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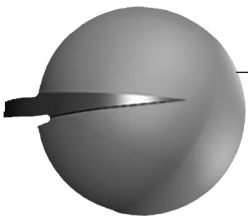
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## Original Article

# Using Nonparticipant Observation as a Method to Understand Implementation Context in Evidence-Based Practice

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### Key words

context, evidence, implementation science, knowledge translation, nonparticipant observations, nursing, triangulation

### ABSTRACT

**Background:** The uptake of evidence-based knowledge in practice is influenced by context. Observations are suggested as a valuable but under-used approach in implementation research for gaining a holistic understanding of contexts.

**Aim:** The aim of this paper is to demonstrate how data from observations can provide insights about context and evidence use in implementation research.

**Methods:** Data were collected over 24 months in a randomised trial with an embedded realist evaluation in 24 nursing homes across four European countries; notes from 183 observations (representing 335 hours) were triangulated with interview transcripts and context survey data (from 357 staff interviews and 725 questionnaire responses, respectively).

**Results:** Although there were similarities in several elements of context within survey, interview and observation data, the observations provided additional features of the implementation context. In particular, observations demonstrated if and how the resources (staffing and supplies) and leadership (formal and informal, teamwork, and professional autonomy) affected knowledge use and implementation. Further, the observations illuminated the influence of standards and the physical nursing environment on evidence-based practice, and the dynamic interaction between different aspects of context.

**Linking Evidence to Action:** Although qualitative observations are resource-intensive, they add value when used with other data collection methods, further enlightening the understanding of the implementation context and how evidence use and sharing are influenced by context elements. Observations can enhance an understanding of the context, evidence use and knowledge-sharing triad in implementation research.

## INTRODUCTION

It is widely acknowledged that the adoption of evidence-based knowledge in practice is influenced by the context in which it is implemented (Doran et al., 2012). Context has been defined as the setting or environment in which the proposed change is implemented (McCormack et al., 2002) and is included as a core element in several implementation models and frameworks (Damschroder et al., 2009; Nilsen & Bernhardsson, 2019). Researchers and practitioners are increasingly interested in identifying factors that influence the success or failure of implementation, including the influence of context (Williams, Rycroft-Malone, & Burton, 2016).

Improving healthcare services through delivery of evidence-based practice is critical to positive client experiences and outcomes. However, it is fraught with challenges and inherent complexities (Eccles et al., 2009) in which the context of practice plays an important role, for example, by influencing healthcare staff behaviour (Rycroft-Malone et al., 2013). Although historically the nursing community has paid attention to individual determinants of promoting evidence use in practice (Estabrooks, Floyd, Scott-Findlay, O'Leary, & Gushta, 2003), more recent work recognises that individuals' behaviour is situated in, and influenced by, work settings (Rycroft-Malone, 2008). Thus, there has been an increasing focus on the role context plays in

the implementation of evidence-based practice (Rycroft-Malone et al., 2002).

Several features may shape the context of practice and affect its receptiveness to implementation efforts; surveys or stakeholder interviews are favoured methods for capturing context (Evans et al., 2017). However, observations can provide valuable insights (Williams et al., 2017). The context of practice is complex and dynamic (Rycroft-Malone, 2008; Stetler, Ritchie, Rycroft-Malone, Schultz, & Charns, 2009), and researchers need to embed themselves into it to obtain a more holistic perspective (Patton, 2015). This paper aims to demonstrate the added and unique contribution observations made in comparison with survey and stakeholder interviews in a mixed methods implementation study. Given that observations tend to be a neglected method for understanding implementation contexts, this paper fills an evidence gap.

## METHODS

### Design

Data triangulation from nonparticipant observations, interviews and survey data (Creswell & Plano Clark, 2018) were collected in a large international implementation cluster-randomised trial, with an embedded realist process evaluation (Rycroft-Malone et al., 2018; Seers et al., 2018): the Facilitating Implementation of Research Evidence (FIRE) study. The Promoting Action on Research Implementation in Health Services framework guided the study (Rycroft-Malone et al., 2002); an overview of the overall study purpose and process is presented in Table 1.

## SETTING AND SAMPLE

The observations (in addition to the interviews and context surveys) took place over 24 months across 24 nursing homes in four European countries (England, Ireland, Netherlands and Sweden). They were performed by the research fellow(s) of each country's team, that is, altogether six investigators. Morning, lunchtime and the evening meals were identified as key times when continence care was often delivered and thus could be observed for application of continence practice recommendations. Altogether, the study comprised 183 observations representing 335 hours across five data collection points (details are presented in Table 2). The data used for analysing if and how observations added to the evaluation included findings from interviews conducted with 357 staff (Rycroft-Malone et al., 2018) and results from 725 responses to the context survey used, the Alberta Context Tool (Seers et al., 2018).

## DATA COLLECTION

A protocol was developed for the nonparticipant observations (Seers et al., 2011), including "Number of and

periods for observations"; "Approach"; "How to perform an observation"; "Follow-up on an observation"; and a template for observation notes (Mulhall, 2003; Spradley, 1980). Researchers noted observations in free text, guided by Spradley's (Spradley, 1980) nine dimensions: space, actors, activities, objects, acts, events, time, goals and feelings. Individuals, units and sites were given study codes to safeguard privacy. The observation notes were transcribed verbatim into Word files or converted to PDFs and stored securely for analysis.

Rigour was enhanced by investigators undertaking an observation exercise prior to the commencing of the data collection (Spradley, 1980). The project team discussed issues arising from experiences of the conduct and management of observations until consistency, that is, agreement on the approach was reached.

## ETHICAL CONSIDERATIONS

Researchers conducting observations dressed in their own clothes to denote that they were not staff, and in the consent procedures, they identified themselves as researchers. Written or verbal informed consent for observations was given by residents, staff and visitors/next of kin.

Ethical clearance was obtained in accordance with the requirements of each country: for England, approval was granted by the South East Wales Research Ethics Committee (number 10/WSE04/20); for Ireland, the University College Cork Ethics Committee (ECM 4(u) 02/02/10); for the Netherlands, the client council of Nursing Homes; and for Sweden, the Stockholm Research Ethics committee (2009/1806-31/2).

## DATA ANALYSIS

Initially, each country's research fellow(s) conducted a content analysis (Rycroft-Malone et al., 2018) of all qualitative data, including observations, thus becoming immersed in the data. Subsequent continuous dialogue and sharing of the analyses and the emerging categories ensured familiarity across the entire data set (Rycroft-Malone et al., 2018).

For this paper, a matrix including elements of context and evidence use derived from the above analyses was designed by the first author (Elo & Kyngas, 2008) and subjected to critical reflection by the research team. The final, agreed-upon matrix was then applied to the data, including the observation notes, and compared with the subcategories and categories derived from study interviews (Rycroft-Malone et al., 2018) and the overall results from the context survey (Seers et al., 2018). Contextual features that only appeared in the observation/fieldnote analysis were identified to demonstrate the added depth provided by, and the unique contribution of, observation data, along with illustrative quotes.

**Table 1.** Outline of the Aim, Design, Intervention and Data Collections of FIRE (Seers et al., 2011)

Aim	Design	Intervention	Data collection
To evaluate the feasibility, effectiveness and cost-effectiveness of different models of facilitation in promoting the uptake of research evidence on continence management in residential elder care.	Cluster-randomised controlled trial with embedded realist evaluation	<p>The sites were randomised to one of three strategies:</p> <ul style="list-style-type: none"> <li>• Standard dissemination of evidence – four recommendations of management of urinary incontinence in the frail elderly distributed via email to all managers, along with an implementation guide.</li> <li>• Type A strategy included the standard dissemination plus an internal facilitator enhancing the transfer of evidence into their day-to-day practice, applying a technical facilitation approach for 12 months.</li> <li>• Type B strategy included the standard dissemination plus an internal facilitator enhancing the transfer of evidence into their day-to-day practice, applying an enabling facilitation approach for 24 months.</li> </ul>	Mixed methods, for example recordings of urinary incontinence in residents' records, the Alberta Context Tool, nonparticipant observations and semi-structured interviews

## RESULTS

The observations illuminated three main contextual elements influencing evidence-based practice and the implementation process: resources (primarily staff and supplies); leadership, including formal and informal leadership in addition to professional autonomy; and person-centredness. Although these transpired in interviews and surveys too, the observation data provided additional depth and richness to their understanding. Two exclusive aspects, knowledge use and knowledge sharing, respectively, were evident only in the observations. The findings are presented with selected quotes to exemplify.

### Resources

Although the interviews provided data on the number of staff, including potential understaffing, and the distribution of staff across professions and occupations, the observations further illustrated how day-to-day issues in staffing in relation to resident needs were managed and who managed them. According to survey data, the availability of staff was a key contextual factor negatively affecting care delivery across all study arms. Meanwhile, the observations illustrated how unexpected needs of one or more residents altered the conduct of care and influenced the strain on personnel.

Healthcare assistants [HCA] 4 and 8 crisscross around each other as they prepare to take the residents to the dining room. They work fast and to a routine. (Site 66, at T2/12 months, England)

Further, observations informed the availability and management of supplies. Although the interviews and

health economics data provided a general idea of availability, the observations revealed how urinary incontinence (UI) supplies were used daily and how staff managed limited supplies in particular. A lack of supplies was a recurring issue, influencing the opportunity to deliver care to evidence-based standards. The observation data illustrated that in nursing homes where UI pads were discretely prescribed based on individual resident assessment (as recommended), the devices were often kept in the residents' own rooms, and borrowing was actively discouraged. The observation notes further revealed the reason for lack of supplies (like administrative errors such as a shortage of records for the need and use of supplies) or a lack of collaboration (between staff or between staff and management). This occurred in sites both with and without a person-centred approach to the application of UI supplies, although notes indicated this as a lesser problem to staff in nursing homes with a limited commitment to evidence-based UI practice.

The licensed practical nurse [LPN] goes to the laundry room to look for pants. Can't find the right size. Picks up the device in another resident's bathroom. Upon return, the resident is in the bathroom, asking for a piece of toilet paper to place in her knickers. (Site 6, at T3/18 months, Sweden)

### Leadership

While leadership was evident in the survey data, and to some extent in interview transcripts, the role of individuals' and teams' professional autonomy was evident only in observation data. Primarily, autonomy was influenced by the trust that the resident had in the individual member

**Table 2.** Numbers on Nonparticipant Observations per Country and Data Collection Points

Time points for, number of and total number of observation hrs (rounded down to full hrs)					
Country	Baseline	6 months into intervention (T1)	12 months into intervention (T2)	18 months into intervention (T3)	24 months into intervention (T4)
England	10 observations, 14 hours	6 observations, 10 hours	9 observations, 17 hours	0 observations <sup>a</sup>	0 observations <sup>a</sup>
Ireland	7 observations, 14 hours	9 observations, 14 hours	12 observations, 16 hours	12 observations, 20 hours	12 observations, 20 hours
Netherlands	11 observations, 22 hours	9 observations, 18 hours	8 observations, 16 hours	3 observations, 6 hours	3 observations, 6 hours
Sweden	24 observations, 48 hours	12 observations, 24 hours	12 observations, 24 hours	12 observations, 22 hours	12 observations, 24 hours

<sup>a</sup>A team decision was made not to burden the sites with further observations, as no further implementation was facilitated.

of healthcare staff, although nursing staff actions could be restricted by other members of the team or other professions or managers.

The LPN awaits another staff member commencing the shift at 8.00, and together they go to the resident who needs assistance of two people. (Site 2, baseline, Sweden)

Formal leadership attributes were captured in the context survey too, and some further aspects were shared during interviews. The context survey included leadership like feedback and change management and management of conflicts. In addition, the observations illustrated how teams and individuals interacted with the formal leaders (i.e. managers); managers, for example, made themselves available by setting up their office close to the care practice. Notes also demonstrated power issues between managers and nursing staff; observations detected staff becoming silent as managers passed by or collegiate interactions like friendly bantering.

At 9.40, caregiver A has helped her last client. She pages the other carers and asks if she can help any of their residents. By 10.00, all residents are taken care of. Staff sit down for a coffee break. (Site 6, at baseline, the Netherlands)

Although formal leadership was evident from survey and interviews data, the presence of informal leadership was mainly identified through observation; staff who had no formal leadership position could be consulted by others, for example, as a result of their personal traits, which made them influential, or by their skills or seniority.

'Oh they [the FIRE study facilitators] came here to tell me how it [continence care] has to be done. To be honest, it doesn't concern me. I don't know what it's for, and I don't want to know either. I'll tell you how I work: If the prescribed pad is not available, I just pick any pad off the shelf. There's more important stuff to worry about.' The other nurses laugh submissively. (Site 5, at T1/6 months, the Netherlands)

#### Person-Centredness

Unique to observation data was how the staff organised their work either by a resident or staff-centredness. For example, notes illustrated that staff prioritising the residents' needs and preferences gave precedence to the individual's needs for toileting, altering their itinerary to assist a resident to the toilet, whereas staff focusing completing on their tasks would not.

A resident sits on the toilet and calls for help. This goes on for minutes. When a member of the staff has helped another client, she goes to her and responds, her voice angry: 'Don't be so impatient, I have a lot of work to do and cannot serve you right away.' The resident is silent; sighs. (Site 1, at T2/12 months, the Netherlands)

Further, the implementation (or not) of person-centred values came across in terms of notes regarding designated areas for staff versus residents. In the interview data, the autonomy of residents was described in general, but the observation data illustrated how this was enacted, representing decisions made by residents and carried out by staff, mutual decisions between residents and staff, or staff making the decisions on behalf of the residents.

HCA1 is busy with her daily duties. As she enters the room of a resident, the resident starts talking to her. HCA1 sits down beside the resident. They chat for several minutes. (Site 2, at T3/18 months, Ireland)

Observations also conveyed how the physical environment impacted on collaboration and person-centred care; for example, some sites were constructed with long, straight corridors. Although this made them less homely, it facilitated communication and contact; notes illustrated how residents or next of kin could easily make contact with staff in straight corridors by calling out or waving although circular or separated corridors restricted communication and the ability of residents and staff to see each other. Further, the enactment of person-centred values in teams or by individuals could be seen in the way staff adapted the physical environment.

[Since previous data collections] the staff have reorganised the common areas: one is turned into a living room with chesterfields. Residents who have a mutual benefit from communicating with each other are seated together for meals, and those needing more assistance are now served in the central dining room. (Site 1, T3/18 months, Sweden)

### Knowledge Use

The observations identified staff's use of knowledge about UI through communication and subsequent actions. This finding was additional to that evident in interviews, which instead illustrated what knowledge the staff believed they had or lacked. What knowledge staff had and how it was applied was also observed, for example, when they explained their interventions and decisions to residents and next of kin.

Different types of knowledge were displayed: knowledge of evidence-based practice, when staff referred to standards and knowledge resources; individual experiential knowledge; tacit knowledge; and lay knowledge, referred to as "common practice."

The nurse asks the resident if he wants to wash himself or if he prefers the nurse to take over. The resident wants the nurse to take over. The nurse checks on a skin rash, assessing whether it has worsened. She uses a moisture barrier cream for its treatment. The resident has a special UI device which he secures himself. The nurse makes a note in the record, describing the condition of the resident's skin. (Site 1, T3/ 18 months, the Netherlands)

### Knowledge Sharing

In the context survey, formal interactions, an indicator for organised knowledge exchanges with others (e.g.

continuing education and team meetings), were generally scored lower than other indicators of context. The observations identified that the Internet was seldom used as a source of knowledge; the availability of computers with Internet access was limited, and staff asked their peers or looked for printed sources when lacking knowledge on UI issues. Further, the observations revealed that knowledge sharing took place spontaneously, tacit knowledge and experience being shared during everyday care and interactions. Though environments and structures for dialogue restricted knowledge sharing, if there was no space or time when staff could meet and discuss issues, staff in some cases improvised meeting places, using, for example, the noise of washing machines or music from a radio or CD player to prevent others from overhearing a discussion.

Registered nurse 4 and HCA1, HCA2, and HCA3 work quickly and routinely through the corridors; they exchange instructions and comments as they pass each other. (Site 5, BL, England)

Observations showed that in nursing homes with a high turnover or a high reliance on temporary staff, the teams spent a great deal of time talking about care provision issues, although with little or no sharing of knowledge or evidence. Rather, a lack of established teams signified discussions as to "what" and "who" rather than "why." Yet, observations also showed that staff familiar with home routines and the residents did not necessarily spend time sharing knowledge. The limited visibility in dialogues on evidence-based practice issues was evident primarily as a result of observation notes rather than interviews or survey data.

## DISCUSSION

Ethnographic methods like observations are known to be valuable for understanding context (Robertson & Boyle, 1984). In particular, observations provide both insight into and understanding of culture, in addition to changes that may or may not occur (Fry, Curtis, Considine, & Shaban, 2017). In implementation science, the ethnographic perspective can capture signs of underlying issues, as they manifest in people's behaviours and actions (Leslie, Paradis, Gropper, Reeves, & Kitto, 2014), although attitudes and relationships can be traced in how people interact with each other (Patton, 2015).

In this study, observations not only assisted in capturing the aspects of context found in other data and the relationships between different contextual aspects, but they also identified a wider range of aspects within the environment, resources, and relationships, as well as philosophies of practice (Cammer et al., 2014). Observations revealed that leadership relates to both teamwork and

professional autonomy and also influenced both knowledge use and sharing. Leadership has been identified as crucial in implementation endeavours, particularly affecting whether or not knowledge transfer is facilitated (Gifford, Graham, & Davies, 2013). Thus, understanding both formal and informal leadership within the implementation context is important, in relation to the environment where the nursing care took place. This was found to impact how resources were used and to influence collaboration, team approaches, knowledge use and sharing – and thus whether or not practice was evidence-based.

Context is considered a fundamental factor influencing evidence implementation (Dainty, Racz, Morrison, & Brooks, 2016). Context is also known to influence how new practices might be facilitated and for providing some explanation for what happens and why (Rycroft-Malone et al., 2013). Although observations are suggested suitable for capturing what happens and why, and particularly interactions and with whom participants are engaged (Kilpatrick, 2013; Sanders, Harrison, & Checkland, 2010), we found the observation data resonated with dimensions of the Alberta Context Tool (Estabrooks, Squires, Cummings, Birdsell, & Norton, 2009). However, observations revealed the dynamic nature of interactions between contextual and individual factors and identified aspects not covered by the context measurement tool. Thus, ethnographic observations can provide “full and rich descriptions of long term context” (Cammer et al., 2014) additional to the overall measure by context surveys.

## STUDY LIMITATIONS

Varied data collection processes between researchers could impact on the rigour of the observation data; in the FIRE study, we relied on handwritten notes (Seers et al., 2011), although the ethical challenges of video recording observations with vulnerable groups precluded this option. The risk of researchers’ bias impacting on what was chosen for observation and when was addressed; piloting observation methods and discussions with fellow researchers throughout the analysis provided the opportunity to bring preconceptions to the surface. Further, self-awareness and appropriate ways to demonstrate rigour are essential (Houghton, Case y, Shaw, & Murphy, 2013), with the adoption of comprehensive dimensions (Spradley, 1980) endorsing the flexibility essential for not missing unanticipated aspects, opportunities and experiences during the observations (Parfitt, 1996; Storesund & McMurray, 2009).

## IMPLICATIONS FOR FUTURE RESEARCH

Observations are impeded by being resource-intensive and thus costly, mainly in terms of time and manpower; they require researchers to have a self-awareness of their

own prejudices and perspectives and acknowledge how those may impact on the description produced (Smit & Onwuegbuzie, 2018). Yet, observations provide an opportunity to obtain a deeper and richer insight into an implementation context (Eldh, Tollne, Förberg, & Wallin, 2016), including how the physical and social context interacts to mediate knowledge sharing and knowledge use in nursing homes and other healthcare settings (Eldh et al., 2017).

## CONCLUSIONS

Observations can capture additional perspectives, enabling a thorough understanding of aspects of context and the relationships between context and knowledge use. Thus, observation is a useful tool in implementation researchers’ armoury for use alongside quantitative measures like context surveys and other qualitative inquiry approaches such as interviews.



### LINKING EVIDENCE TO ACTION

- Context is crucial for implementing evidence in practice, and observation provides a richer understanding of context that can help implementation efforts.
- Although observations are resource-extensive, efficiencies can be gained by being targeted and focussed – observation guides can help with this.
- Observations can provide a unique perspective on features of context that are difficult to capture through methods such as interview and surveys because they enable researchers to study physical and social characteristics from a different perspective.
- Observations augment an understanding of the context, evidence use and knowledge-sharing triad.

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