Professional protectionism; a barrier to employing a sonographer graduate?

SEVENS, Trudy and REEVES, Pauline

Professional protectionism; a barrier to employing a sonographer graduate?

Abstract

Introduction: The national sonographer workforce deficit is not a new challenge and has been driven by the increasing demand for ultrasound services. The current educational models only facilitate small trainee numbers and are unable to keep abreast of the demand for trained sonographers. This is partially due to the intensive (and often one to one) sonographer training which has instigated much debate relating to alternative models of education. Alongside this, debate continues on the educational level of any future training models; one suggestion being the introduction of a graduate sonographer and the subsequent integration into the current workforce. The aim of this research was to gain a deeper understanding of the perceptions of key stakeholders in relation to potential challenges and barriers, especially associated with protectionism, and to offer recommendations to overcome these.

Methods: A total of thirteen semi-structured interviews were conducted and the data analysed using a constructivist Grounded Theory approach.

Results: The findings suggested that sonographers, as an occupational group, presented challenges and resistance to change as a mechanism for protecting their own roles. This research highlighted that responses to the concept of integrating a new sonographer graduate into the workforce were deeply rooted and centred around power and dominance.

Conclusion: The findings from the research identified that tradition and professional culture created barriers for the future development of the sonography profession and that there was an urgent need for change which, it was proposed, could be achieved through clear leadership to manage and implement the changes.

Keywords

- Sonography graduate
- Sonographer
- Professional dominance
- Leadership
- Professional identity
- Professional boundaries

Introduction

The latest figures from the Centre for Workforce Intelligence [1] reveal a national (United Kingdom) sonography workforce deficit of 10% with a high proportion of the current workforce within 5-15 years of retirement age [1, 2] . This is not a new challenge as national deficits were being reported in 2012 as being at 18% [3] with heavy reliance on agency staff to cover demand in many ultrasound departments. The situation is compounded by current training models only being able to accommodate small numbers of trainees due to the intensive one to one training and lack of placement opportunities. The increasing demand for ultrasound services and expansion of clinical applications for ultrasound continues to rely greatly on radiographers undertaking postgraduate study in ultrasound [1, 4, 5] and subsequently being employed at advanced practitioner level. This has created a workforce where all are banded at grade 7 and above with very few examples of sonographers being employed at lower bands. There is a lack of a defined and clear career structure or pathway.

Alternative training routes have started to be piloted with a small number of Higher Education Institutes in England introducing direct entry for ultrasound both at undergraduate and postgraduate levels. More recent developments have seen the formation of a sonographer degree apprenticeship trailblazer group and subsequent development of the degree apprenticeship standard for sonography. However, there is still a lack of national consensus for the future of ultrasound education.

Concerns over regulation are also entrenched within the workforce crisis as the title 'sonographer' is not a protected title and there is reliance on sonographers to maintain their registration in their first professional area, for example, radiographers with the Health and Care Professions Council (HCPC) [6, 7, 8, 9]. This can affect employment opportunities as discrepancies exist between hospital trusts (and even within the same trusts) as to whether HCPC registration (or equivalent) is essential for employment. Furthermore, it can subsequently create professional identity ambiguity for occupational groups that are registered and regulated under one professional title and employed as another.

There is a distinct notion of protectionism from the current workforce around aspects of banding and pay, for example, creating challenges to the introduction of a lower band sonographer [10, 11, 12]. It was hoped this research would therefore, provide valuable insight into key stakeholder views and potential recommendations to allow a seamless introduction and integration of a new model of education for sonography.

Method

Methodology

Ethical approval for the study was gained from the University Research Ethics board (reference 1501061 4010) and relevant research and innovation departments with

the NHS hospitals. Ethical considerations were paramount throughout the research process. The initial research question was

'What are the perceived benefits and challenges of employing a new sonographer graduate from the perspective of key stakeholders?'

which was used to guide the literature review and data collection. In the context of this study, the term 'graduate' related to direct entry into sonography and undertaking a Bachelor of Science degree. There was very little research or guidance found relating to the new sonographer graduate and how they would be integrated into the current workforce and career structure. To explore this complex clinical situation, a constructivist Grounded Theory methodology was used which is considered to be particularly useful where there are complex relationships and clinical situations. It aims to undercover new or poorly understood values and generates new theory from these [13, 14].

Participants and sampling

An initial pilot study was conducted with participants from a sonographer background and radiology services manager background to allow refinement of the interview schedule. Transcribing, coding and analysis of the pilot interviews took place with checking by a second person. Following this, twelve face to face interviews, 1 telephone follow up interview and 1 telephone full interview were conducted by the researcher to gain rich and detailed data. The preferred method was face to face and the two telephone interviews were as a result of geographical issues.

Participants included 4 ultrasound managers, 5 radiology services managers, 2 consultant sonographers and 2 'other relevant stakeholders' (term used to preserve anonymity). Inclusion criteria for participants related to having in depth knowledge or experience of the ultrasound workforce and employability. Theoretical sampling ensured the inclusion of the most appropriate participants [15] and to guarantee a range of different experiences, backgrounds and roles, ensuring a diverse sample with a range of perspectives. The ultrasound managers all had a sonography background with varying years in post, as had the consultant sonographers. The radiology services managers were from a range of backgrounds and years in post.

Initial contact was made via email to invite participants to be involved, with follow up email correspondence including the participant information sheet and consent form to ensure informed consent was gained. The interviews were recorded using a digital Dictaphone and transcribed verbatim. A staged approach was implemented for data collection which ran from August 2015 to August 2016 allowing data collection and analysis to be undertaken concurrently, with emerging ideas and theories guiding subsequent interview questions and focus. No participants approached declined to be involved and data collection continued until saturation had been reached (no new data emerged), strengthening emerging theories [15].

Data Analysis

Following transcription, complete open coding method was used initially to identify anything and everything of interest from the transcripts using NVivo version 10. They were coded with a word or brief phrase that captured the essence of interest and all relevant codes assigned to each point of interest [16, 17, 18, 19]. Memo writing (described as the intermediate stage between data coding and theoretical analysis [18]) was also implemented at the early stages of data analysis in keeping with Grounded Theory methodology. Memo writing was conducted concurrently to allow ideas and theory building to occur [19] through the collection of ideas, thoughts and challenges [18, 20, 21, 22]. This also provided an audit trail [23] increasing the rigour and credibility of the research and emergent theory [20, 24]. The process also allowed any gaps to be identified which were explored in later data collection [17]. Initial codes and associated categories were checked by a second person to ensure these were unbiased.

Focussed coding was then utilised to develop tentative categories and theory testing as the research progressed.

Results and discussion

Anonymised participant's quotes are included in the categories supported by theoretical and relevant published literature.

Resisting change

When asked about the potential for introduction of a graduate sonographer at band 5/6, many participants spoke about the existing workforce being comfortable with the current structure and being resistant to change.

> *'so obviously established people who are quite comfortable with the current career structure will have something to say about it'* (P4)

> *'I just think there is a resistance to looking at it'* (P7)

There was a distinct trait of 'why should we do things differently?', particularly in relation to training routes and educational level studied.

> *'I did three years to get radiographer trained and then I've worked all this time to be a sonographer and got to a band 7 and now they're coming in at a band 5 and they don't have to do all that, why is that fair?'* (P13)

There seemed reluctance to explore other options which were not embedded into the professional culture and developed through socialisation and participation in the role associated with the occupational group [25, 26, 27]. This can be detrimental to professional growth [27] as these learnt behaviours are then passed on to new members of staff with further resistance to change.

'I think certain people don't like change, they're trying to protect their own role and I think it probably was the same with radiographers and assistant practitioners' (P1)

'well, I mean there's always some resistance to change and people are very wedded to their professional identity' (P4)

Reactions to change can be unpredictable and lead to dysfunctional consequences as they often promote feelings of loss and stress [28, 29] as demonstrated in some participants' responses.

'It can sometimes feel like (pause) you're going to have things taken off you perhaps or what am I going to lose?' (P13)

Participants highlighted the complexities associated with there being a diverse range of stakeholders (cultural diversity) including a number of occupational groups utilising ultrasound as part of their role that could potentially be affected by the change. In addition, the associated professional or regulatory bodies of these occupational groups also need to be consulted as they often have requirements which could present competing demands [28, 30].

'HEE [Health Education England] *are just discovering just how complex this really is where the tentacles go and just how difficult it is to cut away through er it's incredibly complex'* (P7)

'I suppose also the fact that it's not just one profession that delivers sonography we're coming at it from all different professions….we'd all be coming at it from a different view so I think that's, it's complex' (P6)

This diverse group of contributors can create challenges in ensuring the implementation plan for change is as uncomplicated as possible to facilitate transparency and ownership. To try and facilitate this clear communication strategies are paramount. Participants stressed the importance of communication and consultation in implementing change and keeping all concerned informed. All agreed the key to success was involving the existing workforce and ensuring the value of the change was understood and accepted.

'I think the biggest thing is, new systems are only successful if everybody that's involved is on board and has a vested interest' (P11)

Being in control

Despite this resistance to change, radiographers (including sonographers) have challenged traditional boundaries in order to advance their own roles which has been recognised both by the professional body and national policy [9]. Participants raised difficulties faced with achieving this.

'it's the professional boundaries that prevent that' (P6)

'in terms of more higher areas then more consultant sonographers so why hasn't that happened? I think that's mainly down to lack of funding and in some instances the erm the consultant radiologists not supporting it and not wanting to let go' (P6)

'I think in some erm trusts erm that's a very big problem, here we're managing to break down those barriers slowly but I do feel in some trusts, especially the older radiologists, you know, who don't want to let go' (P6)

The participants recognised that radiologists were being protectionist of their own roles and striving to maintain the professional boundaries by being reluctant to delegate roles to sonographers. This variation in support from radiologists for radiographers to achieve consultant roles has previously been identified [31, 32] and was clearly evident in a recent report [33],

'The tragedy of the latest statement is that out of 1158 words, 404 are spent not in making the case for better patient services but instead in denigrating and undervaluing the capabilities of advanced practitioner radiographers' [32].

It is evident that barriers still exist centred around the perceived lack of medical knowledge on the part of non medically trained health professionals [32 34 35 36] as radiologists strive to be in control.

Participants believed this subservient relationship still exists with potential to hinder progression for radiographers and sonographers claiming, the situation was 'unique in radiology', making them different from other AHP groups [37].

Participants spoke of the territorial conflict between sonographers (and radiographers) and radiologists, trying to keep control and protect their own areas of practice as they feel threatened [38].

'it's that old thing isn't it radiologists do feel threatened' (P9)

'I still think the radiologists are trying to keep, keep control' (P11)

Comparisons can be drawn to the current sonographer workforce being reluctant to delegate roles to a lower band sonographer amidst concerns of watering or dumbing down the current sonographer role [11, 39].

Participants highlighted that

'obviously sonographers aren't going to want to be down banded are they?' (P4)

'we're very, very er in danger of, severely in danger of dulling down everything' (P5)

'I think they feel it's a weakness or a step down to have sonographers at lower grades' (P9)

This desire to be in control through gatekeeping and protection of one's own role as described above, maintains professional demarcations between occupational groups and allows the exertion of power and control over entry to the group (sonography). The group functioning to strengthen professional boundaries through categorisation can be explained using Social Identity Theory [40]. Team functioning is improved when there are common goals [41] (protecting their own role) and the team members must co-ordinate and work together to maintain these shared goals [42] (gatekeeping). Team members become 'in-group' members [43, 44] holding similar attributes.

One similar attribute of the in-group members is statutory registration and some employers were perceived to be gatekeeping by stipulating registration with a regulatory body as a requirement for employment of sonographers. However, participants highlighted discrepancies, not only between hospital trusts, but also within the same hospital trust. On further exploration, participants were unable to offer any real alternatives to protection of public safety with a perception that the voluntary register was not a suitable alternative.

The majority of the current sonography workforce remain registered in their first professional area, most commonly as radiographers with the HCPC [1]. This creates ambiguity for the professional identity of sonographers as they are registered as a different professional than that of their main role [45].

This perception that sonographers must first have undertaken a professional qualification in another area, such as radiography, can be compared to the historical development of midwifery as a distinct profession rather than what has been termed a sub discipline of nursing [46].

Stevens [47] highlighted the heated debate which preceded this split in the late 1980's with two distinct sides. Opinions ranged from being adamant that a midwife without any nursing background would not be safe to practise whereas the opposing opinion was that midwives should be autonomous. Participants raised concerns over direct entry sonographers having no background in imaging, health care or previous patient contact. These concerns are echoed in a recent Australian study [48] exploring the barriers to employing midwifery graduates into areas traditionally only the remit of experienced midwives. This study demonstrated how professional culture was a challenge, not a barrier and strong leadership was required to facilitate change.

Leadership and power

Despite the reported desire of the current workforce to maintain their professional status and power, participants perceived sonographers lacked professional identity (associated with status, power and prestige).

'we haven't really got a professional identity, is what I feel' (P6)

There was a reported lack of recognition for radiographers and sonographers from both health professionals and the public which can take many years to overcome [49].

Many participants felt the role was poorly understood by service users, carers and other professionals

> '*the public don't know what a sonographer is, they don't know what a radiographer is'* (P6)

> *'it's still considered from an outside view doctors and nurses'* (P13)

Participants spoke of how sonographers were perceived to hold greater power, compared to other health professionals, especially in terms of negotiating higher pay [50]. There was a distinct notion that sonographers had a louder voice and more influence and there were many references to sonographers being special

> *'it's quite nice to be special and needed'* (P4)

> '*they've made us too special, all of us'* (P5)

This feeling of being special may endow perceived influence during the current workforce shortage, but this does not necessarily translate to real power in terms of leadership and positional dominance. The perception of holding power is, arguably, transient as it will undoubtedly diminish as the workforce deficits are reduced [45].

Participants reported a distinct lack of sonographer representation and constitutional members at national level creating difficulties for development of sonography as a profession. This is despite the majority of sonographers being employed at the equivalent of advanced practitioner level or above with only two sonographers nationally achieving the SCoR accreditation for advanced practice [51]. In addition, despite leadership being identified as one of the core values of advanced (and Consultant) practice [52, 53, 54, 55, 56] only half of the respondents in a recent study [57] perceived this to be integral to their role.

In addition, many of the participants in this study alluded to the notion that it was someone else's responsibility to take the sonography profession forward. This could be perceived as laissez-faire leadership (or the non-leadership factor [58, 59, 60]).. Responsibility is abdicated and decisions delayed with a detrimental effect on team effectiveness and decision making [61, 62, 63].

This study suggested that leadership in sonography was weak and participants advocated delegation of decision making to someone else by calling for a national drive from a professional body, for example. At the time of writing there was still no agreement as to the way forward for sonography education, training and employment resulting in different models being implemented by different Higher Education Institutes.

Limitations of the study

It is acknowledged that the sample for this study could be perceived as relatively small which is typical of an interpretative Grounded Theory study [64, 65]. There is also a degree of reliance on the researcher to identify and select an unbiased heterogenous sample and to attempt to minimise their own perspective through theoretical sensitivity and reflexivity throughout the study [17]. Authors claim the benefits of theoretical sampling outweigh these limitations [66, 67].

The recommendations made require further exploration and research to establish a robust future for sonography.

Conclusion

As the research developed and theory emerged, it became evident that the potential challenges of introducing a new educational model, and integration of the subsequent graduates into the department, were more deeply rooted than had been perceived at the outset. It can be argued that these views are entrenched within the occupational group through tradition and professional culture which needs to be challenged through strong leadership and education. This research highlighted that, whilst sonography had small local pockets of excellent leadership (one of the core domains for advanced and consultant practice), there was a distinct lack on a national level. This also extended to the disappointingly small number of sonographers achieving accreditation for advanced practice and evidencing their practice to the four established domains. An increase in the number of sonographers holding both accreditation and a full Masters level (or higher) qualification could indicate that sonographers are further embracing and building upon both research and leadership in striving for professional identity.

The research also calls for effective and strong national leadership; essential to manage and implement change by sonographers taking ownership of these changes. This would minimise any untoward and unwanted consequences and allow the aspirations for sonography to be achieved as a profession.

There is a need to promote sonography and increase recognition by both the public and colleagues. It is acknowledged that this is difficult to do without strong leadership to manage and implement change which this study suggested requires development to move sonography forward towards professionalisation.

3431 words including the key words and abstract

References

1. Centre for Workforce Intelligence. (2017). *Securing the future workforce supply. Sonographer workforce review.* Retrieved from www.cfwi.org.uk
2. Thomson, N. (2014). *Sonographer Workforce Survey Analysis.* Society and College of Radiographers. Retrieved from http://www.sor.org/learning/document-library/sonographer-workforce-survey-analysis
3. Centre for Workforce Intelligence. (2012). *Diagnostic radiographers: Workforce risks and opportunities – education commissioning risks summary from 2012*.
4. British Medical Ultrasound Society. (n.d.). *Sonographer regulation.* Retrieved from https://www.bmus.org/about-ultrasound/sonographer-regulation/
5. Nightingale J. (2017). Thinking differently about specialist imaging education. *Radiography*, *23*(3), 179-180. https://doi.org/10.1016/j.radi.2017.06.003
6. Gibbs, V. (2013). The long and winding road to achieving professional registration for sonographers. *Radiography, 19*(2), 164. doi:10.1016/j.radi.2012.11.003
7. Health Professions Council letter. (7th October 2009). Recommendation to Secretary of State for Health about the regulation of sonographers. Retrieved from http://www.hpc-uk.org/assets/documents/10002B0120091007Council-enc7-Sonographers.pdf
8. Society and College of Radiographers. (2009a). Retrieved from http://www.hpc-uk.org/assets/documents/10002A9C20090910Council-enc08-sonographersapplication.pdf
9. Society and College of Radiographers. (2009b). *Developing and Growing the Sonographer workforce: Education and Training needs*. Society and College of Radiographers. Retrieved from http://www.sor.org/learning/document-library/developing-and-growing-sonographer-workforce-education-and-training-needs
10. Edwards, H. (2012). UK NHS workforce reviews. *Ultrasound, 20*(3), 129-129. doi:10.1258/ult.2012.012e10
11. Parker, P. C. & Harrison, G. (2015). Educating the future sonographic workforce: Membership survey report from the British Medical Ultrasound Society. *Ultrasound, 23*(4), 231-241. doi:10.1177/1742271X15605344
12. Parker, P. & Wolstenhulme, S. (2012). A workforce review in diagnostic ultrasound. *Ultrasound, 20*(3), 165-170. doi:10.1258/ult.2012.012009
13. Ng, C.K.C. & White, P. (2005). Qualitative research design and approaches in Radiography. *Radiography, 11*(3), 217-225. doi:10.1016/j.radi.2005.03.006
14. Stanley, M. (2006). In L. Finlay & C. Ballinger. (Eds). (2006). *Qualitative research for allied health professionals: Challenging choices*. (pp 63-79). Chichester: John Wiley. Retrieved from http://lib.myilibrary.com.lcproxy.shu.ac.uk/Open.aspx?id=35589

15. Moore, J. (2010). Classic grounded theory: a framework for contemporary application. *Nurse Researcher, 17*(4), 41-8. Retrieved from http://search.proquest.com.lcproxy.shu.ac.uk/docview/741866547?accountid=13827&rfr_id=info%3Axri%2Fsid%3Aprimo
16. Gerrish, L. & Lacey, A. (2010). The Research Process in Nursing. (6th ed.). Chichester, West Sussex: Wiley-Blackwell.
17. Braun, V. & Clarke, V. (2013). Successful Qualitative Research. A practical guide for beginners. London: Sage.
18. Charmaz, K. (2015). Grounded theory: Methodology and theory construction doi:10.1016/B978-0-08-097086-8.44029-8
19. Urquhart, C. (2013). Grounded theory for qualitative research a practical guide. London: SAGE.
20. Corbin, J. & Strauss, A. (2015). *Basics of Qualitative Research*. *Techniques and Procedures for Developing Grounded Theory.* (4th ed.). California: Sage
21. Hallberg, L. (2010). Some thoughts about the literature review in grounded theory studies. *International Journal of Qualitative Studies on Health and Well-being, 5*(3). doi:10.3402/qhw.v5i3.5387
22. Strauss, A.L. & Corbin, J. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory Procedures and Techniques.* (2nd ed.). Thousand Oaks, CA: Sage.
23. De Chesnay, M. (2015). *Nursing research using grounded theory qualitative designs and methods in nursing*. Retrieved from http://lib.myilibrary.com.lcproxy.shu.ac.uk/ProductDetail.aspx?id=630074
24. Lempert, L.B. (2007). Asking questions of the data: memo writing in the grounded theory tradition. In: A. Bryant & K. Charmaz (Eds.) *The SAGE Handbook of Grounded Theory*. (Pp 245-264). London, England: Sage
25. Hashimoto, B. E., Kasales, C., Wall, D., McDowell, J., Lee, M., & Hamper, U. M. (2014). Teaching ultrasound professionalism. *Ultrasound Quarterly, 30*(2), 91-95. doi:10.1097/RUQ.0000000000000063
26. Lave, J. & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge: University Press.
27. Strudwick, R. M., Mackay, S. J. & Hicks, S. (2012). Team working in diagnostic radiography--choreography or chaos? *Synergy: Imaging & Therapy Practice,* 19-24. Retrieved from https://www.sor.org/learning/library-publications/imaging-therapy-practice/july-2012/team-working-diagnostic-radiography-choreography-or-chaos
28. Scott, T., Mannion, R., Davies, H.T.O. & Marshall, M.N. (2003). Implementing culture change in health care: theory and practice. *International Journal of Quality in Health Care, 15*(2), 111-118. doi:https://doi-org.lcproxy.shu.ac.uk/10.1093/intqhc/mzg021
29. Kerber, K. & Buono, A. F. (2005). Rethinking organizational change: Reframing the challenge of change management. *Organization Development Journal, 23*(3), 23-38. Retrieved from

http://lcproxy.shu.ac.uk/login?url=http://search.proquest.com.lcproxy.shu.ac.uk/docview/197993890?accountid=13827
30. Allen, B. (2016). Effective design, implementation and management of change in healthcare. *Nursing Standard*, *31*(3), 58-68. doi:10.7748/ns.2016.e10375
31. Henwood, S., Booth, L. & Miller. P. (2016). Reflections on the role of consultant radiographers in the UK: The perceived impact on practice and factors that support and hinder the role. *Radiography, 22*(1), 44-49. doi:10.1016/j.radi.2015.06.001
32. Price, R. (2017). SCoR CEO responds to RCR statement on radiologist shortage in Scotland. *TopTalk*. The Society of Radiographers. Retrieved from http://www.sor.org/ezines/toptalk/issue-153/scor-ceo-responds-rcr-statement-radiologist-shortage-scotland?utm_source=TopTalk&utm_campaign=4e992f3437-Top_Talk_2017_02_20&utm_medium=email&utm_term=0_231700d1b0-4e992f3437-86917917
33. Royal College of Radiologists (2017). *The radiology crisis in Scotland: sustainable solutions are needed now*. Retrieved from https://www.rcr.ac.uk/posts/radiology-crisis-scotland-sustainable-solutions-are-needed-now
34. Donovan, T. & Manning, D. (2006). Successful reporting by non-medical practitioners will always be task specific and limited in scope. *Radiography, 12,* 7-12. doi:10.1016/j.radi.2005.01.004
35. Lovegrove, M. & Long, P. (2012). Guest editorial: are radiographers prepared for the clinical leadership challenge? *Radiography, 18*, 230-231. doi:10.1016/j.radi.2012.08.002
36. Rees, Z. (2014). Consultant breast radiographers: where are we now? An evaluation of the current role of the consultant breast radiographer. *Radiography, 20*(2), 121-125. doi:10.1016/j.radi.2013.12.005
37. Harris, R. & Paterson, A. (2016). Exploring the research domain of consultant practice: perceptions and opinions of consultant radiographers. *Radiography, 22,* 12-20. doi:10.1016/j.radi.2015.03.002
38. Woodford, A.J. (2005) An investigation of the impact/potential impact of a four-tier profession on the practice of radiography - A literature review. *Radiography*, *12*(4), 318-326. doi:10.1016/j.radi.2005.09.008
39. Walton, J. (2000). Meet the chairperson of BMUS scientific and education committee. *Ultrasound, 8*(4), 48-49. doi:10.1177/1742271X0000800415
40. Hogg, M. A., Terry, D. J., & White, K. M. (1995). A tale of two theories: A critical comparison of identity theory with social identity theory. *Social Psychology Quarterly, 58*(4), 255-269. Retrieved from http://www.jstor.org/stable/2787127
41. Cashman, S.B., Reidy, P., Cody, K. & Lemay, C.A. (2004). Developing and measuring progress toward collaborative, integrated, interdisciplinary health care teams. *Journal of Interprofessional Care, 18*(2), 184–196. doi:10.1080/13561820410001686936

42. Levi, cited in Northouse, P.G. (2015). *Leadership: theory and practice.* (7th ed.). London: SAGE.
43. Burford, B. (2012). Group processes in medical education: Learning from social identity theory. *Medical Education, 46*(2), 143-152 10p. doi:10.1111/j.1365-2923.2011.04099.x
44. Stets, J. E. & Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly, 63*(3), 224-237. Retrieved from http://www.jstor.org/stable/2695870
45. Sevens, T. (2017). The Benefits and Challenges of Employing New Sonography Graduates: Key Stakeholder Views. Doctoral thesis.
46. Farsides, C. (2002). Autonomy, Responsibiity and midwifery. In S. Budd & U. Sharma. (2002). The Healing Bond: The Patient-Practitioner Relationship and Therapeutic Responsibility. (Pp 4 -62). London: Routledge.
47. Stevens, S. (2010). Direct entry now means no exit from the midwifery profession. *Nursing Times, 106*(8). Retrieved from http://www.nursingtimes.net/home/specialisms/continence/direct-entry-now-means-no-exit-from-the-midwifery-profession
48. Cummins, A.M., Denney-Wilson, E. and Homer, C.S. (2016). The challenge of employing and managing new graduate midwives in midwifery group practices in hospitals. *Journal of Nursing Management 24*(5) 614-23. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/jonm.12364/pdf
49. Health and Care Professions Council. (2014). *Professionalism in Health Care Professionals*. Retrieved from http://www.hpc-uk.org/assets/documents/10003771Professionalisminhealthcareprofessionals.pdf
50. French, J.R. Jr & Raven, B.H. (1959). In Northouse, P.G. (2015). *Leadership: theory and practice.* (7th ed.). London: SAGE.
51. Coleman, L. (2017). Personal communication.
52. Society and College of Radiographers. (2013). Education and Career Framework for the Radiography Workforce. Retrieved from http://www.sor.org/learning/document-library/education-and-career-framework-radiography-workforce
53. Department of Health. (2000). *Meeting the challenge: A strategy for the Allied Health Professions*. London: HMSO. Retrieved from http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/assetRoot/04/05/51/80/04055180.pdf
54. Society and College of Radiographers. (2010). *Education and Professional Development Strategy: New Directions.* Society and College of Radiographers. Retrieved from http://www.sor.org/learning/document-library/education-and-professional-development-strategy-new-directions
55. Tootell, A. & Hogg. P. (2010). Advance practice - concepts, definitions and education. *Journal of Nuclear Medicine and Molecular Imaging, 37*, 23. Retrieved from http://www.eanm.org/education_esnm/cme_cte/cte_2010/pdf/cte2a_tootell.pdf

56. Yielder, J. (2006). Leadership and power in medical imaging. *Radiography, 12,* 305-313. doi:10.1016/j.radi.2005.07.006
57. Milner, R.C. & Snaith, B. (2017). Are reporting radiographers fulfilling the role of advanced practitioner? *Radiography, 23*(1), 48-54. doi.org/10.1016/j.radi.2016.09.001
58. Bass, B. M. & Riggio, R.E. (2006). *Transformational Leadership*. (2nd ed.). London: Lawrence Erlbaum Associates. Retrieved from https://www/dawsonera.com
59. Hendrey, J.A. (2013). Are radiography lecturers, leaders? *Radiography, 19*(3), 251-258. doi:10.1016/j.radi.2013.01.004
60. Northouse, P.G. (2015). *Leadership: theory and practice.* (7th ed.). London: SAGE.
61. Borrill, C., West, M., Shapiro, D. & Rees, A. (2000). Team working and effectiveness in health care. *British Journal of Health Care Management 6*(8), 364–371. doi:10.12968/bjhc.2000.6.8.19300
62. Field, R. & West, M. (1995). Teamwork in primary health care: 2. Perspectives from practices. *Journal of Interprofessional Care, 9*(2), 123–130. doi:10.3109/13561829509047846
63. Rutherford, J. & McArthur, M. (2004). A qualitative account of the factors affecting team-learning in primary care. *Education for Primary Care 15*, 352–360.
64. Finlay & C. Ballinger. (Eds). (2006). *Qualitative research for allied health professionals: Challenging choices*. (pp 63-79). Chichester: John Wiley. Retrieved from http://lib.myilibrary.com.lcproxy.shu.ac.uk/Open.aspx?id=35589
65. Saunders, M. & Tosey, P. (2012). The Layers of Research Design. Retrieved at: http://www.academia.edu/4107831/The_Layers_of_Research_Design
66. Gray, D. (2014). *Doing Research in the Real World.* London: Sage.
67. Williamson, K. (2006). Research in Constructivist Frameworks using Ethnographic Techniques. *Library Trends*. *55*(1), 83-101. Retrieved from http://lcproxy.shu.ac.uk/login?url=http://search.proquest.com.lcproxy.shu.ac.uk/docview/220444707?accountid=13827