

Experiences of consultant breast radiographers regarding breast imaging services in the United Kingdom

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ABSTRACT

Objective: The objective of the study was to explore the experiences of consultant breast radiographers regarding breast imaging services in the United Kingdom (UK).

Methods: The study used a qualitative research design. Data were collected using semi-structured interviews from eight purposively selected consultant breast radiographers across the UK. Interviews were recorded, transcribed, and analyzed by themes.

Results: Four themes emerged: Reasons for the introduction of breast consultancy role in radiography, education and training, domain of practice, and autonomy and support. This study found that participants were carrying out roles similar to those performed by consultant breast radiologists and that they had been performing such roles even before they were appointed. The study further revealed that the creation of consultancy posts came because of an increase in demand for breast imaging services and the shortage of radiologists. Four domains of practice were clinical expert, professional leadership, research and evaluation, and education and training. Participants worked independently with adequate support from fellow consultants and non-radiology staff.

Conclusion: Consultant breast radiographers are performing most of the consultancy roles stated in their scope of practice, except for research and evaluation, which they are mainly unable to do due to clinical workload. Therefore, there is a need to provide protected time for research and evaluation activities so that consultant breast radiographers can utilize their full potential. The findings have provided baseline information for countries planning to extend the scope of practice of radiographers in breast imaging.

Keywords: Breast cancer, consultant radiographer, imaging, radiologist

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Introduction

Consultant allied health practitioners were introduced in the United Kingdom (UK) at the turn of the century to back-up medical practitioners when it became increasingly clear that the workload in health trusts was becoming insurmountable and patients were being subjected to long wait times.^[1,2] In the context of this study, the establishment of national breast cancer screening programs in the mid-1990s increased the demand for breast imaging services.^[1] In 2000, the UK government announced an intention to create non-medical consultant posts to provide expert clinical staff and enhance the delivery of care to patients.^[2] This saw the creation of the post of consultant breast radiographer.

It is now several years since the introduction of this post and studies from nursing professionals have been undertaken to evaluate the role of the consultant breast radiographer. Some still feel the duties of these practitioners are not well defined.

Redwood *et al.*,^[3] evaluating the role of nurse consultants, argued that the consultant role has not been well documented. Crouch^[4] states that the role needs a definition to help with succession planning and to establish its value. Reeves^[5] concurs that radiography literature to date has only looked at the potential and prerequisites for the appointment of these consultants.

According to Reeves,^[5] whatever the field of practice, an appointment to consultant posts must be on merit, with practitioners being able to demonstrate that their skills and expertise are at the highest level and that they can put these to use in the best interest of patients. Consultants will need to demonstrate a breadth of knowledge across their discipline but vitally, will demonstrate and be acknowledged for the breadth of their knowledge and its integration into their field of radiographic practice.^[6] These two authors opined that the direction given by the department of health that the title “consultant practitioner” would apply only to new posts which

was not positive.^[7] They argued that radiographers already practicing competently at the consultant level and fulfilling the appropriate criteria should be formally be recognized and appointed as consultants.

Several consultants allied health professionals have since been appointed in the UK, but debate still rages as to whether they are performing their roles as expected. While practitioners, themselves, argue that they are performing their roles, some authors contend that they have performed their clinical roles but have failed to perform the other three core functions of professional leadership; practice and service development, research and evaluation; and education and training.^[5,6]

Since the establishment of consultant posts in the UK, there is little research conducted to investigate the experiences of consultant breast radiographers to the delivery of breast imaging services. Therefore, this study aimed to explore the experiences of consultant breast radiographers regarding breast imaging services in the UK. The study findings can be helpful to the UK and other countries planning the development of breast imaging services.

Methods

This study was part of a larger study that focused on the role of the consultant breast radiographer and factors that lead to the development and implementation of this leadership role in the UK. A qualitative research design was used to conduct the study. According to Bowling,^[8] qualitative research provides a framework to explore and analyze issues in a flexible yet thorough way. This approach provided a greater depth of understanding of the phenomena from a personal perspective.^[9] This helped the researcher to understand the experiences of consultant breast radiographers regarding breast imaging services in the UK.

Population and sampling

The study population constituted of consultant breast radiographers from different trust hospitals across the UK. Potential participants were identified through the Society and College of Radiographers register which had a total of 16 consultant breast radiographers. A total of eight participants were purposefully selected for this study. All participants were female. Four had more than 3 years' experience while the rest had <3 years, but they had been performing the role of consultancy even before their appointments.

Data collection tool and procedures

Data were collected using semi-structured interviews using an interview guide developed based on the literature and aim of the study. The flexibility of semi-structured interviews allowed participants with a degree of freedom to describe their work experiences and the expertise they felt that they had in

their roles. The researcher was able to probe the interviewees with detailed questions for further responses and clarify any ambiguities in the answers.^[9,10] This helped to get rich and all the necessary information to answer the research question.

Following ethical approval from Cardiff University School of Health Care Studies, a pilot study was conducted with two advanced practitioners working for breast screening programs in the UK. The aim was to test the interview schedule and gain experience with interviewing and voice recording equipment (Dictaphone). It also allowed to obtain feedback from the pilot study participants about the interview style and whether they felt at ease and were willing to answer the questions. The pilot interviews took between 30 and 45 min.

Following the contact with participants, a package that included an introductory letter, participant information sheet, and the participant informed consent was sent to each participant who agreed to participate. Each participant was then requested to schedule an appointment for the interview. Eight main interviews were conducted: Seven face-to-face semi-structured interviews in hospitals where the participants were working and one telephone interview due to distance limitations. Each interview took place during the lunch break in a quiet room. At the beginning of each interview, the researcher explained the purpose of the interview to each participant and asked for permission to record the interview. Data collection only stopped after data saturation point when repetitive information started emerging from participants.^[10] Each interview lasted between 30 and 45 min. Summary notes were written after each interview to capture relevant contextual information.

Data management and analysis

Data were analyzed thematically as recommended by Braun and Clarke.^[11] Following the transcription of the interviews, the researcher familiarized with the data by reading through each transcript several times, noting down the initial ideas. Through a repeated and systematic reading of the data, important ideas and issues were identified. The researcher began by underlining only the part of the utterances that most directly answered the research question. The first time the sub-theme was noted, the researcher used a highlighter to identify the place in the text in which it was observed. The researcher continued highlighting each sub-theme noted with a different highlighter. All the sub-themes were then collated into potential themes, gathering all the data relevant to each potential theme. These major themes were identified by the frequency and by the degree to which they were closely associated in meaning with other themes. Table 1 was used to connect identified sub-themes with themes.

Ethical considerations

Before the study, ethical approval was obtained from the Cardiff University School of Health Care Studies. An

Table 1: Themes and sub-themes, which emerged following thematic analysis

Themes	Sub-themes
Theme 1: Reasons for the introduction of breast consultancy role in radiography	<ul style="list-style-type: none"> • Increase in demand for breast imaging services • Shortage of radiologists
Theme 2: Education and training in breast imaging	<ul style="list-style-type: none"> • Type and duration of training • The role radiologists played during training • Challenges during training
Theme 3: Domains of breast imaging consultancy practice	<ul style="list-style-type: none"> • Clinical expert • Professional leadership • Research and evaluation • Education and training
Theme 4: Autonomy and support	<ul style="list-style-type: none"> • Autonomy • Peer and external support

informed consent package was sent to each participant before data collection and included an information sheet detailing the aim of the research and what taking part involved and a consent form. All the participants who agreed to participate in the interviews signed informed consent. Confidentiality was ensured by only allowing the researcher and supervisor access to data and other information. To maintain anonymity, all participants were given code numbers and used instead of their real names.

Establishment of rigor

Trustworthiness criteria were used to evaluate the rigor of this study (Lincoln and Guba).^[12] This involved adhering to four concepts: Credibility, dependability, conformability, and transferability. To ensure credibility, participants were purposefully selected from different hospitals to validate data from multiple perspectives.^[9,10] After the transcription process, the researcher went back to access participants to ascertain whether the transcribed data matched what they said during the interview.^[12] The research supervisor also performed a peer debriefing by checking sub-themes, and themes generated during data analysis. All research processes which include the purpose of the study, research design, data collection, and analysis have been described to maintain dependability. The researcher also kept all complete records throughout the research project for audit trail.^[9,10] To ensure conformability, direct quotes of participants have been used to support the study findings. To enhance transferability, a detailed description of the research process has been provided.^[10,12]

Results

Four themes emerged following thematic analysis [Table 1].

Theme 1: Reasons for the introduction of breast consultancy role in radiography

All the participants stated that the development and implementation of the breast consultancy role were largely

driven by the increase in demand for breast imaging services and the shortage of radiologists.

Sub-theme 1: Increase in demand for breast imaging services

The recognition of the importance of breast cancer screening and the subsequent introduction of the National Health Service Breast Screening Program in the UK led to an increase in the demand for breast imaging services:

“Breast imaging was constantly expanding all the time and also there was an increased workload in the symptomatic service.” (Participant 1)

The increase in demand resulted in long waiting lists and negatively affected the delivery of breast imaging services in the country.

Sub-theme 2: Shortage of radiologists

The increased demand for breast imaging services led to an increased workload for radiologists who were already not enough in the country:

“There was a shortage of radiologists. They decided that they will try a skill mix project because there weren’t enough radiologists to do the assessing and the reading.” (Participant 1)

Participants reported that some radiographers had already extended their roles by helping radiologists. The recognition of the capability of radiographers who had already undertaking much of the breastwork resulted in the formal recognition and creations of consultancy posts.

Theme 2: Education and training in breast imaging

All participants stated that training and education were an important element in the developing of the breast consultancy role.

Sub-theme 1: Type and duration of training

All the participants mentioned that they had to be backed by academic qualifications that could be at master’s level for them to perform the job well. The participants explained that the education and training they attained were all postgraduate. They underwent formal training that was a university based and modular program through blended learning. The training involved both practical and theory. As a result, the duration of the completion of the masters depended on each participant:

“I did a master’s degree which was all four modules relating to my advanced practice. I used to spend a week at the university and the rest of it the practical training at my workplace.” (Participant 7)

Participants raised some concerns about the training program for the breast consultancy role. They stated that there was no set program for consultant breast radiographers and no one university has all

the modules in one place. The participants enrolled in different universities to complete the required modules:

“The modules were all postgraduate. Well, very piecemeal. No one university has all the modules in one program.”
(Participant 2)

Most participants suggested the development of master’s programs in breast imaging in each university than undertaking different modules from different universities.

Sub-theme 2: The role radiologists played during training

Consultant breast radiographers needed radiologists with professional knowledge and expertise to coach and mentor them as they were being trained to do the same functions radiologists perform. There was a universal agreement among participants that radiologists mentored them during their training. However, there were divided feelings about the support they received from the radiologists during their training:

“They were very supportive because we had a few radiologists here at that time and they were all very supportive.” (Participant 5)

The radiologist refused to teach me an ultrasound-guided biopsy. I think she saw this as a threat because we were doing what she was doing.” (Participant 4)

However, most participants reported that they received a lot of support from the other members of the multidisciplinary team:

“We have had tremendous support from the consultant surgeons. The clinical director also thinks consultant radiographers are the best.” (Participant 7)

All the participants felt that the training they received from radiologists for the role was appropriately adequate which is helping them in performing the consultancy role.

Sub-theme 3: Challenges during training

All the participants mentioned “time” as the major challenge during training. The participants expressed their feelings saying that a lot of time was taken away from their families:

“Time for studying is the main challenge.” (Participant 8)

“It was challenging because most of the written work I had to do it in my own time at home and I have a family.”
(Participant 5)

All participants reported that the undergraduate degree was cardinal for the development of the breast consultancy role, but the universities needed to put together postgraduate courses that would help radiographers perform such roles.

Theme 3: Domains of breast imaging consultancy practice

Four domains of practice were reported by participants: Clinical expert, professional leadership, research and evaluation, and education and training.

Sub-theme 1: Clinical expert

All participants managed the diagnostic decision pathway and the aspect of this role involved making informed decisions regarding which diagnostic tools were appropriate. They made individual diagnostic decisions on each patient:

“I report on all mammograms and ultrasound scans. I do biopsies and wire localizations for theatre. I attend the multidisciplinary meetings where I discuss with the surgeons, and the oncologists and the breast care nurse.”
(Participant 5)

All the participants expressed feelings about how closely they work with their patients. Clinical practice was felt like the most important priority:

“Patient care to me is very important and the patient is the center for what I do because if you don’t have the patient then you don’t have the role... the patients are central to what we do and they have to be in all aspects.”(Participant 3)

“Patient care is the most important part of the role of achieving the diagnosis and getting through the clinic in an efficient sympathetic and empathetic manner.”
(Participant 3)

Imaging results are discussed with the patients and frequently require very careful sensitive handling tailored to each individual. This involves informing the patient of the likely nature of their abnormality (benign or potentially cancerous) and the reason why a biopsy or any other intervention may be necessary. Several participants felt the need for every consultant breast radiographer to have an advanced communication course to learn how to deal with patients when breaking the news:

“Having a conversation with an anxious patient can be challenging. As a consultant breast radiographer, you need to have good communication skills. I had to do an advanced communication course to learn how to deal with these patients as they come.” (Participant 6)

The advanced communication course was not part of the radiography module but most of the participants felt that as a consultant, it was necessary to do this course to improve communication skills. Participants suggested the inclusion of communication skills in postgraduate radiography courses.

Sub-theme 2: Professional leadership

The participants mentioned that they are leaders and not managers and emphasized the need to empower others and facilitate collaborative working within the clinical environment:

“I am not a manager because I don’t manage any individual people but am part of the management team and am probably the lead radiographer for the unit. As a leader, you need to be an ambassador for the department because you need to encourage and motivate others to develop on the qualities they have.” (Participant 1)

Sub-theme 3: Research and evaluation

All the participants mentioned that they had a service development side and activities such as research, evaluations, and clinical audits:

“We try to work on service delivery and see how much we can improve things. Auditing the stereo cores to ensure that we are maintaining a 95% of the diagnostic accuracy without having to do repeat cores... if we identify any area where we are underperforming then I could audit and look at how we can improve that and where we are going. We do quite a lot of audit on practice although it’s time consuming.” (Participant 1)

Despite the research being one of the elements of the consultant role, some participants reported being prevented by pressure of work from undertaking research:

“I am aware that I should be doing more research but it’s the time thing. A lot of time is spent on clinical duties.” (Participant 8)

Participants agreed that they did not research due to a lack of time. However, they understood the importance of research in informing evidence-based practice.

Sub-theme 4: Education and training

All the participants felt that it was essential to develop others through sharing knowledge and skill. As experts in the field, they felt that they are responsible for ensuring that education and training of other staff are sufficient to guarantee a high-quality service to the patients. Their education and training roles ranged from preparing in-house teaching packages and doing tutorials to university involvement as a lecturer:

“We have training within the department for medical students. I also mentor trainee mammographers and lecturer at the university.” (Participant 5)

Although participants were involved in education and training, this was not in their postgraduate studies. They reported lacking knowledge and skills in teaching and learning. Furthermore, they did not influence the development and progression of professional education programs related to breast imaging.

Theme 4: Autonomy and support

This theme had two sub-themes: Autonomy and peer support through networking.

Sub-theme 1: Autonomy

All participants agreed that there was a degree of autonomy among them and all planned and executed their work as they saw fit:

“I am very autonomous because I am responsible for everything that I do. I run my clinics and I make decisions on my ladies.” (Participant 7)

Some participants stated that they had not faced any legal challenges, but they were aware that there is a possibility that it would happen:

“I have not experienced any legal challenges.” (Participant 8)

One participant had encountered legal claims and had this to say:

“There have been some court cases going through the department that I have potentially dealt with and you just go through the lawyers. It is not people who are questioning the diagnosis. The only thing is that the patient sues the hospital and the whole team comes in. If you are worried about being sued, you won’t do your work properly.” (Participant 2)

The participants understood that their hospital management is vicariously liable for their staff actions provided they acted within the guidelines or protocol.

Sub-theme 2: Peer and external support

Most of the participants felt that peer support and networking with other consultants proved to be very helpful:

“The consultant group meetings are very brilliant, and you get a lot of advice to support the role.” (Participant 8)

Most of the post-holders felt that peer support and networking with other consultant radiographers proved to be very helpful as more consultant posts were created. Most participants also reported having received adequate external support from other health-care professionals:

“All the consultants in the team...radiologists, surgeons, and pathologists have a good relationship and we all work together well as a team.” (Participant 6)

The support from non-radiology staff was reported as a positive experience for the consultatory breast imaging role.

Discussion

The establishment of screening breast imaging services in the UK created significant service demands. The department of health estimated increase in workload by 40%.^[13] However, there were not enough breast radiologists to meet all the demands. To meet the increased workload, a four-tier career structure was developed which led to the development of the consultancy roles.^[14] As Ford^[15] states the shortage of radiologists was a major factor in the establishment and implementation of radiography consultancy posts in the UK. This concurs with our findings where breast radiographers reported undertaking advanced roles even before being appointed as consultants in breast imaging due to increased demand.

This study found postgraduate education and training as an important element in the development of the breast consultancy role. According to Jones,^[16] the masters’ level of education

provides sufficient knowledge, critical thinking skills, and support higher level practice. This agrees with the findings of our study. However, the College of Radiographers suggests that doctoral qualification should be an essential requirement for consultant practice.^[15] The breast imaging training consisted of theory and clinical practice and delivered using a blended learning approach. The literature revealed that blended learning is the most preferred method for postgraduate radiography studies because many radiographers undertake training while working.^[17,18] Blended learning is a combination of the traditional face-to-face classroom and distance or online educational methods.

Several studies have reported challenges faced by radiographers during their postgraduate studies. Participants complained of the fragmentation of the education and training for consultant breast radiographers. Modules were undertaken in different universities which were reported as a challenge because trainees had moved from one place to another. Although the clinical training was undertaken in the workplace, some radiologists were not interested to be involved in the training of consultant breast radiographers. In other words, they had a negative attitude toward the role extension of radiographers. Radiologists and medical resistances have been cited in previous studies as a potential barrier to radiographer role development.^[19] Trainees also faced the challenge of a lack of time due to work, school, and family responsibilities. This finding concurs with that of the study by Ugwu *et al.*,^[18] where a lack of time and family responsibilities were identified as a barrier for radiographers pursuing postgraduate studies. The delivery of training through blended learning minimizes the trainee's isolation from their families.

Four domains of practice were reported in this study: Clinical expert, professional leadership, research and evaluation, and education and training. The role of clinical expert was directly related to breast imaging services and included reporting on all mammograms and ultrasound scans, performing biopsies, and wire localizations for theatre. Breast consultant radiographers worked independently which involved the communication of results and diagnosis to patients. This was challenging and effective communication skills were identified as vital to a consultancy role. Springett and Dunmal^[20] pointed out that effective communication is at the heart of quality health care. It decreases the anxiety and distress felt by patients and improves the satisfaction of both patients and practitioners.^[21] However, communication skills were not integrated into the curriculum for breast consultant radiographers. For this reason, some had to undertake a separate communication skills course. There is a necessity to integrate this topic into future postgraduate studies.

Breast consultant radiographers also undertook non-clinical roles: Professional leadership, research and evaluation, and education and training. These three roles identified in our study were also discussed by Hardy and Snaith^[1] as the core functions of a consultant practitioner. The College of

Radiographers^[22] identifies education and training as one of the roles of consultant practice. However, clinical education was not integrated into the training program. Steinert^[23] argues that educational principles and theories are useful in showing clinical educators approaches that can inform and improve teaching and learning. However, global literature shows that most of the radiographers teach without training in educational principles.^[24,25] This can lower the standards of radiography clinical education. Steinert^[23] recommends supporting postgraduate trainees through the integration of clinical education in their training programs.

Our study also identified consultant radiographers are leaders. This agrees with Hogg *et al.*^[26] who stated that consultant radiographers are leaders who manage their caseload. Yelder^[27] identified the six qualities of an effective leader: Patience, empathy, a good speaker and listener, creativity, positivity, and effective feedback provider. The other role of consultancy included performing audits. Clinical audits are important in checking performance against standards with the view to improving patient care.^[28] This study also revealed that consultant radiographers were responsible for conducting research. Reeves^[5] states that research and publications must be embedded in the work of all consultant radiographers. However, our study found that radiographers did not research due to increased clinical workload. To encourage consultant radiographers, undertake clinical auditing and research, protected time for these activities should be provided by departmental managers.

Breast consultant radiographers worked independently, but this exposed them to litigation. Alderson and Hogg^[29] stated that as the role of consultancy expands in clinical practice, so does the potential of their involvement in legal claims and these arise from a multitude of circumstances such as failure to detect an abnormality on a radiograph. However, to avoid these legal claims, Keenan *et al.*^[30] suggested good practice and adhering to protocol. Radiographers can also be covered under the legal principle of vicarious liability. In the workplace context, an employer can be liable for the acts or omissions of its employee, if acted within the scope of practice.^[30] This means that radiographers should not perform new roles without guidelines and agreements with their employers.

Price and Edwards^[31] found that consultants enjoy the full support of their professional organizations and medical colleagues alike. This concurs with our findings where most of the breast consultant radiographers felt that networking with other consultant radiographers proved to be very helpful as more consultant posts were created. The consultant group meetings facilitated by the Society and College of Radiographers also encouraged consultants to demonstrate professional leadership, a requirement to the post. Attending such meetings became apparent that many consultants had to deal with very similar issues and, therefore, it should be beneficial if they are highlighted so that similar problems could be avoided.

Recommendations

Based on the study findings, the following recommendations are made:

- To amalgamate the modules that are being introduced in different universities so that a uniform program is set up for the whole country in the UK. There is also a need to integrate communication skills, management, and clinical education in breast imaging training courses to support consultant breast radiographers in performing their role
- To encourage consultant radiographers, undertake research, evaluation, and clinical auditing activities, it is recommended that protected time be provided
- To have a comprehensive understanding, there is a need to conduct further research to include all key stakeholders such as consultant breast radiographers, radiography managers, breast radiologists, and radiography lecturers.

Conclusion

The UK government's policy focused on modernizing the National Health Service and making it more responsive to patient's needs and this created more service demand. The shortages of radiologists together with a growing demand for radiological services accelerated the introduction of extended role activities in radiography, including breast imaging. One such role is the consultant radiographer job roles, which are broad and include clinical activities often similar in nature to those delivered by radiologists, professional leadership, teaching and education, and service improvement.

Authors' Declaration Statements

Competing interest

None to declare.

Authors' Contributions

Mercy Chipampe Nachalwe conceptualized and carried out the research as part of the masters in radiography. Oswald Bwanga supported the researcher and prepared the manuscript.

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