

Original Article

The role of the ‘on treatment’ review radiographer: what are the requirements?

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Abstract

Purpose: The aims of this study were to describe the scope of practice of the radiotherapy 'on treatment' review radiographer. This included trying to gain an insight in to what knowledge, skills and characteristics are needed to operate in this role extension and to establish whether the role requires skills in areas of patient care and support which are beyond the generic training of a treatment floor therapy radiographer.

Method: A qualitative grounded theory methodology was employed using semi-structured interviews with 'on treatment' review radiographers from three different departments. The departments were selected to maximise the amount of data collected, consequently they were chosen due to the differences in the way their review service was set up. This ranged from full time, to team led, to part time review. Using coding and constant comparative analysis based on grounded theory, categories were developed describing attributes of the role.

Results: The scope of practice and challenges of the role varied slightly between the departments. The core categories needed to operate in the role were identified as knowledge, listening skills and characteristics with sub categories of self-reflection, interpersonal skills and attitudes.

Conclusions: To be a review radiographer requires advanced knowledge at Masters level, with well developed listening and interpersonal skills and enjoyment of the people side of the profession. These skills need to be regularly practised, updated and reflected upon. The requirements for further training needs are noted and recommendations for further research are identified along with the limitations of this research. The role appears to require knowledge and skills in areas of patient care and support, which are above the level of practice of a treatment floor therapy radiographer.

Keywords

Patient support; role development; role extension; treatment review radiographer

INTRODUCTION

In many cases, patients undergoing a course of radiotherapy treatment for cancer, develop side effects. These effects vary in severity and

intensity depending on the total dose of radiation and the area of the body being treated.¹ Radiographers generally enquire about the patients' health when they come for treatment. However, it is in the patients' interest to be reviewed regularly while having a course of radiotherapy so that any treatment reactions

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may be monitored and side effects that develop can be managed. These may include physical symptoms such as skin reactions or identifying further needs like dietetic input or support for psychosocial issues.

In the past these on-treatment weekly reviews were conducted by the Oncologists but as their workloads increased it became recognised as an area where therapy radiographers could extend their roles with further training and specialise in a certain area of their profession.

Role extension for radiographers is a concept that is growing in strength both inside and outside the profession. Foulsham discussed the role of the review radiographer as early as 1997 and in diagnostic radiography,² Paterson reported role extension as early as 1995.³

The government has recognised and highlighted the need for better streamline care for patients through its published reports. For example, the National Health Service Cancer Plan⁴ states that staff will be encouraged to extend their roles to improve career prospects and opportunities. The College of Radiographers has also acknowledged the need for 'developing new roles which cross traditional boundaries'.⁵ The focus of this development will be on competences, skills and knowledge with the aim to improve patient care.⁶ This will be linked to the continuing education and development of the profession as a whole and may be seen as a way of furthering careers and offering a more streamlined service to cancer patients.

With the drive towards evidence-based practice it is essential that radiographers are prepared when taking on these roles to evaluate them and acknowledge their strengths and weaknesses. Arguably, evaluating these roles will help recruitment and retention in the profession, as there will be definitive career pathways with role descriptions and clarification of attributes required to work in these roles.

This study aimed to contribute towards this by defining the scope of practice of an on-treatment

review radiographer and developing a theory explaining what knowledge, skills and characteristics are needed to operate in this role. In addition it was hoped to be able to establish whether the role requires certain advanced skills relating to patient care and support which are beyond the level of practice required of a therapy radiographer who runs a treatment linear accelerator.

Having identified the study's principle aims, the author had to choose an appropriate research method with which to collect the data. She decided on a qualitative approach based on the grounded theory method, using semi-structured interviews.

LITERATURE REVIEW

A limited number of articles have been published on this subject. However, using a variety of databases including, Science Direct, Cinahl, Medline and Ebsco, there was plenty of research relating to advanced nursing practice where such concepts have been around for sometime.

Historically, these advanced nursing roles were first recognised in America and evolved in response to service needs.⁷ They arose in areas where there were gaps in the health care system so were service driven. Various authors,⁸⁻¹⁰ agree that there are some common themes that relate to working at an advanced level and these include accountability and responsibility for making decisions. Those in the role should develop ways of actively establishing accountability. They should gain recognition from other professions and they should learn to think critically.

The researcher could only find a few articles relating to the on-treatment review role. One paper¹¹ undertook a small descriptive study that looked at nurse-led review clinics in one hospital and compared them to doctor-led review. The main findings indicated that generally the nurses were proficient at providing effective care for the patients given medical support and made more referrals to other support services allowing for continuity of care. However, this study used a limited range of patients and disease type.

Cameron¹² looked at the review role in one hospital in relation to breast cancer patients. She concluded that therapy radiographers have the essential skills to undertake this role, although she did not define what those skills were. She also highlights the point that with this potential for role development radiographers may increase their job satisfaction and this may aid future recruitment and retention within the profession.

The paper written by Colyer¹³ which attempts to describe and interpret the review role was used as the underpinning framework for this study. Colyer looked at the role of the review radiographer using a qualitative phenomenological methodology, through the use of individual interviews. The perceptions of three radiographers who were conducting the role were explored. Each radiographer was at a different stage in their training experience and reviewed either independently or with various grades of medical staff. From these interviews some common themes emerged including the need for developing further skills such as training in clinical examination and prescribing rights, which would enhance their role. They acknowledged the need to use active listening skills and they felt that self-reflection was essential, particularly in recognising the complexities of the role and in helping to become aware of their own limitations and boundaries.

All the radiographers felt their relationships with other professionals had improved but one had difficulties with some of her colleagues where she felt she experienced non-cooperation and some hostility.¹³

A further point made was that the role was developing with new characteristics. Barton¹⁴ discussing advanced practice in nursing had raised this in her paper. Here it was argued that roles are developing with a blend of new skills, including both medical and nursing, which may constitute a role, which is 'outside previously agreed professional definitions and boundaries. (ref. 14, p. 59).

Ellis *et al.*¹⁵ described the implementation and evaluation of multidisciplinary review clinics

within their department. They concluded that radiography led review was of benefit to their department and further radiographers were encouraged to proceed with training in the role.

In addition they conducted a brief telephone survey across another 19 departments in the United Kingdom to ascertain how review clinics were run. The general outcome appears to be that there is a wide range of disparity across the role, including type of training course undertaken, categories of patients who are reviewed and how the clinics are conducted as in autonomously or not.

It was anticipated that the review role had moved on and expanded since Colyer¹³ wrote her paper and more data was obtained as all the review radiographers used in this study had completed their training and had been practising their roles for some years. However, initial themes for the interview questions were based on some of the issues raised in Colyer's paper.

METHODOLOGY

The design of this study was qualitative research using data collection via one to one semi-structured interviews based on the grounded-theory approach originally the work of Strauss and Glaser.¹⁶ The main characteristics of this approach include theoretical sampling, constant comparative analysis, coding and categorising the data.¹⁷ Data is collected from a sample; analysed and then further data collection occurs until categories are formed that help to develop a theory, which is grounded in the data.

According to Strauss and Corbin,¹⁸ theoretical sampling should be used in grounded theory; however, in practice it is not always physically possible to encompass the whole research phenomena within the time constraints of a project,¹⁹ so sometimes purposeful sampling is employed. It involves deciding to sample a certain group because of preconceived initial ideas and consequently to knowingly look for a way to maximise the data collection.²⁰ This method was used in the above study and the radiotherapy departments were

selected to maximise the similarities and differences between them in the way that radiographer led on treatment review clinics were conducted. In department A, a team of radiographers conducted review, in B; one radiographer conducted the reviews on a part time basis whereas in department C, a full-time review radiographer conducted review on a full-time basis.

The radiotherapy service managers of each department were approached informally to ask permission to carry out research using 'on-treatment' review radiographers from their departments.

Following ethical approval from all departments involved, the manager of each department was sent the information sheets and invitation letters and was asked to distribute them to their review radiographers.

The letters invited the review radiographers to participate, and if they agreed, to reply to the researcher via the stamped addressed envelope. They were then contacted to arrange a mutually convenient time to conduct a semi-structured interview lasting between 45 and 60 minutes.

Semi-structured interviews were chosen as they employ a series of open-ended questions that allow the respondent to answer in their own words and diversify into other areas of interest if they wish. Their aim is to uncover participants' own framework of meaning and as far as possible to avoid imposing the researchers own assumptions.²¹

In this study it was particularly important, as the researcher was also a review radiographer and needed to be aware of the influence she may have had on the participants. She attempted to do this by keeping a reflective post-interview diary to record personal thoughts after each interview. This was used to enhance the credibility of the results by acknowledging her thoughts and values and recognising how these may have influenced data analysis.²²

The literature was reviewed as data collection and analysis proceeded so that any concepts that

emerged could be compared to what was already known. It was then possible to see what, if anything was new information. The broad themes of the initial interviews came from the researchers' personal and professional experience as a review radiographer and from some of the issues raised in the literature, particularly the paper by Colyer.¹³ However, some questions were expanded as the research proceeded.

Data collection was via recorded semi-structured interviews carried out on a one to one basis in a private room in their hospital premises. On completion of the interview, the participants were asked if there was anything else they would like to add and were thanked for taking part.

The tapes were transcribed and the researcher obtained a printout, which was checked against the original tape to make sure no transcribing errors had occurred. The scripts were then sent to each participant to confirm they agreed with what had been said. When the participants accepted them, data analysis began.

Ideally, when using grounded theory, data analysis occurs simultaneously with data collection.¹⁸ The emerging concepts help to clarify further data collection. Data analysis is done through coding, starting with open coding, proceeding to axial coding and then selective coding. In addition, data analysis in grounded theory employs the constant comparative method. This consists of constantly comparing the codes and categories between each other until the basic properties for that category are defined.²⁰ This is an ongoing process throughout the whole of data analysis.

The researcher read through the transcripts to become familiar with the data and then using a coloured marker employed the use of line-by-line coding where any common ideas or themes were underlined. Once concepts were identified they were given a code consisting of a word or a phrase, which was recorded and described briefly. The text was constantly checked for all possible incidences of any new codes and using the constant comparative

method all codes were compared repeatedly within and between each other until the basic categories were defined and described by the data.

When these basic categories were adequately filled they were sorted, compared and contrasted. Ideally the aim of the researcher using grounded theory is to saturate the categories until no new data is uncovered and with true-grounded theory this may include going back to the original interviewees with further questions.¹⁸ However, due to time constraints and the limitations of this study the researcher used any adjusted questions on the next set of interviewees rather than the original. Finally selective coding occurred where core categories were selected and related to other categories and relationships were compared and contrasted between them until all the data had been accounted for.

The core categories identified were

- Knowledge
- Listening skills
- Characteristics

With sub categories of

- Self reflection
- Interpersonal skills
- Attitudes

Researcher bias

As the researcher is also a practising on-treatment review radiographer, it was acknowledged and recognised that this may have led to researcher bias. When using grounded theory this may be used as an advantage, as although the researcher needs to be objective in collecting data, they also need to get close and be accepted by the participants.¹⁷ In addition the researcher needs to be theoretically sensitive to the data and so is able to have insight and give meaning to the data.¹⁸ This could have been beneficial based on the researchers' professional experience. However, it could also have led to the distortion of the meaning of the data as interviewing people similar to oneself, run the risk that they may assume you know what

they know.²³ It was necessary to clarify exactly what the participant meant at each interview and occasionally the researcher asked the participants to explain themselves.

Before this project could begin all the appropriate ethical approvals were sought both from Sheffield Hallam University and Main Research Ethics Committee. In addition, approval was also sought from each of the radiotherapy departments' own research and development departments.

Consent was sought from the review radiographers taking part and the necessary data protection rules were adhered to.

RESULTS SECTION

Table 1 introduces the participants and identifies where the direct quotes in the data come from.

Organisation of service

In the three departments approached in this study, the scope of practice of the review radiographers' role did not appear to vary greatly despite the differences in the set up of the service. For example, most patients are seen on a weekly basis by the review radiographer, and then seen by their consultants in the last week of treatment.

In department C, all categories of patient are reviewed including those on concurrent chemotherapy. Whereas in the other two departments all radical patients are seen but there are some exclusions. The radiographers in department A do not review head and neck patients at the time of writing this study, (although this was under discussion with their oncologists), and in department B, the radiographer did not review sarcoma and lymphoma patients, some brain patients and the palliative patients. At this department there was also a specialist gynaecological radiographer who undertook all the care of the gynaecological patients.

All review radiographers reviewed autonomously, but in department C the doctor was

Table 1. Scope of practice of an on-treatment review radiographer

	Department B	Department A	Department C	Job rate
Participant A	√			Part time review
Participant B		√		Team review
Participant c		√		Team review
Participant D		√		Team review
Participant E		√		Team review
Participant F		√		Team review
Participant G			√	Full time review

present for the head and neck patients. In addition, all radiographers prescribed medication under departmental Patient Group Directives. These included skin creams, anti-emetics, anti-diarrhoeal medications, oral care packs, enemas and suppositories. In department C, Patient Specific Directives were used which meant that all prescriptions had to be patient specific and signed off by the doctor so in addition to the above medications pain medicine and muscle relaxants could be prescribed.

The main differences between the departments appeared to be in the running of the review clinics. In department A, a team of review radiographers conduct the clinics on a rota basis, so annual leave is taken into account and if there is sickness or clinics are running late, invariably there is another radiographer who can take over the clinic. In this department there are also designated review rooms and the review radiographers carry a bleep so are always contactable. They also take consent for radiotherapy treatments for various sites including breast and prostate patients.

In department B as there is only one review radiographer conducting the clinics on a part time basis, if there is sickness or annual leave there is no cover. There are also no designated review rooms so sometimes finding space can be difficult. In department C the radiographer conducts review on a fulltime basis so also coordinates chemotherapy and radiotherapy for gynaecological patients and gives dilating advice.

All the review radiographers spoken to liaise with other departments in their hospitals

for the ongoing care of the patient including referrals to Macmillan nurse specialists, lymphoedema specialists, dietetics, venepuncture and specialist nurses for dressings when needed.

Challenges

The main challenges associated with the role consisted of medical issues such as trying to find a doctor when they needed one. As one radiographer pointed out 'the role is almost a victim of its own success' (Participant G). The doctors had changed from an attitude of reluctance for radiographers to take on the role to a complete reversal where they did not want to or were too busy to see their own patients when required.

'You do feel like you are selling your soul to get them to review their patient.' (Participant F)

A common theme that applied to all the departments was that now the doctors had had the role of review removed from them they had filled their time with other clinics and were reluctant to be "interrupted and bothered" (Participant B). This reluctance on the part of the medical staff led to frustration.

Other challenges centred on the patients. In some cases these are to do with the patients' emotional issues such as their feelings of anger or fear relating to their diagnosis and other times it was to do with practical issues such as not being able to admit them if they needed a bed. Many of the radiographers interviewed mentioned their feelings of powerlessness

associated with their lack of ability to deal with all the issues the patients could raise.

'You do feel stressed sometimes, when people have obviously got other issues than the radiotherapy... You do get a lot of patents who tell you about their personal problems..you really want to help them but you are powerless to do anything about it.' (Participant D)

Other frustrations encountered by all radiographers were occasional non-compliance of patients with either their review appointments, or their oral care advice.

An interesting point highlighted by the full-time review radiographer in department C was the fact of not working in a team situation as occurs on treatment floor where any immediate issues can be shared or discussed, but the review role is conducted on a one to one basis with the patient autonomously. The radiographers in department A also remarked on this but interestingly it was not a point raised by the radiographer in department B who worked part time in the role. The full-time review radiographer found it very challenging at first having to work single handed and also very isolating, particularly when her colleague was off.

She found 'listening to people's problems all day every day...quite wearing sometimes.' (Participant G)

As a consequence of this and with the support of her colleagues she set up an internal peer support group. This was the only department interviewed where there was an official peer support group running.

Personal boundaries were mentioned by some of the radiographers as an issue. The radiographer in department B felt that 'maintaining the distance' was important and something she had learnt in her past 'from bitter experience'.

The radiographers who reviewed in a team situation in department A, varied their review day so did not necessarily see the same patients

each week, but at the time of the interview, they were discussing changing that system and reviewing on the same day to give continuity to their patients. One of the radiographers felt that

'...that is fine when you are getting patients that are just coping...but if you get some patients that appear to have clung on to you and using you as more than a review radiographer, then that can be quite complicated.' (Participant C)

Interestingly the radiographer in department C who reviews full time and therefore sees the same patients on a weekly basis did not mention this.

Another issue cited by the radiographers interviewed in department A was the treatment floor radiographers sending the patients through for review without proper thought or questioning.

'...we do get some things through that are not really appropriate. It is not related to the radiotherapy or it is something they could have quite easily answered on set.

'...they do not even bother to ask them what it is and whether they could have answered the question for them.' (Participant D)

The full-time review radiographer in department C mentioned this too.

Finally the radiographers in department A described lack of funds as one of the challenges of the role, where they had tried to incorporate some complimentary therapy skills including a radiographer who could do aromatherapy. Originally the hospital funded somebody on a 1 day a week basis but this was stopped when the money ran out.

The second part of this study attempted to look at the attributes required to operate in the review role. The core categories found in this data were knowledge, listening skills and characteristics with sub categories of interpersonal skills, self-reflection and attitudes. These are portrayed in Figure 1.

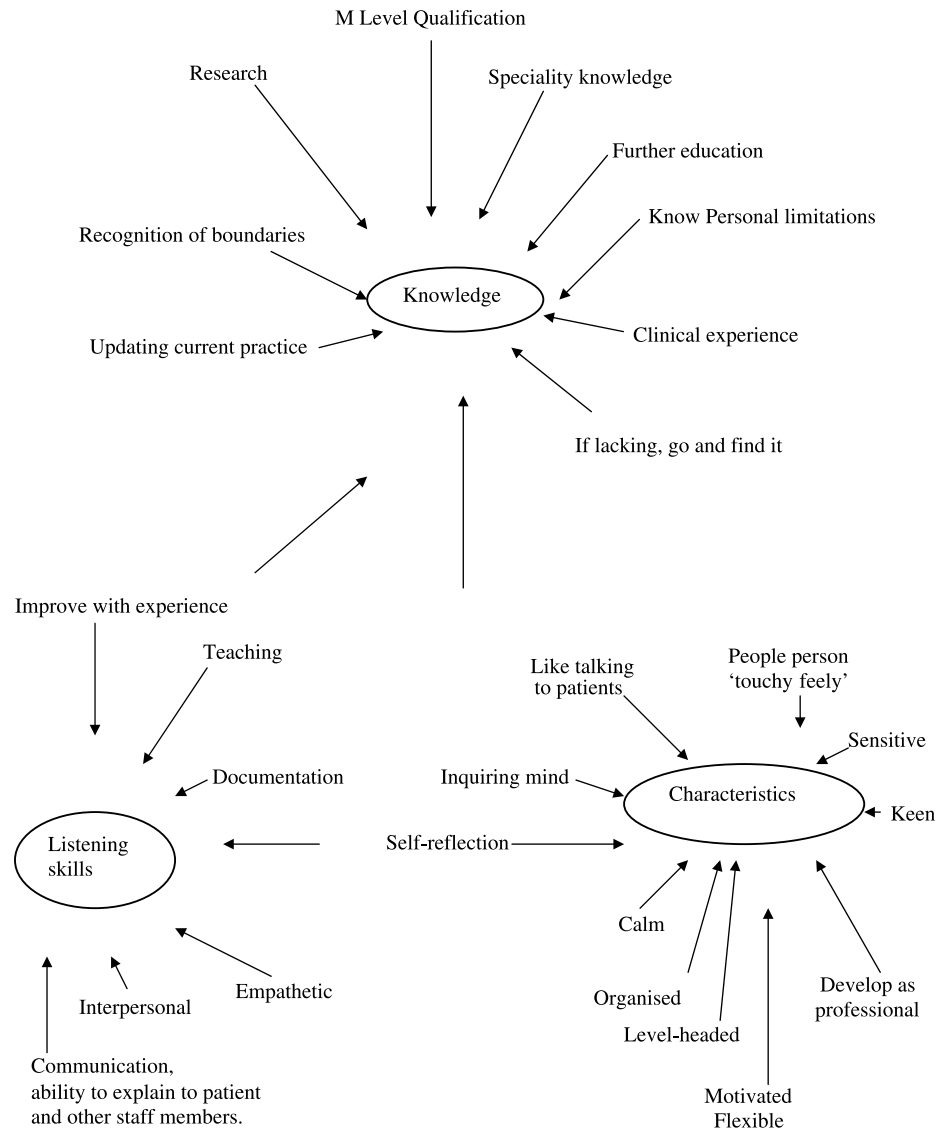


Figure 1. Attributes required to work in the role of a review radiographer.

Knowledge

Knowledge had sub categories of

- Further learning at Masters level
- Clinical experience
- Ongoing education

The general opinion from all the radiographers interviewed was that to become a review radiographer it is necessary to gain specific expert knowledge above and beyond the standard radiography training and to participate in further education at Master’s Level. The quali-

cation obtained by the review radiographers in this study was an M Level module either in patient assessment and review or in pharmacological management of treatment related toxicities. The radiographers in department B and C had undertaken both.

‘although most of the radiographers have quite a lot of experience, we felt that they should have gone that extra step and have a Masters qualification to do it, so they would have to do the research into the side effects.’ (Participant B)

It would seem that becoming a review radiographer was not something that should be encouraged for newly qualified radiographers. Some years of clinical experience were needed initially so that radiographers were more confident in their generic abilities before embarking on further training. Participant A felt that her experience as a radiographer helped her a lot in the review role even before she had embarked on the M level training

'I was quite surprised on how many things I could actually deal with just from my experience of being a treatment floor radiographer'.

The radiographers from the other departments mirrored these thoughts.

'some of the things we know we learn through the reviews and the length of time seeing the patients, rather than when you are first qualified:' (Participant E)

One radiographer stated that 'the more you review, the more knowledge you get from the doctors, when you're asking questions about certain patients.' (Participant E)

This implies that some of the knowledge comes from experience and familiarity with practising the role.

Gibson and Bamford²⁴ used a small focus group study between two hospitals to look at the role development of clinical nurse specialists. There were only 25 female nurses with a variety of qualifications, experience and time in post. Also the researchers acknowledged to being novice and having a limited amount of experience in focus group method. However, from this study they highlighted that experience and education are important but experience cannot stand alone. The nurses felt that ongoing education is a necessary component of the role and they had evidence showing that education made a difference to the way they thought and felt giving them more confidence. Despite the limitations of this study, its views were

reflected by one of the radiographers from department A

'...not only gives you the knowledge but it gives you much more confidence that you actually know what you are talking about.' (Participant C)

Similarly the radiographer from department C felt that her knowledge had improved the longer she had been doing the role and so with that experience

"...the more patients you have seen, the more you know what is normal and what is not. The more you feel confident in yourself..." (Participant G)

Looking at the nursing literature discussing role expansion or advancement, there is a general consensus here too that the knowledge required to practise in these roles is above basic generic knowledge and should be at post graduate or Masters level.^{7,14,25-27}

This is an area where there is little published data with regards to radiographer role development, so it is difficult to make direct comparisons between the professions as nurses and radiographers have the opportunities to develop their roles in different ways. However, the data found in this project supports the ideas that the knowledge to conduct the review role also needs to be at Masters or postgraduate level.

Listening skills

Listening skills were another core category found in the data with subcategories of

- Interpersonal skills
- Self reflection

Communication and listening skills

Generally it was felt by all the radiographers interviewed that communication is included in generic knowledge whereas listening skills have to be practised and learnt. Radiographers in their daily life need to be able to communicate with their patients but in the review role

this becomes even more important as they need to be able to elicit the necessary information from the patient about their side effects from the treatment and any problems they may be encountering.

It has been recognised both in this project and by other authors,^{11–13} that because patients perceive that they have more time with the review radiographer than a doctor, they tend to open up more and discuss issues in depth. It has also been suggested that the patients may find radiographers or nurses more approachable than doctors.¹² Having the private space and consultation away from the treatment floor may encourage this further.¹³

'...the patients are much more likely to talk. They are very aware that the consultants have got a shortage of time...clinics running behind... Whereas...they don't view that we are in a rush...so sometimes they will say what they are really feeling and they will let you know something that they haven't let the consultant know.' (Participant C)

Despite recognising that listening skills are an important part of the role, all the radiographers interviewed commented that there appears to be no formal communication or counselling training included in the review training modules. One of the radiographers interviewed had done a basic counselling course but not as part of her review training.

As Hetherington²⁸ points out using communication skills is not the same as counselling, so it may be possible to elicit information from the patient about how they are feeling and what their concerns are but giving coping strategies and goal setting is beyond the role of the review radiographer. This point was acknowledged and emphasised by a number of the radiographers interviewed,

'...really our role isn't meant to be that of counsellor, we are more likely to be in a position where we understand that this person might need counselling and there

fore we would need to refer the patient onto someone that has got counselling skills.' (Participant C)

'That is when you need to know that you have to stop and say that I really think I need to refer you to someone else. There are problems that we really can't sort out.' (Participant D)

However, using communication skills effectively can help in the accurate assessment of the patients' problems and is one of the major prerequisites for providing effective psychosocial intervention.²⁹ As Bor³⁰ suggests, it is important to be able to recognise what the normal reactions to the diagnosis of cancer are and then ask is counselling appropriate and could it help?

The radiographer in department B uses an internal questionnaire designed by their departments psychosocial support team, which is given to the patients about halfway through their course of treatment. Its aim is to identify any issues that the patients may have outside of their treatment side effects. Although the radiographer felt that it was helpful and has used it in making referrals for counselling she also commented that

'I've always sort of been able to realise when patients need something like that... whether its just...insight...or just years of experience...'

The radiographers from the other departments reflected these ideas.

'So through experience as well...with the more patients you have seen the more you know what is normal and what is not.' (Participant G)

If it was felt that psychological support was required all the departments approached had referral systems in place to offer help as necessary.

Interpersonal skills

Interpersonal skills were cited by all the radiographers as being important. These included

the ability to communicate and feedback information to other members of the treatment floor team and other professionals involved in the patients care.

'You have got to be able to communicate very well with the consultants. They are very busy and sometimes can be a bit short with you' (Participant D).

This includes having good documentation skills and being able to record the information from the review accurately so other team members can understand it. Also included is the ability to liaise and refer the patient on to other members of the multidisciplinary team when it is recognised that their problems are out of the review radiographers remit. In addition, the ability to give clear and concise advice about any medication prescribed is essential for the patients' well being and safety.

An interesting point raised by the review radiographer in department C was that she felt that she may be de-skilled as a treatment floor radiographer but had developed other skills as a review radiographer, which 'more than replace that', and she went on to say that

'I think because I have concentrated entirely on this I have probably developed skills more than I would have done if I were only doing it on an ad hoc basis.' (Participant G)

She felt that when she started in the role she tried to take on as many new skills as she could but now believes she is at the stage where she has taken on enough. This is because

'it is not having enough back up when we are away, as once you have started doing it, people expect you to carry on and it does get quite difficult' (Participant G).

Unfortunately as department C was the last department interviewed; these points were not taken back to the other radiographers due to the time constraints on this project. This is an issue that warrants further exploration and discussion.

Self-reflection

Tied in with the acquisition and use of these skills, particularly listening skills is the ability to self reflect and evaluate actions. Self-reflection is a form of self-knowledge and Schon³¹ separated it into two types. Reflection on action, which is retrospective, assumes practise is underpinned by knowledge and is an active process of transforming experience into further knowledge through analysis and interpretation. Secondly, reflection in action entails thinking about practise whilst doing it. Both these types of reflection are used in this role.

Self-reflection is a skill, which has to be learnt. The purpose of reflection is to assist in understanding how the review went and what if anything could have been done differently.

'...you have to be able to mentor and reflect on your practise' (Participant C).

'How people react to you, if a review has gone well or whether the patient has not quite got out of it what you wanted. . .then you need to change things accordingly.' (Participant E)

Being able to discuss reviews with another member of the review team was recognised as one advantage of conducting the clinics in a team situation. The radiographers felt it was helpful to be able to bounce ideas around between themselves and it helped in their support for one another to be able to discuss any issues or problems they may have had with patients. This sharing of information and ideas strengthened their self-reflective skills.

'that is one advantage of having a team...because there will be quite often discussion about a particular case , where we are discussing, was this the right thing and perhaps we could have done this in a particular situation.' (Participant C)

Finally, all the respondents felt that teaching skills or the ability to mentor students is an important aspect of the review role.

Some of the literature^{26,27,32} looking at advanced practice in the nursing profession cites this as being important criteria for working at advanced practice level. Hockenberry-Eaton,³³ claim that people in these roles should develop ways of actively establishing accountability, and they should gain recognition from other disciplines, establish priorities for professional growth via public speaking, teaching and publishing research. They should also learn to think critically and provide input to solving healthcare issues.

'I think you do have to have teaching skills because you are mentoring other people doing it.' (Participant B)

Nearly all the review radiographers spoken to do some form of teaching, either to student nurses or radiographers and some gave lectures to other professional groups.

Personal characteristics

One of the main personal characteristics cited was the need to enjoy the 'people' part of being a radiographer.

The radiographer in department B originally trained as a review radiographer to do further study, but felt strongly it was worth doing something that was going to benefit her department and fill a service need. She recognised that she enjoyed talking to the patients and that with the pressures of the patient workload; this was not always as easy as it used to be. So by training to be a review radiographer she could incorporate this element into her job and expand her role.

Another radiographer pointed out that there tend to be two types of therapy radiographers, those who like the technical side of the job and those who are more 'touchy feely radiographers'

'I feel personally that the radreview service needs much more touchy feely people who do want to sit and listen to things that are not always related specifically to what we are doing. ...' (Participant F)

It follows that although it is important to be sympathetic, sensitive and not interrupt, it is also necessary to be able to remain emotionally detached and to learn to keep a professional distance. This was a point made by one of the participants.

'...you do get an awful lot of patients who will burst into tears for no apparent reason so you almost have to be able to cut yourself off from that so you don't join in with them. ...you need to have quite a sensitive nature but be able to be strong enough to cope with all these things. ...' (Participant D)

Other qualities needed are the ability to be organised, flexible and practical so that patients' problems do get dealt with.

'It is I think essential to be flexible. ... Certainly in the way we work if we are not flexible and fitting in, we have had to fit in a lot with other departments, to get their confidence in us. ...' (Participant G)

In addition, review radiographers need to be motivated, keen and have an inquiring mind so that they are continually learning and looking up information if their knowledge is lacking in certain areas.

'We are always trying to look up any new information about the medicines or dressings or things that would be appropriate to use.' (Participant D)

Cameron¹² points out that conducting the review role is a continuing challenge, which may highlight gaps in knowledge. This leads to fact finding either through medical colleagues or literature searching. So it is an ongoing learning process.

Attitudes of others

Although not a core category, the attitudes of other staff to the review role came up in the data quite frequently. It was not part of the original questions but was initially raised by the radiographer in department B. When she originally undertook the role, she experienced a

lot of negative attitudes from her colleagues and from the doctors even though they had agreed to its implementation.

'I had a few comments from people who used to say well I was only doing it to look good on my C.V'.

'I had to do reflective piece on the whole experience [when writing up the review module]...when she did my feed back... she said you sound like you had a really horrible time... I was like yes...it was awful...really awful'.

These attitudes later changed and she had very positive feedback both from the doctors and her colleagues with greater respect from both, increasing her confidence in her abilities.

Sadly these attitudes were reflected initially in department C as well where the radiographer experienced some suspicion and animosity.

'Initially I had a bit of animosity and people said why can't you just do the job you were trained for' (Participant G).

This radiographer also suffered animosity from some members of the pharmacy team.

However over time these issues resolved themselves to the point where

'In fact we had a situation recently where my boss said that they were no longer in a position to support the review clinic role and the treatment radiographers were absolutely horrified because they couldn't imagine how we would cope without one, and I suppose a lot of staff can't remember not having review radiographers' (Participant G).

Interestingly in department A, although there was initial scepticism from the doctors to start with, they have now become very supportive and have recognised the need for the role. This change of attitude has come about due to their confidence in the review radiographers' abilities and with the increase of their workload.

'I think now they have realised that there is a need for us...because of the workload, also because they are confident in what we do' (Participant B).

Even though these radiographers had some reluctance from their medical staff, they never experienced any animosity from their departmental colleagues. The treatment floor radiographers have always been very positive and supportive of the review role.

'I think they are quite happy that the patients can have something more from us. I think they feel happy that we are giving them that service.' (Participant C)

It was suggested that their attitudes were more positive because being a team review situation "...all the ones that are really interested in being involved in that way, are doing it and the ones that are not are probably quite happy at the level they are at' (Participant C).

Level of practice of the role

The general consensus of opinion from the review radiographers in this research project was that the role is at advanced practice level.

'you have increased your knowledge and skills over and above what you would have done, if you had just stayed a radiographer' (Participant D)

'I think it is advanced practise because we are doing a role that has been previously done by the consultants. It is not part of our role that we have just added a bit to: it's doing something completely aside.' (Participant F)

It is beyond the remit of this research project to discuss the differences between role extension and advanced practice but the definition of advanced practice from the College of Radiographers (ref. 5, p. 6) states that an advanced practitioner 'will have developed knowledge and expertise in a specific field of radiotherapy... They may assume responsibility for many clinical

or medically related tasks previously only undertaken by medical practitioners'. It continues they will be 'reflective, accountable practitioners with developed judgement and decision making skills in their chosen field'.

Eddy³⁴ raises the issues of the difference of role expansion, development and advanced practice, as often these terms have different meanings. She highlights that, as within the nursing profession, there appears to be confusion over what these terms mean and what they involve. Also there are no generic job descriptions that cover these roles. Some of the things that radiographers do in their daily work may be considered role development and not necessarily advanced practice. Does the on treatment review role fall into this category? Eddy also points out that as yet there has been little evaluation of these roles and this is certainly an area worthy of further research.

Hardy and Snaith³⁵ looking at role extension and advancement in the profession of radiography advocate that advanced practice is the attainment of a higher level of professional knowledge and abilities. In a later paper³⁶ they say that it may also include the ability to reflect upon clinical practice and develop it via research or effective teaching and leadership skills. They proceed to define eight key areas where they feel that individuals seeking advanced practice status should meet. These include knowledge, research, decision-making skills, education and training, leadership, service and practice development, service management and planning and recognition of expertise.

From the data collected in this study, it could be argued that the review role meets many of the criteria of an advanced practice role mentioned above. It involves further learning and skills, which go above and beyond the generic training of the therapy radiographer. It is a role that was originally conducted by the oncologists and has now been taken on by radiographers. Most of the radiographers in this project participated in further teaching and training skills although not all of them participated in active research.

DISCUSSION

This research has managed to gain a new insight into the role of the review radiographer. It demonstrates that in the participating departments, the role has expanded and moved on from the original paper by Colyer¹³ although not perhaps as far as it could go.

One of the biggest changes since Colyer¹³ wrote her paper is that the role has developed in such a way that in two of these departments; review is carried out solely autonomously by radiographers; one as a team situation and one as a full-time radiographer. They both have medical cover when required (although as mentioned this is not always easy to access) and all the radiographers interviewed agreed that the attitudes of other medical staff in the main had been very supportive despite some initial scepticism.

In this study the core categories produced from the data as key attributes of a review radiographer were knowledge, listening skills and characteristics. Knowledge can be defined simply as 'what one knows; the body of facts accumulated over time' (Webster's, p. 185).³⁷ However Eraut³⁸ has carried out some considerable work on knowledge and he has defined six categories. These are people knowledge, situational knowledge, knowledge of educational practise, conceptual knowledge, control knowledge and process knowledge.

Eraut³⁸ claims that all professional processes make use of propositional knowledge that is based on disciplined theories, systematic knowledge and practical principles in an applied field or profession, for example the basic training of a therapy radiographer. This is the 'knowing that' but Process knowledge is the 'knowing how'.

This ranges from being able to carry through explicit rational procedures to intuitive skills like making a patient feel at ease. It depends on gaining knowledge intellectually through reading and discussion but also through practical skills, which are acquired through practise and feedback. For process knowledge to develop, it requires a complex combination of knowledge

and skills including acquiring and giving information, skilled behaviour and a deliberative process.

Eraut defines skills as 'a complex sequence of actions, which has become so routinized through practise and experience that it is performed almost automatically' (p. 111).³⁸ Further more he says that these skills when used become tacit and not something easily explained to others or self. However possessing skills is not enough in itself, as it is equally important to know how and when to use them.

When applying this to the profession of therapy radiography, all have a generic training and therefore some basic skills. But to become a review radiographer it is essential to increase and develop certain knowledge and skills in the areas of patient care and support. This supports the above ideas of needing to gain in-depth process knowledge about side effects and their management, decision making, insights into communication and people skills through practise and feedback. These skills then need to be evaluated, refreshed and reflected on periodically throughout their use to maintain them at this level.

This is reflected in the Statements of Professional Conduct, which states that there is a duty of care to remain up to date in professional training skills and to take part in life long learning, hence the need for continual professional development.³⁹

Gaps in knowledge

Although gaining extra knowledge and training as a review radiographer is very important, all the participants cited recognition of the boundaries of their knowledge, both personal and professional as being key to practising the role. It is a crucial element of being a review radiographer to be able to recognise personal limits and know when to refer on to other members of the multidisciplinary team or the oncologist.

Recognising these boundaries is also essential from a legal point of view. White and McKay⁴⁰ point out that role expansion brings new

responsibilities and accountabilities both from a legal and an ethical viewpoint. To claim to be a specialist implies working autonomously often within protocols and being able to recognise personal limitations is essential. Accepting greater responsibilities also means accepting greater accountability.

According to Andrews⁴¹ there is a difference between competence and ability. Having the appropriate knowledge and skills may make the individual capable but if they are over tired, ill or have not used the skill for some time, then they may be lacking in competence and a failure to recognise the limit of this may be construed as professional misconduct in a court of law.

Further training requirements

The general consensus of opinion was that the review radiographers would like more training in certain areas. Formal counselling knowledge was an area most frequently cited as lacking in their review training and although the majority agreed that they were not counsellors, they still felt it would be helpful to have some further knowledge in this area.

It was suggested by one radiographer that in a team review situation the ideal would be to have a core group of review radiographers who could then specialise in certain areas, for example, counselling, dietetics, catheterisation, venepuncture and dressings. This may be a way of developing the role in the future although it would not be feasible for a single review radiographer conducting reviews on her own as it could be too time consuming, a view pointed out by the review radiographer in department C.

Good listening skills and the ability to elicit the relevant information from the patient during the reviews are essential. Once the radiographers have this information they need to be able to give advice and prescribe the appropriate medication accordingly.

It is the researchers' belief that the ability to obtain the information and assess the patients' needs is something that develops with experience

in the role. Knowing how to ask the appropriate questions and making use of pauses in the conversation, it generally becomes possible to recognise when a patient appears to be coping with their diagnosis or when they are using defensive mechanisms or denial. At this point it is usually acceptable to acknowledge this with the patient and offer further support. Therefore, review radiographers do need to be radiographers who engage with the 'people' side of the job and are willing to encourage the patients to communicate.

As cited in this data and supported by professional experience, once the patients have a private room away from the busy treatment floor, they feel they have the time to open up. This may sometimes make the interviews very emotional and intense and working autonomously there is no one there to dilute the interaction with or share the information giving, a point raised by the review radiographers interviewed about the difference of not working in a team situation and sometimes having feelings of isolation. This was not the case for all the radiographers interviewed. Unfortunately due to the order of the interviews and the time constraints of this project, it was not possible to go back and raise this issue with the radiographer in department B, but it may be that because she does review part time, she does not have the same feelings of isolation.

Sometimes it would appear that the patients become more dependent on the review radiographer to the point of asking to be seen by them whenever they have any problems at all rather than speaking to the radiographers who treat them on a daily basis. It was suggested by one of the radiographers that maybe the treatment floor radiographers felt de-skilled and this could be a possible explanation why sometimes in all the departments interviewed some of the treatment floor radiographers sent through the patients without finding out what was wrong with them. (This has also happened frequently in the researchers' experience and would be an interesting issue to follow up with further research at some point in the future).

On the other side of the argument, being a review radiographer full time may have advantages of honing the knowledge and skills needed for review but the disadvantages are that the radiographer may become de-skilled as a treatment floor radiographer as mentioned by the radiographer from department C. However, she pointed out she felt she would still have the generic knowledge from her basic training and so do a better job than a nurse in the same role.

Finally, review radiographers need to be reflective practitioners who can adapt as they conduct the reviews and recognise their own personal limitations and boundaries and refer on as required to other members of the multi-disciplinary team.

As Cameron¹² points out the review radiographer does more than give advice about treatment reactions and so needs to have knowledge on a range of issues. Cameron goes on to say that 'a review radiographers role is complex ranging from information provider, counsellor, patient advocate to friend and different patients require different aspects of this role' (ref. 12, p. 37).

Attitudes

One of the areas in this data where the review role has appeared to move on greatly is in the attitudes of the other medical staff. In general they all appear, after some initial reluctance, to be very supportive of the role to the extent of not wanting to take back the care of the patient themselves which often led to some frustration amongst the review radiographers. The researcher felt this must be a reflection of how competently the radiographers have handled the role and how confident the medical staff must be in their abilities to practise the role.

It may also be that over time as these extended roles become more common place amongst the nursing profession and in radiography, the medical staff can accept and appreciate the benefits of passing on some of their burden of work to the appropriately trained professionals.

From the review radiographers' point of view, they all generally expressed enjoyment of their role despite its challenges. One radiographer felt that it had challenged her thinking powers and kept her in radiotherapy,

'I firmly believe that if I didn't do the dual role, I probably would be doing something else now' (Participant A).

Others commented on how 'rewarding' the role was and the fact that 'you are helping somebody' (Participant D).

That it allows variety and patient contact,

'...we are still doing all our other radiography, but you get this opportunity to do something different, which makes you brush up on your other stuff but also gives you a nice contact with the patients.' (Participant C)

Plus the pure enjoyment of working autonomously,

'I love my review days because you can just talk and you are in control of that day, so you can know how much time you have got with people.' (Participant F)

Level of practice

Finally, the key features of advanced practice as cited by Hardy and Snaith³⁶ are in the main met by the review radiographers interviewed in this project. However, as there is no generic job description for the review role and this project only looked at three different departments it would be wrong to draw conclusions based on this data alone.

The radiotherapy profession needs to collate information countrywide from all review radiographers and develop a generic job description for the role. It may then be possible to establish the level of practise of this role.

Limitations

The researcher must acknowledge that there were limitations to this study including that

the methodology used was not true-grounded theory for a variety of reasons. First the questions used in the interviews were not truly open and due to the nature of their wording they assumed categories of knowledge and skills. This may have forced the data into categories that may have not been pertinent if different questions had been used.

Second, the order of data collection starting with department B, where there was only one part time review radiographer was not as the researcher originally intended. It had been planned to start with department A with a team of review radiographers but due to unforeseen circumstances this was not possible and may have led to the initial data collection not being as rich in different experiences as hoped.

Third, in grounded theory ideally data analysis should take place after each interview before continuing with the next participants. Due to time constraints and geographical location, the interviews at department A were all conducted in 1 day and analysed after all the interviews were completed. So it was not possible to adjust the initial questions before moving on to the next interview. This meant that true data saturation was not achieved. In addition, there were some issues raised by the data that were not followed through, for example, did the review radiographers feel de skilled as treatment floor radiographers?

The number of participants involved was very small, so it is difficult to generalise any of these results across other departments.

Recommendations

Further areas of research could include evaluating the review role both from the point of view of the patients and other medical staff. It would also be interesting to gain an insight into how other radiographers feel about the role, whether it is beneficial or threatening to them.

In addition, it would be a good thing to compare the role across the country and establish a generic job description and qualifications.

CONCLUSIONS

The data collected in this study show that the scope of practice of the review role does have differences between departments but has moved on from the original article by Colyer.¹³

There are still discrepancies in the training and although everyone agrees it must be at Masters Level as yet there is no generic training module. It would be interesting to know whether these review radiographers could review across the country in different departments and it is the authors' opinion that for this role to continue to develop, the profession should produce a generic job description with a training that reflects this.

The attributes required of the review role are additional training and knowledge plus personal qualities. The knowledge and skills need to be regularly practised, updated and reflected on and it was recognised that it was just as important for participants to know where the limits of their knowledge were.

The personal qualities include the ability to use well-developed listening and communication skills effectively and to enjoy particularly the 'people' part of the profession. Furthermore, review radiographers have to be practical, calm and organised and have the ability to reflect on their practise.

Despite initial scepticism from other medical staff in the departments, their attitudes became very positive as the radiographers proved their competencies in practising the review role. This almost became an issue where the doctors were resentful of seeing their own patients when requested and are now quite happy to hand over more responsibilities to the review radiographers provided they have the appropriate training.

From the opinions of the participants in this project it was agreed that the review role requires higher skills in the areas of patient care and support. However, whether it is an advanced practice role or an extended role remains outside the remit of this project and is an area for further exploration.

Finally, the chosen research methodology was not used correctly so it is arguable whether firm conclusions may be drawn from these results but it is hoped that this project has gained some further insight into the role of the review radiographer.

References

1. Bomford CK, Kunkler IH. *Walter and Miller's Textbook of Radiotherapy*. Edinburgh: Churchill Livingstone, 2003.
2. Foulsham A. Role extension—radiographer led treatment reviews. *Synergy* 1997; 12.
3. Paterson A. Role development—towards 2000. A survey of role developments in Radiography. London: The College of Radiographers, 1995.
4. The NHS Cancer Plan. Department of Health, 2000.
5. College of Radiographers. *Breaking the mould: roles, responsibilities and skills mix in departments of clinical oncology*. London, 2002.
6. College of Radiographers. *A Strategy for the Education and Professional Development of Therapeutic Radiographers*. London, 2000.
7. Cunningham R. *Advanced Practice Nursing Outcomes: a review of the selected empirical literature*. *Oncol Nurs Forum* 2004; 31(2):219–229.
8. Hanson C, Hamric A. Reflections on the continuing evolution of advanced practice nursing. *Nurs Outlook* 2003; 51:203–211.
9. Mick D, Ackerman M. Deconstructing the myth of the advanced practice blended role: support for role divergence. *Heart Lung* 2002; 31(6):393–339.
10. Munding M, Cook S, Lenz E, Piacentini K, Auerhahn C, Smith J. Assuring quality and access in advanced practice nursing: a challenge to nurse educators. *J Prof Nurs* 2000; 16(6):322–329.
11. Campbell J, German L, Lane C, Dodwell D. Radiotherapy outpatient review: a nurse led clinic. *Clin Oncol* 2000; 12:104–107.
12. Cameron J. Radiographer review clinics: breast cancer. *J Radiother Pract* 2004; 4(1):33–38.
13. Colyer H. The role of the radiotherapy treatment review radiographer. *Radiography* 2000; 6:253–260.
14. Barton T, Thome R, Hoptroff M. The nurse practitioner: redefining occupational boundaries? *Int J Nurs Stud* 1999; 36:57–63.
15. Ellis T, Ashmore L, Bray D. Multidisciplinary radiographer-led review clinics—an example of implementation. *J Radiother Pract* 2006; 5:87–95.
16. Strauss A, Glasser. Cited in Denzin N, Lincoln Y. *Handbook of qualitative research*. 2nd edn. Sage publications, 2000, ch.19, 509–535.

17. McCann T, Clark E. Grounded theory in nursing research: part 1 methodology. *Nurse Researcher* 2003; 11(2):7–19.
18. Strauss A, Corbin J. *Basics of Qualitative Research*. 2nd edition. Thousand Oaks: Sage Publication, 1998.
19. Backman K, Kyngas H. Challenges of the grounded theory approach to a novice researcher. *Nurs Health Sci* 1999; 1:147–153.
20. Mellion L, Tovin M. Grounded theory: a qualitative research methodology for physical therapy. *Physiother Theory Pract* 2002; 18:109–120.
21. Bowling A. *Research Methods in Health*. Open University Press: Buckingham, 1997.
22. Chiovitti R, Piran N. Rigour and grounded theory research. *J Adv Nurs* 2003; 44(4):427–435.
23. Rubin H, Rubin I. *Qualitative Interviewing—The art of hearing data*. Thousand Oaks: Sage Publication, 1995.
24. Gibson F, Bamford O. Focus Group interviews to examine the role and development of the clinical nurse specialist. *J Nurs Manag* 2001; 9:331–342.
25. Bush N, Watters T. The emerging role of the oncology nurse practitioner: a collaborative model within the private practise setting. *Oncol Nurs Forum* 2001; 28(9):1425–1431.
26. Fairley D. Nurse consultants as higher-level practitioners: factors perceived to influence role implementation and development in critical care. *Intensive Crit Care Nurs* 2003; 19(4):198–206.
27. Bryant-Lukosius D, DiCenso A, Browne G, Pinelli J. Advanced practise nursing roles: development implementation and evaluation. *J Adv Nurs* 2004; 48(5):519–529.
28. Hetherington A. *The Use of Counselling Skills in the Emergency Services*. Open University Press, 2001.
29. Cooper C, Watson M. *Cancer and Stress*. London: John Wiley, 1991.
30. Bor R, Miller R, Latz M, Salter H. *Counselling in Health care Settings*. London: Cassell, 1998.
31. Schon DA. *The reflective Practitioner*. 2nd edition. London, Temple Smith, 1991.
32. Carnwell R, Daly W. Advanced nursing practitioners in primary care settings: an exploration of the developing roles. *J Clin Nurs* 2003; 12:630–642.
33. Hockenberry-Eaton M, Kennedy L. Promoting accountability in nursing practise. *J Paediatr Health Care* 1996; 10(2):92–94.
34. Eddy A. Advanced practice for therapy radiographers—a discussion paper. *Radiography* 2006; 14(1):24–31.
35. Hardy M, Snaith B. Role extension and role advancement—is there a difference? A discussion paper. *Radiography* 2006; 12(4):327–331.
36. Hardy M, Snaith B. How to achieve advanced practitioner status: a discussion paper. *Radiography* 2007; 13(2): 142–146.
37. Webster's Reference Library. Concise edition Dictionary and Thesaurus. Geddes and Grosset, 2002.
38. Eraut M. *Developing Professional Knowledge and Competence*. Routledge-Falmer, 1994.
39. College of Radiographers *Statements of Professional Conduct*. London, 2002.
40. White P, McKay J. Guidelines and legal requirements, which inform role expansion in radiography. *Radiography* 2002; 8:71–78.
41. Andrews A. *Legally Speaking: issues for radiographers*. Synergy 2007; Feb: 26.