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Some strategies to address the challenges of collecting observational data in a busy clinical environment



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Summary Studies drawing on observational methods can provide vital data to enhance healthcare. However, collecting observational data in clinical settings is replete with challenges, particularly where multiple data-collecting observers are used. Observers collecting data require shared understanding and training to ensure data quality, and particularly, to confirm accurate and consistent identification, discrimination and recording of data. The aim of this paper is to describe strategies for preparing and supporting multiple researchers tasked with collecting observational data in a busy, and often unpredictable, hospital environment. We hope our insights might assist future researchers undertaking research in similar settings. © 2015 Australian College of Nursing Ltd. Published by Elsevier Ltd.

1. Introduction

The aim of this paper is to describe and address the issues involved in collecting observational data in a busy, and often unpredictable, hospital environment while using

multiple data collectors. In doing so, we hope to assist future researchers undertake research in similar settings. The study we draw on in this paper focused on violence in the health care environment. The specific phenomenon of interest was the examination of cues to violence and the violence itself. This required contextual detail; therefore data was collected in a clinical setting using an observational approach. The challenges faced from conducting the study included: ensuring and maintaining the multiple observers'

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shared understanding of the phenomenon under investigation; and issues around data collection and recording in a busy hospital environment.

1.1. Background

Studies drawing on observational methods can generate valuable data that provides insight and a deeper understanding of many types of social interactions. In the health context, aspects of clinical practice are amenable to observation (Caldwell, 2005) and data thus gathered can make an important contribution to knowledge and enhance health-care delivery. Observational data collection methods and qualitative approaches contribute to research by using 'natural' settings, which allow an explanation of social processes and phenomena. This is especially relevant for service professions such as nursing. Maas and Buckwalter (1989) suggest that for research to be optimally relevant to nursing practice it is necessary for it to take place in natural settings. Such methods can facilitate understandings of peoples' responses, behaviours, and practices; as well as how these responses, behaviours, and practices may change over time and in different contexts and situations.

Observational data may be structured or unstructured. Unstructured observations allow the observer to take notes (Pretzlik, 1994), to record naturally occurring phenomena, and do not restrict data collection to concepts and actions previously identified. Structured observations apply check lists or specific questions to be answered by observers and are considered to provide a more systematic approach to data collection (Wilkes, Mohan, Luck, & Jackson, 2010).

Some of the challenges of non-participatory observation in health care settings are outlined in the literature (Borbasi, Jackson, & Wilkes, 2005, chap. 5; Fitzpatrick & Boulton, 1996; Turnock & Gibson, 2001). The conflict between being an observer and being a clinician has been previously documented (Borbasi & Jackson, 2005; Borbasi, 1994; Parshuram et al., 2008). These issues can be challenging for the nurse/observer, particularly if issues related to ethical conduct or patient safety are observed. However, as suggested by Fitzpatrick and Boulton (1996), observer intervention can potentially alienate participants. Observer conspicuousness can also be an issue.

Borbasi and Jackson (2005) outlines the advantages and disadvantages of observers in hospital settings with and without nursing backgrounds and the fine line between establishing sufficient rapport with informants in order to collect meaningful data without 'going native'. Personal variables can also come into play during observation and these can include motivational, attentional and stylistic factors (Feldt & Brennan, 1989). Observer reliability can also be an issue when multiple observers are recruited and observer error can increase during long observation periods (Fitzpatrick & Boulton, 1996; Turnock & Gibson, 2001).

Observational studies can be very useful in studying subjects who might be excluded from studies due to perceived impediments, such as health issues, or those that are dying; communication issues (such as hearing impairment, cognitive impairment), issues of age or maturity (the very young and the very old), and where issues of social desirability may alter responses (such as drug use, sex workers) (Hammersley

& Atkinson, 2007). The use of non-participant structured observation allows incidents and interactions to be captured in busy hospital settings and thereby has the potential to uncover novel information about the nature of violence towards nurses in hospital settings (Jackson, Hutchinson, Luck, & Wilkes, 2013).

The observational study design addresses the challenges of conducting research in busy clinical settings because it allows researchers to explore or describe the phenomenon under investigation in context, using a variety of data sources (Baxter & Susan, 2008). As behaviour does not occur in isolation, research designs need to be able to capture the context of violence to provide essential contextual information (Gates, Fitzwater, & Deets, 2003). Observational studies can contribute something particularly useful to the discourses about violence in hospitals where self-reporting, often retrospectively, has previously been the most common method of reporting (Jackson et al., 2013). This is especially so given that an estimated 70–75% of violent incidents in the health workplace are underreported, unreported or underestimated (Luck, Jackson, & Usher, 2007). Furthermore, retrospective self-report is often restricted to a yes/no response meaning that the nature and context of phenomenon is not clarified.

1.2. Background to the study

Research undertaken by Wilkes et al. (2010) extended preliminary work conducted by Luck et al. (2007) and resulted in a predictive tool, the Violence Assessment Tool (VAT), to identify behavioural cues for physical violence towards nurses. This instrument comprised of 18 behavioural cues for physical violence in the emergency department, with staring, tone and volume of voice, anxiety, mumbling and pacing (STAMP) being the salient themes (Luck et al., 2007; Wilkes et al., 2010). Observers had an option to add unstructured comments on the situation and subjects in order to refine the cues and further develop the tool. In the study upon which this paper is based, the VAT was applied in real-world settings, that being in multiple busy hospital wards and emergency environments. Findings of the study have been published elsewhere (Jackson, Wilkes, Waine, & Luck, in press; Jackson, Wilkes, & Luck, 2014). The aim of this paper is to describe strategies for preparing and supporting research staff tasked with collecting observational data in a busy and often unpredictable hospital environment and using multiple data collectors. We hope our insights might assist future researchers undertaking research with multiple observers in similar settings.

1.3. Ethical considerations

The study received ethical approval from the relevant human ethics committees. Observations were undertaken in public areas, hospital wards and waiting rooms so that personal consent procedures were not required. The act of observing people caused no harm and did not impact on any relationships. Because of the sensitivity of conducting observations within the clinical setting, the ethics committee instructed that approval was given on the proviso that the team could not collect any medical, demographic or

potentially identifying information about the health staff, patients or persons accompanying patients.

2. Method

Structured, clinical observations using the VAT were conducted over a four-month period in the later part of 2010 for a total of 1150 h (see Tables 3 and 4). Timing of observation periods was an important consideration in the methodology of this study. Long periods of observation can distract the observer (Fitzpatrick & Boulton, 1996; Turnock & Gibson, 2001) and so periods of observation were conducted in episodes ranging from 4 to 8 h in length, with regular short breaks. The observation periods were chosen on advice from local hospital staff as being the best times to get more exposure to the phenomenon under study, that being violence against nurses.

In accordance with the study's ethics approval, observations were overt and conducted in thoroughfares and waiting areas in several departments in the hospital including delivery unit, acute general wards, geriatric assessment ward, and the emergency department. Most observations ($n=918$ h) were conducted in the emergency department, as this was the location of the majority of the physical violence and verbal abuse observed. Respect for the personal privacy of health professional staff and patients remained a priority throughout the project. Notices were displayed in the departments where the observers were located, detailing their role and the nature of data collected. Additional verbal information was provided to anyone who inquired.

Observers were provided with ongoing support and access to counselling services at all times during the data collection period (Jackson et al., 2013). Because of the potential for vicarious trauma (Kadambi & Ennis, 2004) to the observers, special attention was made to ensure telephone contact with the team and debriefing or counselling was available. Only two occasions in the entire study necessitated the debriefing of observers and both these occurred during the early stages of data collection. This was an essential part of the debriefing process of the observers and a strategy to safeguard their workplace health and safety. The project officer was available for additional support if problems arose during the study.

On conclusion of the observational stage of the project, observers were given the opportunity to provide researchers with written feedback as to the usefulness of the preparation and asked to share their insights on any further preparation that might have been useful. This reporting feedback was implemented to ensure the quality of the data collected via shared understanding and training. The workshop was well attended and feedback from the observers suggested that they had found the preliminary training very useful. The main challenges reported by observers were around establishing rapport with the clinical staff; and of feelings of self-consciousness on occasions, at being seen to be openly watching people and holding clipboards. This is difficult, if not impossible, to mitigate unless observers are hidden.

The busy and often unpredictable nature of the hospital environment must be considered in the design methodology of observational research. It is well known that such intense,

Table 1 Observer training workshop outcomes.

Workshop outcomes

On completion of the observer training workshop participants will be able to:

- Identify the objectives of the research project and the role and responsibilities of data collection
- Demonstrate critical thinking and analytical skills in using the VAT
- Define the elements of verbal and non-verbal behaviour cues that predict the potential for violence in the hospital context
- Interpret strategies for maintaining professional and ethical principles of research and personal health and safety

high-paced environments can distract observers from their research focus. The need to 'desensitise' observers to these clinical settings is therefore critical. In this study, to enable the breadth of data collection, multiple observers were required. A total of nine observers were recruited using a snowball technique whereby the recruited observers helped identify and recruit additional observers. To ensure the observers were sensitised to the high-intensity and fast-pace of the clinical setting, and would not be distracted from their observation role, observers were required to have health professional backgrounds and be familiar with clinical settings and patient/health professional encounters. In order to ensure optimal data quality and maximise inter-rater reliability, the observers required shared understandings and training to ensure data quality, and particularly, to facilitate accurate and consistent identification, discrimination and recording of data. Before entering the field to commence data collection, observers participated in an intensive training workshop to develop familiarity with the instrument, to practice using it and to enable an opportunity to ensure that observers had shared understandings of what behaviours were considered to comprise the various cues. The planned outcomes of the training workshop are outlined in Table 1.

One full day of interactive and experiential training was developed and this included both theoretical and practical applied elements. The workshop comprised of sessions involving videos, group discussions and assessments to ensure a consensus for scoring codes and better enabling participants to identify, discriminate and consistently record behavioural cues and violent episodes.

The sessions were conducted using adult education principles and were facilitated by one of the research team who held qualifications in adult learning (Wilkes et al., 2010). An authentic learning approach (Lombardi, 2007) was the underpinning rationale of the interactive and experiential learning activities. This approach enabled learners to work together on problem-based concepts, namely identifying and analysing verbal and non-verbal behaviour cues, across a range of perspectives which led to individual and group reflection (Cully & Polyakova-Norwood, 2012). This constructivist model enhanced the participants' knowledge through a 'scaffolding effect' of building on previously learned principles of data collection (Phillips, 2005).

Teaching strategies were utilised to optimise exploratory and logical thinking. Practical workshops of using the VAT while observing episodes of violent or potentially violent interactions from video clips and television dramas were included and participants were asked to comment on the presence of any cues to these depictions of violence. They were able to watch and re-watch these encounters, and discuss the smaller elements, reaching shared understandings of the presence and nature of any violence cues.

2.1. Use of role-play scenarios

Practical workshops of using the VAT were followed by active participation in several role-plays (see Table 2), which are useful for conveying problem-based learning concepts because of the critical thinking, evaluation and synthesis of new knowledge that takes place. Role-play has been viewed as an appropriate learning strategy for andragogical practice, due to the application of real-world situations which engage adult learners, yet are relatively safe learning

Table 2 Role-play scenarios.

Role-play Scenario 1

1 x patient, 1 x nurse, and remaining participants are observers.

CARD A: YOU ARE A PERSON WHO HAS COME TO THE HOSPITAL FOR HEALTH CARE. YOU ARE IN THE RECEPTION AREA OF THE ED:

- Approach the nurse and ask her for immediate help. Follow the nurse's instructions to you.
- As time goes by, begin to display the following behavioural cues:
 - Irritability—e.g. talking to yourself about the time you are being made to wait, twitching, jiggling, rubbing hands over face, sighing and groaning
 - Increased volume of speech
 - Name calling
 - Pacing around the waiting area
 - Making threats

CARD B: YOU ARE A NURSE WORKING IN THE ED OF THE HOSPITAL.

- When the client approaches you, direct her to the waiting area and tell her to be seated and wait until she is called. Tell her there will be a delay in someone seeing her due to the amount of people already waiting.
- Return to your station which is in hearing distance of the client, and respond non-verbally to the client's behaviour from your position.

Role-play Scenario 2

CARD A: YOU ARE A CLIENT WAITING IN THE ED AND YOU HAVE BECOME FRUSTRATED ABOUT NOT BEING ATTENDED TO.

- Approach the nurse at her station and demand attention. Follow the nurse's instructions to you.
- Almost immediately, begin to display the following behavioural cues
 - Clenched fists
 - Prolonged glaring and staring at the nurse
 - Agitation about surrounding noise and lights
 - Use your mobile phone to call someone, making aggressive statements about the lack of service
 - Walk back and forth to nurse's station
 - Shout for attention

CARD B: YOU ARE A NURSE WORKING IN THE NURSE'S STATION IN THE ED OF THE HOSPITAL.

- When the client approaches you, listen to her comments and then tell her to return to her seat and wait.
- Sit down again, but continue to monitor the client's behaviour, looking over at her whenever she displays some behaviour.

Role-play Scenario 3

CARD A: YOU ARE A PATIENT IN THE TRIAGE AREA OF THE ED. YOU ARE SITTING AT A DESK WITH THE NURSE AND RECEIVING TREATMENT.

- As the conversation goes on, begin to display the following behavioural cues:
 - Being rude
 - Humiliating remarks to the nurse about her and the care she is providing
 - Intimidation
 - Resisting health care

CARD B: YOU ARE A NURSE TREATING A PATIENT IN THE TRIAGE AREA OF THE ED. YOU ARE SITTING AT A DESK WITH THE PATIENT.

- Ask the client how, when and where they cut their arm.
- Tell the client that you will need to clean and bandage their arm.
- Attempt to swab the area and place a bandage on the client's arm.

encounters (Penny, 2008; Rutledge et al., 2008). Role-play has been linked with enhancing self-awareness and learning retention through stepping 'outside' oneself and into another role (Nelson & Blenkin, 2007) and have long been considered a valuable strategy of modelling expected behaviour or role performance, especially when they are new experiences (Shearer & Davidhizar, 2003). Role-plays have been implemented widely in health workforce education, particularly for teaching awareness of client illness journeys, cultural competence, leadership skills and the ability to converse sensitively and assertively with others (Cully & Polyakova-Norwood, 2012; Wanless & Adams, 2010). The role-plays were designed to emphasise acquisition of observational and analytical skills required during data collection.

Following recruitment via snowballing techniques, all the participants were familiar with at least one other group member before the training day commenced, which was important for the success of the role-play activities. Any initial reluctance was dealt with by using positive encouragement and humour. There were three role-plays of approximately five minutes each, followed by a full group discussion workshop. The overall themes depicted interactions between a nurse and client in the ED, firstly when the client arrived for treatment, then after they had waited for some time and lastly, when the client presented to the triage area for assessment and treatment. The client portrayed a range of emotional and behaviour cues showing increasing frustration, irritation and aggression throughout the scenarios. The role-plays allowed for flexible directions to be given to the participants. Participants were assigned roles of nursing staff, patients or observers. Each participant had opportunities to prepare and practise their roles before the activity began. Research has shown that providing learners with detailed, clear profiles before a role-play enables better engagement and confident performances (Nelson & Blenkin, 2007).

During the role-play, observers were asked to take note of behavioural cues of interest using the VAT. Observers were guided to specifically critique the interactions and make judgements about the communication dynamics within the dyads observed. All participants were informed of the expectations for them to participate in the role-plays and subsequent discussion, in the interests of creating an effective active learning environment for the group as a whole. The role-plays could end in a variety of ways, as individual participants interpreted the instruction to "respond non-verbally to the clients' behaviour." This resulted in spontaneous non-verbal communication cues, as in real-life clinical settings, that could be identified and discussed later.

2.2. Role of the facilitator during role-play

In order for the role-play workshop to be an effective learning activity, several elements of planning and implementation were required. It was important that the facilitator properly set the scene so that the participants could engage in active learning: setting clear learning objectives, giving clear instructions, for example a time-frame for preparing, role-playing and debriefing. Afterwards, it was vital to ensure that adequate discussion and debriefing occurred. The facilitator took care to defuse any negative

comments made whilst participants were 'in character' that could potentially cause tension in the group.

Problems of differing interpretations were skilfully managed by incorporating the shared understandings of the group. In this regard, the facilitator was integral to guiding the discussion to meet the learning objectives and encouraging critical thinking. Debriefing, in particular, provided a setting for reinforcing the principles of inter-rater reliability amongst the participants. Debriefing also involved exploring the way scenarios were different depending on the individual characters, yet similar behavioural cues could still be identified using the assessment tool, simulating the real-world data collection environment.

3. Discussion

The paper sought to describe and address issues involved in collecting observational data in a busy and often unpredictable hospital environment. The structured observational design allowed 'real-world' observational data to be gathered that reflected how cues for violence were enacted in the clinical setting, and produced data that was quantifiable, comparable and able to be analysed. Recruiting observers who were comfortable and familiar with the clinical settings and use of a structured observational approach (Pretzlik, 1994) reduced the risk of being distracted by the busy hospital background. During the debriefing sessions, the observers did not discuss identify any instances where they felt compelled to intervene. This could be attributable to the training workshops provided prior to entering the field. Motivational, attentional and stylistic factors (Feldt & Brennan, 1989) were discussed during the workshop with the emphasis on adult learning principles. Ensuring thorough training and monitoring of observers is critical in ensuring data quality and inter-rater reliability when multiple observers are recruited. These of course, are dictated by the allocation of time and resources, both personnel and financial. For this study, the process of training and monitoring observers was time consuming and the data collection period was limited due to time and budget constraints. More observation time of more patients is required to be able to verify the predictability of the assessment tool used in the study. For future studies, use of just two independent observers may improve data management processes as well as inter-rater reliability. Guiding questions for the comment section of the observation tool may have been useful to obtain more qualitative data on the tool and environmental conditions.

4. Conclusion

The need for observational research methods is clear and well established. Collecting observational research in busy clinical settings presents unique challenges, and developing strategies to address them is crucial to ensure quality data. The major strength of this study was that it captured observational data in the natural setting; in contrast to most studies concerning workplace violence in health settings, which are based on self-report only.

This study allowed a snapshot in time demonstrating the physical and verbal abuse encountered by nurses in their

everyday working lives. Nevertheless, there are several limitations to this study. Due to the observational nature of the data, it was not possible to record all incidents occurring during the observation period in their full detail and some events may have been missed. The subjective nature of the data collected must be acknowledged. Similarly, data were not collected in private spaces and it is not possible to identify whether the violence continued in this context. In addition, under the ethical approval for this study, personal details of the participants could not be gathered and therefore the medical status of participants could not be assessed. These variables may have been relevant to the cause and nature of violence observed, and for future research it would be very interesting to gather these details and analyse this information.

The amount, type and quality of data collected are primarily due to the observers' specialised skills in the field; as stated by Borbasi and Jackson (2005, p. 137), "the real instrument in a qualitative study is the researcher". Research studies must be designed and constructed with this in mind. In this study the observers were carefully recruited, trained in skills and rehearsed with role-play scenarios, de-sensitised to the field and provided with feedback mechanisms and additional guidance. These strategies were put in place to maximise the quality of data collected and increase consistency between observers and across observation time periods. Collecting observational data in clinical settings is replete with challenges because of the nature of patient activity and hospital environments. Addressing these challenges requires an investment of time, effort and cost in initial training; foresight; good planning and ongoing monitoring and support of those collecting observational data.

5. Conflict of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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