

2019

Strategies for using non-participatory video research methods in general practice

Sharon James

University of Wollongong, smj774@uowmail.edu.au

Jane L. Desborough

Australian National University

Susan McInnes

University of Wollongong, smcinn@uow.edu.au

Elizabeth J. Halcomb

University of Wollongong, ehalcomb@uow.edu.au

Publication Details

James, S., Desborough, J., McInnes, S. & Halcomb, E. (2019). Strategies for using non-participatory video research methods in general practice. *Nurse Researcher*, 27 (2), 32-37.

Strategies for using non-participatory video research methods in general practice

Abstract

Background Non-participatory video research is useful for observing and analysing interactions between clinicians, patients and technology. However, few clinical nursing studies have used non-participatory video observation and there is limited literature describing the approach. **Aim** To describe a study that used non-participatory video observation in general practice. **Discussion** The authors' experience of non-participatory video research methods indicates that the acceptability of the technique, workplace organisation and consultation space have implications for preparation and data collection. Strategies for success include engaging stakeholders early on, obtaining contextual knowledge and piloting the approach. **Conclusion** Non-participatory video observation is valuable in understanding interactions between nurses and patients in a naturalistic setting. Careful planning is essential to ensure alignment between research aims, context and technology. The methods for analysing data must be chosen carefully to ensure the research question is answered. **Implications for practice** Video observation provides rich data. Careful planning and engagement of participants is required for successful conduct of studies that use the technique.

Keywords

non-participatory, practice, strategies, general, methods, research, video

Publication Details

James, S., Desborough, J., McInnes, S. & Halcomb, E. (2019). Strategies for using non-participatory video research methods in general practice. *Nurse Researcher*, 27 (2), 32-37.

Strategies for non-participatory video research methods in general practice

Sharon JAMES RN BN MPH

PhD Candidate
School of Nursing
University of Wollongong
Auckland St BEGA NSW 2500
E: sjames@uow.edu.au

Dr Jane DESBOROUGH RN/RM MPH PhD

Fellow
Department of Health Services Research and Policy
Research School of Population Health
College of Medicine, Biology and the Environment
Australian National University
63 Eggleston Rd ACTON ACT 2601
P: +61 2 6125 6545 | E: Jane.Desborough@anu.edu.au

Dr Susan MCINNES RN BN(Hons) PhD

Lecturer,
School of Nursing
University of WOLLONGONG
Northfields Ave Wollongong NSW 2522
E: smcinnes@uow.edu.au

Professor Elizabeth HALCOMB RN BN(Hons) PhD FACN

Professor of Primary Health Care Nursing
School of Nursing
University of WOLLONGONG
Northfields Ave Wollongong NSW 2522
P: +61 2 4221 3784 | F: +61 2 4221 3137 | E: ehalcomb@uow.edu.au

Corresponding author:

Sharon JAMES

School of Nursing
University of Wollongong
Auckland St BEGA NSW 2522
E: sjames@uow.edu.au

Abstract

Background. Non-participatory video research is useful for observing and analysing interactions between clinicians, patients and technology. Few studies have used non-participatory video observation in clinical nursing research and there is limited literature describing the approach.

Aim. To describe an experience of using non-participatory video observation in general practice nursing research.

Discussion. Our experience of non-participatory video research methods indicates that acceptability of the technique, workplace organisation and consultation space have implications for preparation and data collection. Strategies for success include early stakeholder engagement, contextual knowledge, and piloting the approach.

Conclusion. Non-participatory video observation is valuable for understanding interactions between nurses and patients in a naturalistic setting. Careful planning is essential to ensure alignment between research aims, context and technology selected. The choice of data analysis methods requires careful consideration to ensure that the research question is answered.

Implications for practice. Video observation research provides rich data. Careful planning and engagement of participants is required for successful conduct of such studies.

Keywords

Video, primary care, nurse, observational research, nurse-patient interaction, general practice.

Introduction

General practice nurses (GPNs) consistently play an integral role within community-based health care delivery (Joyce and Piterman, 2011). There has been growing attention paid to interventions driven by GPNs for a range of acute and chronic conditions (Carrington et al., 2016, Muntinga et al., 2016, Rossem et al., 2017). Communication and the therapeutic relationship between GPNs and patients is key to the success of GPN-led interventions aimed at managing and preventing chronic health conditions. However, to date, there is limited research around the communication between GPNs and patients and scant attention paid to this in terms of lifestyle risk reduction (James et al., 2018).

While video-based medical research has been conducted in general practice since the 1970's (Roland, 1983), it has only recently been used in GPN consultations (Dowell et al., 2018, Griep et al., 2016, Lenzen et al., 2018, Macdonald et al., 2013, Noordman et al., 2014). To assist nurse researchers' understanding of collecting data via video observation this paper describes our experience of using this technique, examining the advantages, disadvantages and challenges for use.

Background

In order to support generalizability, observational research seeks to study behaviour in its natural setting (Crano and Brewer, 2002). Unstructured observation is generally, but not exclusively, used in participatory research whereby the researcher has prolonged contact with the participants (Caldwell and Atwal, 2005). Structured video observation records behaviours through non-participatory means (Caldwell and Atwal, 2005). Within non-participatory video data collection, researchers are generally unseen thus reducing the potential impact they have on participants' behaviour (Crano and Brewer, 2002).

Advantages of video observation

Video observation in primary care research focuses on the interaction between the practitioner and the patient, and technology or other personnel in the primary care

team (Pearce et al., 2006, Spelten et al., 2015). In doing so, rich verbal, nonverbal and para-verbal communication may be extracted for analysis which assists researchers to understand the dynamics and communication techniques, skill development, and engagement in reflective practice in order to improve patient and professional interactions and outcomes (Asan and Montague, 2014, Macdonald et al., 2013, Noordman et al., 2014, van Dillen et al., 2014a, Van Dillen et al., 2014b, Van Dillen et al., 2015, Verbiest et al., 2014).

Due to the nature of general practice consultations and potential spatial constraints, non-participatory video observation is useful in this context for analysing a specific set of behaviours, such as communication techniques and nursing / medical care delivery (Caldwell and Atwal, 2005, Crano and Brewer, 2002, Pearce et al., 2012). The technique is also seen as less intrusive and more practical than physical researcher presence (Pearce et al., 2010).

Disadvantages of video observation

Limitations of video-based research include that it is seen to capture a limited contextual and historical view, potentially further condensed through analysis (Jewitt, 2012). Additionally, researchers can feel overwhelmed with the amount of data produced (Jewitt, 2012). Concerns about participants' visual re-identification, privacy, and confidentiality are managed through careful attention to research design, including ethical approaches to privacy and confidentiality, and participant preparation (Asan and Montague, 2014, Jewitt, 2012).

Study design

This concurrent mixed methods study sought to address the overall research question; "What are the perceptions of and approaches used for lifestyle risk communication by registered nurses in Australian general practice?". The quantitative phase used video recordings to address the sub-question "How is lifestyle risk communicated between registered nurses and patients in Australian general practice?". The study was conducted in two Primary Health Networks on the East Coast of Australia. Convenience sampling was used to recruit 15 GPNs and 40 patients who were being seen by GPNs for chronic disease management consultations. Ethical

approval was obtained from the University of Wollongong Human Research Ethics Committee (2016/381).

Preparation

GPN Recruitment

Approval to undertake the study was, at times, required from a corporate board, practice manager, practice principal, the patient's treating general practitioner, the nurse manager, as well as the participating GPN and patient. This level of consultation was reflective of the hierarchical management structure in general practice (Wood et al., 2016) and added significant complexity to the recruitment phase. Strategies used to optimise recruitment and mitigate other challenges that presented during the study can be found in Table 1. Practice staff support for the data collection was a critical part of the process (Coleman, 2000, Henry and Fetters, 2012). Practices were reassured of minimal investment of practice resources, while patience, persistence, promotion and researcher familiarity with the GPN role was believed to enhance rapport and mutuality between researchers and GPNs (Blythe et al., 2013).

**** Insert Table 1 here****

Health practitioners tended to be more concerned about video data collection than their patients. In our study, approximately 94% of practices approached declined participation, citing concerns about being video recorded, being too busy, or not utilising GPNs for chronic disease management consultations. Similar to the findings of other studies, concerns about patient privacy and unease about being videoed impacted on recruitment (Henry and Fetters, 2012, Pearce et al., 2010). To allay GPNs' concerns, assurances were given both verbally and through the participant information sheet to all practice stakeholders relating to privacy, confidentiality, what would be recorded, how the video would be used, analysed, stored and who would view it (Jewitt, 2012).

Patient Recruitment

In previous studies, more than 80% of patients consented to having consultations video recorded (Coleman, 2000, Henry and Fetters, 2012, Neal et al., 2004). Patient participation in video-based research has been reportedly high, even in the absence

of an established therapeutic relationship (Spelten et al., 2015). However, selection bias concerns exist for those who consent to be video recorded (Henry and Fetters, 2012).

Due to the often ongoing relationships GPNs have with their patients and knowledge of requirements for consent, we asked participating GPNs to consent patients (Desborough et al., 2017, Nursing and Midwifery Board of Australia, 2018). General practice nurses asked consecutive patients attending for chronic disease management consultations to participate in the study until 2 to 4 participants were recruited. This attempted to mitigate selection bias related to which patients were approached. The number of video recordings and sample size required was calculated based on initial statistical advice relating to the tools being used to analyse the data.

Participating GPNs indicated that patients were more likely to decline participation if approached in the days preceding consultation rather than on the day of the consultation. Some participating GPNs described being selective about which patients they approached to participate, being less likely to approach patients if they were infrequent attenders to the practice or if the GPN did not have an established relationship with them. To mitigate this, the research aims were reinforced to GPNs prior to data collection, including the need to recruit consecutive patients.

Equipment planning

The first author's knowledge of contextual constraints was important for planning – understanding the dynamic nature of the GPN role and workspace layout impacted on the feasibility for researcher presence during consultations (Pearce et al., 2010, Pearce et al., 2012). In general practice nursing, these considerations include portability, setting variability, space, workplace organisation and culture (Spiers et al., 2000). However, spacial constraints did contribute to one recording not being used for the analysis of non-verbal behaviours because not all gestures could be viewed. Workspace characteristics and layout affect the GPN role in that many GPNs work in open or treatment room spaces (Pearce et al., 2012). To ensure confidentiality, video data collection only occurred where GPNs used a private consultation space. Even so, we benchmarked equipment components such as video hardware and methods of attachment (D'Agostino and Bylund, 2011, Östlund, 2016), piloted video observation

methods in five general practices for 14 consultations, and constantly evaluated our approach to determine the technique's feasibility and acceptability.

The research purpose and participant perceptions determined camera placement. These included acquiring multiple unobtrusive video cameras versus a singular video recorder, or, video recorder units suitable for use behind and in front of participants. Given that our study was examining communication between the GPN and patient - examining verbal, paraverbal and nonverbal body and facial cues - two cameras were used.

Chronic disease management consultations are largely conducted in front of a computer with minimal desk space. This required a small lightweight camera which could be easily mounted to face GPNs and patients. Additionally, naturalness of the setting are known to influence participant perception (Crano and Brewer, 2002), therefore, hardware was selected based on unobtrusiveness, ease of operation and a wide field of view.

Preparation for technological challenges or failures are necessary (Spiers et al., 2000). To accommodate battery needs over the course of the day, the remote control could be plugged into a USB port and external battery packs were purchased for each camera. The researcher also educated GPNs about the use of equipment and developed a 'Frequently Asked Questions' sheet regarding recorder operation. Researcher accessibility was also assured before and during data collection to address any potential technological concerns.

Data Collection

Set-up

Orientating GPNs to the data collection procedure was necessary to ensure consistency of the approach. This orientation occurred through email, via phone and in person prior to data collection and included verbal and written explanations of the research procedure, and provision of a 'Frequently Asked Questions' sheet and Participant Information Sheet. On the day of data collection, around thirty minutes was required for data collection set up procedures such as consent, primary investigator (PI) and GPN video testing and answering GPN questions. Only five minutes was needed to set up the video hardware. The video recorder was tested and

positioned by the researcher in the consultation room at a location negotiated between the researcher and the nurse, largely on top of or near a computer monitor and attached with a Velcro strip and Blu-tack. One camera faced the nurse and the other faced the patient. On the one occasion where a GPN declined to practice video operation, one video was unusable due to operator error.

Data collection procedure

To collect video data, two Go Pro Hero Session 4 cameras with micro SD 128GB cards and a GPN operated remote control. The remote control simultaneously operated and recorded consultations from both cameras. Nurses initiated the commencement and completion of recording at the beginning and end of the consultation.

**** Insert Figure 1 here****

Data Storage and Management

Once the recorder was retrieved by the researcher, data were downloaded, coded, and securely stored and backed up by the researcher on password protected computers. The SD card was erased for further recording. Guidance relating to the storage, transmission and disposal of sensitive data are part of ethical research principles and found through various data management guides and policies (Australian National Data Service, 2017, The National Health and Medical Research Council the Australian Research Council and the Australian Vice-Chancellors' Committee, 2007 (Updated May 2015)).

Data Analysis

Editing software selection was largely dictated by cost and the ability to slice and manipulate video data. Following consideration of software needs and conversations with video research experts, Windows Movie Player Version 2012 (Microsoft Corp., 2012) was used for video editing, SPSS Version 25 for quantitative data analysis (IBM Corp., 2012) and NVivo 11 for qualitative analysis (QSR International Pty Ltd., 2017). Analysis of video data can occur quantitatively through application of observational tools, or, qualitatively using methods such as interactional or conversational analysis

(D'Agostino and Bylund, 2014, Guassora et al., 2015, Macdonald et al., 2013, Noordman et al., 2014). This study utilised a combination of the Nonverbal Accommodation Analysis System (NAAS) (D'Agostino and Bylund, 2011), content and interactional analysis. The NAAS, an observational tool based on Communication Accommodation Theory (CAT), analyses the rapport and strengthening of therapeutic relationships through paraverbal and nonverbal indicators (D'Agostino and Bylund, 2014). Following verbatim transcription, sections of content analysis were further explored through verbal and interpersonal interactional analysis, whereby individuals learn through interaction in their social and physical environment (Grossen, 2010). Unlike the traditional medical relationship, nurse-patient encounters are typically collaborative and personalised in nature, potentially impacting on nonverbal detail during consultations (D'Agostino and Bylund, 2011, Pillet-Shore, 2006). Micro analysis of behaviours such as interruptions, speech rate and gestures using the NAAS were complex. However, analysis of interactional detail is useful in exploring variables associated with person-centredness, rapport, patient satisfaction, communication and consultation outcomes (D'Agostino and Bylund, 2014).

Analysis using the NAAS was conducted by the first author and five consultations were analysed by a second reviewer. Initially, investigators undertook analysis separately resulting in poor levels of interrater reliability. To assist interpretation of the NAAS, the PI shared reflective notes explaining interpretation of the tool following which two investigators analysed sections of video together. These steps facilitated discussion of and shared understanding and assumptions relating to tool components, such as gestures and speech rate. Intraclass correlation coefficients were then calculated to confirm inter-rater reliability. This revealed that ICC for each item was above acceptable levels (range 0.835-0.999) and interrater reliability was confirmed.

Video recorder presence can potentially affect participant behaviour, requiring researchers to monitor for evidence of participant influence and reactivity during analysis (Coleman, 2000, Spiers et al., 2000). In our study we sought to record multiple GPN-patient consultations. This optimised GPN familiarity with the data collection method which the researchers believe had the effect of minimising GPN reactivity to the camera.

Discussion

Recruitment strategies leveraged the PI's "insider" insight into the GPN role as well as persistence in accessing key staff was needed to to optimise participation. "Insider" knowledge is known to assist recruitment by encouraging rapport and collaboration with participants (Blythe et al., 2013). While other nursing settings and international primary care nursing literature indicates acceptability of the video technique (De Leeuw et al., 2014, Griep et al., 2016, Happ et al., 2011, Lenzen et al., 2018, Noordman et al., 2013, Spelten et al., 2015) our target population were much more challenging to recruit. This may, however, reflect the small business nature of Australian primary care and the subsequent complexity in accessing potential participants.

Video research in the GPN setting using a singular camera and software packages has previously been undertaken (Noordman et al., 2013, Spelten et al., 2015); however we used two cameras and software, which has not previously been reported. These technologies were readily available at relatively low cost. Claims of low cost multichannel recordings in general practice are not new (Sheeler et al., 2007). The development of low cost technology with high quality audio and video features has proved both attainable and beneficial for video observation research in our study.

The use of video has been argued as an unobtrusive means of data collection (Liu et al., 2015, Spelten et al., 2015). It was our experience that nurses were surprised by the small size of the recorders. Due to advances in technology, emphasizing the size of the cameras should further assist participant acceptability of the method, as well as reducing the potential for reactivity. Being clear to potential participants about the unobtrusive nature of the equipment may assist in recruitment.

Video observation is useful for studying context-dependent work practices but can generate large amounts of data (Hostgaard and Bertelsen, 2012). In this study, detailed analysis of consultations was time consuming in terms of uploading, editing, coding and analysis. The increased time taken for video observation research is consistent with other literature and should be considered in in the allocation of resources to fulfil research aims (Caldwell and Atwal, 2005, Jewitt, 2012).

Study limitations

The major limitation of this study was the modest number of participating practices and high rate of refusal to participate. While an adequate sample size was achieved, those who participated may not reflect the broader general practices in the recruitment area. Despite reinforcement of study aims and consecutive patient recruitment there was potential for GPNs to select and recruit patients perceived to be willing participants. Participant reactivity to video is also a potential limitation to the study. However, it was our experience that the recording of multiple consultations using unobtrusive equipment minimised this concern.

Conclusion

While video observation research requires careful consideration at each stage of the project, this is particularly relevant in the preparatory and data collection phases. Factors such as research aim alignment, hardware and software selections, contextual considerations and privacy and confidentiality concerns need to be considered. In the primary care setting this technique provides a practical means of examining naturalistic and targeted interactions to improve patient and professional communication and care.

References

- Asan, O & Montague, E 2014. 'Using video-based observation research methods in primary care health encounters to evaluate complex encounters'. *Informatics in Primary Care*, vol 21, no. 4, pp. 161-170.
- Australian National Data Service. 2017. *Publishing and Sharing Sensitive Data* [Online]. Australian National Data Service. Available: <http://www.ands.org.au/guides/sensitivedata> [Accessed 15th August 2017].
- Blythe, S, Wilkes, L, Jackson, D & Halcomb, E 2013. 'The challenges of being an insider in storytelling research'. *Nurse Researcher*, vol 21, no. 1, pp. 8-12.
- Caldwell, K & Atwal, A 2005. 'Non-participant observation: using video tapes to collect data in nursing research'. *Nurse Researcher*, vol 13, no. 2, pp. 42-54.
- Carrington, MJ, Jennings, GL, Harris, M, Nelson, M, Schlaich, M, Stocks, NP, Burrell, LM, Amerena, J, De Looze, FJ, Swemmer, CH, Kurstjens, NP & Stewart, S 2016. 'Impact of nurse-mediated management on achieving blood pressure goal levels in primary care: Insights from the Valsartan Intensified Primary care Reduction of Blood Pressure Study'. *European Journal of Cardiovascular Nursing*, vol 15, no. 6, pp. 409-416.
- Coleman, T 2000. 'Using video-recorded consultations for research in primary care: Advantages and limitations'. *Family Practice*, vol 17, no. 5, pp. 422-427.
- Crano, WD & Brewer, MB 2002. *Principles and methods of social research* United States of America, Lawrence Erlbaum Associates, Inc.
- D'agostino, TA & Bylund, CL 2011. 'The Nonverbal Accommodation Analysis System (NAAS): initial application and evaluation'. *Patient Education And Counseling*, vol 85, no. 1, pp. 33-39.
- D'agostino, TA & Bylund, CL 2014. 'Nonverbal accommodation in health care communication'. *Health Communication*, vol 29, no. 6, pp. 563-573.
- De Leeuw, J, Prins, JB, Uitterhoeve, R, Merckx, MaW, Marres, HaM & Achterberg, TV 2014. 'Nurse-patient communication in follow-up consultations after head and neck cancer treatment'. *Cancer Nursing*, vol 37, no. 2, pp. E1-E9.
- Desborough, J, Banfield, M, Phillips, C & Mills, J 2017. 'The process of patient enablement in general practice nurse consultations: a grounded theory study'. *Journal of Advanced Nursing*, vol 73, no. 5, pp. 1085-1096.
- Dowell, A, Stubbe, M, Macdonald, L, Tester, R, Gray, L, Vernall, S, Kenealy, T, Sheridan, N, Docherty, B, Hall, DA, Raphael, D & Dew, K 2018. 'A longitudinal study of interactions between health professionals and people with newly diagnosed diabetes'. *Annals of Family Medicine*, vol 16, no. 1, pp. 37-44.
- Griep, E, Noordman, J & Van Dulmen, S 2016. 'Practice nurses mental health provide space to patients to discuss unpleasant emotions'. *Journal of Psychiatric and Mental Health Nursing*, vol 23, no. 2, pp. 77-85.
- Grossen, M 2010. 'Interaction analysis and psychology: A dialogical perspective'. *Integrative Psychological and Behavioral Science*, vol 44, no. 1, pp. 1-22.
- Guassora, AD, Nielsen, SB & Reventlow, S 2015. 'Deciding if lifestyle is a problem: GP risk assessments or patient evaluations? A conversation analytic study of preventive consultations in general practice'. *Scandinavian Journal of Primary Health Care*, vol 33, no. 3, pp. 191-198.

- Happ, MB, Garrett, K, Thomas, DD, Tate, J, George, E, Houze, M, Radtke, J & Sereika, S 2011. 'Nurse-patient communication interactions in the intensive care unit'. *American Journal of Critical Care*, vol 20, no. 2, pp. e28-e40.
- Henry, S & Fetters, M 2012. 'Video elicitation interviews: a qualitative research method for investigating physician-patient interactions.'. *Annals of Family Medicine*, vol 10, no. 2, pp. 118-25.
- Hostgaard, AMB & Bertelsen, P. Using video observation to gain insight into complex clinical work practices. *Studies in Health Technology and Informatics*, 2012. 378-382.
- Ibm Corp. 2012. IBM SPSS Statistics for Windows. Version 21.0 ed. Armonk, NY: IBM Corp.
- James, S, Halcomb, E, Desborough, J & Mcinnes, S 2018. 'Lifestyle risk communication by general practice nurses: An integrative literature review'. *Collegian*, vol, no., pp.
- Jewitt, C. 2012. *An Introduction to Using Video for Research* [Online]. London: National Centre for Research Methods. Available: http://eprints.ncrm.ac.uk/2259/4/NCRM_workingpaper_0312.pdf [Accessed 15th August 2017].
- Joyce, CM & Piterman, L 2011. 'The work of nurses in Australian general practice: a national survey'. *International Journal of Nursing Studies*, vol 48, no. 1, pp. 70-80.
- Lenzen, SA, Stommel, W, Daniëls, R, Van Bokhoven, MA, Van Der Weijden, T & Beurskens, A 2018. 'Ascribing patients a passive role: Conversation analysis of practice nurses' and patients' goal setting and action planning talk'. *Research in Nursing and Health*, vol 41, no. 4, pp. 389-397.
- Liu, W, Gerdtz, M & Manias, E 2015. 'Challenges and opportunities of undertaking a video ethnographic study to understand medication communication'. *Journal of clinical nursing*, vol 24, no. 23-24, pp. 3707-3715.
- Macdonald, L, Stubbe, M, Tester, R, Vernall, S, Dowell, T, Dew, K, Kenealy, K, Sheridan, N, Docherty, B, Gray, L & Raphael, D 2013. 'Nurse-patient communication in primary care diabetes management: an exploratory study'. *BMC Nursing*, vol 12, no. 20, pp. 10.
- Microsoft Corp. 2012. Windows Movie Maker. United States: Microsoft, Corp.
- Muntinga, ME, Jansen, APD, Schellevis, FG & Nijpels, G 2016. 'Expanding access to pain care for frail, older people in primary care: a cross-sectional study'. *BMC Nursing*, vol 15, no., pp. 1-9.
- Neal, RD, Ali, N, Allgar, V & Coleman, T 2004. 'Consent rates for video-recording general practice consultations: Effect of ethnicity and other factors'. *Family Practice*, vol 21, no. 2, pp. 219-220.
- Noordman, J, Koopmans, B, Korevaar, JC, Van Der Weijden, T & Van Dulmen, S 2013. 'Exploring lifestyle counselling in routine primary care consultations: the professionals' role'. *Family Practice*, vol 30, no. 3, pp. 332-340.
- Noordman, J, Van Der Weijden, T & Van Dulmen, S 2014. 'Effects of video-feedback on the communication, clinical competence and motivational interviewing skills of practice nurses: A pre-test posttest control group study'. *Journal of Advanced Nursing*, vol 70, no. 10, pp. 2272-2283.
- Nursing and Midwifery Board of Australia. 2018. *Code of conduct for nurses* [Online]. Melbourne: Nursing and Midwifery Board of Australia. Available:

- <http://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/Professional-standards.aspx> [Accessed 17th January 2019].
- Östlund, A-S 2016. 'Primary care nurses' communication and its influence on patient talk during motivational interviewing'. *Journal of advanced nursing*, vol, no., pp.
- Pearce, C, Arnold, M, Phillips, C & Dwan, K 2010. 'Methodological considerations of digital video observation: Beyond conversation analysis'. *International Journal of Multiple Research Approaches*, vol 4, no., pp. 90-99.
- Pearce, C, Dwan, K, Arnold, M & Phillips, C 2006. 'Analysing the doctor-patient-computer relationship: The use of video data'. *Informatics in Primary Care*, vol 14, no. 4, pp. 221-226.
- Pearce, C, Hall, S, Phillips, C, Dwan, K, Yates, R & Sibbald, B 2012. 'A spatial analysis of the expanding roles of nurses in general practice'. *BMC Nursing*, vol 11, no. 1, pp. 13-20.
- Pillet-Shore, D 2006. 'Weighing in primary-care nurse-patient interactions'. *Social Science and Medicine*, vol 62, no. 2, pp. 407-421.
- Qsr International Pty Ltd. 2017. NVivo qualitative data analysis Software. Version 11 ed.
- Roland, M 1983. 'Videotape as a research tool'. *The Journal of the Royal College of General Practitioners*, vol 33, no. 250, pp. 300-1.
- Rossem, C, Spigt, M, Viechtbauer, W, Lucas, AEM, Schayck, OCP & Kotz, D 2017. 'Effectiveness of intensive practice nurse counselling versus brief general practitioner advice, both combined with varenicline, for smoking cessation: a randomized pragmatic trial in primary care'. *Addiction*, vol 112, no. 12, pp. 2237-2247.
- Sheeler, I, Koczan, P, Wallage, W & De Lusignan, S 2007. 'Low-cost three-channel video for assessment of the clinical consultation'. *Informatics in Primary Care*, vol 15, no. 1, pp. 25-31.
- Spelten, ER, Martin, L, Gitsels, JT, Pereboom, MTR, Hutton, EK & Van Dulmen, S 2015. 'Introducing video recording in primary care midwifery for research purposes: Procedure, dataset, and use'. *Midwifery*, vol 31, no. 1, pp. 95-102.
- Spiers, JA, Costantino, M & Faucett, J 2000. 'Video technology: Use in nursing research'. *AAOHN Journal*, vol 48, no. 3, pp. 119-124.
- The National Health and Medical Research Council the Australian Research Council and the Australian Vice-Chancellors' Committee 2007 (Updated May 2015). National Statement on Ethical Conduct in Human Research. Canberra: Commonwealth of Australia.
- Van Dillen, SME, Noordman, J, Van Dulmen, S & Hiddink, GJ 2014a. 'Examining the content of weight, nutrition and physical activity advices provided by Dutch practice nurses in primary care: analysis of videotaped consultations'. *European Journal Of Clinical Nutrition*, vol 68, no. 1, pp. 50-56.
- Van Dillen, SME, Noordman, J, Van Dulmen, S & Hiddink, GJ 2014b. 'Setting goal and implementation intentions in consultations between practice nurses and patients with overweight or obesity in general practice'. *Public Health Nutrition*, vol 18, no. 16, pp. 3051-3059.
- Van Dillen, SME, Noordman, J, Van Dulmen, S & Hiddink, GJ 2015. 'Quality of weight-loss counseling by Dutch practice nurses in primary care: An

- observational study'. *European Journal of Clinical Nutrition*, vol 69, no. 1, pp. 73-78.
- Verbiest, MEA, Chavannes, NH, Passchier, E, Noordman, J, Scharloo, M, Kaptein, AA, Assendelft, WJJ & Crone, MR 2014. 'Sequence-analysis of video-recorded practitioner-patient communication about smoking in general practice: Do smokers express negative statements about quitting?'. *Patient Education and Counseling*, vol 97, no., pp. 352-360.
- Wood, A, Hocking, J & Temple-Smith, M 2016. 'The practice manager role and relevance to general practice-based research: a review of the literature'. *Australian Journal of Primary Health*, vol 22, no. 2, pp. 86-92.

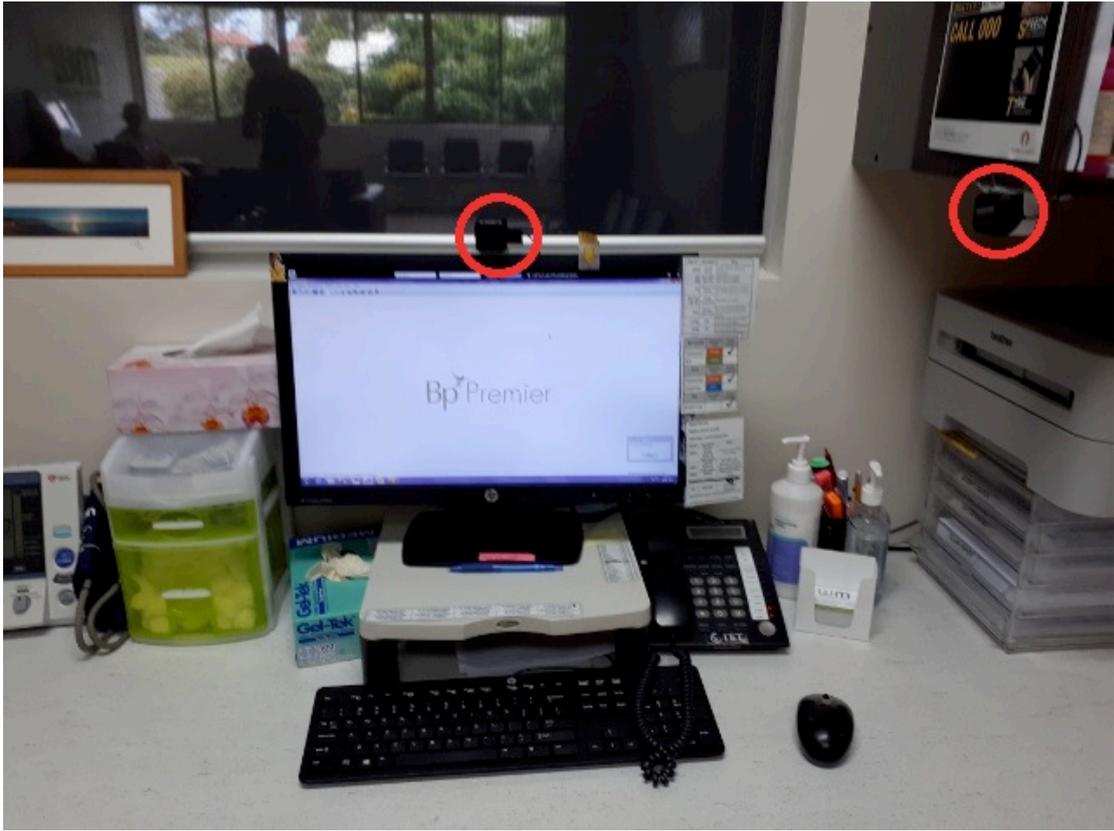


Figure 1: Typical GPN and patient view camera set-up (cameras circled).

Table 1: Potential obstacles, challenges and solutions for non-participatory video observations of GPN-patient consultations

Study stage	Potential obstacles and Challenges	Solutions
Preparation	Determination of the acceptability and feasibility of the technique	Benchmark technique with other researchers and literature. Pilot study components such as hardware, software and tools for analysis.
	Slow or poor recruitment	Persistence in accessing key stakeholders. High level of consultation with key stakeholders regarding study components such as the practice's investment in time and resources, data collection procedures, privacy and storage. Allow time for participating practices to discuss, approve and disseminate study information. Promote participation through professional networks. Familiarity with the participant role and study context.
	Patient selection bias by participants	PI reinforcement of research aims. Consideration by PI to this bias during analysis.
	Setting variability	PI knowledge of participant role and study context. Piloting video attachment, placement, battery needs and video setup. Consider need for multiple cameras. Hardware selections based on being small, lightweight, unobtrusive and a wide field of view. Determine data collection space appropriateness for privacy as well as video and sound quality.
	Technological issues	Piloting video components including internal and external battery needs such as USB ports or battery packs. Verbal and written education of participants regarding video operation. PI availability to resolve potential issues.

Data collection	Maintenance of study integrity	<p>Repeated participant orientation and education to study aims and data collection procedures.</p> <p>Researcher adherence to study aims, methods and data collection procedures such as multiple recordings per participant.</p> <p>Participant practice of video recorder operation prior to data collection.</p>
Data storage and management	Storage, transmission and disposal of sensitive data	Adherence to ethics and governing guidelines and policies.
Data analysis	Software selection	<p>Benchmark with other researchers who have used the technique.</p> <p>Trial available software to determine usability.</p> <p>Alignment of software capabilities with study aims and tools used.</p>
	Undertaking analysis	<p>Monitor and mitigate for potential sources of bias.</p> <p>Consider analysis complexity in relation to interrater reliability and time allocation.</p> <p>Moderate data volume for analysis through adherence to study aims.</p>