collection?

- Are you collecting data from vulnerable and sensitive groups? Remote methods (once secure) may offer more privacy or anonymity as compared to a face-to-face interview;
- Can your research question be answered using secondary data, naturalistic data from social media or online communities, images, or photos?

Some more examples of data collection approaches through remote means include telephone interviews, emails, instant messaging or chat rooms (Dimond, et al., 2012), digital diaries, social media analyses, digital ethnographies (Murthy, 2008), photovoice (Sutton-Brown 2014), and videoconferencing (Archibald, et al., 2019). For instance, the use of photovoice, a participatory visual method, involves capturing photographic images related to issues of social importance in order to uncover unique insights and issues and to find solutions to address them given a specific research objective (Murthy, 2008; O'Donovan, et al., 2020). The use of photovoice is not without its challenges including issues on anonymity, fear, and false promises as expressed by those directly and indirectly involved in the research. These ethical issues may need to be considered if interprofessional researchers decide to utilize these remote and alternative approaches for data collection (O'Donovan, et al., 2020).

The shift from face-to-face to remote data collection approaches implies careful considerations on applying principles of rigour that are used to judge the quality of the research: reflexivity, adequacy, authenticity, trustworthiness, and resonance (Cristancho, et al., 2018). For instance, while using remote and digital means can produce sufficient and robust data (adequacy), interprofessional researchers will also need to ensure that their collection and analytic procedures are systematic and clearly described (trustworthiness). Additionally, there are implications for data protection and storage of digital data; which would need to be outlined in a comprehensive data management plan, and be compliant with research governance procedures both in the local research institution and within the country where the research is being conducted. Useful guidance for the management of sensitive data

and development of data management plans are given in research funding websites such as that of the UK Economic and Social Research Council and UK Research and Innovation (Economic and Social Research Council, 2020).

Interviews

Face-to-face interviews have been considered the gold standard in qualitative interviewing, especially for their potential to elicit honest views on sensitive topics by building trust with research participants. At present this is not feasible and remote methods are being explored with increased vigour. These can include audio recording a telephone interview and using teleconferencing technology such as Skype, Microsoft Teams, or Zoom (Dimond, et al., 2012; Archibald, et al., 2019). A comparative study of face-to-face and video call interviewing using the same interview guide found modest differences regarding depth of data generated (Krouwel, et al., 2019). Decisions as to the most appropriate method will be influenced by researcher and participant factors as well as the phenomenon of interest. Drabble and colleagues (2016) published recommendations for remote interviews based on their experiences and outlined strategies to support researchers. Strategies include sharing information to establish rapport, using vocalisations and clarification requests to show responsiveness, and acknowledging the value of participant disclosures (Drabble et al., 2016). While video interviewing allows observation of non-verbal responses to questions, the required technology may not be available or accessible in all circumstances and telephone interviewing may be more feasible. Interprofessional research often engages with topics such as conflict, power and trust that require an element of rapport to be developed between interviewer and interviewee before disclosure of personal and sensitive experiences takes place. Retaining one-to-one interviews in the arsenal of interprofessional scholars is important to continue to advance knowledge on such matters.

Focus groups

Focus groups, which capitalise on team dynamics to explore interprofessional perspectives, represent another common data collection method. Predicated on bringing groups together, physical distancing poses unique challenges for this method. While individual interviews may be feasible as restrictions lessen, focus groups are likely to remain impacted for a longer period. The concept of online focus groups has been explored within qualitative research and can be a feasible method (Stancanelli, 2010). Modifications such as reduced numbers may be necessary to facilitate effective moderation and interaction in the virtual environment (Smith, 2014). For situations where synchronous online focus groups are not feasible, asynchronous focus groups may also be an option. This can be done through methods such as email thread or private discussion forums (Biedermann, 2018). Brüggen and Willems (2009) compared offline (asynchronous) focus groups, online focus groups, and e-Delphi using different parameters. The study determined that offline focus groups produced data with the highest depth and breadth, and were most efficient; e-Delphi discussions produced very elaborate and deep data collected; and online focus groups produced more superficial data, yet still effective especially in terms of spontaneity and interactiveness in the collected data. Most virtual learning environments (VLE) to support interprofessional learning offer the opportunity to host asynchronous group conversations, but this is arguably an underutilised tool for interprofessional research purposes.

Observations

While researcher observations at health and educational sites are curtailed, first-hand data may still be collected. Diaries or reflections from participants in the field can provide a first-hand insight into participant experiences. Diary data can be free-flow writing or structured

writing in response to specific questions or prompts (Lupton, 2020), for example about working in newly established interprofessional teams, in unfamiliar and evolving roles, or in doing research amid the COVID-19 pandemic. Given that this is a unique experience of such a large-scale health crisis, such diary accounts are likely to be highly valuable. This approach does create additional work for the participant as they are taking on the observer role usually carried out by the researcher who would need to be made aware of this and the likely time requirements involved ahead of commencement. It is recommended that roles are clarified from the outset, as well as how this will be reflected in subsequent publications. Healthcare and student participants are also dealing with unprecedented challenges so the appropriateness of adding additional work would need to be carefully considered. Application of principles of public patient involvement (PPI) when designing the research may help ensure participants are not overly burdened and that their contribution is fairly reflected, for example as a co-author if appropriate (INVOLVE, 2012) and allowing them to act as decision makers in the research process (von Benzon & van Blerk, 2017).

Student and educator experiences of online IPE would also be beneficial to collate. While this may be useful in terms of overall experience of online learning, it has particular applicability to IPE, given the long-standing challenges of physically co-locating students for IPE in a suitable physical space. Diary data can be gathered in a range of ways. Low technology methods include handwritten or typed diary entries, while high technology approaches may include use of audio recorded diaries, digital notes, and smartphone applications (García, et al., 2016). An advantage of a more technological approach is that data can be collected more easily in real-time and may also streamline the process of analysis. However, this needs to be balanced with researcher access to such technology and participant capacity to use the tools. For instance, it may be challenging to train participants in using a specific data recording application given physical distancing restriction, hence the

use of a generic notes or voice recording device may be more feasible. Mobile ethnography involving participant-led data collection via photographs or video also offers a means of adapting traditional ethnographic studies (Murthy, 2008). Muskat and associates (2018) have reviewed mobile ethnography literature and developed a framework to support researchers considering this approach. Photovoice offers a potential data collection method for more visually oriented ethnographies, with Sutton-Brown (2014) providing detailed guidelines on how to conduct such research. Video conferencing software such as Skype and Zoom have previously been used to facilitate qualitative interviews (Archibald, et al., 2019). With careful consideration and set-up, these tools could be trialled to facilitate researcher observations of teaching sessions or meetings. Re-enactment videos also offer alternative means of gathering observation data, whereby participants video record real-life practice using mobile phone or Go Pro devices (Lupton, 2020). The use of a website platform, using a participatory action research method, had also been acknowledged to cultivate IPE and interprofessional research in higher education (Richardson & Cooper, 2003). These approaches could be used to understand how interprofessional teams are working at present and how this could inform the design of IPE (i.e., mapping activities and interactions onto interprofessional competencies) to see which are most relevant to current clinical practice.

Opportunities for new interprofessional research during COVID-19 era

While social distancing poses challenges for bringing learners together for IPE, it can still be effectively delivered and its impact measured through online methods (Curran, et al., 2015). Universities around the world have suspended face-to-face activities and are shifting to digital classrooms (Gewin, 2020), and consequently many have adapted planned IPE for delivery via online teaching and collaboration. Research on student and educator experiences of online IPE could inform design and delivery of future IPE modules, beyond the current

pandemic period. While planned IPE placements may have been curtailed, many healthcare students are involved in the response to COVID-19, both at clinical sites and remotely, and are collaborating with other professionals. Reflective journals can be an effective method of collecting data to gain insight into learning from these interprofessional interactions in practice (Saunders, et al., 2016) or could be utilized as a way of measuring the impact of IPE on practice in longitudinal studies. Research could also consider how IPE experiences are influencing practices of frontline staff during this current crisis. Online surveys or questionnaires could be used to consider how prepared practitioners felt for working in different roles and in different teams and how training could prepare future practitioners for this.

There are also opportunities for secondary research. For example, analysis of social media posts can be used to understand interprofessional experiences of students and clinicians during COVID-19; and how the roles of different healthcare professions are perceived and understood publicly. In terms of conducting this type of analysis, Chew and Eysenbach (2010) offer an example of a content analysis of Tweets relating to use of terminology during the Swine flu pandemic of 2009. In the case of publicly available posts, ethical review is not needed and can be undertaken relatively quickly and with low resource requirements. Furthermore, Tricco and colleagues (2017) provide useful guidance on rapid reviews, including collaborative working during the review process. Viner and colleagues (2020) conducted a rapid review of COVID-19 school closure and is a useful example from a methods perspective (Viner, et al., 2020).

There may also be increased scope for international interprofessional research, as educators, students and practitioners globally are impacted by COVID-19. For example, the Rapid Research Appraisal and Evaluation Lab at University College London are coordinating international mirror studies, involving review of COVID-19-related policy and experiences of

frontline staff. Similarly, the UK CAIPE launched an online IPE study registry to aid coordination of initiatives and encourage international collaboration (available at www.caipe.org). Furthermore, there have been several research grant offerings from different institutions and agencies for COVID-19 related research which interprofessional researchers should take advantage of.

With the increased use of remote means to conduct research, interprofessional scholars will soon be expected to be competent in using online approaches in collecting research data (American Psychological Association, 2020). This can also open up more opportunities for international research collaborations and partnerships.

Positive implications and potential limitations

The options outlined for conducting interprofessional research using remote approaches and the new research-related opportunities for researchers during the COVID-19 era suggest positive implications. These include increased international research collaboration that will allow for pooling of resources and expertise between partner institutions; training more people on new and alternative ways of data collection, analysis, and storage will ensure there are ready alternates in the case of researchers becoming ill; increased interest in carrying out review research; improved technology-related communication, allowing interprofessional and international collaborations. In the COVID-19 era, interprofessional scholarship has become more relevant especially in the process of sharing more comprehensive scientific findings, enabling development and innovation, and disseminating findings more quickly in order to provide guidance to new policies and guidelines to be implemented in the midst of the ever-changing health and health professions education landscapes.

On the other hand, potential limitations may include restrictions in the research which can be conducted as some research will not be feasible given the current situation.

Also, many remote methods of data collection require access to and capacity to use digital or Internet tools. Therefore, researchers need to ensure that methods are inclusive of participants who have limited or no access to such methods, such as postal questionnaires. Both researchers and participants are living through an unprecedented global pandemic. This pandemic has health, occupational, and financial implications and consequently can impact one's involvement in research undertakings. As a research community, it is important to remain cognisant of this and modify expectations accordingly.

Conclusion

Pursuing interprofessional research is important in times of pandemic crisis, especially as teams are faced with unusual challenges that put principles of collaborative working to the test. These challenging times require researchers to employ creative research methods, explore new ways of working and collecting research data, and be mindful of the subtle "side effects" of conducting research in novel ways during a period of global health crisis. This discussion paper presents some of the important issues to be considered when planning and continuing interprofessional research during the pandemic to inspire the interprofessional community to continue their research endeavours during and post COVID-19.

Additional Resources

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