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Ethnography for radiographers: a methodological insight for prospective researchers

# Introduction

 In recent years ethnography has become a methodology of choice amongst prospective researchers within diagnostic radiography.1, 2, 3, 4 This paper offers reflective insight from two researchers that have utilised ethnography in the United Kingdom (UK) by exploring its application at uncovering original research within the clinical environment. The paper begins by providing an overview of ethnography and how it remains pertinent to enhancing the evidence base within the radiographic profession. Next, the authors reflect on their methodological approaches for prospective researchers. Researcher positionality and reflexivity are discussed, with pertinent experiences reflected upon within the clinical environment. Lastly, the authors discuss the importance of maintaining reliability and validity [trustworthiness] in ethnographic research and how this has been best achieved within a qualitative framework. Few papers, if any, have critiqued the role of ethnography in the medical imaging environment(s) and thus it is intended that by offering reflective accounts, prospective researchers may decide to utilise ethnography to uncover originality.

# What is ethnography?

Ethnography has its roots in both British social anthropology, whereby researchers went out to study foreign cultures, and in American sociology (from the Chicago School). Observation explored groups on the margins of urban industrial society. The task of these two distinct groups were the same, that of cultural description.5 Since then, ethnography has developed, moving into other spheres such as education, health and social care. In short, ethnography is a form of social research bearing a close resemblance to the ways in which we all make sense of the world around us.6

Ethnography is the study of the culture of a particular social or occupational group within its own setting.7, 8 The aim of ethnographic research is to gain an understanding of a culture from members within a specific community.9 This is often recognised as ‘insider research’ because prospective researchers best know and understand their social environment. This is recognised in the author’s own work as they explored social cultural phenomena within the X-ray environment, as diagnostic radiographers.5 Further, Hobbs and May7 remind us that ethnography is a way of telling it like it is, describing the culture observed and looking at the social world being studied, as seen from the insider’s perspective, which remains central. Denzin10 suggests that researchers attempt to uncover a participant’s interpretation and draw their own conclusions using the many versions that exist to understand the group culture.

In order to document findings, researchers need to become part of the culture being studied in order to gain understanding and insight. This involves observing what happens, listening to what is being said and asking questions.11 The culture should be studied in its natural state, as undisturbed by the researcher as possible.6 Ethnography, then, should be carried out over a period of time in order to reduce the impact of the researcher’s presence on the situation because people can sustain an act or maintain their best image for only so long.12 (p.49) A researcher’s presence may alter behaviour for a short period of time, but this will only continue for a while as the real behaviour begins to emerge.13

# Ontology and epistemology for prospective ethnographers

At a philosophical level it has been claimed that dichotomies exist between qualitative and quantitative research paradigms,14 each an ‘entire constellation of beliefs, values, techniques and so on shared with members of a given community’ allowing researchers to commit to different ontological and epistemological positions.15 (p.162) Our ontological and epistemological viewpoints are now discussed. Ontology is the science or theory of being and concerns the question of how the world is built: is there a real world out there that is independent of our knowledge of it? Two distinctions are made. Firstly, there is a real world that is independent from our knowledge and upon these foundations life is built – hence the expression foundationalism. Secondly, and on the contrary, there is no ‘real’ world but a world that is socially and discursively constructed and hence dependent from a particular time or culture. Epistemology is the theory of knowledge. An epistemological position reflects the view of what we can know about the world and how we can know it.16 There are two major distinctions within epistemology. Firstly, it is possible to acquire knowledge about the world unmediated and with no interferences. This implies that objectivity is possible, because everyone observes things in the same way. Secondly, however, that observation is never objective but always affected by the social constructs of reality.

These two distinctions in relation to ontology and epistemology are generally accepted to have nothing in common. Positivism adopts the foundationalist ontology and thus an according epistemology. Developed from the empiricist tradition from the natural sciences, which maintains that it is possible to observe everything that happens and understand it as such without any mediation. The opposite position is taken by interpretivists arguing that it is not possible to make objective statements about the real world because it is socially constructed, with an ontological position that is clearly anti-foundationalist.

Whilst some researchers may hold different positions and believe that the worldviews of qualitative and quantitative research remains incompatible, the Chicago School of Sociology recognised the collaborative use of both research paradigms as we cannot guarantee valid or direct knowledge of the real world.6 Our ontological and epistemological viewpoint throughout the author’s research remains primarily aligned with social constructionism and interpretivism. This is further affirmed by Finlay: (17, p.212)

*As qualitative researchers engaged in contemporary practice, we accept that the researcher is a central figure who influences, if not actively constructs, the collection, selection and interpretation of data. We recognise that the data is co-constituted, a joint product of the participants, researcher and their relationship. We understand that meanings are negotiated, within particular social contexts so that another researcher will unfold a different story.*

The ontological and epistemological viewpoint by the author’s led to the exploration of specific findings. Thus, such exploratory approaches required first hand contact allowing the development of theoretical social processes in which social reality was seen as multifaceted amongst radiographers within their clinical settings, which will now be discussed.

# Ethnography as a methodological approach

Ethnography employs several research methods, which can link findings together and allow for what Richardson and St. Pierre term ‘crystallisation’.18 They propose that in undertaking qualitative research the researcher needs to acknowledge that there are many dimensions in which to approach the world (just like a crystal has many facets and dimensions) and that what is seen depends on our own individual viewpoint and perspective. As researchers we are trying to understand a little more about the different facets of the crystal, as there is infinite variety. By utilising different research methods we gain a greater understanding of the world and different people’s viewpoints. The heart of ethnography is to depict the lived order and/or the way in which members of a group construct, enact, do and inhabit their daily world(s).19

Ethnography typically utilises qualitative research methods, observation, interviews, focus groups and/or the study of written documents or artefacts.5, 6 Observation is normally carried out over a period of time with the researcher becoming a participant. Interviews or focus groups can either follow the observation or be carried out during the period of observation to explore issues further. Documents or artefacts used within the culture can be studied to find out about how information is recorded and transmitted within that culture, this can also take place during the period of observation to gain a greater insight into the culture. Ethnography is iterative-inductive research, and is an on-going simultaneous process of theory building, testing and re-building.11

# Utilising reflexivity in ethnographic research

 In order to ensure that data collection and interpretation remains transparent, ethnographers attempt to remain reflexive. Reflexivity is a means of self-reference where qualitative researchers examine their action(s) in the field of research. It recognises the socialisation of forces and how they impact on the social structure and how the researcher may change their behaviour based on the socialisation of others around them. Thus, because reflexivity requires a self-critical attitude about any preconceptions affecting the research,36, 38, it is, argued that researchers can be biased in order to critically engage with their clinical environment.. Historically, however, ethnographers undertook research without being self-critical about their role as the researcher and whom they would be interacting with. By introducing reflexivity within ethnographic research, it ensures honesty and openness about what has influenced the research. In recent years, it has become necessary for researchers to provide some auto/biographical details to help the reader understand the researcher’s perspective. Auto/biographical chapters are presented within the author’s own work, offering readers an insight of their own values, beliefs and perspectives.19, 31

The first author identifies his own reflexive journey with participants in his dual role as the ‘ethno-radiographer’. He examines the power relations with some participants during the data collection, for example, by often playing the friend and/or the professional simultaneously depending on the individual participant.19 Throughout the research, some participants became well-known, some more than others, some of whom he had collaborated with on his undergraduate degree and some he had collaborated with working as a diagnostic radiographer.19 He wrote how he socialised with participants outside of work, attending various social events including the Christmas party. In short, he remained conscious of his professional/personal relationships with research participants and how this influenced data collection. Another example of reflexivity is reflected in a situation when participants asked the first author about a particular X-ray exposure or what he would do in a particular situation. More importantly, he would occasionally alert radiographers to incorrect settings selected on the direct digital radiography (DDR) console, such as a wrong detector selected prior to the radiographer making an X-ray exposure.27 He concludes that failing to intervene would have resulted in a patient receiving a dose of radiation with no digital radiograph produced, thus negating his own professional and ethical duties.

The second author also experienced these tensions. There was a desire to be friends with the participants in order to get to know them better and so that they would openly share information. However, there was also a conscious awareness that friendship could be used to exert power contexts. Van Maanen42 encourages the expression of the relationships that form between researchers and participants in writing ethnography, describing such disclosure as confessional tales, which adds to the credibility of the work. Furthermore, the second author found that her interactions with participants varied depending on the situation, for example, she reports discussing the resultant radiographic images with the participants.28 She also participated in the story telling that occurred in the viewing areas when the radiographers were discussing previous patients and experiences.29 This highlights that the presence of the researcher had an impact on the situations being observed throughout the ethnographic fieldwork whereby our professional duties as both radiographer and researcher influenced the behaviour and actions of participants, thus influencing data collection.25 The second author recollects when she felt that her knowledge of radiography as a profession influenced her behaviour and actions. Because of her professional experience she had a good understanding of radiography, the terminology used and the cast of characters.30 Therefore she was able to make judgements about her observations based on previous experiences. She was however aware that she entered into the research environment with some pre-conceived ideas, which may have subconsciously influenced the way research was conducted.31

**Ethical issues in conducting ethnographic research**

 The reflexive discussions above also remain central to research ethics within qualitative research, which goes beyond any original research ethics approval. It is beyond this paper to explore this fully, but Tracy43 offers a broad and comprehensive discussion on the multifaceted aspects of the ethical journey within qualitative research and how the researcher can remain ‘ethically minded’. For example, Tracy43 affirms that ethics is not just a means, but rather constitutes a universal end goal of qualitative quality itself, whereby procedural, situational, relational and exiting the field remain central. Tracy43 concludes by reminding us that good qualitative researchers take care of others, as well as themselves, with the most successful researchers being self-critical of their own research practices and the impact on others. This leads us to reaffirm the importance of open and critical reflections when undertaking ethnographic research in order to provide honest accounts, but for prospective researchers in the medical imaging field to learn and develop if/when becoming the ethnographer.

# Researcher Positionality

Ethnographic research explores the social action and deeper elements of a particular culture, yet, the relationship of the researcher with his/her participants is an issue that inevitably pervades all aspects of the research.14 Ethnographers may adopt a variety of roles, however our aim throughout was to maintain a more or less marginal position. The ethnographer must be intellectually poised between familiarity and strangeness, whilst socially poised between stranger and friend.22, (p.100) We acknowledged our own connections with numerous participants based on our own cultural and professional identities throughout our theses, becoming the ‘friend’, yet our choice to undertake advanced postgraduate study often alienated us amongst our peers and others as participants often questioned: ‘why on earth did you decide to do that?’ and ‘what do you intend to do after it?’ This alternate approach to our radiography careers arguably helped distanced us from the research participants allowing us to become a stranger amongst radiographers, and thus enable us to ask the unfamiliar and the obvious. Further, our research identified areas of practice in which our presence remained an advantage following professional obligations to protect participants and patients by abiding to our professional code of practice outlined by the Society of Radiographers: 23 (p.3)

*“You must conduct yourself with honour and dignity and demonstrate trustworthiness and integrity in both your personal and professional life in order to maintain the widest public trust and confidence in the profession”.*

 On reflection, we also developed a moral stance within our respective fieldwork. It is generally accepted that individuals entering a healthcare profession generally want to care for people.24 Similarly, we had both moral and professional obligations to patients and their participants, which resulted in leaving our researcher positions to aid where appropriate. Glaser and Strauss25 (p.246) identified this awareness context for doctors and nurses with people involved in a dying situation. Similarly, we were required to approach situations holistically, which remained grounded on our cultural and professional identifies leading to control over our own forms of interaction with individual participants.

The experiences outlined here fall in the category of cognitive dissonance whereby individuals find themselves in situations that involve conflicting attitudes, beliefs or behaviours. Festinger32 suggested that cognitive dissonance theory highlights that individuals have an inner drive to hold onto attitudes, beliefs and behaviours in order to avoid dissonance. Numerous authors have written about researching into their own area of practice and how it can influence the research process, 33-36 however, few methodological reflections are reported when utilising ethnography within the radiography environment for prospective researchers.

# Reliability and validity in ethnographic research

It is claimed that both novice and experienced qualitative researchers often struggle with the term qualitative rigour.44 (p.151) Lincoln and Guba37 first used ‘trustworthiness’ to reflect rigour within qualitative research. Trustworthiness in qualitative terms is a way of establishing trust or confidence in findings. Replication is not a term used in qualitative research because like a river, the water is not the same even if one’s stance and perspective from the bank is from the same spot.42 The term rigour means stiffness, from the Latin word ‘rigere’ implying rigidity, harshness, and strict permission, unyielding or inflexible. Thus, the term ‘qualitative rigour’ has been argued as an oxymoron, considering that qualitative research is a journey of explanation and discovery, moving back and forth between design and implementation.38, 44 In the classic work of naturalistic enquiry Lincoln and Guba37 (p.290) explain the basic questions of qualitative research rigour:

*‘How can an inquirer persuade his or her audiences (including self) that the findings or an inquiry are worth paying attention to, worth taking account of?’*

 Maxwell45 (p.284) agrees with Lincoln and Guba maintaining that:

*‘Validity is not an inherent property of a particular method, but pertains to the data, accounts, or conclusions reached by using that method in a particular context for a particular purpose’.*

 Philosophically, then, it is generally accepted that a single, generalizable, external truth held and perceived by all would be impossible. The readers of this article will have their own personal perspectives, seen through a lens of alternate cultures, experiences, and environments, but it is anticipated that such findings can resonate with the experiences described in qualitative work.44 Rolfe46 (p.305) asserts that a study remains trustworthy if, and only if, the reader of the research report judges it to be so. In order to test the trustworthiness of the qualitative research, credibility, dependability, transferability and confirmability are considered because they are generally accepted terms assessing rigor and validity and these are the most useful criteria appropriate within the radiography qualitative framework.37, 38, 44

*Credibility*

Achievement of credibility occurs by checking for representativeness of the data. To establish credibility qualitative data transcripts in both studies were read and analysed looking for similarities within and across the participants. Krefting47 (p.218) supports this claiming that:

*‘A qualitative study is considered credible when it presents an accurate description or interpretation of the human experience that people who also share the same experience would immediately recognise’.*

One strategy to strengthen the credibility includes peer debriefing and examination of publications at national and international conferences, supported with discussions of empirical findings.38, 44 Thus it remains paramount that researchers undertaking ethnographic research disseminate their findings, enhancing the credibility of their research. Sharts-Hopko48 (p.85) maintains that the findings of a study can be shared with the participants so that they can determine the accuracy of the research report (commonly referred to as member checking). Both authors utilised this method in order to confirm or refute discrepancies. Further, prolonged observations coincided with professional and social relationships facilitated rapport with research participants, something that the first author termed the ethno-radiographer.20 The first author took on the role of a the locum radiographer and the researcher, adding to the credibility of his study because informants could contact him at any stage of the research if they had concerns over ‘what had been said’ or ‘what had been observed’.48 The second author undertook her fieldwork as a researcher and was not employed as a radiographer during this time, thus allowing her to be supernumerary and therefore available to discuss the work as it was happening with the participants and also to discuss any concerns that participants might have about the observation of their practice. Further, after leaving the field it was important to remain contactable by means of mobile telephone, e-mail, social media (i.e. facebook) and for the first author enhanced by undertaking additional locum shifts as a diagnostic radiographer. The dual role identified helped develop rapport with the participants because without persistent fieldwork and prolonged engagement with participants delicate subjects may not have been explored.

Member checking additionally occurred as part of triangulating observational data with participants during interviews. The rationale for triangulation is that ‘it attempts to overcome any inherent weaknesses or bias of a single research strategy’.49 (p.31) For the first author, triangulation involved discussions regarding suboptimal practices such as cropping and lack of autonomy regarding exposure factors. For the second author, this was more about verifying findings and discussing issues such as dark humour and communication with patients. The observations were complemented with open-ended questioning in one-to-one interviews with radiographers quizzing them on the actions observed, with some concurring on such incidences. There were also informal discussions held with lecturers and researchers at conferences and within the University, with research supervisors and with other colleagues regarding the actions observed. Thus the interconnection of data between the authors were strengthened by triangulating on the periphery and equally interconnected in a wider radiographic context.

*Transferability*

Transferability is the ability to transfer research findings or methods from one group to another. Lincoln and Guba37 (p.290) assert that:

*‘Transferability determines the extent to which the findings of a particular enquiry have applicability in other contexts or with other subjects/participants’ and is equivalent to external validity in quantitative research.*

One strategy establishing transferability is providing dense descriptions of the population studied by providing descriptions of demographics and geographical boundaries of the study.41 In-depth descriptive accounts offered by both authors provide insight for prospective researchers aiming to undertake single and multi-sited ethnographic research within the healthcare environment(s).20, 31 Further, explanations surrounding methods that both facilitated and hindered the researcher and participants remains central. In short, it is argued that disciplines such as diagnostic radiography that sit in a more public sphere require multi-site social constructionism in order to highlight different cultural phenomena in similar clinical environments. The argument of ensuring multi-site social constructivism in ethnographic research is central because different hospitals may have different workplace cultures, due to varying attitudes, behaviours and beliefs about radiographic practice.51 Thus, whilst observations produced reoccurring themes in different radiographic departments illustrating a common theme and common ground between research environments, this naturalistic enquiry, which has individual subjective meaning does not necessarily constitute generalisation to the wider population.38 In short, we suggest providing cultural experiences of numerous diagnostic radiographers in order to provide a unique insight into cultural behaviours because they may resonate in other radiological environments nationally and/or internationally.

*Dependability*

Dependability can be achieved by demonstrating audit trails within qualitative research. It is generally accepted that audit trails are inherent within some kinds of qualitative research.38, 44 Reflexive data analysis and discussions critically assess the assumptions made throughout the author’s methodological approaches. Raw data such as field notes help surmise and enhance the dependability of the data.50 Thus following audit trails enables a reader to follow the research process, but also draw their own conclusions about how trustworthy it is. The interactions with participants required a holistic approach. By reflecting on key features of interactions, emerging changes to the research design, together with a justification for the decisions made, should enable any reader to follow processes undertaken. Further, rapport building with participants remained central because depending on the researchers personal position the researcher would shift their persona within the fieldwork depending on the research site and those participants taking part. This highlights that although our goal was to provide unity throughout the fieldwork, it also suggests a sense of activism throughout the research study.

*Confirmability*

Confirmability refers to the degree to which the results can be collaborated or confirmed by others.38 Sharts-Hopko48 affirm that confirmability refers to the adequacy of information reported from the research questions and protocol for data collection through the raw data, through various stages in the analysis of data to the interpretation of findings. It is generally accepted that different researchers might produce different constructions with the same data, yet it should be possible to trace constructions and assertions to their original sources and made available to outside reviewers.26 Throughout the authors’ work, their biographic and reflexive accounts provided a sense of awareness and openness to the reader. This reaffirms that the interpretations and conclusions derive from the data whilst taking into account individual subjectivity or bias. A central tenet of confirmability is the recognition of the role and involvement with participants in their respective studies.

# Conclusion

 This paper sought to provide some methodological insight for prospective researchers who may consider utilising ethnography as a research methodology within the clinical environment. The authors experiences and subsequent publications demonstrate that original research is possible. Further, although ethnography may offer originality pertinent to a professional group and/or imaging modality, ethnographers/radiographers play a pivotal role when interacting with participants, collecting data and ensuring trustworthiness of findings. In addition, this paper offers recollections of the researchers own positionality and reflexivity by recognising that ethnographic research requires open and honest accounts from the researchers in order to enhance the trustworthiness of qualitative findings. These experiences may help prospective ethnographic researchers accommodate and manage methodological hurdles that occur in the field, but with the overall aim of adding to existing knowledge.

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