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Do general radiographic examinations resemble a person-centred environment?

Hayre, C. Blackman, S. and A. Eyden

Introduction

This article challenges whether general radiographic practices adhere to person-centred care (PCC) within the direct digital radiography (DDR) environment. Diagnostic radiographers require an understanding of advancing technology and radiological physics to acquire images of diagnostic quality, yet radiographers also require the professional and social skills to interact and care for their patients.^{1,2} PCC is often advocated within healthcare but the terminology refers to many different principles and activities, with no single definition. Four generally accepted definitions of PCC are cited by The Health Foundation, which include; 1) affording people dignity, compassion and respect; 2) offering coordinated care, support or treatment; 3) offering personalised care, support or treatment and 4) supporting people to recognise and develop their own strengths and abilities to enable them to live independent and fulfilling lives.³ This approach is instilled within the National Health Service (NHS) Constitution, supported by key principles and values underpinning the rights of patients (public and staff).⁴

The practice of PCC is generally accepted amongst authors. Frank⁵ is of the opinion that PCC is the king of care promoting patient capabilities, which are a subset of human capability whereby the patient is treated as a person. In nursing, PCC is associated with nurses listening to a person's story, engaging with them in meaningful dialogue, recognising them as human beings with dignity and honour in their unique beliefs and

values.^{6,7} The findings presented in this study represents one category (of four) 'quicker exams vs. in and out culture', within a theme (of four) 'patient care delivery', which was part of a larger study.

Few studies have explored the socio-cultural and radiographer-patient interactions within the general radiography environment. This is important to consider because prior experiences and workplace cultures can hinder patient care practices.^{8,9} Increases in hours and pace of work have been reported to impact nursing staff whereby treatment begins to resemble a production line¹⁰ and may similarly resonate with diagnostic radiographers within the general radiography environment.¹¹ It is generally accepted that advances in radiographic technology have enhanced patient satisfaction.¹² Evidence highlights that advances in technology now offer patients faster image acquisition, easy availability, excellent image resolution and lowering radiation dose.¹³ The rationale to explore PCC within general radiography is supported by Murphy¹⁴ suggesting that there is limited evidence of radiographic practices in the United Kingdom (UK). In response, this study offers readers original insight into an imaging modality that constitutes approximately 90% of all

imaging examinations undertaken clinically.¹⁵ Importantly this study may resonate with radiographic departments nationally and/or internationally enabling hospital managers and staff to critically reflect on current PCC approaches in contemporary practices.

The study sought to question whether DDR impacts on the delivery of PCC within the general radiography environment. The aim was to explore general radiography practices and radiographer-patient interactions during DDR examinations. The objectives of the study were to 1) review radiographic literature to ensure the research question and design added to existing knowledge; 2) select an appropriate methodology to inductively

uncover the radiographer-patient interactions during DDR examinations and 3) collect qualitative data, analyse and incorporate into later discussions.

Methodology

A qualitative methodology was used to explore PCC within the DDR environment. Ethnography was the methodology employed providing original insight into radiographic practices underexplored within the UK.^{16, 17} This study offers original insight by exploring PCC practices within the X-ray room using advancing technology.^{18, 19} The methods include:

- 1) Participant observation: Observing contemporary radiographic practices and the radiographer-patient relationship.
- 2) Semi-structured interviews: Explored key themes from participant observations uncovering 'what had been seen and discussed informally' in relation to PCC.

Ethnography provides thick descriptions of behaviour belonging to specific groups and individuals within a culture.^{20, 21} Saks and Alsop²² assert that ethnography is important to professional groups seeking an understanding of behaviours, attitudes and practices of its members. The purpose of this fieldwork was to uncover a rich description of radiographic practices using participant observations and semi-structure interviews.^{23, 24} This enabled the researcher to depict and understand naturally occurring phenomena within real-world settings because it was believed that advancing technology could impact PCC.^{21, 22} Ethical proposals were submitted to two National Health Service (NHS) Trusts in the south of England following the installation and clinical use of DDR equipment. Applications were considered and approved at both NHS Trusts and by the University.

Philosophy of Methodology

This qualitative study was conducted in the radiography environment(s). The author's philosophical position assumed that reality was constructed, multidimensional and ever-changing and that there is no such thing as a single, immutable reality waiting to be observed and measured.^{18, 29} This stems from the interpretivist paradigm, relying heavily on naturalistic methods of enquiry, such as observation and interviewing. Observational and interviewing methods will now be discussed in accordance with this study.

Participant Observation

Research commenced in October 2012 and finished in 2013. Two research sites (A and B) were chosen to engage in a multi-sited ethnographic approach.⁴⁸ It was believed that alternate outcomes may emerge from different research sites, thus further enriching the qualitative findings.⁴⁸ The participants selected were required to satisfy two inclusion criteria, be registered as a diagnostic radiographer with the health care professions council (HCPC) and willing to participate in the study. Every effort was made to ensure participants made an informed decision about taking part in the study. Participant information sheets (PIS) were distributed via email and placed within staff rooms. The staff informed and willing to participate were asked to complete an informed consent sheet. In total 36 operators were observed over 19 days (approximately 142 hrs.). Situationally, the researcher observed clinical practices from behind the protective lead screen within numerous DDR X-ray rooms, enabling the

collection of radiographer and patient interactions.^{16, 17} Typically observations commenced at 09:00 and ended at 12:00, the second observational block began at 12:30 and ended at 17:00. Participant observation provided immersion as a ‘participant observer’, lasting approximately two months. Observations were detailed in nine dimensions, as identified in table 1 (p.5).²⁵ Barley²⁶ maintains that to map emergent patterns of action and interpretation requires at least partial reliance on participant observation to record interactions. During the observations the researcher observed and informally discussed emerging concepts concerning PCC, as discussed in previous ethnographic research.^{16, 17, 27} This was important when discussing PCC within contemporary practices. Field notes provided a useful tool capturing the behaviours, views and actions of radiographers, providing first-hand experience of action-in-process.^{16, 27, 28} The observations allowed the researcher to enter X-ray environment, discuss concepts and explore radiographer-patient interactions, later informing the development of the interview schedule.

Table 1: Features observed within the X-ray environment

Features Identified	Features of X-ray Environment
1. Space	Identification of the surrounding layout of im rooms and areas.
2. Actors	The people involved in the situation and the
3. Activities	The various related activities of people in the
4. Objects	The physical elements present e.g. in the X- areas.
5. Acts	The actions of individuals, professionals and

6. Events	Particular activities of individuals, such as the
7. Time	The time sequence in performing a DDR ex
8. Goals	The activities people are trying to accomplish
9. Feelings	Emotions in particular contexts.

Semi-structured interviews

Twenty-two interviews were undertaken and ceased following data saturation. It was deemed unnecessary to interview all radiographers within the clinical environment.^{18, 19, 20} Purposive sampling was undertaken whereby novice and experienced radiographers were invited to interview.^{16, 18} Seeking maximum heterogeneity was important because it provided varied responses with the aim of uncovering original data, thus strengthening the validity of the findings.²⁴ No attempt was made to undertake an equal number of interviews at each site because each site was considered to have its own socio-cultural context, thus impacting data saturation and producing rich and varied data.^{16, 17, 20, 23} Semi-structured interviews lasted between 30 minutes to 1 hour and 15 minutes and were directed by emerging themes uncovered during the observations and informal discussions, thus remaining sensitive to the language and concepts used by the researcher.^{16, 17, 21} Interviews provided significant data generation. The semi-structured style of interviewing allowed a set of topics to form

questions in an attempt to have conversations with purpose.²⁵ A digital audio device was used to record the interviews and later transcribed verbatim, presenting the participants' views and attitudes.

Data analysis

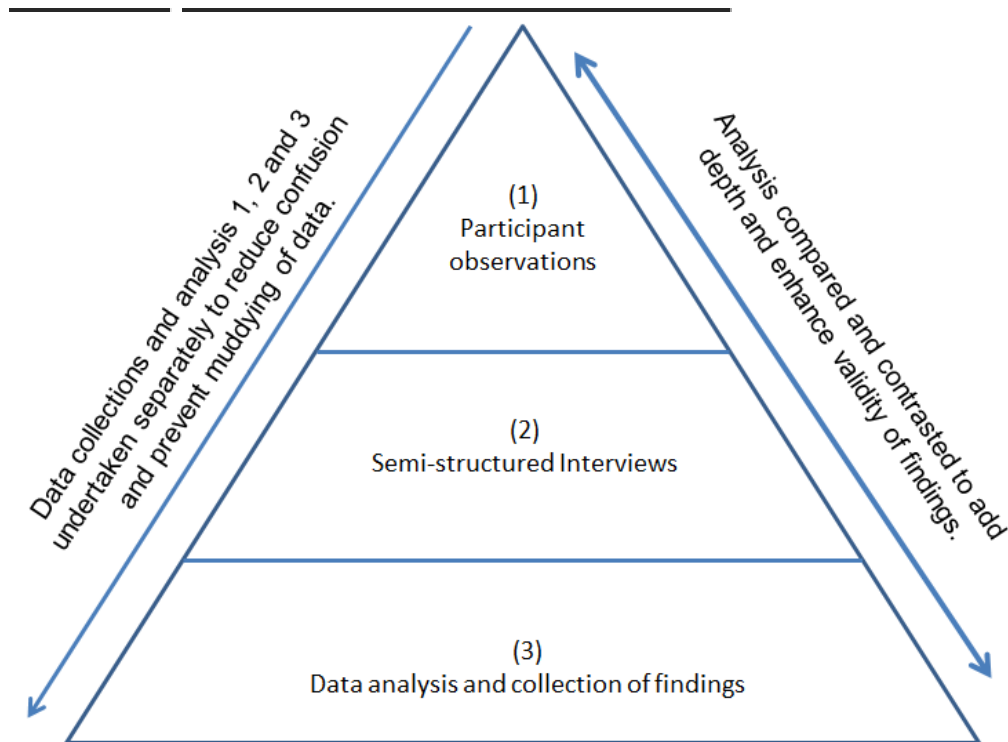
Data collection and analysis during observations followed a

grounded theory approach, identifying social-cultural phenomena by first-hand contact and developing theories of social processes 'grounded' on the X-ray practices observed.³⁰ This method of analysis is depicted in figure 1 demonstrating procedural steps with use of comparative analysis enhancing validity of findings.⁶

Figure 1: Data collection and analysis process

Observations and interviews were undertaken sequentially. This allowed comparative analysis between sites A and B and facilitated the development of the interview schedule.

Throughout the data analysis the researcher moved back and forth between the methods and emerging data, providing an on-going analysis, developed by the researchers' voice and actions through reflexivity and positionality.^{31, 32} Glaser and Strauss³⁰ support this method of analysis suggesting that general relations are discovered in the field through participant



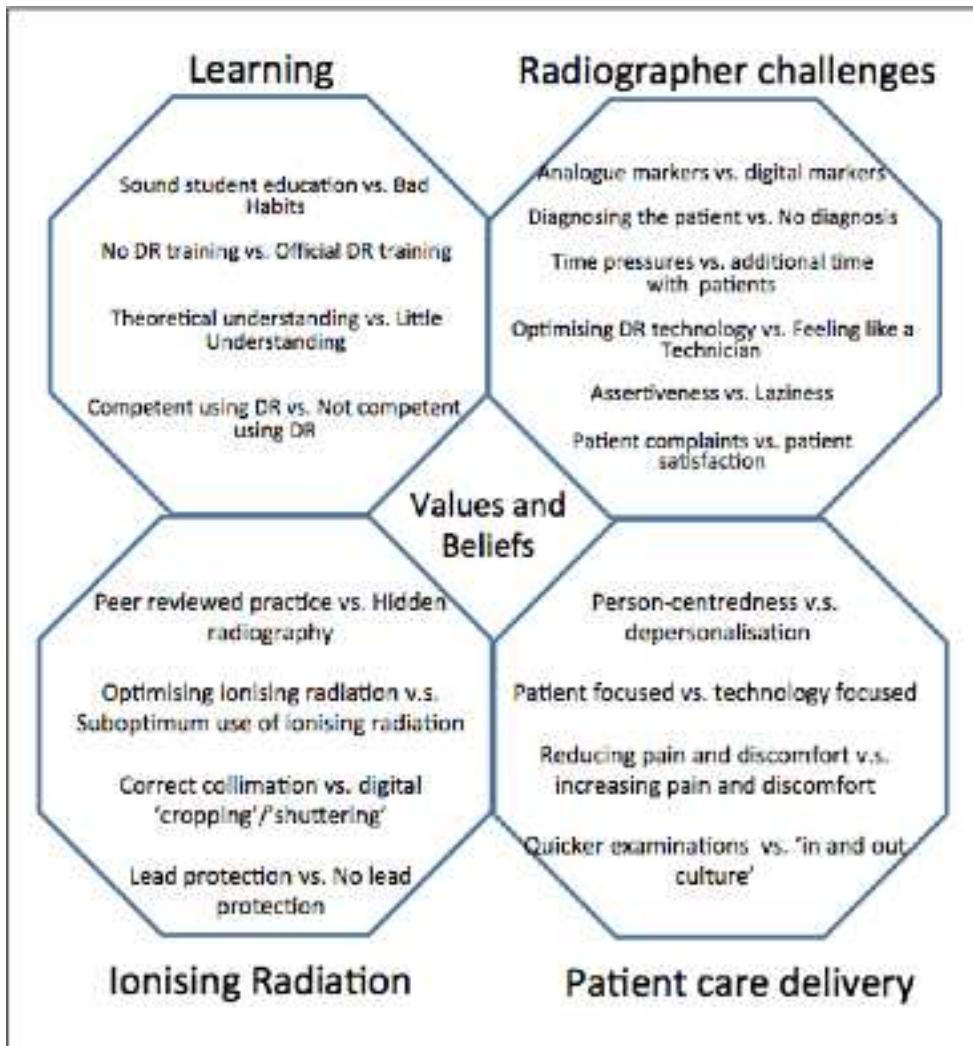
observation, whereby the researcher continually uncovers and analyses data.³⁰ Observation and interview data were analysed using thematic analysis.^{7,14} The analysis began by gathering and comparing data and dividing it into themes highlighting commonalities and variations. The data was transcribed into a word processing application, dated and indexed with spelling and grammatical errors searched and corrected. Themes were categorised and coded.²³ The stages of data coding were open, axial and selective coding. Open coding began by firstly reading the data and organising statements relating to the research question. The statements were assigned a relevant code and referred to as open coding.²² Using these codes the researcher reread the qualitative data whereby additional codes developed during the analysis, this is termed axial coding.²² Lastly, selective coding involved the researcher reading through the raw data whilst looking for data that was contradictory, as well as confirmatory. This is important to consider because data analysis was undertaken by a sole researcher. It remained imperative that the researcher was not selective in choosing data, thus avoiding what is referred to as confirmation bias, which can impact on reliability of the findings.²² Codes were later assigned to overarching themes and later printed on A4 paper, 'cut out' and placed on A1 pieces of card, whereby theory could then be linked across the themes. Colour pencils were used to cross reference data, which provided the foundation of theory development.

Results and discussion

Upon 'sorting' of the themes, four overarching themes emerged from the overall study: learning, radiographer challenges, ionising radiation and patient care. Categories within the four themes are all identified in figure 2.⁶ Due to the scope of this article one category (of four) is discussed within the patient care delivery theme: 'quicker examinations vs. in and out culture' and will remain the focus of this article. It is important to note that there were two dimensions to the data in this category, which will

now be considered.

Figure 2: Depiction of culture within diagnostic radiography environment



Do general imaging examinations resemble an 'in and out' culture?

Few studies have explored the radiographer-patient relationship using DDR. It is important to note the demographic and situational contexts. Demographically, radiographers varied in both experience and rank at each research site. All radiographers were registered with the HCPC and were

employed full time within the NHS, enabling follow up contact if necessary.²⁷ The observations initially revealed that radiographic examinations could be performed in quick succession due to advances in technology:

Observation(s): General radiographic examinations using DDR at sites A and B were often undertaken in quick succession by radiographers,

sometimes completed in several minutes.

The observation(s) above highlighted a potential concern within general radiographic practice. Because radiographers undertook radiographic examinations quickly it was felt that this could lead to suboptimal levels of PCC for patients.^{6, 7} Reeves and Decker³³ maintain that advancing technologies allow radiographers to deliver care in a shorter period of time, potentially distancing themselves from patients, something which Murphy¹⁴ recognises as a 'blip' or 'hit and run' culture. Radiographers in this study support this assertion recognising that PCC could be hindered:

Victoria:

I always try and be really nice, and obviously sometimes though you are rushing and I suppose *you do try and just say "Right, let's knock these out - get them in, get them out, get them done."* And you probably don't spend as much time with them as you'd like, because you know people keeping are waiting.

(Band 5 radiographer - 1 year experience)

You don't have a lot of time with the patient nowadays. If it's busy, it's literally one in; one out...it's like a bit of a conveyor belt. It's not nice for the patient I don't think, having to be quick. It does look like we're not caring very much". "And you just want to hurry them up.

(Band 6 radiographer – 7 years experience)

Rosemary:

The radiographers suggest that increases in work pressures may reduce the radiographer- patient relationship by encouraging patients 'out of the door', thus not conforming to a PCC approach identified within the literature.^{3, 5, 7} This view was accepted amongst junior and senior radiographers clinically identifying that cultural concerns can impact all radiographers, regardless of professional rank and experience.^{16, 17} This remains an important consideration because it may resonate with other departments, thus highlighting areas of consideration for other healthcare institutions.^{6, 18} The data suggests that an 'in and out' culture may be emerging within general radiography whereby little attention is demonstrated to individual patient needs or concerns.³⁴ It also suggests that radiographers may resemble that of an operator on a production line following the narrative 'if its busy, it's literally one in; one out...it's like a bit of a conveyor belt', suggesting that radiographers observed in this study ensure waiting times are prioritise over other forms of person-centred approaches.⁷ This

resonates with Murphy'³⁵ study exploring cross-sectional imaging identifying a diminishment in care whereby the primary focus surrounds maximum efficiency and throughput in radiographic imaging.

It is generally accepted that professionals should communicate with their patients by actively listening and responding to the patients' verbal and non-verbal cues tailouring the patients' needs.³⁶ Yet radiographers may fail to meet patients' needs within the general imaging environment by performing examinations 'quickly', putting 'waiting times' above other forms of PCC. Margaret supports the conjecture that radiographers resemble an operator on a production line, maintaining that contemporary radiographic practices [using DDR] resemble a 'sausage factory'. She asserts that in the past the sole use of cassette radiography (CR) and film-screen provided additional

time with patients due to increases of 'processing time' enabling her to actively listen to the patients' needs:

Margaret:

They're [DDR rooms] are now more like sausage factories. Before, you would have to get them in, sit them on the table, get the cassette and pop it through. They would stay there, you'd come back, have a chat, da-da-da, get them off. And you'd only send them out if you were really busy... If we were on CR, we'd keep them on the table, wouldn't we? And she would have said something to me - she'd have said "Oh, my heel is sore as well" and I would have had time to absorb what the patient was telling me, and respond.

(Band 7 radiographer - 18 years experience)

Within nursing Entwistle and Watt³⁷ identified that patients were treated not as a person but rather as a lump of meat, a number, or a thing on a conveyor belt. This finding resonates with observations and discussions amongst radiographers within this study. Because radiographers were under increasing time pressures, observations of radiographic practice using DDR highlighted 'fast paced practices', which limited patient contact and communication:

Observation:

Patient contact and communication was observed to be limited due to the speed of radiographic examinations using DDR technology. This reduction of dialogue between the radiographer and patient often facilitated confusion amongst patients concerning their treatment and management. Informal

discussions with radiographers suggested that DDR was however central to maintaining the speed of undertaking radiography procedures because radiographers were under increasing time pressures radiographers. This often led radiographers depersonalising patients, reducing them to a

number or mode of transport.

Geoff and Victoria reaffirm the observed culture above during radiographic examinations with concerns surrounding less ambulant patients because 'they may take longer' and the requirement to irradiate 'twenty patients in ten minutes' with DDR:

Geoff: I think one of the major advantages [with DDR] is the ease of use, which facilitates patient throughput as well. Even the volume of work and the demand... if you compare that to CR, you can easily get twenty patients in ten minutes... in terms of patient throughput, we are experiencing high numbers of patients - high numbers of X-ray requests.

(Band 6 radiographer – 5 years experience)

Victoria: *You've got to prioritise these ambulance patients... And they're in a wheelchair and you know they're going to take even longer.*

(Band 5 radiographer – 1 year experience)

These comments may go against current philosophical viewpoints associated with caring and person centeredness identified within the literature.^{5, 7, 34} In support, it does not resonate with the four generally accepted principles posed by The Health Foundation,³ nor the principles and values identified within the NHS Constitution.⁴ McMance et al³⁸ remind the reader that PCC is associated with healthcare practitioners listening to a person's story, engaging with them in dialogue and recognising them as human beings with dignity and honour in their unique beliefs and values. Brown³⁹ identifies five listening responses that may help radiographers within the general imaging environment, these include 1) nod - nodding the head slightly and waiting; 2) pausing – looking at the speaker and expectantly without doing or saying anything; 3) casual remark – terms such as 'I see', 'is

that so' and 'that's interesting'; 4) echo – reporting the last few words the speaker said; 5) mirror – reflecting back to the speaker your understanding of what he/she just said. Such

communicable tactics may become increasingly important for radiographers within an increasingly pressured environment. Because radiographers in this study remained under increasing time pressures the listening responses noted above were rarely observed. However by recognising this limitation this study may help practitioners reflect on their communication skills, ensuring optimal healthcare delivery.

Do patients prefer quicker examinations within general radiography?

Evidence suggests that not all patient groups are equally responsive to a PCC approach. Boer et al⁴⁰ reported that patients may consider PCC to be of above average importance, compared to other aspects of care such as waiting times, activities to monitor disease, medication, accommodation, privacy, and care following discharge from hospital. Further, research demonstrates that younger and older cancer patients differed regarding the type of information they like to receive about their cancer treatment⁴¹ with PCC considered more important by patients who were younger, female, well-educated and healthier.^{40,43} Within medical imaging Mathers et al⁴³ reported experiences of men with prostate cancer highlighting that patients were more concerned with their diagnosis and treatment rather than the attendance for imaging procedures and seen as a means to an end and routine. Bolderston et al⁴⁴ found that patients may not expect much care from their diagnostic imaging procedures, seeing diagnostic radiology as a process of imaging and diagnosis, with little emphasis on caring. Thus do patients undergoing general imaging examinations prefer quicker radiographic examinations? Historically radiographers have continuously aimed to reduce the objectification of patients due to the potential technological-humanistic role of both technologist and carer⁴⁵ ensuring a sense of emotional and physical comfort

because caring is reported as the very essence of radiologic technology.⁴⁶ In this study radiographers highlighted that some patients were significantly impressed with the speed in which their diagnostic X-ray examinations were acquired and sent to the referring clinician:

Terry: Well, sometimes for the patient, their amusement to see how it is working more quickly - *they come in and it's done, and they're going. So they're more like "Wow!" Every time when they come in they say that.*

(Band 6 Radiographer – 7 years experience)

Mick: I think the experience... because from my experiences, *when I've X-rayed patients these days, they are like "that's fast compared to".*

(Band 6 Radiographer – 5 years experience)

Rosemary: *They're always shocked at how quickly we do the X-rays. "Oh, is that it?", and "Oh, there's no film nowadays"... and it's like "No, no film now!" So I think viewing the public's opinion I think they'd be quite happy with how we do it nowadays. It's a lot quicker for them.*

(Band 6 Radiographer – 7 years experience)

The data above provides insight challenging whether patients may begin to rank waiting times and speed of examinations above other 'caring' components associated with medical imaging examinations. A potential paradox may begin to emerge within the general imaging environment. For example, if radiographers undertake general radiographic examinations with greater speed following technological advances this may place contradictory pressures on both professionals and patients. For example, if patients begin to rank speed and waiting times above

other aspects of 'radiographic care' radiographers may become under increasing pressures to perform radiographic procedures more quickly, which may lead to radiographic errors or near misses recently cited within general radiography.⁴⁷ Another concern is that students entering a healthcare profession often want to care or help a person, providing a source of personal and professional satisfaction.^{1, 2} However if the radiographer-patient relationship continues to decrease this may impact on the satisfaction of both radiographers and prospective radiographers within the clinical environment whereby the premise of entering into a healthcare profession was to help and care for people.

Limitations of study

The data uncovered in this research was collected from two radiography departments, thus cannot be fully generalised. However radiographers in other departments may have similar experiences. It is important to note that the author has made some assumptions about how patients may feel following some responses by radiographers in this study. No empirical data supports this but should be further explored and remains a recommendation for future studies.

Conclusion

This article challenges whether general radiographic practices observed in this study conform to a PCC model. Two issues are identified. Firstly, radiographers exposed to time pressures within this study suggests that radiographers are in danger of resembling an operator on a production line, whereby patients are not treated as human beings, rather as lumps of meat in attempts to keep waiting times to a minimum. This finding does not resonate with the values and beliefs that currently underpin the NHS Constitution, nor does it resonate with the PPC approach cited within healthcare literature, maintaining that patients are treated as persons. Secondly, radiographers in this

study suggested that patients are beginning to rank speed and waiting times above other aspects of radiographic care. This impression by radiographers altered their behaviours and attitudes in practice and added additional pressures for radiographers in attempts to perform radiographic examinations quickly, thus facilitating faster radiographic healthcare. Although time pressures were of a concern amongst radiographers in this study it is important that radiographers remain holistic healthcare practitioners ensuring that patients are not depersonalised to numbers or mobility. Further, it is generally accepted that radiographers must adhere to a PCC model by treating patients as persons and based on their individual need regardless of time constraints. However this study highlights that radiographers may be straying from the PCC model, which could be affecting patient care and satisfaction. This remains an underexplored area requiring further discussion and research within the radiography community, ensuring optimum healthcare delivery.

Recommendations

Radiology managers should explore the volume of general radiographic examinations undertaken within general radiography and investigate whether time pressures are impacting on PCC. Further, research exploring patient experiences within general imaging should be undertaken to support or refute the assumptions made by the radiographers and researcher of this study. This would add to existing knowledge by understanding the patients' needs, expectations and challenge PCC approaches within diagnostic radiography.

Conflict of interest

None.

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