Review Article

Impact and challenges of consultancy role regarding the delivery of breast imaging services in the United Kingdom: consultant breast radiographers' perspective

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ABSTRACT

Background: Breast cancer is the leading cause of death in women worldwide. Imaging and radiographers play an important role in the diagnosis and treatment of breast cancer. With the increase in demand and a shortage of radiologists in the UK, consultant breast radiographers were introduced to perform some roles previously performed by radiologists. However, there is a scarcity of research to assist other countries, such as Zambia, who are planning to extend the role of radiographers.

Objective: To explore the impact and challenges of the radiography consultancy role regarding the delivery of breast imaging services in the United Kingdom.

Methods: The study was guided by a qualitative research design. The sample was purposively selected, and semi-structured interviews was used to collect data from consultant breast radiographers in the UK. Data saturation was reached after interviewing eight participants. Interviews were audio-recorded, transcribed and data analysed thematically.

Results: Two themes were identified: the impact and challenges of the radiography consultancy role regarding the delivery of imaging breast services. The creation of consultant posts impacted positively on the service delivery: reduction in patient waiting times, career progression and job satisfaction, and reduction in the workload of radiologists. Participants also faced challenges: increased workload and time pressure, isolation and poor support from colleagues, and animosity from a few radiologists.

Conclusion: It is evident that consultant breast radiographers have contributed greatly to improved healthcare delivery. However, consultant breast radiographers encounter challenges in their role as consultants. Radiographers undertaking new roles should be supported to improve the delivery of imaging services.

INTRODUCTION

The role of radiographers in the United Kingdom (UK) has extended into advanced and consultancy roles due to the increase in demand for imaging services and a shortage of radiologists.[1,2,3] Trained radiographers have taken up some roles traditionally performed by radiologists. The first main extended role to be established was image reporting on plain radiographs after conducting extensive research. A meta-analysis that included 12 research studies from 1994 to 2000 on the abilities of radiographers to report on plain radiographs in the UK, found the

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sensitivity and specificity at 92.6% and 95%, respectively.[4] Other research studies also found that trained radiographers in image interpretation can provide diagnostic imaging reports at a level comparable to radiologists.[5,6] These findings, amongst others, gave confidence to stakeholders to extend the role of a radiographer.

The other area where radiographers in the UK have extended their role is in breast imaging services. Breast imaging plays an important role in the diagnosis and treatment of breast cancer. The common imaging modalities used to detect breast cancer include mammography, ultrasonography (US), and magnetic resonance imaging (MRI). Breast imaging also includes performing needle aspiration biopsy and breast image reporting. It should be mentioned that breast cancer is the leading cause of death in women worldwide.[7] In the UK, it accounts for 7% of all cancer deaths.[8] To minimise the mortality rate, the National Health Service (NHS) established a breast-screening programme in the 1990s for women aged 40 and above.[1,9] Literature shows that screening mammography has been shown to reduce the breast cancer mortality rate to between 30 and 40% through the effect of minimising the incidence of advanced and inoperative breast cancer with metastases.[10] Breast imaging screening leads to more effective treatment and less morbidity. Unfortunately, the establishment of the breast cancer screening programme in the UK resulted in long patient waiting times due to a shortage of radiologists. This negatively affected the breast cancer screening programme.

Given the above and the increase in demand for other imaging and healthcare services, non-medical consultant posts were established in the NHS workforce.[1,11] This saw the birth of consultant breast radiographers with two main roles: clinical and non-clinical. The clinical roles relate directly to breast imaging and include image reporting and performing interventional procedures such as breast biopsies.[1,12] Non-clinical roles are divided into four categories: professional leadership, practice and service development, education and professional development, research and evaluation.[1,3,12] To be appointed as a consultant in breast imaging, a radiographer must hold a master's or doctorate qualification in breast imaging.[11,12]

Since the introduction of radiography consultant posts in the UK, there is a scarcity of research on the experiences of consultant breast radiographers in the delivery of breast imaging services. The aim of this study was, therefore, to explore the impact and challenges of the radiography consultancy role regarding the delivery of breast imaging services in the UK. The study has provided useful information to help enhance the experiences of both patients and consultant breast radiographers in the UK. The study has also provided baseline information to radiographers and stakeholders in African countries, such as Zambia, where radiographers are planning to take up some roles previously undertaken by radiologists.

METHODOLOGY

The study was guided by a qualitative research design. Dawson[13] explains that qualitative research explores experiences, attitudes, and behaviours through interviews or focus group discussions. In this study, this was useful to get in-depth opinions from consultant breast radiographers regarding the impact and challenges of the consultancy role on the delivery of breast imaging services in the UK.[14]

The target population was all consultant breast radiographers working in the UK with more than four years' experience in breast imaging. At the time of this study, there were a total of 16 consultant breast radiographers on the Society and College of Radiographers register. Purposive sampling was used to select eight participants from the accessible population. Dawson[8] defines purposive sampling as a non-probability sampling in which participants are chosen according to the researcher's judgement as to their suitability for the study. The sampling was based on the idea that the selected participants have the knowledge and expertise to help the researcher in understanding the problem being investigated.[13,14,15] All participants were female because of the

nature of the job where only female radiographers undertake breast imaging.

Data were collected using semi-structured interviews. Semi-structured interviews are guided by a predetermined set of open-ended questions using an interview guide, with the researcher free to probe additional details during the interview.[13,15] After successfully conducting pilot interviews with two breast radiographers within the study population, eight interviews were conducted. Seven were face-to-face interviews within the participants' workplace, whilst one was a telephone interview due to distance limitations. All interviews were conducted during lunchtime in a quiet room within the breast imaging department. Interviews were voice recorded and conducted to a point of data saturation, where no new information emerged.[15] The average duration of each interview was 30 minutes.

Data collection and analysis took place simultaneously after each interview. Data were analysed thematically based on the aim of this study: impact and challenges.[16] The emerging sub-themes from the data were matched to each theme. Two themes were identified: the impact and challenges of the radiography consultancy role regarding the delivery of breast imaging services.

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. The research ethics committee at the Cardiff University School of Health Care Studies approved the study. Each participant signed informed consent before the interview once the aim and details of the study were explained. Written information and an ethical approval letter were also provided to each participant. They were also informed about their right to withdraw from the study at any time.[14] To maintain confidentiality, all interview summary forms, field notes, and recordings were kept in locked locations.[13] Data stored in digital format were also secured by passwords. Only the researcher and research supervisor had access to the data. To maintain anonymity, no names or any information which might identify the participants were sought. To maintain anonymity, numbers (e.g. Participant 1) were assigned to each participant and used to report the findings.

RESULTS

Two themes and six sub-themes were identified following thematic analysis (Table 1).

Table 1: Two themes and six sub-themes which emerged following thematic analysis

Themes	Sub-themes
Theme 1: Impact of the radiography consultancy role regarding the delivery of imaging breast services	• Reduction in patient waiting times • Career progression and job satisfaction • Reduction in the workload of radiologists
Theme 2: Challenges of radiography consultancy role regarding the delivery of imaging breast services	• Increased workload and time pressure • Isolation and poor support from colleagues • Animosity from some radiologists

Theme 1: Impact of the radiography *consultancy role regarding the delivery of imaging breast services*

All the participants agreed that their role has made improvements to the patient journey and that the implementation of consultant breast radiographer posts had improved the imaging pathway by providing more capacity in the fast-track clinics.

Sub-theme 1: Reduction in patient waiting times

Participants reported reduced waiting times for breast imaging services due to the introduction of breast consultant radiographers. Furthermore, participants noted that most patients received all necessary tests in a single outpatient attendance:

> "*Undoubtedly, without a shadow of a doubt, yes. There has been a reduced waiting list. The patient has benefited as more people are seen and the treatment is quicker and effective. They are having all services done in one visit so enhancing the health delivery. We keep within the government targets exceedingly well." (Participant 4)*

All participants made comments about faster diagnosis and treatment and felt that they had made healthcare services more accessible to patients. The services were also timely, geographically reasonable, and provided in a supportive clinical environment.

Sub-theme 2: Career progression and job satisfaction

Participants explained that taking up responsibilities previously performed by radiologists means career advancement or progression. They had developed expert knowledge, skills, and competence in relation to breast imaging services because of their added responsibility:

> *"I undertake the same clinical roles as of the consultant radiologist. I undertake image interpretation and report on breast images. I run my own breast screening assessment clinics and provide reports for routine surgical follow-up and family history surveillance mammograms, suggesting further diagnostic workup if an abnormality is detected". (Participant 7)*

Most of the participants had also developed teaching and learning skills as they were involved in the education and training of both undergraduate and postgraduate students:

> *"I am an honorary lecturer at two universities. I teach radiography students. I also teach ultrasound and image interpretation to the postgraduate students. I assist postgraduate students on the academic and practical sides".* ***(Participant 5)***

Participants had developed their careers in teaching and learning, both in the clinical and classroom settings. Participants also reported performing new roles: clinical auditing, evaluation, and research related to breast imaging.

The career progression or development resulted in job satisfaction which was reported as a positive experience in the delivery of breast imaging services. Furthermore, participants reported working independently in running the breast imaging services with flexibility:

> *"My work is very flexible; certainly not routine. I have a job plan…but over things like film reading sessions we are very flexible about them. It depends on what else am doing and when I take up my supportive professional activities that is something all consultant radiographers have." (Participant 3)*

Sub-themes 3: Reduction in the workload of radiologists

All participants agreed that the establishment of breast consultant radiographers in the UK had a positive impact on breast imaging service delivery. The introduction of breast consultant radiographers also had allowed radiologists to then concentrate on other complex imaging duties:

> *"This has also freed up radiologists for other duties, but the position of consultant breast radiographer depends on the workload within the department*." *(Participant 6)*

Theme 2: Challenges of radiography consultancy role regarding the delivery of imaging breast services

Three main challenges were identified: increased workload and time pressure, isolation and poor support from non-consultant radiographers, and animosity from some radiologists.

Sub-theme 1: Increased workload and time pressure

Most participants felt they did not have enough time for their patients because of the huge workload and meeting targets set by the government:

> *"Time pressures. We never have enough time. We are incredibly busy, and we are always rushing patients through. We have a huge workload and sometimes feel we don't give our ladies extra attention as we should. So, I just think the workload is enormous and we haven't got enough time." (Participant 2)*

The increase in workload was attributed to set targets by the government. This was reported as very frustrating, and negatively affected the delivery of breast imaging services:

> *"The main frustrations are government targets. In breastwork, the target set by the government is that we see breast referrals within two weeks and it's killing us. The targets are so unreasonable in the screening programmes and we don't get thanks from the NHS for meeting these targets. All they are interested in is meeting these targets. The whole system is too target driven." (Participant 4)*

Sub-theme 2: Isolation and poor support from colleagues

Independent working was a feature of the role where many participants experienced isolation and poor support from non-consultant radiographers. One participant cited people's lack of knowledge about the consultancy role as disappointing:

> *"Often you get resentment of 'why are you doing this'. You do sometimes feel quite isolated because you are not part of the mammography team and you are not part of the radiology team. You are on your own and it can be lonely." (Participant 1)*

Participants felt lonely and isolated due to a lack of support from colleagues. This negatively affected some participants in the delivery of breast imaging services.

Sub-theme 3: Animosity from some radiologists

One participant described the hostile attitude of one radiologist:

> *"There was one radiologist who did not like our title. She didn't like the fact that we were called consultants and she felt that it was misleading to the patients and she also felt that she didn't pick on the amount of work that I was doing, and she said something one day. "Oh, you can do the audit because you don't need to get bored." I was just thinking in my head that she does know what I do. The family history things, the teaching that I do, and everything…. that was a bit annoying." (Participant 8)*

Participants stressed that consultancy does not only belong to medical doctors but allied health and nursing professionals as well. The strong hostility from a few radiologists negatively affected the working relationships between the two imaging professionals.

DISCUSSION

Our study found that the radiography consultancy role had brought a lot of benefits to patients because the diagnosis, discussion, counselling, and management strategies are often decided and implemented in one visit to the breast centre. This finding agrees with Kelly[17] who reported that most

patients attending breast clinics for breast assessment of abnormalities receive all necessary workup in one attendance, significantly expediting the diagnosis process and subsequent treatment. The establishment of breast consultant radiographers has resulted in reduced waiting times for patients with better outcome and quality service.[1] This finding is encouraging for countries planning to extend the role of radiographers.

The benefits of the creation of consultancy posts also extended to consultant breast radiographers themselves. They took up new clinical roles previously undertaken by radiologists which meant career progression or advancement. The knowledge and skills acquired related to image reporting and performing interventional procedures such as breast biopsies. This finding was fully in line with a study conducted by Mubuuke and Pope[18] which found that radiographers pursue postgraduate studies for professional development. Consultant breast radiographers also acquired new knowledge and skills in teaching, clinical auditing, evaluation, and research. Our study found that all these impacted positively on consultant breast radiographers. The career progression resulted in job satisfaction. This agrees with another study by Page et al.,[19] which reported that role development in radiography is beneficial to radiographers in terms of more interesting jobs and work-life satisfaction. This can result in the retention of radiographers within the profession.

The additional benefit of the extended role is that radiologists are freed up for other complex duties, such as reporting on computed tomography (CT) and magnetic resonance imaging (MRI). This benefit was also reported in a study by Page et al.,[19] where it was reported that radiologists benefit the most in terms of a decrease in workload. The other benefit reported in the literature is the reduction of healthcare service costs. Hardy and others[20] point out that cost-effectiveness is evident because radiographer's salary rates are much lower than radiologists. There is also evidence of the reduction of healthcare service costs when radiographers take up roles previously undertaken by radiologists.[20,21] One of the explanations is that patients are seen for all the services in one visit rather than the old system where they came on multiple days for different breast imaging services. This reduces costs to both patients (transport costs), and healthcare services.

Taking up the radiography consultancy posts comes with its challenges. Kelly et al.,[17] state that the current workloads for consultant radiographers within hospitals have meant that a number carries a 70% clinical weighting, with pressure to devote even more time to that element, resulting in the other elements (practice and service development, education and professional development, and research and evaluation) of the post not being given sufficient attention. This concurs with our study finding where breast consultant radiographers reported an increase in workload as a challenge in the delivery of breast imaging services. Their involvement in education and training exacerbated the workload. Harden and Laidlaw[22] state that teaching in the clinical environment is complex and demanding due to the dual roles clinical educators play in providing patient care and facilitation of learning for students. There is a necessity to put in place protected time for teaching and increase staffing levels to match the workload. The other challenge reported in the radiography literature is a lack of teacher training amongst clinical educators.[23,24,25] Harden and Laidlaw[22] point out that an effective clinical educator, in addition to having the necessary clinical competencies, need to approach teaching with an understanding of basic educational principles related to the facilitation of practice-based learning for students. Clinical education should, therefore, be integrated into postgraduate imaging programmes to prepare consultant radiographers for education and training roles.

A supportive environment is important in any workplace and this includes the radiology department. In role extension of radiographers, the success of the initiative depends on collaboration amongst key-role players.[1,2,26] This means

cooperation amongst radiographers and between radiologists and radiographers. However, our study found that consultant breast radiographers received poor support from non-consultant radiographers. This finding disagrees with what is reported in the literature. Global literature shows that radiographers have positive attitude towards role development and are supportive to colleagues undertaking advanced practice.[1,2,18,19] Although consultant breast radiographers received support from radiologists, some had a negative attitude towards the role extension of radiographers. Page *et al.*,[19] reports that radiologists feel threatened when radiographers take part in their roles. Fear leads to animosity. This is worrying because imaging colleagues should support the extension of the role of a radiographer to develop the profession and improve healthcare delivery.

CONCLUSION

The implementation of consultant breast radiographer posts has improved the symptomatic imaging pathway in the UK. Breast imaging services have been made more accessible to the patients as diagnosis and treatment have been sped up. The study finding also shows that the role extension of radiographers offers many benefits to patients, radiographers, radiologists, and healthcare services. The study has provided useful information to help enhance the experiences of both patients and consultant radiographers to breast imaging in the UK. The findings also provide baseline information to radiographers and stakeholders in African countries, such as Zambia, where radiographers are planning to extend their imaging roles. The limitation of this study was the exclusion of patients. It is recommended that future research should include both patients and radiographers to have a complete understanding of breast imaging services.

Competing interests

None to declare.

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