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Review article

A diagnostic radiographer's experiences of using ethnography and observation within radiography research

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ABSTRACT

Objectives: This article outlines the use of ethnography as a qualitative research methodology and one of the key data collection methods that is used in ethnographic studies, observation. This is explored in the context of the researcher's doctoral study.
Ethnography and observation will be discussed in relation to research within radiography and their application within qualitative research studies.
Key findings: The author uses examples from their own work to illustrate the strengths and challenges of undertaking an ethnographic study using observation within a diagnostic imaging department.
Conclusion: Ethnography and observation can be utilised to highlight the professional culture of a group of people and uncover some of the unknown behaviours that may be exhibited.
Implications for practice: Ethnography is a useful methodology within radiography research which can be utilised when behaviours and norms are of interest.

Introduction

Ethnography

For this article I will be writing in the first person in a narrative style as I am discussing my own perspectives, thoughts and experiences.

Ethnography is a qualitative research methodology that promotes a way of seeing and interpreting the world. In my book 'The ethnographic radiographer'[1] I explain that when since I started on my doctoral journey in 2006, I have developed an understanding of the benefits of and the use of ethnographic research in a practice-based profession like radiography. This article focusses on my own doctoral research and my experiences of using ethnography and observation for that study. As an ethnographic researcher you spend an extended period of time with the participants of your study, and you develop a relationship with your participants, getting to know them. This is an important aspect of ethnographic research as the researcher needs to become part of the group to understand how the group works. They need to develop a rapport with the participants to develop trust. The researcher learns about different groups of people, or the culture of a group and they study the ways in which different groups of people live, behave, work and interact with one another.[2–5] For me, this is what makes the methodology fascinating, you can get to know people, learn about how they think and behave and you are able to ask questions to find out more.[1,6,7]

My doctoral thesis was 'An ethnographic study of the culture in a diagnostic imaging department'[8] and I will be reflecting on this work throughout the article.

Ethnographic research employs a range of research methods using an obvious, common-sense approach.[5] The different data collection methods are used to make sense of the participants and the group being studied in order to understand their group norms, values and behaviours. Observation is the main method of data collection and is usually the starting point for an ethnographic study.[9] The researcher gains access to the group, usually via a 'gatekeeper' and spend time with the group, observing their behaviour and communication within the group. During the time that the researcher is observing the participant group, the researcher can also ask questions to clarify what they are observing, and to start to make meaning from what they have observed.[8,10] The period of observation of the group is usually followed by asking questions about what was observed in a more formal way using research interviews and/or focus groups with the

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participants.[2] The choice of individual interviews or focus groups will be at the discretion of the researcher and will depend upon the topic and the group being studied. For example, focus groups can allow for discussion and consensus, but group dynamics can be a potential challenge whereas interviews can allow for exploration of an individual's perspective.[11] I selected individual interviews as I wanted to explore with the participants the reasons for the behaviours that I had observed, for example, the use of dark humour. The ethnographic researcher can also study the artefacts and 'props' used within the group, for example the equipment that is used, policies, protocols and guidelines. An ethnographic study is very similar to the ways in which we all make sense of our world, using all our senses.[1,12] For me, the simplicity of ethnography is key, it is all about being curious. Yet, the ethnographic researcher can also utilise a systematic and rigorous approach to research. Ethnography is still the most suitable methodology to learn about different groups of people and how they interact and behave and it can be applied to research studies when the behaviour of a group of participants is a key part of the research.[5] Observation can uncover things that we did not know about beforehand, for example group norms and behaviours that may not be reported in other research methods.[13] Participants can have more control about what they chose to share in a questionnaire, interview or focus group, but observation of their practice will pick up on what actually happens.[1] For example, if you asked participants how often they wash their hands in a face-to-face interview or in a questionnaire, they will tell you that they do this often and in between every patient, but if you observe them in practice, you will find out what really happens and how often they actually wash their hands.

In my book[1] I explain that my introduction to ethnography as a methodology came from watching the film 'Paris is Burning',[14] an American documentary which was filmed in the mid-1980s. The film uses ethnographic methods to study the 'Ball Culture' of New York city and the African-American, Latino, Gay and Transgender communities involved in it. The film director, Jennie Livingston spent time with the group to learn about ball culture and voguing. She also researched African-American history, literature, and culture, as well as reading up on queer culture and the nature of subcultures. As well as spending time with the group, observing their group culture Livingston undertook audio interviews with several of the 'ball people' in order to 'crystalise' her findings.[15] The main scenes in the film were shot at the 'Paris is Burning' ball in 1986. The film is an ethnography of the culture of the group being studied using film clips of their lives and their preparation for attending balls and through interviews undertaken with the key members of the group.

This film helped me to understand that ethnographic research is a methodology where the researcher spends time with the participants, becoming and being part of the group or culture being studied in order to gain an understanding of the group.[16] When watching 'Paris is burning' I could gain an understanding of the participant's world and what it was like to be part of the group through the filming of the 'ball culture' (observation) and through the filming of the interviews. Providing such an insight into different groups of people was a 'hook' for me and I could see how this could be applied to my own area of practice.

Ethnography comes from both British social anthropology,[17] where researchers travelled the world to study different cultures and in American Sociology (from the Chicago school) which used observation to explore groups on the margins of urban industrial society.[18] The aim of these two different groups was to provide cultural descriptions of the groups they had studied.[19] Since then, ethnography has developed as a research methodology and moved into other spheres such as education, health care and social work. In many respects ethnography is really a basic form of social research; it bears a close resemblance to the ways in which we try to understand our world in everyday life.[20] Ethnography is as relevant now in contemporary research as it was in historical anthropology.

Ethnography involves the study of a particular social group or culture in their naturally occurring setting.[21,22] This means that the researcher needs to move 'into the field' and be within the group being studied for data collection and they need to have access to the group and this may need a 'gatekeeper'. The researcher needs to become part of the group culture that is being studied to gain understanding and insight and to record their findings. They need to have direct and sustained contact over time with the group of people being studied within their cultural setting, i.e., where they are situated or where they meet as a group. This involves watching what is happening, listening to what is said and asking questions.[11] Ethnography seeks to explain the culture of the group.[5] It also involves collecting data to 'throw light on' the issues that are the focus of the research.[20] The group should be studied in its natural state and setting and be as undisturbed by the researcher as possible, so that 'normal' behaviour is observed.

An ethnographic study takes time, it is not a short-term study, as the researcher should spend an extended period of time with the group in order to reduce the impact of their presence on the situation being studied, this minimises the Halo and Hawthorne effects.[23,24] People can sustain an act or maintain their best image only so long, then 'normal' behaviour is resumed.[25] The researcher's presence may alter behaviour for a short period of time, but this will only continue for a while and after time the participant's 'normal' behaviour re-emerges. The researcher may end up becoming so much part of the group, that the group members forget why they are there. The choice of ethnography as a methodology was so that I could spend an extended amount of time with the participants to gain a thorough understanding of the professional culture rather than gaining a snapshot at one point in time. This allowed for 'thick description' of the context.[16,19,26] In my opinion, there is no substitute for spending time with the participants so that the Halo and Hawthorne effects wear off.

The concept of 'rapid ethnography' has been discussed in the literature more recently, and this involves a much shorter timeframe. Vindrola-Padros and Vindrola-Padros[27] published a systematic review of rapid ethnographies in healthcare organisation and delivery in 2018 and have provided detailed information and guidance on how rapid ethnographies can be undertaken in their other publications.[28–30] Although such studies can provide a useful insight, they involve less time spent observing the participants and the authors suggested that some of the limitations of these studies could be poor quality of the study design and methods, and the lack of reflexivity. However, such rapid ethnographic reviews can be utilised in time-sensitive contexts and still provide a useful overview of the culture of the group from a shorter period of observation.

Ethnographic research is by its very nature iterative and inductive, that is, it continues to evolve over time.[11] An inductive approach, which is also known as inductive reasoning, starts with the data collection, which in the case of ethnography is a period of observation and the rest of the study develops from there.[19] Patterns are recognised and the study evolves from the data that have already been collected, for example, interview or focus group questions would not normally be written until after the observation is completed as the researcher will want to explore further some of the things that they observed.[31] In interviews or focus groups, explanations emerge as the study continues and the researcher is free to change the direction of the study as the research process continues. The benefit of an inductive approach is

that it allows for flexibility depending on the findings. The researcher can therefore respond to what has been discovered in the way that they proceed with data collection and analysis.[11]

Observation

As stated earlier, an ethnographic study usually starts with a period of observation where the researcher spends time observing the participants in their natural setting, getting to know them and how the group works. The length of the period of observation is really governed by the situation, the setting and the researcher's judgement. Observation could also be via video recording and video ethnography is becoming more popular.[32] However, video recording would not be permitted within an NHS setting for ethical reasons. A video can be useful in aiding recall after the event when writing notes but may miss events if not focussed in the area of 'action'. Observation would normally end when data saturation is reached, and this is at the discretion of the researcher. Data saturation occurs when no new information is being uncovered and this would be a decision made by the researcher.[16] Other reasons for ending the period of observation include ending of access to the field, lack of funding to continue and limited time.

If the group being studied is based in a particular location, for example a place of work, a floor plan or map of the location can be beneficial to the reader to provide information about space and place as well as providing the context and location of events.[33] This helps when describing which behaviours and actions occur in specific places, so in my own work this demonstrated the 'front and back stage' locations within a diagnostic imaging department, a finding also shared by Murphy.[34,35]

The researcher needs to decide how much to participate in the group being studied and what their role will be. Gold[36] created a typology of participant observer roles for observational research in 1958 which is still relevant (see Table 1).

The researcher will need to decide which role works for their particular study when observing, and this will be governed by the group being studied and the gatekeeper to the group. For example, in my doctoral study I took on the role of 'observer as participant', I was not employed to work where I undertook my research, but I did wear a radiographer's uniform and participate in some activities such as pushing patient's beds or assisting with moving and handling patients. The gatekeeper to the department (the manager) specified that this was the role that they wanted me to take.

Consent must be obtained from those being observed and so the researcher needs to be overt. However, you do not want to keep reminding the participants of your presence and why you are there, as you want them to continue to behave normally, so there is a tension between overt and covert in the observation.[37]

Table 1
Gold's typology of the participant observer roles.[36]

The complete participant	Takes an insider role, is fully part of the setting and often observes covertly.
The participant as observer	The researcher gains access to a setting by virtue of having a natural and non-research reason for being part of the setting. As observers, they are part of the group being studied. This approach may be common in health care settings where members of the health care team are interested in observing operations in order to understand and improve care processes.
The observer as participant	In this role, the researcher or observer has only minimal involvement in the social setting being studied. There is some connection to the setting, but the observer is not naturally and normally part of the social setting.
The complete observer	The researcher does not take part in the social setting at all. An example of complete observation might be watching children play from behind a two-way mirror.

Observation involves sound, movement, touch and smell as well as visual cues. The observer needs to be aware of their senses,[12] and in the case of my doctoral study this involved observing how the human body was central to the healthcare environment where I was observing.[8]

Discussion

Ethnography in radiography research

Ethnographic research is useful in radiography if we want to understand how a group of people behave and to try to seek an explanation for their behaviour. Within radiography, ethnographic researchers can explore the 'why' behind radiographic practices, exploring the social, cultural, and organisational factors that influence how radiographers work. In understanding the context of radiographic practice, ethnography can help to identify potential areas for improvements in quality and safety, for example, the communication between referrers and radiographers or management of patient to radiographer interactions. Ethnographic studies can examine how professional knowledge is shared, accessed, and created within the radiography profession, for example, how students learn.[1]

Within radiography, ethnographic studies could focus on different imaging modalities, for example ultrasound or magnetic resonance imaging (MRI), to understand some of the social and cultural aspects associated with working in these imaging modalities. Ethnography can be used to understand how radiographers perceive their patients and interact with them, how they manage the workflow in the department, how they handle complex cases and how they interact with other professional groups.

Why ethnography?

Ethnography should be the chosen methodology when the researcher wants to gain a deep, contextualized understanding of human behaviour and culture within a bounded group of people, using direct observation, being immersed in the group within a specific setting.[1,16,38] It allows researchers to see what people actually do, rather than what they say they do, observation reveals nuances and complexities that might be missed when conducting interviews or surveys. By spending time in a setting with the participants, ethnographers can observe social interactions, power dynamics, and cultural norms that might not be apparent from outside the setting and may not be reported by participants.[39,40] Ethnography can be used to inform service development by assessing needs or understanding how current systems work.[41]

Reflexivity

Reflexivity is key to ethnographic research.[42] Reflexivity considers the ways in which the researcher influences the study and the researcher should examine their own beliefs, judgements, behaviours and practices during the study and how they may have had an influence on the research process.[19,43] Reflexivity is an important part of any qualitative study as there are many ways in which the researcher can influence or affect their study. This influence includes the choice and design of research methods, the data collection tools, the ways in which the data are collected, the data analysis process and the ways in which data and findings are presented. Reflexivity is "a concern with how the selves and identities of the researcher and researched affect the research process" [19] The researcher needs to be 'up front' at the start of their study, stating who they are and giving their own professional background so that the reader can understand the decisions that

they have made during the research process. The researcher explains the lens through which they view the world and their own research.[11] This subjectivity should be obvious, acknowledged and not hidden. In making this explicit, the legitimacy of the data and the way in which it is represented can be believed and can be considered trustworthy.[44,45]

In a qualitative study, and particularly within ethnographic research, the researcher is the research instrument and so the study will be influenced by their decisions throughout the data collection. For example, within an ethnographic study the researcher will decide what to observe, where to observe, who to observe and how long to observe for. They will also decide how to note their observations and the structure that their fieldnotes will take. Trustworthiness of qualitative research is measured in a different way from quantitative research, instead of reliability and validity, the following measures are recognised; credibility, dependability, authenticity, transferability and conformability.[46] Ensuring trustworthiness comes from, introducing the researcher, their background and from triangulation – the use of more than one method of data collection,[47] thorough data collection and fieldwork – prolonged engagement with the participants,[48] having a thorough audit trail which outlines the processes used,[49] member checking – which involves verifying the themes with the participants and being reflexive.

So, in my case, when studying my own profession for my doctorate, I needed to be honest about who I was and the lens through which I was observing the world; as a diagnostic radiographer, an educator and a researcher, as this had an influence on the study.[8]

Challenges

Ethnographic research in radiography requires careful consideration of ethical issues, particularly in relation to patient confidentiality and the potential impact of the research on clinical practice. Participants should give consent to being observed and can withdraw their consent at any time throughout the study, which needs to be managed by the researcher. It is difficult to gain consent from everyone who interacts with the group being studied, particularly in a work setting as others who are not participants may venture into the setting, this could include both patients and staff members from other departments.[37,50,51] In my study I was bound by my own professional code of conduct in this situation and as my focus was on the diagnostic radiographers and I was able to articulate this to the local NHS research ethics committee who accepted this explanation.

When you are observing practice there is also a dilemma about when and if you might need to intervene. This could be if something occurs that you could not simply 'watch'. Johnson[33,50] discusses why intervention is a difficult concept for researchers in the clinical environment. He calls the lack of intervention by a researcher the 'wildebeest perspective',[33] referring to nature documentaries where the person filming does not intervene when the predator stalks and eats the vulnerable new-born and ageing wildebeests as it is argued that any intervention here would disturb or intervene with nature. Johnson[33] goes on to state that it is useful for a researcher to consider where interventions or their avoidance can be planned for or predicted in research, but this does not reflect the turmoil of the real and messy world of clinical research. Johnson[50] suggests the development of a personal 'bottom line' of care below which the researcher feels they must intervene. My 'bottom line' was if I thought that anyone could be harmed unnecessarily when I was observing. Practice that is less than satisfactory should be reported in research, because although this may be controversial, without reporting such incidents future practice cannot improve and the profession being observed is not able to move forward.

The confidentiality and anonymity of the participants should be preserved, and they also need to be assured of this. This can be done by using pseudonyms or numbering the participants. There also needs to be an awareness of expressions of speech when using quotations from interviews or focus groups as these may inadvertently identify the participant.[1]

Participants should be given the opportunity for support should any element of the study cause them distress. This may seem to be a little over-protective. However, there may be a situation during the observation for example where something goes wrong with a patient or during the interview, a participant may become distressed when recounting an incident that occurred in the past. In order to approve a study, ethics committees will need assurance that this support is in place either via an occupational health department in a work setting or through an independent counselling service.[1]

Ethnographic data

In this section I am going to refer to my doctoral study and some of the ethnographic data as an illustration.[8]

The aim of my study was to explore the culture in a Diagnostic Imaging Department with the primary focus on diagnostic radiographers. The objectives were to describe the culture in a diagnostic imaging department and highlight the current workplace cultural issues that face diagnostic radiographers, to explore how people learn to become a diagnostic radiographer and how they become professionally socialised, and to observe and describe how diagnostic radiographers communicate and interact within the department.

An ethnographic approach was used and participant observation was carried out for a four month period in an imaging department in the East of England. Semi-structured interviews with ten key informants were carried out to explore further the issues uncovered by the observation.

The data were analysed using thematic analysis and four overarching concepts were identified.

- Relationships with patients
- Relationships with colleagues

Table 2
The overarching concepts and themes.

Relationships with patients	Relationships with colleagues
Involvement with patients	*Use of dark humour*
Task focussed interactions	Team working and communication between radiographers
Time pressures and waiting times	Interprofessional relationships radiographer – radiologist relationships
Avoiding confrontation	Discussion and story telling
Categorising patients	Role modelling
Structure and environment	**Characterising the role of the diagnostic radiographer**
Blame culture	*Visible product*
Structure, organisation, routine – the way things are done	Radiographers' views about research, continuing professional development and evidence-based practice
Workflow	Extended role and barriers
Behaviour in different areas	Dealing with radiation

As an illustration, I am going to focus on one of the key themes of 'dark humour' which sat under the overarching theme of 'relationships with colleagues'.[8,52]

- Structure and environment
- Characterising the role of the diagnostic radiographer

Table 2 below shows the overarching and subthemes from my doctoral study, within each of the overarching themes there was one key theme and several other subthemes.

During my observations and interviews I was aware that like many other professions working in public services, radiographers use dark humour as part of their conversations about service users.

The radiographers saw the use of dark humour as a coping strategy, and a way of dealing with the difficult situations a radiographer has to face.

> *"I think it's a coping strategy you know … I guess you turn it into humour to keep you going, it's just a coping mechanism … well you can't cry, you can't well you can't show any emotion so the only way you can show it is by joking about it and turning it into something light hearted."*
> ***Interview with radiographer.***

> *"I think it helps you to cope, to make a joke, otherwise you can get quite depressed I suppose. Oh yes, definitely, it is about how we cope. It is you know how you get through it and otherwise you know you'd just get so depressed and so stressed you well you wouldn't cope. You have to not take it into heart too much … but it's good that you can you know well even if something starts off as a joke it brings it to the fore and you can you can then discuss it you know … there's no point in trying to hide things up and pretend it didn't happen. If you take it on board it's not healthy no no."*
> ***Interview with radiographer.***

The use of humour gives staff members a way of discussing something that has happened and bringing it out in the open in a non-threatening and less serious way. The manager had a slightly different take on this and talked about how uncomfortable they felt about discussing life and death matters.

> *"You're actually dealing with things that are well if they happen to you would be the stuff of your worst nightmares but because you're in a front line hospital, you've got people coming well if you've just had a severe road traffic accident or have got the worst forms of cancer, the things that you absolutely dread and it's not actually you know even as I'm sitting here talking to you about it on that level well it almost feels uncomfortable but you'd normally cope with it by saying or by treating it a little bit more lightly."*
> ***Interview with Manager.***

There was some further discussion about this theme and how I observed a cardiac arrest occur in the department and how the radiographers used dark humour to cope with this.[8,52]

This section just gives a flavour of ethnographic data and how themes are constructed from the data in order to understand how a group behaves.

Future plans

Since my original ethnographic study, I have not carried out any further studies using ethnography, but I have undertaken observational research with students and undertaken both focus groups and interviews as part of other research studies. There are other radiographers who have carried out ethnographic work and some who are currently using ethnography in their doctoral research.[53–60]

Conclusion

Ethnography and observation are excellent tools that can be utilised to highlight the professional culture of a group of people and uncover some of the unknown behaviours that may be exhibited. This is really useful within a practice-based profession such as radiography to gain an understanding of how the group works, interacts and performs and what the norms, beliefs and values of the group are.

Ethics approval and consent to participate

Ethical approval for the original study referred to in the article was obtained from The University of Suffolk in 2008.

Written informed consent was Not applicable for anonymised patient information to be published in this article.

Availability of data

Data required for this study may be made available by the author(s) upon reasonable request.

Author contributions

RS – the whole article.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work the author did not use AI.

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Conflicts of interest statement

None.

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