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Why you should read this article:
- To understand the value of undertaking a feasibility pilot
- To explore how new technologies can be used as timely and effective tools for collecting data
- To recognise the specific consent and confidentiality requirements for using WhatsApp to collect and transmit data

Using mobile phones, WhatsApp and phone interviews to explore how children's hospice nurses manage long-term relationships with parents: a feasibility pilot

Mandy Jane Brimble, Sally Anstey, Jane Davies et al

Abstract

Background Mobile phones are familiar to most nurses, but the applications available for voice recording and transfer of audio files in research may not be.

Aim To provide an overview of a pilot study which trialled the use of mobile phones, WhatsApp and phone interviews as a safe and reliable means of collecting data.

Discussion A pilot study was designed to test the use of: mobile phones as a safe and reliable way to record audio diaries as research data; WhatsApp to transmit the audio files; and phone interviews to explore them. Undertaking the pilot demonstrated that the tools proposed for collecting data were useable and acceptable to the target population and that the researcher's guidance for doing so was satisfactory.

Conclusion New technologies enable innovation but trialling them for useability is important. Confidentiality and consent need to be carefully managed when using WhatsApp to ensure a study is compliant with data protection regulations.

Implications for practice Collection of research data digitally and remotely has become increasingly mainstream and relied on during the COVID 19 pandemic. The methods discussed in this article provide solutions for timely data collection that are particularly useful when the researcher is geographically distant from participants. The 'in the moment' reflective nature of the audio diaries could also be applicable to non-research settings – for example, as a method of assisting ongoing professional development and/or collection of reflective accounts.

Author details

Mandy Jane Brimble, *doctorate in* **[Q1 Our style is to write this as PhD in… OK to change?] advanced healthcare practice, senior lecturer, School of Healthcare Sciences, Cardiff University, Cardiff, Wales; Sally Anstey, emeritus reader, School of Healthcare Sciences, Cardiff University, Cardiff, Wales; Jane Davies, honorary senior research**

fellow, School of Healthcare Sciences, Cardiff University, Cardiff, Wales; Catherine Dunn, lecturer, adult nursing, School of Healthcare Sciences, Cardiff University, Cardiff, Wales; Aled Jones, professor: patient safety and healthcare quality, School of Healthcare Sciences, Cardiff University, Cardiff, Wales

Key points [Q2 please add three short bullets points here on key points from the article]

- *Xxxxxx*
- *Xxxxxx*
- *Xxxxxx*

Introduction

Pilot studies are valuable in shaping and refining practical and methodological issues (Wray et al 2017). The use of mobile phones to record audio diaries and WhatsApp to transfer research data is relatively new and unexplored (Kaufmann and Peil 2020). This article reports on a pilot study that sought to explore the feasibility, acceptability and the practical and ethical challenges of using: mobile phones to record audio diaries; WhatsApp to transfer the resulting audio files; and phone interviews to explore the diaries. The aim is to add to the knowledge base underpinning theoretical and practical aspects of using digital methods of data collection and transfer.

Background

The lead author (MB)'s doctoral research involved participants using mobile phones to record audio diaries, WhatsApp to deliver the diaries to her and phone interviews to explore them. The aim of the study was to explore how children's hospice nurses managed their long-term relationships with parents, particularly in terms of emotional labour and professional integrity. The data needed to be collected and explored in a timely way because the nurses' contemporaneous sense-making of clinical practice and their associated cognitive processes were central to the study's aims. Therefore, recording on familiar and readily available equipment with the option of easily and safely transferring the digital recording to the researcher made mobile phones and WhatsApp attractive propositions. Furthermore, phone interviews are more flexible and easily arranged than face-to-face interviews, making the time between an 'event' – for example, the clinical sense-making – and the interview to explore the associated audio diary minimal.

MB was inexperienced in using these methods and there was uncertainty about whether the target population would engage with them. Therefore, a pilot study was conducted to trial the safety, reliability and useability of the methods, and to explore whether the guidance for participants concerning recording and transferring the audio diaries was clear.

The clinical governance committee of a children's hospice approved the pilot study and permitted the recruitment of two nurses who met the inclusion criteria of the planned doctoral study. Information sheets distributed by the director of care of the hospice elicited expressions of interest and two pilot study participants were duly recruited.

Audio diaries

Diaries are an established method of collecting data in qualitative research, making that which is tacit for the participant clearer to the reader, thereby promoting greater understanding (Thomas 2015). Audio diaries are increasingly used in social sciences (Crozier and Cassell 2016). They can capture sense-making in the moment (Monrouxe 2009) and their ease of completion may reduce a study's attrition rate (Siemieniako 2017). Studies have used audio diaries to explore workplace issues (Crozier and Cassell 2016), including healthcare professionals and the settings in which they work (Joyce 2015).

An emerging method of collecting data is to ask participants to record audio diaries on their mobile phones (Siemieniako 2017). Mobile phones are ubiquitous and commonplace in most people's lives, so are more likely to be accepted by participants than unfamiliar equipment (Worth 2009). However, it is important to note that digital approaches can limit participation by those who do not have the skills or resources to engage with them.

A disadvantage of audio recording is the absence of non-verbal communication (Denzin and Lincoln 2000). Furthermore, there may be an element of performance when making the recording, reducing its authenticity (Latham 2003) – MB is a nurse so there was the potential in the study for participants to adjust their 'performance' to comply with expectations of healthcare professionals. However, interviews may also include performance-like representations (Crozier and Cassell 2016).

Markham and Couldry (2007) compared audio diaries with their written counterparts and found that although the former were less structured, they included a deeper reflective element. Audio diaries were therefore likely to elicit rich 'stories' that conveyed the children's hospice nurses' sense-making of their affective responses to interactions with parents with whom they had long-term relationships, particularly as they would be asked to record their diaries in relation to interactions with parents as soon as possible after a particular shift. This meant their accounts would be specific, rather than the general recollections that interviews may have elicited from them.

Participants have occasionally cited challenges with audio diaries such as finding somewhere private to record them and feeling shy or embarrassed about talking to a machine (Crozier and Cassell 2016). However, flexibility and convenience (Worth 2009) together with the reflective and therapeutic value of audio diaries can counteract the negatives (Williamson et al 2015).

Methods
Audio diaries
The geographical separation of researcher from participants when using audio diaries to collect data is advantageous because it minimises the opportunities for researchers to influence participants' accounts (Monrouxe 2009). This means that participants control the diaries' content and focus, so guidance is required (Hislop et al 2005). The purpose of the guidance is to assist participants in creating data that meets the aims of the study without restricting their reflections or the communication of ideas that have not already occurred to the researchers (Crozier and Cassell 2016), which could reduce the richness of the data (Mazzetti and Blenkinsopp 2012). Guides can also aid participants to complete their diaries if they are unsure what information is relevant (Crozier and Cassell 2016).

The guidance for the pilot study contained prompts to help participants start their recordings, because this has been shown to be beneficial for commencing a storytelling monologue (Worth 2009). It requested they record their diaries immediately after their shifts and in private. Instructions were given about maintaining the security of the recording to ensure confidentiality, although the dangers involved in someone unauthorised accessing an audio diary are arguably the same as those of mislaying a handwritten diary.

Extracts from the guidance are shown in Boxes 1 and 2.

Box 1. Extract from 'Completing the audio diary'

This study is exploring how you manage your long-term professional relationships with parents of children with life-limiting conditions. There is no set formula. However, these are some prompts that may help you to get you started.
» It would be helpful if you could start by telling me how long you have known the child and their family (approximately) and whether they are resident for short break care or attending for day care.
» Please tell me the story of the shift in relation to your interactions with the parent(s).

Box 2. Extract from 'How to record and send your audio diary'

**SECTION 1: Making and sending your audio diary using an iPhone**
*If you are using an Android phone, please see later instructions.
There are two options for using an iPhone to record and send your audio diary. One is to record a Voice Memo and then send it as an attachment via WhatsApp, the other is to record and simultaneously send via WhatsApp. I will talk you through the first option then the second.

Using an iPhone

**Option 1. Recording a Voice Memo and then sending via WhatsApp.**
Use the 'Voice Memos' function usually located in 'Utilities' here[Q3 We will need the original files of these three photos/screenshots and they will have to be of good quality if we are to use them in the article. Can you provide them for us? Or is there a link we can add with instructions and then cut the text and pictures accordingly?]
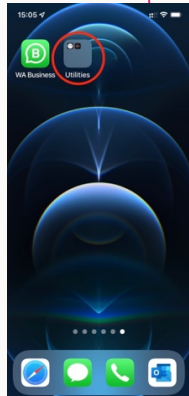
1. Open the 'Voice Memos' app

Voice Memos
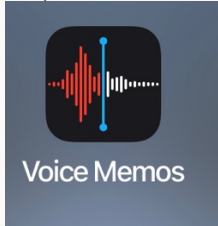
2. Tap the red record button to start recording the voice or audio. When you have finished, tap on the same button again to stop recording.
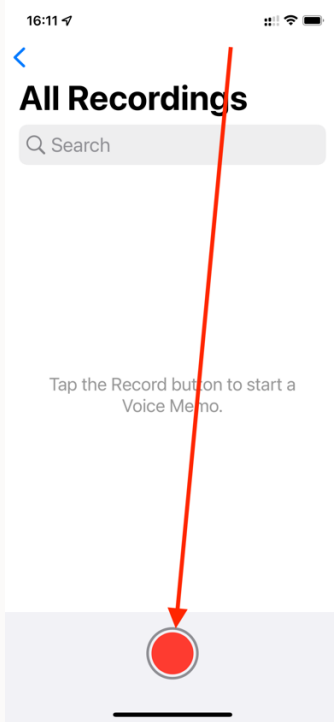
WhatsApp

A condition of ethics committee approval was that the audio diaries be transferred securely. This was a source of much debate between MB and her supervisors. Emailing the audio diaries as password-protected attachments was considered, but this felt complicated and added to the technical 'load' on the participants.

Ultimately, a colleague suggested using WhatsApp, a commonly used mobile phone app that has 'end to end' encryption – encryption built in from the point of recording through transmission to the point of delivery. The ethics committee gave approval for the use of WhatsApp in the study, and participant guidance for the completion and transfer of the audio diary was developed.

Consent and confidentiality are the main ethical considerations relating to the use of WhatsApp (Manji et al 2021). Participants had consented to use their mobile phones to record and transfer audio diaries and had provided their mobile phone numbers. Hoffman's (2021) privacy solution was used to ensure that consent to use WhatsApp was clear. This involved sending the participants a mobile phone text message with a link inviting them to use WhatsApp. Participants provided consent to use WhatsApp if they responded to the link. Confidentiality was maintained by using participant identification numbers rather than names, and each participant was added to a stand-alone pairing with MB in WhatsApp, rather than a group chat.

All recordings were reviewed on receipt, to ascertain their completeness and quality. Participants were asked to retain the recordings until they were advised MB had received them.

Phone interviews

Each participant was asked to make three audio diary recordings relating to three individual families over a period of three to six months. This increased confidence in the reliability of recording and data transfer at different time-points.

A phone interview based on each recording was undertaken as soon as possible after it had been transcribed. This can help researchers to clarify audio diary content and explore in depth the issues raised (Baumbusch 2010), particularly with sensitive topics (Bell and Walters 2014).

Some argue the absence of body language in the phone interview make it an inferior method of collecting data (Sturges and Hanrahan 2004). However, Lechuga (2012) concluded that successful qualitative interviews do not rely on the researcher and

participant being in the same room. Yin (2014) suggested that a remote approach can assist participants in relaxing and encourage more open dialogue. Saarijärvi and Bratt (2021) concluded that qualitative nursing research interviews carried out at a distance using some form of technology are trustworthy and valid alternatives to those conducted face to face.

Oltmann (2016) synthesised evidence to provide a framework that researchers can use when deciding whether phone or face-to-face interviews are preferable. Table 1 outlines the interviewer's and participants' contexts, highlighting pragmatic considerations for each such as the time available, financial costs and participants' geographical locations. The framework is a useful tool for considering and reviewing both contexts, enabling researchers to make thoughtful, justifiable selections. They should choose the most appropriate and useful method for their projects, based on which contextual components are most relevant and important.

Table 1. Considerations when using phone interviews	
Interviewer's context	**Participants' context**
» Time and financial costs » Geographical distribution of respondents » Sensitive or controversial topics » Technology problems » Interviewer safety » Note-taking » Interaction effects » Non-verbal language and cues	» Scheduling » Anonymity » Privacy/invasiveness » Stigmatised/marginalised groups » Sensitive or controversial topics » Respondent empowerment
Source: Oltmann (2016)	

Tables 2 and 3 show the proposed study scored against the criteria in Table 1. Shaded areas indicate a benefit from using a method; unshaded areas on both sides of the table indicate a neutral score. Considering the interviewer's context (Table 2), phone interviews scored 4, while face-to-face interviews scored 1 and two components were neutral; considering the participants' context (Table 3), phone interviews scored 4, while face-to-face interviews scored 0 and two components were neutral. Therefore, phone interviews were the more appropriate choice.

Table 2. Interviewer's context in the study		
Components	**Face-to-face interviews**	**Phone interviews**
Time and financial costs	» Usually time-intensive » Travel may add to costs	» Can be less time-intensive » Lower costs as no travel
Geographical distribution	» Often limited geographically to local area	» National and international access possible and easier
Sensitive or controversial topics	» May be difficult » Has the potential to be embarrassing or awkward	» May be less awkward
Technology problems	» Less likely to have problems, except with recording device	» Calls can be dropped » Possible recording problems
Interviewer safety	» Can be endangered depending on location and time of meeting	» Low danger » Interviews can be made from office, home or other location as appropriate
Note taking	» Can be obtrusive » Can capture non-verbal language and cues	» Can be done unobtrusively » May present logistical problems juggling multiple items
Nonverbal language and cues	» Usually very rich » Can include dress, body language, mannerisms and so on » More data to be interpreted » Can be misinterpreted	» Most types unavailable » Can note pauses, hesitations and so on » Less information, but less potential for bias and misinterpretation

Table 3. Participants' context in the study

Components	Face-to-face interviews	Phone interviews
Scheduling	» Participant may feel pressure to be available » May have lower attrition rate	» Easier to reschedule » Less social pressure » Easier to avoid time conflicts » Easier to cancel
Respondent anonymity/confidentiality	» Difficult to hide identity from interviewer » Anonymity dependent on interviewer integrity and data protection » Can decrease disclosure	» Perception of higher anonymity » Can lead to more disclosure
Privacy/invasiveness	» Can be invasive to participant (often in their home or office) » Can be less invasive than technology » Cannot hide non-verbal language	» Can either reduce or increase invasiveness and surveillance fears
Stigmatised/marginalised groups (not applicable)	» May be more or less difficult for marginalised individuals, depending on social pressures and cues	» By increasing distance from interviewer, may improve responses from marginalised individuals
Sensitive or controversial topics	» May be uncomfortable or embarrassing » May conform to social expectations » May under-report	» May ease discomfort or awkwardness » May improve accuracy of reporting
Respondent empowerment	» Can see and respond to interviewer » Social pressure (potential loss of face) more evident	» More control » Easier to reschedule » Less chance of loss of face

MB explained at the beginning of each interview that she was asking the questions as a researcher rather than as a nurse. She told participants that she may ask them to clarify something that would be self-evident to a clinical colleague but needed to be outlined categorically for research purposes, such as aspects of practice, procedure, the hospice philosophy or environment.

The interview schedule was informed by the content of each diary. The questions were intended to clarify MB's understanding of content and/or to further explore an issue. Fresh questions often arose during the interviews, commonly when participants raised relevant new subjects or viewpoints.

Participants sometimes related stories about a different family or circumstance to illuminate their point – fundamentally, telling a story within their story. The data therefore became more than the sum of their two parts, as the participants spontaneously included experiences with other families.

Reminders

The phone interviews relied on the submissions of the diaries. It was important to ensure completion of the diaries was manageable and that participants remembered they had volunteered to take part. Reminders can assist but require careful management to avoid exerting undue pressure on participants (Thomas 2015).

Gentle, carefully crafted reminders were sent a month after recruitment and then monthly if no audio diary had been received. Once one audio diary had been received and the phone interview conducted, a reminder for the next audio diary was sent a month later. A similar approach was used after each second audio diary and phone interview.

Evaluation of the pilot study

Bell and Walters (2014) strongly advocated piloting instructions to participants when using diaries to collect data. Accordingly, one of the aims of the pilot study was to trial the clarity of the audio diary guidance. The ease of using a mobile phone to record diaries and transmit them using WhatsApp was also explored, the aim being to highlight any potential technological issues.

A questionnaire was sent to the pilot site participants that explored these aspects of the pilot and participation in phone interviews. This approach was informed by Kenten (2010) and Crozier and Cassell (2016). The pertinent questions are shown in Box 3.

Box 3. Extract from the questionnaire evaluating the audio diary and phone interview pilot

Q3. Was the guidance for recording the audio diary clear? If not, how could it be improved?
Q4. Were the instructions for transmitting the audio diary clear? If not, how could they be improved?
Q5. Was it easy to record your thoughts and feelings in the form of an audio diary? If no, please could you say why this was difficult for you and what would have made it easier (if anything)?

Q10. Did you find this method of data collection intrusive?
Q18. Were the phone interviews a useful way of expanding on your audio diary?
Q20. Would you have preferred to be interviewed face to face?
Q21. Please explain the reasons for your response to Q20 above
Q22. Is there any other feedback you would like to give about the methods used to collect data in this pilot study?

Both pilot study participants completed the evaluation questionnaire, which produced quantitative and qualitative data. Statistical tests were not used to analyse the quantitative data, because of the small number of participants. The qualitative data was analysed manually to identify commonalities of experience and themes.

Table 4 shows the quantitative responses from the questionnaire.

Table 4. Quantitative responses to the questionnaire		
Question	Yes %	No %
Q3. Was the guidance for recording the audio diary clear?	100	0
Q4. Were the instructions for transmitting the audio diary clear?	100	0
Q5. Was it easy to record your thoughts and feelings in the form of an audio diary?	100	0
Q10. Did you find this method of data collection intrusive?	0	100
Q18. Were the phone interviews a useful way of expanding on your audio diary?	100	0
Q20. Would you have preferred to be interviewed face to face?	0	100

Both participants reported that the methods selected for collecting data were acceptable and the guidance provided was satisfactory. They also indicated they did not prefer face-to-face interviews to phone interviews. This was an important consideration for the main study as potential participants were to be recruited from across the UK and it would be easier to use the phone to follow up audio diaries with interviews in a timely way.

Question 21 elicited explanations for participants' preference for phone interviews (Box 3). Themes of convenience, timeliness and accommodating participation alongside work commitments were evident from both participants.

Responses to question 22 also highlighted the burden of recording the diaries alongside work commitments. Although the reminders to send the diaries proved to be relatively successful, these only elicited two of the desired three diaries from the participants. As a result of these factors, the number of diaries requested in the main study was reduced from three to two.

The pilot participants' answers also indicated that they perceived the three-to-six-month timespan for submitting the diaries as implying a lack of urgency. This resulted in completion of the diaries not being seen as a priority and potentially being forgotten. The desired data collection period in the main study was therefore also reduced to one-to-three months.

Conclusion

This pilot study demonstrated that using mobile phones to record audio diaries, WhatsApp to transfer them and phone interviews for follow-up was feasible and acceptable to participants. There were some challenges in that the responsibility for generating the diaries remained with the participant, necessitating carefully timed reminders. The use of WhatsApp also required particular attention in terms of confidentiality, consent and some technical knowledge. Specific institutional ethical approval is also required to use WhatsApp to collect data.

New technologies enable creativity and innovation when collecting data, but piloting new approaches is important to ensure that they are usable and acceptable to the proposed target population. Piloting can go some way to avoiding difficulties in the main study and successful piloting could be a way of reassuring participants in the main study who are hesitant about engaging with new technologies.

The methods discussed here provide solutions for timely data collection, particularly at times or at locations where accessing clinical practitioners is difficult. This can be particularly useful when the researcher is geographically remote from participants, and may encourage participation because it enables more freedom of expression and could be considered less intrusive.

The 'in the moment' reflective nature of the audio diaries could also be a way for nurses to achieve ongoing professional development and/or collection of reflective accounts for revalidation with their governing bodies, such as the Nursing and Midwifery Council (NMC) in the UK (NMC 2019).

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