**Variation in job titles within the nursing workforce.**

**Abstract**

**Aims and Objectives/Background**

The work of specialist nursing has been under scrutiny for many years in the UK due to a perception that it is not cost effective. A common issue is the lack of consistency of job titles which causes confusion to the public, employing organisations, colleagues and commissioners of services. Lack of consistency has implications for the wider perception of advanced specialist practice in the worldwide community and the workforce more generally. This study aims to understand the variation in job titles in the UK population.

**Methods**

A pre-existing data set of accrued studies into the work of nurses working in specialisms was mined for insight (N=17,960). This study used knowledge discovery through data and descriptive statistics to perform secondary analysis.

**Results**

Mining these data revealed 595 job titles in use in 17,960 specialist posts once the specialism had been removed. The most commonly used titles were Clinical Nurse Specialist, Nurse specialist/specialist nurse, Advanced Nurse Practitioner and Nurse Practitioner. There were three other primary groupings. These were variants with a specialist or technical prefix of suffix for example nurse endoscopist, variants of seniority such as trainee, senior nurse for [specialism] or variants of function such as Nurse prescriber. The clustering was driven primarily by pay band.

323 posts were recorded as holding titles such as Advanced Nurse Practitioner or specialist nurse who were not registered with the Nursing & Midwifery Council.

**Relevance to Clinical practice**

In this dataset there is a large array of titles which appear to have little relationship with other factors like education. This is confusing to the public, employers and those commissioning services. It also demonstrates that the previous assumptions by Council for Healthcare Regulatory Excellence that advanced practice labels are associated with career progression are unsound and should be addressed by the regulator.

**Keywords**

Advanced practice, specialist practice, clinical nurse specialist, nurse practitioner, job titles

**Word count 3747**

**Summary**

**What does this paper contribute to the wider global clinical community?**

* The range of job titles in use in the UK today to describe nurses in specialist practice is extremely varied.
* Other countries developing specialist and advanced levels of practice may wish to clarify or regulate these roles before widespread introduction to avoid this lack of clarity.
* Nurses who were not registered with the Nursing and Midwifery Council were recorded in the dataset using job titles such as Advanced Nurse Practitioner, Assistant Nurse Practitioner and specialist nurse which could be an issue in terms of public understanding of these roles and present an issue for patient safety.
* This variation in job title and lack of clarity appears to cause confusion to commissioners of healthcare services, colleagues and employers. It is likely to be misleading to patients and undermines confidence in the profession.

**Introduction**

The work of specialist nursing has been under scrutiny for many years in the UK due to a perception that it is not cost effective (Read, 2015). Despite this scrutiny these role titles have continued to expand in an uncoordinated way (Barton, 2012), this is largely due to the actions of employers rather than the profession as employers confer titles. Common issues include lack of consistency of job titles, variation in preparation for roles and variation in levels of practice (Lowe et al 2012). This causes confusion to the public, employing organisations and, in England, to commissioners of services. In addition there is a safety concern regarding the confusion of titles and lack of regulation of roles which can be found in documents such as coroners reports (Swann, 2016).

Worldwide the picture is variable. In North American nursing bodies regulate the use of protected titles and post-masters level education board certification. The umbrella of advanced practice includes the Clinical Nurse Specialist (CNS), Nurse Practitioner (NP), certified nurse anesthetist (CRNA) and certified nurse-midwife (CNM) plus variants on specialty certification (Hamric & Hanson 2003, ANCC, 2017). This approach provides clarity regarding level and relationship between specified titles for all key stakeholders and public.

In Canada, inconsistencies in application of titles have also been noted. An example is inconsistency in the requirements for and the use of the term Clinical Nurse Specialist which led lack of role clarity for the CNS role (Donald et al 2010). In Alberta, the title "Specialist" is restricted to registered nurses (RNs) practising in a specialty who have a degree and at least three years of experience in the specialism. However, the title "Specialist" is not limited to the CNS role and appears to be in common use in nursing roles such as clinical nurse educators. Both the non-CNS-titled nurse in the role of a CNS and the indiscriminate use of the CNS title contribute to role confusion within and outside the profession (Donald et al 2010). There has been awareness of these issues for years-authors such as Monica Redekopp (Redekopp, 1997 p88) noted how the confusion over roles leads to “frustration, hampers collaboration, contribute to conflict, prevents the CNS from optimizing knowledge and skills, and even result in deletion of the post”.

In Australia nursing titles have been protected by law. The titles ’Nurse’, ‘Registered nurse’, ‘Enrolled nurse’ and ‘Nurse practitioner’ are all protected (NMBA, 2017).

In the U.K. while there has been interest in protecting the title ‘nurse’ for some time (Clews 2010) currently the term nurse is not protected by statute. In contrast examples of healthcare related titles which are currently protected include ‘Operating department practitioner’, ‘Occupational therapist’, ‘Paramedic’, ‘Radiographer’ and ‘Hearing aid dispenser’(HCPC, 2017). A protected title is a contract between the profession and the state. The state gives the professions exclusive rights to use professional titles and undertake certain roles. In exchange, the state can be assured that anyone using those titles or performing those roles will be appropriately trained so that quality of work can be assured. In this way, it aims to protect the public from harm by people practising when they are not qualified to do so (Holmes, 2009).

Other countries which are introducing such roles now tend to favour pursuing a professional and regulatory framework during the development of the role (Hibbert et al 2017) in which job titles are protected and can be used only by certified and credentialed individuals. The confusion over the naming of nursing roles and their various functions or scopes of practice has been an issue for some time, not just for nursing but other healthcare professionals too and serves to feed role dissonance (Bryant-Lukosius et al. 2004, Gardner et al. 2007). There is now a vast body of international literature discussing advanced practice and the contribution these roles make to healthcare. However, lack of consistency around title, role definition and scope of practice remains (Lowe et al 2012). This lack of clarity is not confined to the UK. Authors such as Duffield remark that there is little consistency in nomenclature in Australia (Duffield et al 2011).

In the UK support for such role development has been driven by population needs and supported by individual employers and charitable organisations (Trevatt & Leary, 2010). This has meant that the roles and their titles have evolved in an ad hoc way rather than been subjected to strategic planning, although some policy decisions have pushed expansion in areas like cancer and emergency care (Department of Health, 2007, Royal College of Emergency Medicine, 2016) without the associated professional or career development as part of policy. This has also meant that many studies on the complexity and cost effectiveness of the work have been commissioned when financial pressure comes to bear, particularly by charities that see direct benefits to patients from these roles. The cumulative data from these studies has been warehoused over a ten-year period.

**Aims**

The aim of this study was to mine this pre-existing data set to better understand the scale of variation of job titles in the UK.

**Methods**

The primary methodology is descriptive statistics and knowledge discovery through data mining (KDD) (Fayyad et al 1996). This is an interdisciplinary area focusing upon methodologies for extracting useful knowledge from data (Witten, 2011). These techniques are sometimes known as “big data” studies.

Since 2006 a number of studies and pieces of research for which the author has been commissioned have been undertaken have been aggregated into an anonymised dataset. This set was then mined.

The apriori set mined consisted of detailed anonymised activity and demographic data of 17,960 UK nurses collected over ten years (2006-2016) in 41 specialisms within the four UK countries. Examples include prostate cancer (Leary, 2016), lung cancer (Khakwani et al 2016) sickle cell and thalassemia (Leary and Anionwu 2014) and rheumatology (Oliver & Leary 2012). This equates to around 70 million hours of work. The group are self-identified as in some way practicing in a specialist field. Initially descriptive statistics were used to look at frequency. These data were then subjected to cluster analysis using K-means clustering algorithm (Weisstein, 2017) which is a non-hierarchical technique often used in industries such as banking or retail. In KDD a cluster is a group of objects that belongs to the same class. In other words, similar objects are grouped in one cluster and dissimilar objects are grouped in another cluster. The goal of clustering is to separate a finite unlabelled data set into a finite and discrete set of “natural,” hidden data structures, rather than provide an accurate characterization of unobserved samples generated from the same probability distribution (Cherkassky & Mulier 1998). Analysis was carried out using Euclidean norm in Mathematica V10TM.

**Results**

Mining the dataset revealed 595 job titles in use in the overall dataset of 17,960 posts. This excludes title specialism (for example Clinical Nurse Specialist breast cancer and Clinical Nurse Specialist rheumatology were both categorised in the Clinical Nurse Specialist data subset). Any charitable support title was also discarded (for example Macmillan Clinical Nurse Specialist was categorised only as Clinical Nurse Specialist). Unique technical descriptive suffixes with particular professional accreditation were retained for example endoscopist, colonoscopists or colposcopist.

The five most commonly used job titles were Clinical Nurse Specialist (6721) followed by Specialist Nurse/Nurse Specialist (2,334), Advanced Nurse Practitioner (2,214), Nurse Practitioner (1,977) and Lead Nurse (665). The least common were Trainee Advanced Practice Consultant (3), Specialist Liaison Nurse (8), Trainee Consultant Practitioner (11), Nurse Clinician (12), Specialist Support Sister (23) and Locality Nurse (4). The prominence of the Clinical Nurse Specialist title reflects the targeted groups of the studies.

The other titles were primarily variants on nurse, specialist, advanced, practitioner, trainee, case manager, navigator, lead, senior, clinical and specialism.

In order to provide structure the remaining data was “binned” into three different sets. “Binning” is a way of grouping similar sets of data into groups to allow categorisation. Variants with a specialist technical prefix of suffix for example Nurse Endoscopist, Emergency Nurse Practitioner, [specialism] Nurse (i.e. bladder and bowel), Critical Care Practitioner and Triage Practitioner were binned into one set. The second set included variants of seniority such as Consultant, Trainee, Student, Associate, Deputy, Senior Nurse for [specialism] Matron [specialism], Lead nurse [specialism] Senior Clinical Nurse Specialist, Trainee Advanced Nurse Practitioner and Advanced Practitioner in Training. The final set included variants of function such as Nurse Prescriber, Rapid Response Nurse and Locality Nurse. There were a series of combination of adjective, adjective, nouns such as Advanced Clinical Practitioner. The binned sets were arbitrary on this analysis and could be revised in future.

A summary of the job title groupings is shown in Figure 1.

The job titles were then referenced against other parameters in the dataset. These were pay band (N=17540), education level (N=8064), years in role (N=8064) using k means clustering. There was clustering between pay band 6 & 7 and variants of Clinical Nurse Specialist (the largest group) and between pay bands 7 & 8 and variants of Nurse Practitioner and Advanced Nurse Practitioner meaning Nurse Practitioner and Adavnced Nurse Practitioner title holders tended to be on a higher banding. There was clustering between seniority variants (lead, senior, team leader etc) and pay band at 7 and 8a. There was clustering between educational attainment (n=8064) at master’s level and job title (Clinical Nurse Specialist and Advanced Nurse Practitioner). The Masters level qualification was chosen as it is recommended for advanced practice (ICN 2017). Highest number of years in role clustered around Clinical Nurse Specialist with a mean of 12 years in role (range <1-34 years).

Of concern was a small subset of 323 (4%) of those not having a recordable qualification leading to registration with the Nursing & Midwifery Council (NMC), out of the 8064 in which educational level was obtained. The dataset was derived from a series of national studies and so was directed at those working in a specialism in the UK and were on pay band three and four (approximately £17,000-£22,000). Of these the majority use the term Advanced, Nurse or both Advanced and Nurse in their job title. In this group that were not registered with the NMC various titles were returned. Advanced Practitioner was the most common (83) followed by Specialist Practitioners (69) and Advanced Nurse Practitioner (52). The full range of titles is shown in Table 1. They primarily worked in emergency care, pre-assessment, theatres and cancer..

To examine this issue further, a search was made on the NHS Jobs website during April & May 2017. NHS jobs is a central repository for all vacant NHS posts in England. Using the search terms “advanced” and applying a pay band 1-4 filter it was possible to see that the use of the term advanced appears common. In one random search posts such as Advanced Intermediate Support Worker, Advanced HCA/CQUIN, Associate Advanced Assistant Practitioner, Advanced Associate Nurse, and Advanced Care Navigator were listed. Searching with the term “nurse” and using the same pay bands resulted in roles for which registration was not required such as Clinical Support Nurse, Assistant Nurse Practitioner, Community Nurse, Level Four Nurse and Assistant Nursing Practitioner. Figure 2 shows an example of one such advertisement.

**Discussion**

This short study demonstrates the extremely varied labelling of posts in the UK even within one assumed sphere of practice. The need to clarify the role in health care and professional clarity is identified as a strategy to enhance this. Themes around role clarity, professional identity, ability to enhance healthcare provision and inter-professional issues have been examined by many authors (Bryant-Lukosius et al. 2004, Duffield et al 2011, Lowe et al 2012, Read 2015) . Yet policy and regulation have failed to maintain pace with this development. ,

The differences in nomenclature have led to confusion over the roles, scope of practice and professional boundaries of nurses in both a national (National Leadership and Innovation Agency for Healthcare 2010) and international context (Duffield et al 2009) In recent years Northern Ireland, Wales and Scotland have sought to standardise job titles (National Leadership and Innovation Agency for Healthcare 2010, NIPEC, 2014)

The variety of posts means that attribution of complexity of work or outcomes is challenging and consistency would help articulate the function of the roles. For example the term associate was used for registered and unregistered staff in terms such as associate clinical nurse specialist (registered) and associate specialist nurse (both registered and unregistered). Added to the fact that England has introduced a Nursing Associate role in recent months (HEE 2016) the lack of clarity presents a challenge when undertaking research in areas such as nurse sensitive indicators.

In 2009 the Council for Healthcare Regularity Excellence (CHRE 2009) determined that statutory regulation of advanced practice was not necessary as they argued that much of what is termed “advanced practice” was career progression. However CHRE also cited concerns around the need to protect titles to protect the public (CHRE, 2010). The labelling of roles in this sample appears to have little relationship with education or years in post thus this assumption may be unsafe and should be reconsidered. Harmonisation of titles would curb the proliferation of titles, introduce clarity and possibly enhance safety. The unprotected use of titles could contribute to undermining confidence in the profession and in professional regulation as those who are not registered are not subject to professional regulation.

**Limitations**

This study is limited in that it mines an apriori dataset collected to look primarily at the complexity of specialist practice in the UK. It would be interesting to look at a much wider sample of nursing posts which purposively includes the non-registered workforce and also includes non NHS employees.

**Conclusion**

The range of job titles in use in the UK today to describe nurses in specialist practice is extremely varied. Nurses who were not registered with the NMC were recorded in the dataset using terms such as Advanced Nurse Practitioner and specialist nurse which could be an issue in terms of public understanding of these roles. In this dataset there is a large array of titles which appear to have little relationship with other factors like educational level. This could be confusing to the public, employers and those commissioning services. Job titles are conferred by employers and currently there is little consistency.

It is necessary to consider public safety and the vagueness of job titles does not offer assurance. The development of credentialing though medical colleges will further add to the confusion as these institutions also seek to define these roles.

The lack of a framework across England is an issue. Future role development and education from a common framework should be considered.

Strategic workforce planning requires improvement. These roles are rarely considered despite the impact they have. Standardisation would help explain and also deploy the role to ensure that it delivers.

This variation and lack of clarity appears to cause confusion to commissioners, colleagues and employers. It is likely to be misleading to patients in that titles do not appear to confer assurance of educational background or levels of expertise.

**Relevance to clinical practice.**

A range of job titles describe specialist practice in the UK despite efforts by the different countries to harmonise titles. Titles are extremely varied and terms such as advanced nurse practitioner are used by non-registrants without meeting the recommended educational or professional credentials. As there is no regulation of specialist advanced practice in the UK employers and post holders drive the labelling of posts. Harmonisation of titles would curb the proliferation of titles, introduce clarity and possibly enhance safety.

This is particularly important for the international community in countries which are developing these roles as given the current situation described in the UK. It may be better to tackle issues such as agreed definition and regulation before expansion of roles thus avoiding the confusion that exists in the UK.

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