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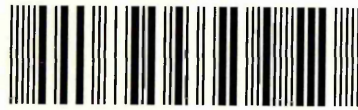
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**THE FUNCTION AND PURPOSE OF CORE PODIATRY:
AN IN-DEPTH ANALYSIS OF PRACTICE**

Lisa Jane Farndon

A thesis submitted in partial fulfilment of the requirements of Sheffield Hallam
University for the degree of Doctor of Philosophy

March 2006

ABSTRACT

The function and purpose of podiatry and podiatrists in the UK were investigated with specific regard to the core role whilst considering current health policy and socio-political issues influencing the profession.

A survey of 9.6% working members of The Society of Chiropodists and Podiatrists from both the private, commercial and public sectors, identified the constituents of current practice in the UK. Traditional podiatry was still being carried out over 50% of the time despite developments in education and training. Although the term *traditional podiatry* is in current use to describe long-established tasks associated with care, respondents disagreed about its role, which suggest that it is poorly conceptualised and understood. Consequently, the term *core* podiatry was adopted.

Some NHS departments are reducing the provision of core podiatry care which is linked to cost improvement initiatives, as there is little evidence of its effectiveness. Patients were interviewed to determine the value of core podiatry to them and it was found to sustain foot health whilst offering some emotional support and reassurance. Utilising data provided by practitioners and patients and reappraising the literature using concept analysis, a new definition and model of core podiatry was produced. This was then assimilated into The Chronic Care Model to propose a new strategy for the design and delivery of core podiatry services within the NHS.

The findings confirm that core podiatry preserves individuals' foot health and the mobility of elderly patients in particular. Withdrawal of services is therefore a false economy. This new definition offers a consolidated view of practice and denotes areas that require further advancement or reorganisation. Developing the role of assistant practitioners to carry out some of the core work is proposed, whilst increasing treatments that can offer a cure. There is also an urgent need to introduce foot health promotion strategies at both national and local levels with the aim of preventing foot problems, thus contributing to the longer-term picture of improving and sustaining foot health.

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ACKNOWLEDGMENTS

I would like to thank my supervisory team for their guidance, help support and encouragement throughout this journey. Professor Anne Parry for her expertise, wisdom and straight talking. Dr Julia Potter for her organisation skills, advice and podiatric knowledge. Dr Alan Borthwick for his vast wealth of in-depth knowledge on many aspects of podiatric professional issues. Professor Wesley Vernon for having a visionary view that has kept me on the right track and for being both a good friend and colleague. Without any of these people I would not have completed this marathon and I thank you all.

I would also like to thank my friends and colleagues working for the Podiatry Service, Sheffield South West Primary Care Trust for their interest and encouragement over the last six years, especially Jeremy Walker, Mandy Moore, Sandra Robson, Dawn Yates and Sally Walker. A special thank you goes to Dr Susan Nancarrow for her support and encouragement during the difficult times.

A big thank you goes to my husband, Simon who has never doubted that I would complete this work, has helped me both by reading drafts and in discussing main points and has put up with me spending many hours shut away in my study whilst he has been left to care for our son, Charlie.

I would like to dedicate this thesis to my dad, who sadly passed away before its completion, but I hope he would have been very proud of me.

CHAPTER 1
INTRODUCTION
THE DEVELOPMENT OF PODIATRY

“No matter what aptitude a Chiropodist may show in dealing with general affections of the foot, or what operating skill he may have developed, there can be no doubt that one of his greatest assets is the capacity for being able, cleverly and painlessly, to enucleate a corn.”

E.G.V. Runting (1934) Practical Chiropody, pg 1.

The practice of removing a corn (or *enucleation*) is a central but rudimentary skill employed by podiatrists since the first descriptions of the profession in the 16th Century (Dagnall 1983). On average people walk between 2,000 and 6,000 steps a day (The Society of Chiropodists and Podiatrists 2004a), so walking is a necessary part of life, but the condition of feet is rarely considered unless problems occur and they become painful (Potter 2004). It is then that professional advice may be sought and it is the podiatrist's role to diagnose, treat and advise on foot problems allowing people to remain mobile, independent and active (The Society of Chiropodists and Podiatrists 2004b); this role is also assigned to chiropodists. Though podiatry has developed from chiropody and the two terms are often used synonymously, they have disparate etymologies. The origins and development of the words are different; chiropodist is derived from the Greek terms *kheir* (hand) and *podos* (foot): one concerned with the hand and the foot. However more commonly, practice is exclusively associated with the foot and podiatrist coming from the Greek *podos* (foot) and *iatros* (physician): physician of the foot is a more appropriate title (Dagnall 1963). Podiatry is therefore a more accurate modern term and has replaced chiropody “*in recognition of the universality of the title ... in the English speaking world*” (Quality Assurance Agency for Higher Education 2001). Throughout this thesis, *podiatry* and *podiatrist* will be used as the generic terms and *chiropody* and *chiropodist* will only be referred to when special reference is being made or in direct quotations.

“General” podiatry care includes the treatment of foot pathologies associated with the nails and soft tissues, such as corns and callus, which can affect a large number of people (Cartwright and Henderson 1986; Levy 1992). However, a number of specialist areas have developed and these range from treating abnormalities of foot function (biomechanics), developmental functional foot problems in children (podopaediatrics),

treating people with systemic diseases such as diabetes mellitus and rheumatoid arthritis which cause potentially serious pathologies in the lower limb and carrying out surgery to correct nail problems, foot deformities and soft tissue lesions (The Society of Chiropodists and Podiatrists 2004b). Though podiatrists perform nail surgery, podiatric surgeons, who have completed a large amount of post-graduate training, undertake the more complex foot surgery of the bones and associated soft tissues (The Society of Chiropodists and Podiatrists 2004c). Once trained, podiatrists can work in the public, commercial or private sectors. In 2004 approximately 64% of practising members of The Society of Chiropodists and Podiatrists (which represented 82% of the total number of podiatrists at the time), worked in the NHS, either all of the time or in combination with carrying out private or commercial work whilst 20% worked solely in the private sector (The Society of Chiropodists and Podiatrists 2005a).

1.1 RATIONALE FOR THE STUDY AND PERSONAL PERSPECTIVE

The overall purpose of this study was to investigate and define the role of *core* podiatry in a modern health service through an in-depth analysis to determine both the function and practice of podiatrists and the extent of chiropody, or “traditional” podiatry, in their work. “Traditional” podiatry is a term used by some podiatrists to represent the routine, general care most commonly involving the treatment of the nails, corns and callus, often repeated at 3–4 monthly intervals and with the main client group being older people. These types of treatments have always formed a large part of the work undertaken by podiatry departments in which I have worked. The research questions formulated were based on the personal experiences gained during working as a podiatrist as well as both the political and organisational changes and developments taking place since I qualified in 1987. I have been working for 18 years exclusively in the National Health Service (NHS) and during this time I have noticed a gradual change in the types of treatments being offered to patients. Traditional work is being supplemented more and more with more specialist areas of treatments including biomechanics, surgery and care of people deemed to be at risk due to a systemic disease which could lead to a serious foot problem. However, the incorporation of new podiatric specialities into NHS practice appeared to be on an ad hoc basis, dependent on the expertise of podiatrists working within a particular service and the personal interests of both individual clinicians and podiatry managers. It was not driven by a professional and organisational need to use the extensive skills that are now being taught at both an undergraduate and post-graduate level. There also seemed to be an emphasis on quantity rather than quality,

which reflected the NHS contracting system at the time (The National Health Service and Community Care Act 1990). Podiatrists were being told that the most important part of their practice was to ensure that appropriate numbers of patients were being treated according to service plan agreements otherwise budgetary cuts might be incurred. The actual treatments being undertaken or the quality of the service did not seem to be a priority.

My thinking was not only informed by observations of clinical settings and the organisations in which I work but was also based on policy documents. The introduction of the NHS Plan (Department of Health 2000a) proposed a change in the way that we worked with an emphasis on patient-centred care pathways, evidence based practice and multi-disciplinary team working. I have seen some of these areas being incorporated into NHS podiatry departments but treatments were still predominantly based on the pathology centred model and patients were not at the heart of clinical decision making. Later policy documents (Department of Health 2000b; Department of Health 2000c) also supported my view that podiatrists needed to look at new ways of working.

I have been involved in an innovative project since working in my current post, which has changed the way the whole podiatry department works and bases care on clinical need using education to help the less needy manage their own feet (Moore, Farndon et al. 2003). This however has been a local initiative based on a reaction to current overwhelming demands from new patients wishing to receive podiatry care rather than being strategically led based on health policy and the vision of our professional bodies. This scheme has generated a huge amount of interest from other podiatry departments across the country and has been adopted by many of them to cope with the similar demands of over subscription to services. However, as the types of clients podiatrists most commonly see at the moment will continue to rise as the numbers of older people and those suffering with diabetes mellitus will increase in society, I still believe even re-organised services will eventually become overloaded again and find difficulty coping with patient numbers.

My position as an experienced NHS podiatrist has therefore allowed me to identify that there may be problems in future service provision, especially involving the traditional type of podiatry care. There is a need to look at what we do as a profession, identify

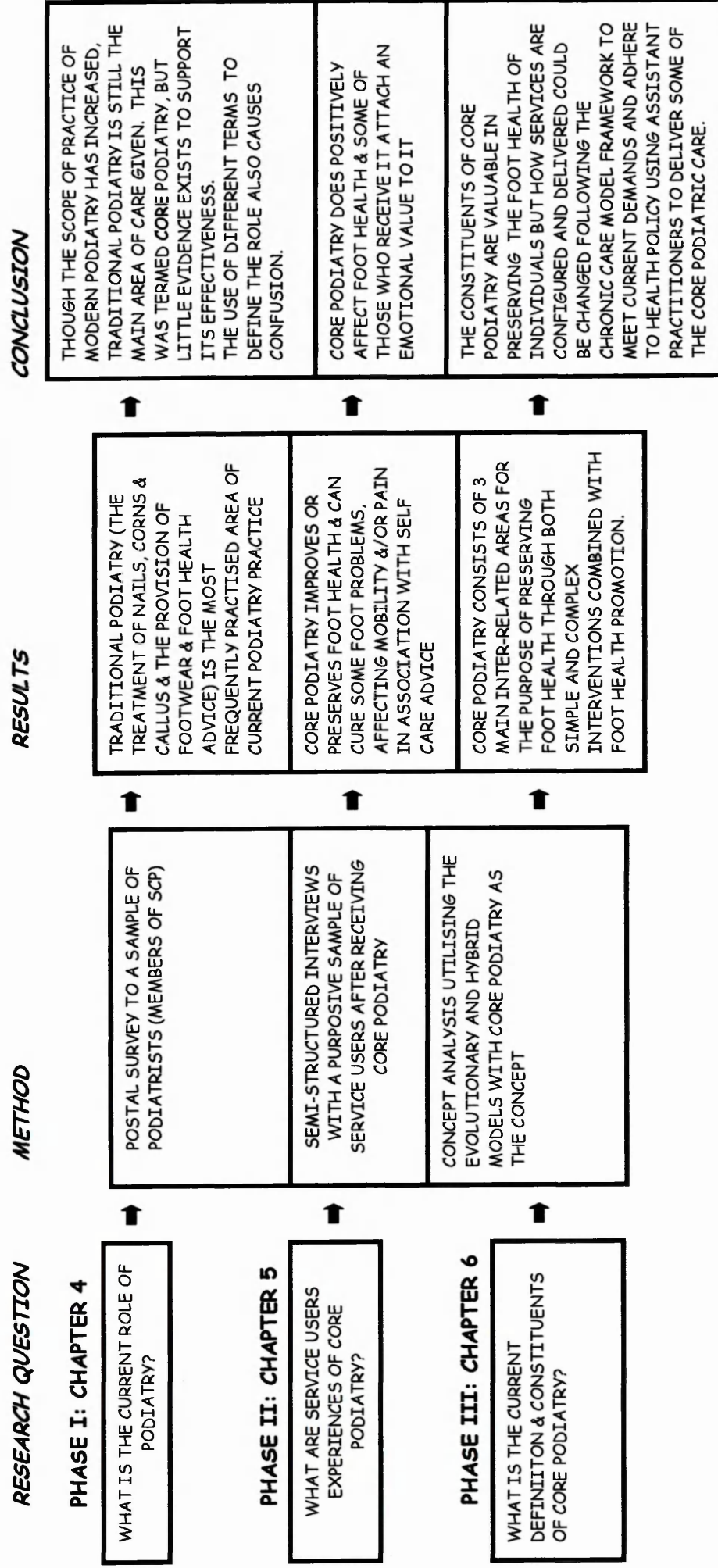
core values or common practises to find out which areas are effective and beneficial for patients and look at possible ways to improve the delivery of services in the future. This was the main intention of my exploration but was helped by the people and place in which I work. The head of service where I am currently employed has a strong vision for podiatry and he considers we need to constantly change by looking at new ways of working and firmly believes in the need for a research base for the profession. This philosophy is ingrained within the whole department, has inspired and encouraged me throughout this journey and given me the time and support to carry out this study.

Original Observations and Sequence of Events

The three phases of this thesis were sequential; the findings from each section were used to inform the next phase. A variety of research methods were chosen based on their relevance to the different research questions considered during the progression of the project. The order of events at different stages of the thesis and the associated research questions are shown in Figure 1. Phase I used a postal survey and confirmed that podiatrists treat nails, corns and callus most of the time in conjunction with giving footwear and foot health advice. The term *core* podiatry was adopted for this “traditional” area of practice because it reflects the beginnings of chiropodial, latterly podiatric practice and underpins developments in the profession over the last thirty years as new specialist areas have been introduced. Practice taking place in the UK is the main emphasis of this work, though the literature review does consider some different podiatric models present in other countries. Tasks performed by podiatrists across all work sectors were also included in the survey though the subsequent phase concentrated more on the podiatric role in the NHS, which is delivered primarily to older people, as current changes in health policy are influencing professional developments. It is however, envisaged that this work could be generalized to both the private and commercial sectors in the UK and may contribute to knowledge development of the professional at a national level.

As the most common areas of current podiatric practice were identified, phase II went on to investigate whether core podiatry was effective and valuable for older people using one-to-one interviews. This was carried out to examine whether core type care is still required as many podiatry departments are currently restructuring services, which is leading to a reduction in the provision of some of these treatments. This however, is often a result of financial pressures with

Figure 1: ORIGINAL OBSERVATIONS & SEQUENCE OF EVENTS



associated cost savings rather than based on patients' views and needs.

Phase III of the study re-examined the data generated from the earlier two phases, supplemented with a new literature review. Following a recognised method, core podiatry was explored in further depth by undertaking a concept analysis, using core (traditional)¹ podiatry care as the concept, to determine its exact and precise characteristics in order to define and clarify it. A new definition and model of core podiatry was produced and a redesigned podiatry service proposed for the delivery of future core podiatry care. This includes increasing foot health promotion initiatives at both a local and national level and developing assistant podiatric practitioners who could provide some of the core treatments. The reconfiguration of core podiatry services is adapted from an existing model for the provision of long-term health care.

1.2 THE HISTORY OF PODIATRY

The evolution of the podiatry profession has been affected by a number of political, educational and sociological issues, which has both restricted and shaped its development. In order to fully explore the current matters affecting podiatrists, the historical beginnings of the profession will be discussed with specific reference to the UK. A discussion of professional developments in the US will be presented as some similar challenges have arisen there, though many years earlier than in Britain. The development of podiatry in other English speaking and European countries will also be briefly examined.

According to Dagnall (1970; 1983), the first practitioners of the feet were known as “*corn cutters*” who carried out their trade in the streets during the 16th Century, though foot problems and foot care are illustrated in an Egyptian tomb drawing from around 2,500 BC (Dagnall 1983). It is believed that the term *chiropodist* was first coined by Low in the 18th Century and derived from a French text, ‘L’ Art de Soigner les Pieds’ (The art to care for the feet) by Laforest in 1781. Low published a textbook of chiropodial practises called *Chiropodologia* around 1785 (Seelig 1953) which was believed to be one of the first British accounts of professional practice however, it was later revealed that this was a complete replication of Laforest’s earlier book merely translated into English. In the following century a surgeon-chiropodist to George IV,

¹ Though the term **core** podiatry was adopted after Phase I of this thesis to represent the traditional role, the word **traditional** was used when searching the literature during the concept analysis in Phase III as this term has been more extensively employed in the past by podiatrists to represent this routine area of practice.

William IV and Queen Victoria called Durlacher, published a renowned book of chiropody practises. This was called '*A treatise on corns, bunions, the diseases of the nails and the general management of the feet*' and Dagnall (1987) believed this led to the establishment of chiropody as a branch of medicine and surgery and chiropodists as professional men. More publications followed to build upon the knowledge base and led a stalwart of the profession to later declare: "*knowledge which, as our literature proves, we hold as an independent profession – nobody else knows it, or if they do they learnt it from us.*" (Dagnall 1970).

As the podiatry profession began to grow, two men - Runting and Oxford founded the first British Society in 1912, which was registered as the National Society of Chiropodists a year later. One aim of this group was to obtain parliamentary or other legal acknowledgement of the rights and status of chiropodists (Dagnall 1985). The First World War brought a change to the professional constituents of chiropody, as prior to the war, there were few chiropodists, often coming from a family tradition of the profession and mainly providing treatment to the middle and upper classes. During the war, many foot orderlies were trained to provide basic foot care to soldiers and as the war ended, these foot orderlies began to practise as chiropodists. This saw an increase in training courses, many of which were through correspondence learning and more societies, clinics and schools emerged (Dagnall 1970). As the more traditional, 'old school' practitioners deemed a need for regulation necessary; exams were established in 1919 for new members to the Incorporated Society. In the same year, The London Foot Hospital was opened which allowed students to gain clinical experience by providing chiropody treatment to the poor (Dagnall 1985). In 1939 the first register of chiropodists was published which had 1,029 members who were allowed to receive patients without medical referral and to diagnose and prescribe (Dagnall 1985). The scope of practice of UK podiatry was also determined during the 1930s according to Larkin (1983), and was based on the Missouri definition, derived from the one used in the US state of the same name. Practice was to involve the "*nails, skin excrescences (corns, callus, warts), bunions but not congenital or acquired deformities requiring anaesthesia or incisions below the true skin*". This forbade practitioners to carry out surgery, as that was solely in the realm of doctors – a form of medical hegemony. However, it did allow podiatrists to receive, recognise and treat patients without medical referral, which was notably different to the other auxiliary professions such as physiotherapy.

In 1945 the five bodies representing the profession at the time, joined together to become The Society of Chiropodists (Dagnall 1985), which today is known as The Society of Chiropodists and Podiatrists (SCP)² and is still the largest UK professional body representing approximately 65% of registered podiatrists (The Society of Chiropodists and Podiatrists 2005b).

1.2.1 Podiatry in the United States

The American podiatric model is quite different from the British one though similar external forces have shaped and influenced the scope of practice of the profession in both countries. American podiatry is more closely aligned to medicine as this definition suggests: “*a branch of medicine which medically and surgically manages care of the lower extremity*” (Ohio College of Podiatric Medicine 2002). However, an American podiatric physician is: “*involved with examination, prevention, diagnosis and treatment of foot disorders by physical, medical and surgical means*” (Ohio College of Podiatric Medicine 2002), which is similar to UK definitions of podiatrists (The Society of Chiropodists and Podiatrists 2004b). There are however, a relatively small number of US practitioners. In 2005 there were approximately 15,000 licensed doctors of podiatric medicine with around 13,000 of these being represented by The American Podiatric Medical Association (American Podiatric Medical Association 2005). Undergraduate training consists of a four-year course compared with the English model of three years and leads to a degree of Doctor of Podiatric Medicine. The core training curriculum for American podiatrists is similar to that of medicine incorporating instruction on the basic sciences; students also go on clinical rotations where they learn how to perform examinations and therapeutic procedures, make diagnoses and interpret tests (US Department of Labor 2003). Postdoctoral education includes residency training (Levrio 1987), which can be between 1 –3 years (US Department of Labor 2003).

Historically, podiatrists in the US have concentrated on diagnosing and treating disorders of the foot and ankle (American Podiatric Medical Association 1997) but

² The Society of Chiropodists was re-named The Society of Chiropodists and Podiatrists (SCP) in June, 1993 and will be referred throughout this thesis as the latter.

more recently, their scope of practice has been greatly extended to include treatment between the ankle and the knee, the upper muscles of the leg and the treatment of hand conditions also found in feet, though there are differences across states (Cooper, Henderson et al. 1998). US podiatry has encountered a number of problems with the medical establishment in its quest for professional development, especially involving the use of surgical methods of treatment. Some professional gains have been made which have challenged the dominance of medical physicians (Levrio 1992) and led to more autonomy but overall professional control over the foot has still not been achieved, as medical doctors also have the right to diagnose and treat foot problems (Skipper and Hughes 1983). Similar issues have affected UK podiatrists associated with the introduction of podiatric surgery and will be described later in this chapter.

As part of continued professional development, the US podiatry profession sought certification in 1960, to allow podiatrists to have hospital privileges and avoid regulation from the medical profession (American Podiatry Association & National Association of Chiropodists 1960). In 1962 regulations were adopted for the approval of national certifying boards to obtain certification after a two-year postdoctoral education programme was undertaken. This was proposed by the Council of Podiatry Education to improve podiatrists opportunities to obtain surgical privileges that would in turn improve the overall image of the profession and protect some areas of practice from intrusion by non-podiatrists in particular foot surgeons (Levrio 1987). As there were insufficient postdoctoral residency programmes available in specialist areas of podiatry especially surgery at the time, certification was suspended but restored in 1974 with the first specialism in podiatric surgery and the second, podiatric orthopaedics being introduced in 1976 (Levrio 1987).

The introduction of this certification brought up the issue of '*grandfathering*', a route to allow individuals to achieve a certain professional title or certification without satisfying all of the requirements, which often includes an examination: "*to protect experienced individuals who have had a long career in the practice of a speciality and deserve appropriate recognition for their accomplishments*" (Levy 1996). It is interesting to note, that similar issues around '*grandparenting*' have occurred in the UK as previously non-state registered podiatrists have now been accepted onto the Health Professions Council (HPC) register after fulfilling a number of conditions (Health Professions Council 2003). It was thought by one author that American podiatrists,

when expanding their scope of practice, aimed to avoid divisions amongst professionals to maintain union rather than to advance a few in the hope that all would eventually benefit (Levrio 1987). This was felt necessary in a small profession and was markedly different to the tactics employed by the first UK podiatric surgeons mentioned later, though this is due to the different cultural and social contexts (Borthwick 2006) plus the current antagonism from some previously state registered podiatrists regarding the HPC 'grandparenting' clause (Graham and Brown 2004).

Further positive accomplishments were achieved by the American podiatry profession in the 1960s and 70s around the issues of staff privileges in hospitals (Chumbler and Grimm 1996) including; giving permission for qualified podiatric physicians to perform surgery without a physician surgeon in the operating room, allowing them to be defined as *practitioners* together with doctors and dentists and the inclusion of podiatry graduates as hospital staff (Levy 1996). In 1978 changes in entry requirements for training schools added to image elevation with colleges of podiatric medicine agreeing to adopt the same requirements of entrance as those for US schools of medicine. This involved potential students taking the Medical College Admission Test (McNevin, Gill et al. 1996), which enhanced the legitimacy of podiatric medicine and improved applications to the profession as it was on a par with medical and osteopathic schools (Levy 1996).

In the 1990s three quarters of all American states required podiatrists to undertake at least one year post-doctoral training and many hospitals required them to be residency trained (Levy 1996). This led to a change in the requirements of the colleges in 1992; they were now expected to prepare graduates for entry-level postgraduate study (residency), usually two years of post-registration training (McNevin, Gill et al. 1996), making the process of becoming a podiatric physician identical to that of any other medical speciality – six years. According to Borthwick (2001a), this has led to American podiatrists having a wider scope of practice and greater prestige when compared with their UK colleagues however a survey of members of the American Podiatric Medical Association (American Podiatric Medical Association 2002) found that nail pathologies (fungal and ingrowing) were one of the most commonly treated conditions. This suggests that though US podiatrists can carry out a larger number of invasive procedures, due to the surgical element in their undergraduate training, traditional podiatric skills still form a large proportion of their work.

1.2.2 The Introduction of Podiatric Surgery in the UK

The beginnings of podiatric surgery in Britain began to develop during the 1970s and followed the American model. However, before any foot surgery can be undertaken, the foot must be anaesthetised, which was the first problem requiring a solution, as at the time, this was outside the training of UK podiatrists. The potential value of anaesthetising the foot would be far reaching as it could lead to an increase in the scope of practice of podiatry with associated benefits. A member of the profession many years earlier eloquently outlines this: *“I think we need to be able to obtain analgesia by injection.... If this gradually... became part of our training it would certainly open out fields that are closed to many at the moment. Such things are linked with our status, our relationship to the medical profession, and the limits of the present legislation, and the need first for a ‘closed’ profession”* (Dagnall 1967).

Despite no formal training, some independent practitioners began to use local anaesthesia, which led to the introduction of unapproved courses, led by the Croydon Post Graduate group (Borthwick 2001a). Borthwick (2005) believes this organisation acted as a ‘ginger group’ as it galvanized the larger organisation of SCP into adopting a wider scope of practice, beginning with formal training in local anaesthetics. The State Board granted the right to administer local anaesthetics dependent on undertaking the appropriate training (Borthwick 2001b), after continued demands from those keen to develop podiatric surgery. Neale (1985) notes, that *“evolution... is a notoriously slow process”* as it took ten years of negotiation before podiatrists in the UK could legitimately use anaesthetics.

In 1974 the Podiatry Association (PA) was formed from the Croydon Post Graduate group and other like-minded regional establishments. Their aim was to *“champion the cause of surgical practice in podiatry and challenge existing limits to the scope of practice”* (Borthwick 1997). This led to some podiatrists carrying out surgical procedures; initially of the toenails and correcting lesser toe deformities and was later expanded to corrective surgery for bunions. The practitioners involved in surgery were still working solely in the private sector and were practising within the law, as the scope of practice definition was changed as part of the Professions Supplementary to Medicine Act during the 1960s to include: *“that which he is trained to do”* (Borthwick 1997). Therefore, because English law did not specifically forbid podiatrists to practice

surgical techniques and they could demonstrate that they had appropriate training to carry them out, they were legally allowed to do so. This was a direct challenge to the medical profession specifically orthopaedic surgery, radiology and anaesthesiology (Borthwick 2001a). Borthwick (2001a) states that SCP was also unhappy with the new advancements in podiatric surgery, as it was antagonising members of the medical profession and they wished to pursue advancements to the scope of practice with medical approval. The PA however, attempted an alternative strategy (Borthwick 2001a) to “*eschew medical dependence*.” Larkin (1983) notes that this approach to move forward the podiatry profession without medical approval would limit an occupation to the private sector and was the complete opposite of the tactics employed by US podiatrists, which UK surgeons seemed to want to emulate. As developments continued, the scope of podiatric surgery was not restricted to private practice, due to changes in NHS policy at that time leading to the creation of an internal market for competition (Department of Health 1989). This gave an opportunity for cost-effective, efficient treatments to be incorporated into the ‘new’ market economy of the health service. Podiatric surgery services were then slowly introduced into some NHS Trusts using the purchaser/provider system (Borthwick 2000a).

The PA now had good grounds to further their surgical course within the legitimate arena of the NHS. They were able to prove that their procedures were easily accessible, and they believed them to be clinically and cost effective when compared with orthopaedic surgery (Ariori, Graham et al. 1989). The Department of Health also promoted podiatric surgery, as waiting lists were smaller when compared with orthopaedic surgery (NHS Executive 1994). Podiatric surgeons have now been appointed in some health care trusts to carry out foot surgery under local anaesthesia and the introduction of general practitioner fund-holding which later became primary care groups and then devolved to primary care trusts, has seen this trend continue. Some surgeons now hold a ‘consultant’ post reflecting their role as lead clinicians within a podiatric surgery department (The Society of Chiropodists and Podiatrists 1999b) and there are currently 52 NHS podiatric surgery units (The Society of Chiropodists and Podiatrists 2005a).

As the new modernisation agenda (Department of Health 2000c) challenges professions to rethink ideas surrounding autonomy and exclusivity and encourages tribal boundaries to be broken down, it is logical to suggest that state employed podiatric surgeons should

be looking towards working more closely with orthopaedic surgeons to 'share out' surgical work rather than competing for it. Whether this will be possible is debatable considering the continual restriction of the podiatric scope of practice by the medical profession (Larkin 1983) and in some instances and locations, the professional rivalry that exists between orthopaedic and podiatric surgeons. This is highlighted by an article in a podiatry professional journal that discussed the bad press consultant podiatric surgeons have received (Podiatry Now 2004), based on results from a small poll conducted by the British Orthopaedic Trainees Association, that showed the general public associated the terms *consultant* and *surgeon* with medical training which is incorrect. In defence of podiatric surgery is evidence to support both its cost effectiveness (Carter, Farrell et al. 1997) and practitioner satisfaction. The latter information is based on a study by Helm and Ravi (2003) who surveyed GPs to find out their opinions of orthopaedic and podiatric surgery. The majority of respondents said they referred patients with foot problems to podiatric surgery and they were pleased with the quality of this service. Regardless of the conflicts that podiatrists have caused by encroaching into the surgical arena, the introduction of podiatric surgical techniques into the professional scope of practice has been a key issue in improving the podiatric role and associated status (Chumbler and Grimm 1996).

1.2.3 A Change in Title

In the US the terms *podiatrist* and *podiatry* were introduced to replace *chiropodist* and *chiropody*, for two reasons according to Skipper and Hughes (1983): the original words are inappropriate as they infer care of the hands as well as the feet and they are similar to *chiropractic*, which could cause confusion amongst the public. These replacement terms were first coined in 1914 by Dr M. Lewi (Goldstein 1991), but were not adopted by the whole of the American profession until 1957 (Levrio 1987). This was followed by a change in professional title from Doctor of Surgical Chiropody to Doctor of Podiatric Medicine (Gibley 1974), which saw the American profession further evolve.

To reflect the increase in scope of practice that the inclusion of surgical techniques brought to UK chiropody and to conform to other English speaking and European countries, a change in professional title was proposed in 1994 (Morris). *Podiatry* and *podiatrist* have now superseded *chiropody* and *chiropodist*. The institutions where training led to state registration and were once called schools of chiropody have

changed their titles to incorporate podiatry and students study for degrees in *podiatry* not *chiropody* (The Society of Chiropodists and Podiatrists 2006).

Though the professional titles adopted are now the same, surgical training is still different in the two countries. US training incorporates a surgical element at an undergraduate level whereas the UK model has only begun to train podiatric surgeons since the 1970s and it is still carried out at a postgraduate level. With the introduction of podiatric surgery into the UK and the initiation of pre-registration degree level training courses in the late 80s, many practitioners who did not carry out podiatric surgery also began to adopt the term podiatrist. Non-state registered practitioners however, also assumed these terms, and were legally allowed to do so, as closure of title remained unobtainable at the time.³

1.2.4 Podiatry in other Countries

According to Kippen (2006) the first podiatrists (then called chiropodists) were described in Australia in the 19th Century, with a number of men who had originally worked in the medical corps, training in the profession after both the Great War and the Second World War had ended. Numbers were swelled further in the 60s by emigrating podiatrists from the UK and other countries (Kippen 2002). An Australian three-year full-time training course was established in 1965 and current degree training can take place at one of eight universities (Australasian Podiatry Council 2006a). As there is limited state health care available in Australia, the majority of podiatrists work in private practice (over 73% in 1999) (Australasian Podiatry Council 2006b). New Zealand also established the first training course in podiatry in the 1960s, though South Africa only introduced an education programme based on the UK model in 1977. The South African training route now offers a Bachelor of Technology degree in Podiatry, and again, the majority of practitioners work in the private sector (Technikon Witwatersrand 2006). To link countries where podiatry is practised, The Federation Internationale des Podologues was founded in 1947, which currently represents 19 member countries from five continents (Federation Internationale des Podologues 2006).

³ The UK podiatry profession was fully closed in July 2005 and previously non-state registered podiatrists were eligible to apply for registration to The Health Professions Council through the grandparenting clause.

1.3 PROBLEMS ASSOCIATED WITH THE DEVELOPMENT OF PODIATRIC KNOWLEDGE

Podiatric Biomechanics as an example of an Evolving Professional Knowledge-Base

Colin Dagnall (1970), a prominent podiatrist with a special interest in the historical development of the profession, believed that podiatry could justify its own knowledge base but Larkin (1983) disagrees with this as chiropodists: “...*have not developed a science of their own which is distinct from that of medicine*” and have borrowed terms from medicine and surgery both limiting its autonomy and restricting its competition with medicine.

This responsibility to generate and describe its own original knowledge or theories underpinning practice is a requirement of a profession according to Eraut (1994) and Higgs and Titchen (1995) and the knowledge can be generated through research, which in turn can also generate theory. Scientific knowledge or empiricism is knowledge that is measurable and can be tested (Chinn and Jacobs 1987) and evolved via logical deduction utilizing the scientific method (Rutty 1998).

The following statement was made in the mid 20th Century:

“...the chiropodist should be reminded that the bulk of his scientific knowledge is derived from the studies and researches of anatomists, physiologists, and pathologists and, therefore, that it behoves him to defer to the opinion and pronouncements of medical practitioners” (Runting 1934).

It illustrates that the beginnings of podiatric knowledge are tied up and have been controlled by medicine, which is similar to many other health related professions such as physiotherapy and nursing. Fawcett (1984) cites the development of a “*distinct body of knowledge*” as a way to advance nursing, and unique and specific knowledge can allow a profession to declare a genuine status believe Behi and Nolan (1995). Recent developments in podiatry have challenged medical dominance by introducing knowledge that is specific to the profession during the development of podiatric biomechanics. This is a “*branch of biomechanics that deals specifically with the interaction of the foot with the lower limb,*” (Kirby 1993) and uses specific and specialised terms that have not been derived from medicine, to represent new concepts

and knowledge (Borthwick 1999a). It was begun with the work of Root, Orien and Weed (1971) who published a theory for foot function based on a 'neutral' position of the foot during the gait cycle. They believed that any variation from normal alignment could cause abnormal foot function known as compensation, and this would result in a particular set of signs and symptoms dependent on the nature of the variation (Payne 1998). Using this theory they proposed that realigning the foot, specifically the sub-talar joint, to its 'neutral' position using shoe inserts known as functional foot orthoses, would improve foot function and alleviate symptoms. Sub-talar neutral is a reference position which Root believed represented "*osseous segmental relationships (where) abnormal pronation and supination can be measured*" (Mathieson 2001). Foot orthoses aim to put the sub-talar joint into a 'normal' or neutral position during part of the gait cycle to reduce some functional abnormalities, which are thought to lead to the development of some foot pathologies (Bevans 1992).

This new paradigm was not based on pre-existing podiatric or medical knowledge and was widely accepted by the podiatry and physiotherapy community (Norris 1993), though Lee (2001) states it was initially met with opposition and criticism when introduced into professional practice and the medical profession described it as "*nonsense and non-science*" (Mcguire 1995). The work of Root et al was based on clinical practice rather than research evidence and as no data has been presented to explain how the theory was formulated (Harradine, Bevan et al. 2003), criticisms from non-podiatrists may be justified but according to a former head of a podiatry school: "*Root is almost revered as a God because basically . . . he established a scientific basis for chiropody/podiatry*" (Borthwick 1999a). Borthwick (1999a) believes this was used to improve the professional status of podiatry and the fact that it was almost universally accepted amongst podiatrists may indicate a problem with core clinical values. Podiatrists adopted a new theory without a firm evidence-base derived from research to support it. Recently, some new knowledge has become available which recognises the inconsistencies in the Root model (Lee 2001), however Payne (1997) states that texts on podiatric biomechanics published in the last decade still do not adequately discuss such discrepancies which Lee (2001) views as an "*avoidance of knowledge to preserve the status quo*".

Over the last decade, some podiatrists have challenged the "Rootian" theory further and argued that the neutral position is not the ideal as deviations from this have been found

in a number of ‘normal’ subjects (Pierrynowski and Smith 1996). Payne (1998) cites the lack of randomized controlled trials to support Root’s theory as a major criticism while Menz (1998), questions the validity and reliability of Root’s method of foot measurement. A study of published work using biomechanical theory advocated by Root (Pratt 2000) also found low scientific evidence in the majority of articles, though the theory has been widely used in clinical practice for many years.

Recently, new models have been presented that are “*biologically plausible and theoretically coherent*” (Payne and Dananberg 1997). Payne and Dananberg’s (1997) *sagittal plane facilitation* is a new theory based on logical thought and was recommended to provide a framework for future experimental studies. It varies from Root’s model of motion control as it focuses on motion enhancement according to Lee (2001). The only published studies using this theory to date though, have been conducted on patients with lower back pain not foot pain (Dinapoli, Dananberg et al. 1990; Dananberg and Guiliano 1999). A detailed protocol of the methods used in assessing patients has also not yet been produced which has made replication difficult for practitioners (Harradine, Bevan et al. 2003).

An alternative model first described by Kirby (1987) and built upon by Fuller (2000a; 2000b) challenges Root’s sub-talar joint neutral position for correct foot function as not representing a normal foot. Kirby (2000) believes a foot that is moderately pronated represents normality. However, Kirby’s theory has also been criticised, due to a lack of reliable research underpinning the method of determining the correct anatomical position of the sub-talar joint axis (Harradine, Bevan et al. 2003) and the use of a static rather than dynamic measure which is seen to be unreliable in gait analysis (Knutzen and Price 1994). There is also currently no outcome study assessing the efficacy of foot orthoses designed solely using this theory (Harradine, Bevan et al. 2003). A further tissue stress theory based on the laws of physics involving stresses placed on the anatomical structures of the foot (Harradine, Bevan et al. 2003) has been described by McPoil and Hunt (1995) and Demp demonstrates another geometric model but this is still purely theoretical at the moment (Lee 2001).

Whether podiatric biomechanics represents a new podiatric theory is still not demonstrated at this point in time due to a lack of empirical evidence to support its efficacy and potential competing new paradigms. The use of terminology, which is

varied and often non-standardised across the profession, only serves to confuse the debate and has weakened advancements in clinical knowledge (Weinder 1955). Lee (2001) views this present dilemma for podiatric biomechanics as representing a *pre-science* phase as described by Kuhn (1996) where ideas may be disorganized with debate and disputes over the rudiments taking place before a *normal science* phase can be entered where a single paradigm dominates. Advancements in future research should therefore aim to gain a consensus of opinion from practitioners and academics in order to promote a central theory for podiatric biomechanics according to Lee (2001).

The fact that there is a debate taking place regarding the elements of podiatric knowledge, illustrates that the profession is becoming more aware of the need to justify some areas of practice. In the past podiatrists have been criticised for following new trends that have not been fully validated (Keenan and Redmond 1999). For the future development of the profession, podiatrists need to be encouraged to continually develop, be aware of the evidence underpinning clinical interventions, implement appropriate research into practice in order to improve patient care and look at new ways of working to fit into the requirements of health policy.

The whole profession of podiatry including podiatric biomechanics has a large armoury of pre-scientific knowledge that is acquired through practise and experience. This has been referred to in the nursing literature as expert, intuitive clinical knowledge that cannot be identified or measured by propositional theories (Benner 1984) but is an important consideration in professions that are essentially humanistic in nature (Holmes 1990). Higgs and Titchen (1995) divide professional knowledge into three sectors: propositional, professional craft and personal. Professional craft knowledge is derived from professional experience (knowing how) and personal knowledge is gained from work and life experiences.

Podiatry has a smaller amount of propositional knowledge, derived through research and scholarship and a larger amount of craft and non-propositional knowledge. Many podiatric textbooks used to inform the profession according to Payne (1999), are based on accumulated experience rather than empirical work. This is because of the practical nature of the profession and is similar to other allied health professions, such as physiotherapy. Root's biomechanical model illustrates the problem of propositional knowledge in podiatry, as it is based on an experiential and observational premise rather

than being grounded on researched facts. This may have allowed this particular area of knowledge development to be open to error.

The evidence base of all aspects of current podiatric practice, including the specialist areas such as surgery and biomechanics must be nurtured via the research process in order to lay a firm grounding for future professional developments. The rudiments of core podiatry and its associated tasks must also be investigated through the research agenda to demonstrate if this area of practice is beneficial to those who receive it, most commonly older people.

Identity Crisis

Podiatry is a clinical profession involving the diagnosis and treatment of the whole foot without medical referral (The Society of Chiropodists and Podiatrists 1999a) and possesses and utilises a corpus of knowledge and skills. Neale (1985) believes podiatry adds to its knowledge through research, whilst having a monopoly in its field of work, autonomy in organising and defining its nature of work and possesses a code of ethics. These factors according to Freidson (1970) in part define a profession; however, as with other allied health professions, modern podiatry still has to work within a degree of freedom permitted by the medical profession and much of its knowledge is derived from medicine which has contributed to the problem of recognition in modern healthcare (Larkin 1983).

The lack of professional closure until July 2005 has led to competition with the non-registered sector and has continually caused problems both with other health care professionals and the general public, both of whom are not always clear on the differences between the two factions (Farndon, Vernon et al. 2004). This has resulted in an identity crisis for podiatrists. Some evidence to support an image problem can be derived from a small qualitative study of 77 podiatrists (Cartwright and Henderson 1986), 19 of whom were not registered. Many of them felt frustrated with the profession due to its low status, lack of foot care awareness by the public and the maintenance nature of the care being provided to patients. Though in this study private practitioners were overall more satisfied with their work when compared with NHS workers. Harvey et al (1997) in their survey of foot morbidity mention the poor status afforded to podiatry services resulting in the NHS giving low priority to the treatment of foot problems. Further studies have been published that highlight this lack of eminence

as a major issue for podiatrists. Skipper and Hughes (1984) conducted a small American survey asking podiatrists to rank themselves against other health professionals on a number of status indicators. Podiatrists placed themselves lower than many other medical workers on income, authority and prestige. A British investigation of work stress and burnout in podiatrists found that this was associated with a number of key issues including work overload, isolation, lack of career structure and lack of public understanding of the professional scope of practice (Mandy 2000; Mandy and Mandy 2000). A comparative study of burnout in newly qualified British and Australian podiatrists (Mandy and Tinley 2004) found higher levels of occupational stress than indicated by published data for health workers. This was associated with geographic and professional isolation. The lack of professional status was also a major theme and was linked with patients' poor understanding of the podiatric role and scope of practice. These results are corroborated by another recent UK study which reports that podiatry is a poorly understood and isolated profession and recommends an urgent need to deal with the public, professional and managerial lack of awareness of its role (Vernon 2004). These issues contribute to status believe Chumbler and Brooks (1993) who found that occupations with difficult training routes and that are important to society such as medicine, are afforded a higher prestige and associated rewards.

The use of two terms *chiropody* and *podiatry* to describe the occupation, has also led to confusion and debate both within the profession and by others. One member of SCP (Foxall 1999) suggested the general public view chiropody as a practice involving nail and corn cutting and are unsure as to the definition of podiatry. He believed this is further confused by the introduction of under graduate-training courses in podiatry but the continued use of the terms chiropody and chiropodist by some at the time.

Specialist titles denoting specific professional roles have also caused some debate.

Though podiatric surgeons are allowed to use the term consultant if they hold a substantive NHS post at the appropriate grade (the Society of Chiropodists and Podiatrists 2001a), it is recommended that the difference between a medical practitioner and a podiatrist should be made explicit to any patient undergoing foot surgery (The Society of Chiropodists and Podiatrists 1999a). American podiatrists, many years earlier, encountered a similar issue. Skipper and Hughes (1983), commented that (American) chiropodists in the early 1900s were advised not to use the term doctor and ensure patients understood the difference between chiropody and medicine in order to actively show they were not competing with medicine. Even the use of the term

specialist has been controlled as UK podiatrists have been advised that this title should be limited to those practitioners who have undergone specific training in an area, beyond that required to practise (The Society of Chiropodists and Podiatrists 1999a).

The Introduction of an Assistant Role

Foot care assistants (FCAs) were introduced into NHS podiatry services in 1977 to help deal with a high demand for foot care and the shortage of podiatrists working in the public sector at that time (Borthwick 1997). They were employed to carry out simple foot treatments whilst supervised by a podiatrist (House of Commons 1977) after undertaking specific in-house training. Much of this training was based on a structured package developed by The Association of Chief Chiropody Officers (ACCO) who represented some NHS podiatry managers at the time (Beech 1994). Though the continued and increased use of assistants was recommended after a large review of podiatry services (NHS Executive 1994) to allow podiatrists to concentrate on providing more specialist treatments. Some professional bodies representing podiatrists were opposed to their introduction, as it was felt assistants might leave the public sector and work in private practice, competing with registered podiatrists (Borthwick 1997). This resulted in strict control over the assistants scope of practice as they were only allowed to provide foot care that individuals could provide for themselves (Council for Professions Supplementary to Medicine 1981). Any attempt to increase their role including using scalpels was fiercely contested (Editorial 1994) as the general professional opinion at the time appeared to be that scalpel use was solely in the remit of the podiatrist (Webb, Farndon et al. 2004). Strict and confusing supervisory arrangements for assistants also appeared to restrict their use in some departments (Webb, Farndon et al. 2004) though over recent years their scope of practice appears to have developed significantly, as many now assist with surgical procedures and contribute to many other aspects of service provision (Farndon and Nancarrow 2003).

State Registration and Professional Closure

Early in the last century, the issue of state registration for podiatrists became an important debate and was felt to be necessary to protect the public and set down a minimal qualification for competence. A campaign was launched to achieve this in 1928 but did not reach fruition until 1960 with the Professions Supplementary to Medicine Act . This allowed those with the recognised qualification and competence to be eligible for NHS employment (Neale 1985). However, it did not provide *indicative*

closure (protection of the title *chiropodist*), or *functional closure* (protection of the scope of practice) (Editorial 1984). Thus allowing practitioners without state registration to still work in the private sector. Some podiatrists were concerned about the implications of *functional closure* as this could lead to a limitation in the scope of practice (Jenkins 1984) and it did prove to be a useful omission, as it allowed future developments specifically surrounding the introduction of podiatric surgery, to confront existing professional boundaries associated with orthopaedic medicine (Borthwick 1999a).

The advancement of podiatric practice through surgery challenged to a degree, medical dominance but did not lead to overall professional closure. Borthwick (2000b) cites Weber's (1968) definition of social closure, that is "*the attainment and enhancement of social status through the creation of criteria to exclude non-members of the group*" as a significant factor within the podiatry profession. It was believed by some that closing the profession would not only offer protection from the un-registered sector but would also increase professional standing. The journey for professional closure finally began to gain some momentum in 1995/96 when JM Consulting (1995) carried out the review of the Professionals Supplementary to Medicine Act (1960) and recommended its abolishment and replacement with the Health Act (1999). This new Act saw the original individual boards representing each professional group being replaced with one board for all allied health professions - The Health Professions Council (HPC). It is responsible for setting and monitoring standards to ensure patient safety, which includes having increased authority in coping with clinicians who are unfit to practise and to ensure registration is linked with continual professional development (Department of Health 2000c; Health Professions Council 2005a).

In 2002 the HPC began to tackle the issue of professional closure in the allied health professions by introducing 'grandparenting' procedures for non-registered practitioners including podiatrists. The podiatry profession was finally closed in July 2005 with the terms *chiropodist* and *podiatrist* being protected (Health Professions Council 2005b). Before the grandparenting process began, there was an average annual increase of approximately 548 podiatrists on the professional register, accounting for those who had recently qualified. A similar comparison with the physiotherapy and occupational therapy professions shows average increases in registered members of 2800 and 1393 respectively (Health Professions Council 2005b). Comparing the pre-closure figures

with the current number of HPC registered practitioners in these three professions indicates that whilst the overall numbers of physiotherapists and occupational therapists has not risen above that expected from annual increases reflected by new graduates entering these professions, the overall number of podiatrists has grown dramatically. Using pre-closure figures the total number of registered podiatrists if grandparenting had not been introduced would be around 9221, though the exact number is now 12,357 (Health Professions Council 2005b). This may be a reason why the podiatry profession were initially reluctant to join the HPC, as they perceived the numbers of previously non-state registered practitioners wishing to register with the new council would be far greater than other similar allied health professions. Issues of self-regulation were also given by SCP as a potential problem (De Lyon 2001), before the professions were integrated into the new council. This suggests an isolation tendency, which is in opposition to the Government's strategy of smarter working and their recommendation that professionals "*support the new arrangements for professional regulation*" (Department of Health 2000c). Some members of the profession are still calling for a general podiatry council (Anonymous 2004) though SCP appear to agree now with current policy as they have stated that a separate "*council would run completely counter to the government's approach*" (Brown 2004).

SCP also proposed at the 2005 Annual General Meeting that previously non-state registered podiatrists who have been accepted onto the HPC list could join the society as a full member. One reason for this may be to ensure SCP still represents the majority of clinicians as since the grandparenting procedure was introduced, they have seen their overall professional representation fall from 92% to 65% (The Society of Chiropodists and Podiatrists 2005b), a result of the extra 2000-3000 podiatrists being accepted onto the register. There is however, opposition to this by some podiatrists as it is seen as potentially diluting the status afforded to existing members of SCP who need to have undertaken a three year training programme to Diploma or Degree level in Podiatry (The Society of Chiropodists and Podiatrists 2005a). As functional closure was not agreed, private practitioners who are not enrolled with the HPC are still able to practise by an alternative professional name such as *foot health practitioner* (Foot Health School 2005), which may add further confusion over roles and titles for the general public.

How the podiatry profession will incorporate itself into the joint working arena representing the Allied Health Professions is still unclear as the HPC is still in its

infancy. The NHS Plan (Department of Health 2000a) advises ‘smarter’ working across professional boundaries, but in order to do this, each profession must identify its core skills, determine what it can ‘let go’, and what skills it shares with other health care professions. With the expansion of podiatric practice over the last twenty years, nail care has become a skill that, although representing part of a podiatrist’s role, can be passed onto others (Farndon and Nancarrow 2003). Recent changes in services due to dis-investment have seen a trend for this work to be carried out by non-podiatrists, whether assistants working alongside podiatrists, carers or the patients themselves (Moore, Farndon et al. 2003). Podiatry however, still has to define through empirical work, what are its core skills and specialist areas, what work it shares with others and what tasks could be delegated.

All of these issues formed the basis of this thesis, the purpose of which was to investigate and define the core podiatric role through an in-depth analysis of practice, set in the context of contemporary requirements of care. The following research questions were considered:

- What is the core role of podiatry?
- What are service users experiences of core podiatry?
- If core podiatry is defined and clarified, would this allow for a model of care to be developed which is suitable for the current NHS?

To set the context of this work, the role of podiatry based on evidence after reviewing the literature, is explored in detail in Chapter 2, methodologies and methods are discussed in Chapter 3. The process and findings at each of the three phases of the research are presented in Chapters 4, 5 and 6. A discussion of the findings is in Chapter 7 and final conclusions and recommendations are offered in Chapter 8.

Summary

The historical context of the emergence and development of chiropody is described in this chapter, as is the change in professional title to highlight the increased scope of practice of modern podiatry and to conform with other English speaking countries. The issues of state monitoring, medical dominance and the fight for professional closure have all served to both restrict and control the development of podiatry. However, the introduction of podiatric surgery to the UK served to directly challenge medical control over the profession and may have increased the image and status of podiatrists.

Podiatrists work in the public, private and commercial sectors, but the recent changes in government policy as part of the new NHS reforms, has called for health professionals to employ more evidence-based practice and puts the patient at the centre of clinical decision making. Changes to the NHS therefore have an influence on the profession as a whole regardless of the work sector. The lack of empirical work to provide an evidence-base to support many aspect of podiatric practice, including core work, has restricted further professional developments. These must be addressed before podiatry can view itself and be seen by others to be on a par with other similar professional groups and be promoted to the general public and commissioners of services.

CHAPTER 2
THE PRACTICE OF PODIATRY

2.1 THE TRADITIONAL ROLE OF PODIATRY

Redmond et al (1999), believe a large part of podiatric practice involves the treatment of nails, corns and calluses. These are skills that were most common during the early development of the profession but are still carried out today though new specialist areas have been incorporated into modern practice (Farndon and Nancarrow 2003; Webb, Farndon et al. 2004). This area of practice can therefore be described as the traditional or core role (Chumbler and Grimm 1993).

2.1.1 Nails, Corns and Callus

A podiatrist often treats nail problems, which have resulted from trauma, infection or a systemic disease. Thickened or deformed nails are often associated with damage though Dawber and colleagues (1996) state that some skin conditions such as psoriasis can also result in a thickened nail plate. Fungal infections of the nails can lead to a deformed and thick nail, which is often discoloured (Roberts, Evans et al. 1993) whilst ingrowing nails may also be associated with trauma or result from a curved nail and can cause extreme pain (Johnson 2002, p. 264). Toenails are primarily to serve and protect the underlying constituents of the toes (Johnson 2002, p. 260) and it is the nail plate, which is most often affected by pathology (Dawber, Bristow et al. 1996).

The majority of nail conditions are treated conservatively with cutting and filing, though some require more intensive treatments according to Johnson, (2002, p. 262). Fungal nails often require the administration of a local or systemic antifungal medication to resolve the problem (Pollak and Billstein 2001; Ricketti 2001), and ingrowing toenails, if severe may need a surgical intervention (Rounding and Hulm 1999). All of these treatments are in the scope of practice of the podiatrist, though some more simple treatments are now delegated to assistants (Farndon and Nancarrow 2003).

A common role for podiatrists is to treat manifestations of the skin. Keratinisation or thickening of the skin maintains the stratum corneum (a layer of the skin) as a protective cover and is a normal physiological process. It can be stimulated by trauma or pressure as seen in the hands of manual workers believes Singh and others (1996). Lucke and colleagues (2002, p. 211) states that if large amounts of pressure or trauma occur to the skin the process of keratinisation can be speeded up leading to *hyperkeratosis* or callus. Some diseases of the skin can also lead to the formation of hyperkeratotic lesions, such

as in psoriasis and eczema. Small amounts of callus are often found in the foot and are necessary to maintain comfort and stop the skin from blistering. This is termed 'physiological' callus and can be seen in the feet of people who play a lot of sport (Lucke, Munro et al. 2002, p. 211). If the callus formation becomes painful it is referred to as 'pathological' and it is this type of callus, which Mackie (1986) describes as: "*an excessive formation of normal keratin for the body site in question*" which is removed by podiatrists to reduce pain (Dawber, Bristow et al. 1996). This debridement most commonly uses a scalpel to remove the thickened skin until healthy epidermal skin is visible (Booth and McInnes 1997).

Callus according to Lucke et al (2002), is often of an even thickness, whereas a corn is a concentrated area of callus with a cone shaped centre called a nucleus. The treatment of corns is similar to that of calluses and usually involves scalpel removal of the hyperkeratotic core with a scalpel (Lucke, Munro et al. 2002, p. 212). The removal of calluses and corns by podiatrists is felt to be important as non-removal may result in ulceration. This believes Springett (1993) is due the reduced pliability of callus compared with healthy skin which can cause tissue morphology.

Sharp debridement of corns and calluses is the most commonly occurring treatment and is believed to be effective however; there is little evidence to support this through systematic research (Potter and Potter 2000a). McCourt (1998) states, "*plantar callus seems to be of intrinsic interest only to podiatrists, its repeated removal every few weeks being a major feature of many treatments.*" Some studies have investigated the pain relieving properties of scalpel debridement, one based on 79 patients, found there was a statistically significant reduction in pain after treatment though this was not sustained (Redmond, Allen et al. 1999). Davys et al's study (2004) also found that removing painful plantar callus with a scalpel in people with rheumatoid arthritis did relieve pain, though this was short lived and a similar outcome was found in the control group that had sham callus removal. This was described as "*blunt-edged scalpel paring of the callus with delivered a physical stimulus but let the hyperkeratotic tissue intact*" a process to allow patients to believe callus was being removed when it was not. Though this study was a randomised controlled trial, it was not double blinded and only small numbers of patients were used. Though Timson and Spooner (2005) also found that callus removal with a scalpel did give short-term pain relief in their small study, wearing simple insoles accorded more significant pain relief for a longer period of time

than scalpel debridement. They concluded that insole therapy could be a suitable substitute for reduction of painful calluses. Other alternatives to scalpel reduction have been investigated including the application of different medicaments (Springett 1997; Potter 1999) or carrying out more radical surgical treatments (Wilkinson and Kilmartin 1998). Anderson and Burrow (2001) removed painful corns via electrosurgery and found 52% of them resolved. Another small study using a surgical technique (Gibbard and Kilmartin 2003) did reduce the frequency of regular debridement, but was unable to resolve a number of lesions, which then had to undergo revision surgery.

It has been postulated by Dawber et al (1996), that callus is caused by increased pressure whether this is due to a tight shoe or a foot deformity, such as a bunion. Some studies have investigated the role of pressure in the formation of callus (Robertson and Delbridge 1985; Potter and Potter 2000a) but as yet, no definitive conclusions have been made.

2.2 A REVIEW OF FOOT SURVEYS⁴

There is therefore, a paucity of research evidence to support the efficacy of these traditional types of treatments. To investigate the potential need for core podiatry care a review of foot surveys in the UK and overseas was conducted to identify any similarities and differences and assess the reported range and incidence of foot problems. To locate appropriate studies a hand search was conducted of *The Chiropodist* and its successors, *The Journal of British Podiatric Medicine* and the *British Journal of Podiatry* from 1982 to 2004 using the search terms: *foot problems, incidence, prevalence, epidemiology, corns and callus*. Other British podiatry journals published during this time were excluded as they were not easily accessible or were not peer reviewed. The time frame was chosen, as these journals could be easily located from a colleague's personal library collection and when referring to a list of foot surveys published in *The Chiropodist* between 1946 and 1969 (Winder 1970) the majority of previous British studies had been conducted on children or were screening for specific foot problems such as warts. The Ovid Online database was also searched using the same search terms and with the same time frame. A number of articles were included outside the selected time frame if they were seminal works, consisted of a large sample

⁴ This review has been accepted for publication as the following article: Farndon L.J., D.W. Vernon, et al. (2006). "What is the evidence for the continuation of core podiatry services in the NHS: A review of foot surveys." *The British Journal of Podiatry* (in press).

group or had been referred to in more recent publications. Disease specific epidemiological studies surveying people with diabetes or rheumatoid arthritis were excluded, as the emphasis of this literature review was to ascertain the types and amounts of foot problems experienced by the general population. A summary of the main findings of each project is illustrated in Appendix II:I.

2.2.1 The United Kingdom

One of the first published surveys to identify the prevalence of foot problems in the UK was conducted by Clarke (1969) and estimated that 70-90% of people over 65 years of age had trouble with their feet. A large study carried out by Kemp and Winkler (1983) looking at need and efficiency in foot care; also investigated the foot care requirements of mainly older people. They were divided into three groups: those who had not yet applied for podiatry care, those on a waiting list and those currently receiving it. Fifty-nine per cent of the first group reported that they had foot trouble, though the total number in this group was relatively small; of the group waiting for treatment, 32% were deemed to require urgent care after a podiatry assessment and 91% of the current patients were receiving maintenance care. Sixty-one per cent of patients waiting for treatment had difficulty providing their own nail care. This paper concluded that podiatry services were ineffective as podiatrists were providing nail cutting, though others could carry this out and there was a high amount of maintenance care being offered to patients, which is normally debridement of nails, corns and calluses. The authors felt a more preventative education and curative strategy should be employed to improve the situation. These findings were echoed in a large regional survey conducted by Brodie et al (1988). They concluded that many foot problems could be prevented if people wore more appropriate footwear and some could provide their own self-care including nail cutting where applicable. They suggested a change in the philosophy of patient care to concentrate on more curative aspects of podiatric practice.

Cartwright and Henderson's (1986) survey also involved people aged 65 and over. Their results were based on 543 subjects, all of whom took part in an interview and a sub-section then received a foot examination. Over half the group had foot pain or discomfort and stated that their feet caused them trouble, with the most commonly reported foot care need being problems with nail cutting. Calluses, nail problems and corns were also commonly reported foot problems. After examination by a podiatrist, lesser toe deformities, bunions, thick nails and corns and calluses were found to be the

most frequent foot care problems. Over a quarter of those surveyed did not receive podiatry care, though it was deemed necessary after the examination. The authors concluded that the demand for the podiatry service was greater than the provision, which may increase mobility problems in the elderly. As this study was based on a self-selected sample, some bias may have been introduced and the definitions used to describe foot problems were different for the subjects and podiatrists, which again may have affected the results. An inability to cut toenails was also classed as a foot problem rather than a difficulty that may be associated with mobility problems.

A number of studies backing up this earlier work have suggested that there is an unmet need for podiatry care. A Welsh survey involving 1286 people aged over 70 years found that 52% required help with foot care and between 15-23% were unable to provide their own nail care (Vetter, Jones et al. 1985). A similar sized survey established that 30% of people aged over 65 required podiatry care but were not yet receiving it (Elton and Sanderson 1987). The most commonly occurring conditions were thick nails, foot deformities and corns/calluses. This study however presented results from two different methods of enquiry: patient interviews and patient foot examinations. As 13% of the results were based on respondent interview the incidence of some more technical foot deformities may have been under-reported. It did however, find some foot problems were more prevalent in women than men, which concurs with a number of other studies. Another assessment of very elderly people (over 80 years) found that 70% had trouble looking after their feet and 30% suffered from painful feet (White and Mulley 1989). Corns and calluses were the most common foot conditions, followed by nail pathologies and toe deformities. Fifteen people were found to require podiatry care but were not receiving it, whilst two-thirds of those getting treatment attended a private practitioner. Corns and calluses were found to be the most prevalent foot conditions suffered by another cohort of very elderly people in Crawford et al's study (1995) and 96% of the sample reported they had problems cutting their own nails.

A similar finding was found in a survey of 560 people aged over 65 (Harvey, Frankel et al. 1997). Fifty-three per cent were found to suffer from three or more foot problems including toe deformities, corns and calluses, ingrowing toenails and thickened toenails. Though a high number of foot problems were reported, only 33% of those reviewed had received podiatric treatment in the previous year. Dawson and colleagues (2002) in a more recent study found that 83% of women between the ages of 50-70 years had one or

more foot problem; the most common conditions were corns, bunions and lesser toe deformities.

2.2.2 The United States

UK surveys share common findings with surveys in countries overseas. An early US study of over 1000 people living in nursing homes (Merrill, Frankson et al. 1967) found that the most common foot problems were corns, bunions and calluses, with women suffering from these conditions more frequently than men. Black and Hale (1987) also found corns and callus were more prevalent in women and foot problems affected activities of daily living. Helfand's (1968) investigation of older people living independently again found the most commonly reported foot problems were corns and calluses and 74% of people suffered from foot pain.

An extensive postal survey involving 119,631 individuals throughout all sectors of the United States in 1990 and reported by Levy (1992) found that foot problems were more prevalent in older people. The most commonly occurring ones were those affecting the toenails, corns/calluses and bunions with the author concluding that in an ageing society, chronic foot problems would rise significantly. Greenberg (1994) compared the findings of this study with another survey conducted two years later and found similar reported conditions though the frequency was much higher. Levy's study only asked respondents to record foot problems suffered over the preceding twelve months, which may account for the discrepancy. Two smaller studies conducted by the same authors found that between 30-84% of older people had one or more foot problem (Helfand, Cooke et al. 1996; Helfand, Cooke et al. 1998). The first found over half of the cohort had corns/calluses; problem nails or bunions and the second found similar conditions were present though in smaller numbers. Helfand (2004) in his more recent study presented the results of a thousand people after an extensive podiatric assessment, all of whom lived independently and were aged over 65 years. The sample consisted of people who were existing patients at a podiatry clinic or had been referred for an assessment or treatment so the conditions reported may be higher than in a randomly sampled population. Seventy five per cent reported painful feet and 64% had one or more foot deformity. The most commonly occurring foot conditions found were dystrophic nails (94%), hyperkeratosis (77%), bunions (53%) fungal toenails (59%), and thickened nails (47%). Between 2 – 4% of the sample group were found to have an infection or ulceration with 11% presenting with a pre-ulcerative lesion and 36% were

wearing inappropriate footwear. An assessment of the vascular and neurological status of the lower limbs was included which identified a high proportion of the study group had peripheral arterial disease and/or sensory loss, whereas the medical assessment identified that 42% had arthritis and 57% suffered from diabetes. This study concluded that older people often have a higher incidence of podiatric conditions in conjunction with a multitude of medical and neurovascular problems, which can affect mobility and quality of life. It was recommended that there should be an integrated team approach to the education, treatment and management of the podiatric and medical needs of older people to improve outcomes.

Crews et al's study (2004) concentrates on people with severe mental illness and indicates that this client group reports a higher number of podiatric problems than the general population, the most commonly occurring conditions are; foot pain, nail disorders and corns/calluses. The majority of studies have assessed the foot conditions of people who live independently, in residential care or are in a hospital. One small survey involving homeless people of all ages, found they suffered from many of the conditions already mentioned in addition to fungal diseases, neurological problems and foot injuries (Robbins, Roth et al. 1996).

2.2.3 Other Countries

An Italian study conducted by Benvenuti et al (1995) found older people living independently had a large incidence of corns or calluses (65%) but suffered to a lesser degree with thick toenails and toe deformities. Foot problems were associated with the presence of pain and affected activities of daily living. Foot pain was also reported to be a significant problem in 60% of older people in a Dutch study though specific types of foot problems were not described (Gorter, Kuyvenhoven et al. 2000). A small Australian study involving people over 65 years of age, designed to investigate foot care awareness (Munro and Steele 1998), found that women suffered from significantly more foot problems than men. These were hard-thickened nails, skin problems, corns, swollen feet, bunions and arthritis. Over half of the sample group had never visited medical or health personnel about their feet, though 71% had foot problems. A similar sized survey of people aged between 75-93 years (Menz and Lord 2001) also found women suffered from more foot problems than men but 87% of the entire group had at least one foot problem. Foot deformities were found to be the most frequently occurring conditions but corns and calluses were found to be less prevalent.

2.2.4 Foot Surveys of People with Diabetes Mellitus

Though the majority of surveys involving the diabetic foot concentrate on identifying particular complications associated with the disease such as ulceration, infection (Holewski, Moss et al. 1989), amputation (Bild, Selby et al. 1989) and the presence of neurological (Thomson, Masson et al. 1993) and vascular insufficiencies (Mc Neely, Boyko et al. 1995; Plummer and Albert 1995), some have investigated the presence of more commonly occurring foot problems. Reiber and colleagues (2002) found that 32% of their cohort with an average age of 62 years had a moderate toe deformity. Slightly lower figures were reported in a study of 749 males of a similar age where 20% were found to have a deformity of one or more toes (Boyko, Ahroni et al. 1999). An investigation of the incidence of clawed toes across all adult age groups, found that 38% of patients were classed as having this deformity after examination by a podiatrist (Farndon 2000).

Borssen and others (1990) in their study of 375 people with diabetes aged between 15 and 50 years established that over 30% had some form of lesser toe deformity and over 46% had callus. Another report identified that over 50% of the surveyed 459 individuals with diabetes had forefoot calluses, over 30% had corns and over 19% had toenail problems (Ronnemaa, Hamalainen et al. 1997). Litzelman (1997) details the results from 352 patients 40 years and older and found 64% had a fungal toenail infection and 15% had ingrown toenails. Women had a higher incidence of first toe deformities, corns and calluses than men, which concurs with survey results of people without diabetes previously mentioned. It appears that people with diabetes suffer from some similar common foot problems to those in non-diabetic populations, though podiatry care is more readily available to the first group (Farndon 2004). This is due to the potential to develop serious foot problems in diabetes, which is associated with an underlying disease of the vascular and nervous systems.

2.2.5 A Summary of Results

The incidence and types of foot problems found in different populations are based on survey evidence either self-reported or conducted by an expert, most commonly a podiatrist or doctor. The populations studied are most commonly older people but their residential status varies from those living independently to people in community or hospital care (Menz and Lord 1999). The results from the majority of studies are

descriptive though some have investigated the statistical significance of pain and daily living activities associated with foot problems. The main foot conditions reported across all communities are nail problems, corns/calluses and toe deformities. Most of these problems require core podiatry treatment.

Surveys using experts to diagnose foot problems found a higher incidence of all conditions when compared with self-reported findings. Between 20-78% of people suffer from corns/callus and bunions, between 28-56% have toenail problems and 20-49% have lesser toe deformities in studies where an expert examines the feet. The most commonly self-reported foot problems are corns/calluses (16-48%), toenail problems (7-45%) and bunions (13-25%). The lower incidence of all foot pathologies in the self reported groups might be due to a lack of knowledge to adequately recognise some more complicated conditions such as deformities. There are also few reports looking at functional foot problems. It is unclear whether this is due to this area of podiatric practice being relatively new during the time that many of the surveys were conducted, so the knowledge to diagnose problems of foot function may not have been widely available. It could however, be a result of researcher bias, where only certain (the most common) foot problems were screened for. Some studies used “*difficulty cutting nails*” as a criterion for a foot problem, which gives important information about the potential unmet need for podiatry but is a task rather than a foot problem and is more dependant on the mobility of the individual.

2.3 RESOURCE ISSUES IN PODIATRY

A number of the surveys reviewed show a trend for women to have more problems with their feet than men, and some reflect an unmet need for podiatry care. The combined results of these reports illustrate that large numbers of people suffer from common foot problems - corns, calluses and deformities and many of them are elderly. Some are also unable to provide their own nail care due to problems with either mobility or presenting with a pathological nail condition that makes self-care difficult. Merriman (1993) in a review of the purpose of podiatry services uses evidence derived from some of the foot surveys previously mentioned and concludes that a great deal of podiatry care involves palliative treatments, which are often for life. The components of this type of care involve diagnosis of the foot problem, treatment and health education, with many treatments concerning nail cutting, the sharp debridement of corns and calluses and the application of padding and strapping. This traditional approach still continues though

there has been an increase in the podiatric scope of practice over the last twenty years to include sports injuries, biomechanics, foot surgery and the care of high-risk patients. These new developments in conjunction with a competition for resources in NHS podiatry departments has led a more direct approach to care being adopted in the last decade.

Current figures show a total of 2 million people are treated by NHS podiatry services, 769,000 of these are new episodes of care of which 56% are for older people (Health and Social Care Information Centre 2005). This high demand has resulted in rationing of podiatry services in some areas. A Scottish study of 560 older people (Harvey, Frankel et al. 1997) found that though 53% reported suffering from two or more foot problems only 33% had received podiatry care in the previous year. Cambridge and Huntingdon health authority discharged 5,000 longstanding patients with a 'low risk' due to a budget cut of £145K justified by a lack of evidence to support core podiatry treatment (Campbell, Bradley et al. 2000). As a result of this, research to investigate the associated risks to patients who have had podiatry care taken away from them, has been carried out. It found that some people suffered from deterioration in their foot health if they did not seek alternative professional care (Campbell, Patterson et al. 2002). This has led to criticisms about the restriction of podiatry care from both patients and groups representing older people (Age Concern 1998; Jones, Lindsey et al. 2005).

Some tasks traditionally carried out by podiatrists, especially nail care, are now being delegated to others. The use of assistants to provide this type of treatment has been introduced over the last thirty years as well as a more recent change to encourage relatives and carers to also do this (Moore 2002). This was a recommendation of Feet First, a report by the joint Department of Health and Chiropody Task Force which advised the increased use of assistants to perform simple podiatry tasks in conjunction with an expansion in more specialist podiatry services including foot surgery and biomechanics (NHS Executive 1994). Nail care provision for non-pathological nails by NHS podiatrists continues to be a hotly debated issue. Zarnecki, (2000) considers that podiatrists should focus on functional foot problems not "*quasi-cosmetic social care*" and patients should take control and responsibility for their non-medical needs that could include nail care.

2.3.1 Re-Profiling Services

In conjunction with a new philosophy to encourage more self nail care, a number of podiatry departments have begun to introduce re-profiling strategies to ensure that those who are receiving care need it the most. Some use a system to identify risk status, with those with a low need being discharged to self care, allowing services to concentrate on people at a higher risk (Smith 1982; Tippins 1998). Programmes that encourage others to provide 'social' nail care have also been developed to allow podiatrists to devote more time to specialist areas. Moore, Farndon et al, (2002) described the reduction of a large podiatry waiting list after the introduction of an education package for low risk patients enabling them to manage their own foot care. This new way of working allowed those patients with the greatest need (high risk) to be assessed and treated within two weeks of applying for treatment resulting in less low risk patients being taken into the service, as they had been empowered to care for their own feet. Waxman et al (2003) compared a similar self-care policy with usual podiatric treatment in a group of older people through a randomized clinical trial. At 6 months, the patients who entered the self-management programme had lower foot disability scores than the usual care group, highlighting that self-foot care for suitable patients did not have a detrimental affect on foot health and may be an alternative long-term option that is cost effective.

Although Lever (1999), claims that re-profiling strategies are advantageous as they allow a targeted approach to care to be established, most have been introduced as a result of disinvestment or lack of investment in podiatry services. Between 1995 and 1998 approximately 2.4 million people were treated by NHS podiatry services annually (Department of Health 1998), but since then this figure has fallen year on year to 2 million in 2004/05 (Health and Social Care Information Centre 2005) which may be reflecting the impact of re-profiling and cost improvement programmes. In 2001 a survey of 32 podiatry services in the UK showed 75% now restricted access for new patient referrals whereas only two services had these measures in place before 1995. Most departments determined this according to risk status to ensure those who needed the care the most, received it (Mandell 2001).

A study of service users, GPs and podiatrists attitudes to the potential for re-design of a podiatry service found a needs-based service incorporating more curative treatments where low risk patients are discharged to self-care or voluntary organisations provide

this, was popular with podiatrists (Macdonald and Capewell 2001). However, the majority of service users were opposed to this. This illustrates that though re-profiling has provided a way to give a more targeted approach to podiatry care often within current funding, it is still not always well liked by patients. The lack of a persuasive evidence base to support core podiatry was thought to be the reason for the vast contraction of some NHS podiatry services at the end of the last century (Borthwick 1997). Whether the provision of NHS podiatry care will increase in the future is unclear, but there is a desperate and urgent need to develop alternative strategies to cope with the current demand whilst providing an adequate evidence base to explore and justify if core podiatry treatment is truly beneficial.

2.4 EVIDENCE-BASED PRACTICE

The concept of evidence-based practice (EBP) in health care was popularised by Archie Cochrane in the 1970s and is based on the principle of using current evidence and individual clinical expertise in decisions and treatment about patient care (Sackett, Rosenberg et al. 1996). The professional literature concerning EBP is dominated by medicine and quantitative research methods, where expert opinion is supplemented by empirical evidence in the form of randomised controlled trials (RCTs) and meta-analyses (Bristow and Dean 2003). To aid in determining the reliability and rigour of research findings, hierarchies of evidence were introduced, after first being popularised by the Canadian Task Force in 1979 (Evans 2003). A number of them have been described which score research findings according to effectiveness and use systematic reviews or RCTs as providing the highest level of evidence (Guyatt, Sackett et al. 1995; NHMRC 1995).

Though EBP is important in modern healthcare and was first embraced by the medical profession, Dubinsky and others (1990) claimed that only 21% of interventions were based on high quality researched facts in 1990. Nursing and allied health professions have been slower to adopt the EBP principle; this may be due to the skill-based practice of these professions (Bristow and Dean 2003) though a number of other problems have been suggested as potential barriers. A joint report published in 2001, (HEFCE and the Department of Health) found that research funding for the allied health professions was severely lacking and should be increased to help develop research capacity amongst clinicians in order to support evidence based practice. Professional attitudes to the whole concept have also been cited as an obstacle (Appleby, Walshe et al. 1995) plus

lack of time (LeMay, Alexander et al. 1998) and insufficient skills to adequately carry out the process (McAlister 1999).

Five steps have been described in the process of EBP (Rosenberg and Donald Arosberger 1995; Graham, Gelfand et al. 2004).

1. Formulate a clear clinical question for a patient's problem
2. Search the literature for relevant clinical articles
3. Evaluate the evidence for its validity and usefulness
4. Implement useful findings in clinical practice
5. Review and evaluate implementation

EBP can have a number of benefits as it allows the integration of education with clinical practice, can improve continuity and uniformity of care and helps the better use of resources by evaluating the effectiveness of treatments and services (Rosenberg and Donald Arosberger 1995). However, this is firmly based on the medical model, its main focus being on effectiveness. Evans (2003) has criticised this method, as it does not take into account the patient's perspective and the feasibility of the intervention. He describes an alternative framework that can be used for evaluating health care interventions and includes some qualitative research methods. In this hierarchy, observational studies are ranked as the second level of evidence as in some instances they have been shown to produce similar results to RCTs (Benson and Hartz 2000). Interpretive studies are also placed in the same section as they can contribute to evidence by giving the patient's view of particular interventions and experiences of certain treatments (Van der Zalm and Bergum 2000). Descriptive studies such as surveys and case studies; focus groups and action research are ranked in the next section as they can help in the evaluation of programmes of care but are often based on smaller numbers (Evans 2003). Though systematic reviews are still believed to be the strongest level of evidence in this hierarchy, the value of qualitative studies are considered and included to give a broader focus. Small qualitative studies are now being 'nested' in larger RCTs to try and give more sensitive, patient centred data to improve the overall evaluation of a specific treatment or drug. However, this does not always elicit useful information as Campbell and others (2003) describe a low concordance was obtained between interview and questionnaire data in a study to assess the effectiveness of physiotherapy treatments for knee pain. They concluded that more honest results were found via the interviews as these were conducted by a non-health professional in

patients' own homes compared with the completion of a questionnaire in the presence of a doctor and in a hospital environment. However, Donovan and colleagues (2002) describe a series of useful changes that were made to information given to potential patients in a randomised trial investigating the effectiveness of different treatments for prostate cancer. Semi-structured interviews were used to assess the reasons men did or did not want to participate in the study. Subsequent modifications made based on these preliminary qualitative results, increased patient recruitment by 40%.

2.4.1 The Evidence-Base of Podiatry

In podiatry, the principles of EBP have more recently become important after recommendations were made to increase the role of research and development for the profession (NHS Executive 1994). The increased use of qualitative studies has also been advocated to take into account the patient/podiatrist relationship and other social and psychological factors, which affect the way a clinical profession, and service may be viewed (Editorial 1997b). Before research can be conducted and its findings implemented into clinical practice, barriers that may prohibit it and an individual's understanding of published reports should also be examined. Payne (1999) attempted to do this by conducting a postal survey of Australian podiatrists. His results were based on over a hundred responders and found that financial issues were the main barriers to carrying out research in clinical practice, with the lack of a mentor to help and advise also being cited as another difficulty. He concluded that if strategies were implemented to overcome these problems, podiatrists would have more opportunity to conduct their own research. Bristow and Dean (2003) surveyed 2000 podiatrists on their awareness, knowledge and opinions towards EBP. The results, based on 940 returned questionnaires, found that most practitioners thought EBP was a good idea though the majority were unsure as to whether their current practice was effective. A large number of respondents reported they had limited knowledge of EBP and clinical effectiveness though, when given specific criteria on the EBP stages, most practitioners felt they practised the principles regularly. This report concludes that further training in conjunction with support and appropriate time is required to improve and increase EBP principles.

Though the role of EBP is becoming more prominent, some podiatric research has been criticised for being of poor quality. Porthouse and Torgerson (2004) undertook a review of the number and quality of RCTs carried out in podiatry between 1997 and

2002. They found only six had been conducted during this period and most of them were unsatisfactory. They criticise a lack of evidence base for many podiatric interventions and question whether some of the rudiments of care being provided may actually have detrimental effects. They recommend that more high quality research in the form of correctly carried out RCTs should be conducted in the field of podiatric medicine to provide a firm and robust evidence-base for practice.

2.4.2 A review of published research in podiatry conducted over a 3 year period

This chapter has already discussed why there is a need for core podiatry treatments, highlighted by data from a review of foot surveys. To ascertain what evidence exists to support this area of practice, a review of research involving the foot was conducted over a three year time scale. Articles published between 1999-2002 which formed a database produced by the Podiatric Research Forum (Vernon 2002), were reviewed. Four hundred and thirty six separate references were identified, on 53 topics and in 29 different journals written in English. The greatest numbers of articles were found on the subject of biomechanics, with 95 references, this was followed by foot surgery (91) and diabetes (80) (see Appendices II:II and II:III). These are all deemed to be specialist areas in current practice and similar findings were reported after a retrospective analysis of one American podiatry journal over a 9-year period (Menz 2002). Only 10 articles were found which were associated with core treatments involving the nails and soft tissues which illustrates the low importance given to this area, as definitive conclusions regarding many aspects of core practice have still not been made. Studies conducted on patients with specific systemic diseases affecting the foot (e.g. diabetes), were excluded, as it was the core type of care for people without a high-risk status that was the focus of this thesis.

2.4.3 The hierarchy of evidence for articles involving nails, corns and calluses

Hierarchies of evidence have already been discussed in this chapter as a way to assess the scientific standard of research, with systematic reviews (NHMRC 1995) or RCTs (Guyatt, Sackett et al. 1995) believed to demonstrate the highest quality investigations. The level of effectiveness of each research study including nail, corn and callus treatments was determined using the criteria described by the Centre for Reviews and Dissemination (NHS Centre for Reviews and Dissemination 1996) where five levels of research are described:

1. Experimental studies (RCTs)
2. Quasi-experimental studies (no randomisation)
3. Controlled observations studies with control groups (cohort or case control)
4. Observation studies without control groups
5. Expert Opinion based on pathophysiology, bench research or consensus

Fungal Toenails

Only one of the four articles appraised was a level 1 study and this assessed the effectiveness of topical fungal preparations for fungal toenails by reviewing findings of two large RCTs and conducting a meta analysis on the results of 10 projects using the same criteria (Gupta and Joseph 2000). The authors conclude that the use of a specific nail lacquer (Ciclopirox 8%) gave a better cure rate when compared with a placebo.

The remainder of the articles about fungal nail treatments were all level 4 studies as no controls were used. Bohn and Kraemer (2000) used the same medicament described in the first study to examine penetration and distribution within the toenail. Wadhams and colleagues (1999) illustrate the use of surfactant allantoin and benzalkonium chloride solution and a further study examined the effectiveness of terbinafine/miconazole nitrate 2% tincture compound (Ricketti 2001). All found topical anti-fungal agents were useful treatments for fungal nail infections, but none of these investigated the effectiveness of core podiatry treatment, that is cutting or debriding toenails, either in conjunction with antifungal treatment or as an alternative.

Skin Conditions

Five articles were found involving skin conditions; all were level 4 studies except one, which was a level 3. The level 3 study used a case control method to examine peak plantar pressures after scalpel debridement of callus (Potter and Potter 2000a) but only small numbers of patients were used in each group. Two studies were double blind and looked at the use of topical preparations for the treatment of plantar xerosis, but one was not randomised (Uy, Joyce et al. 1999) and the other though randomised did not use a control group (Jennings, Alfieri et al. 1998). Potter (2000) evaluated topical preparations for dorsal corns and calluses in a randomised trial though again there was no control group. Regrowth patterns of plantar callus after debridement were also investigated in a small study (Potter and Potter 2000b). The final article investigated

the non-surgical treatment of verrucae using cryosurgery and a topical preparation in an observational level 4 study (van Brederode and Engel 2001).

From these 10 articles, only 2 really examined the effect of core podiatry treatment; nail care and using a scalpel to reduce corns and calluses. This concurs with an evaluation of the six RCTs that were conducted in podiatry between 1997 and 2002 (Porthouse and Torgerson 2004), which also found none investigated the effects of core podiatric care. There is therefore very little evidence to show that these types of podiatry treatments are effective both from the small number of articles published on this subject and the poor quality of most of the research when the hierarchy for grading evidence is applied. This has been cited as a possible reason for the ease that budgetary cuts have been made to some NHS podiatry departments in the past (Borthwick 1997).

2.5 OUTCOME MEASURES

The need to investigate the value of core podiatry is therefore apparent as it is believed to still form part of current podiatric practice but has been threatened due to the lack of evidence to support it. One way to assess its effect would be to use an outcome measure, as they are designed to look at areas of social well being, mental or physical health, the factors included being seen as indicators for good health (Meenan 1985). There are many different outcome measures available all of which should be reliable, valid, generalizable and sensitive (Meenan 1985). Quality of life (QoL) measures have also been used to evaluate patients' experiences of disease or the effect different treatments have on specific conditions (Wrobel 2000). There are over 250 different methods of measuring QoL however, some have been criticised for not taking into account specific factors which individuals may feel are important in their own lives (McGee, O'Boyle et al. 1991).

2.5.1 Outcome measures in Podiatry

In the last decade, specific podiatric outcome measures have been developed to measure the efficacy of different types of interventions and treatments. A review of these was conducted to determine if one or more of them would be suitable to assess the effect of core podiatric care.

The Foot Function Index (FFI) was formulated and validated in a study by Budiman-Mak et al (1991) to assess in terms of pain, disability and activity restriction; the impact

foot pathologies associated with function. It comprises of a self-administered questionnaire with 23 items divided into 3 sub-sections and was first used on patients with rheumatoid arthritis. The scoring system is based on the supposition that the number of situations in which an individual experiences pain, difficulty or limited activity due to a foot problem, in combination with the intensity of that experience in each situation, determines how severely foot function is impaired. Therefore, the higher the FFI score the greater the impairment. This index was later evaluated in a study comparing the FFI scores of both feet (side-to-side reliability) in 30 people with rheumatoid arthritis and was found to be a reliable tool (Saag, Saltzman et al. 1996). Domsic and Saltzman (1998) modified the FFI to form the Ankle Osteoarthritis Scale which assesses symptoms and functional problems associated with osteoarthritis of the ankle joint.

Bennet and Patterson (1998) describe the development of another outcome measure, The Foot Health Status Questionnaire (FHSQ). This is designed to measure foot health related quality of life and consists of three sections. The first section measures foot health from a score of 0 representing poor foot health to a score of 100 for optimum foot health. The second section measures generic measures of health and is based on the Short Form 36 (SF36) quality of life questionnaire (Ware and Sherbourne 1992). The final section measures demographic variables, such as socio-economic status and satisfaction. A pilot study was undertaken using the FHSQ on 107 subjects attending a podiatry clinic. Their presenting problems were divided into those with minor problems (including corns, calluses and nail deformities), those with foot deformities and people with more acute problems. The minor foot problem group has the greatest foot health in terms of pain and foot function when compared with the other two groups. The authors concluded the results of this study gave similar information to that derived from clinical experience, but could provide a tool to measure the success of a podiatric intervention.

The FHSQ was compared with the FFI by Bennet et al (1998) on 111 subjects who completed both questionnaires. A subsequent clinical examination found the FHSQ was a more suitable measure than the FFI as it could help researchers identify changes in foot health status resulting from a therapeutic or surgical intervention. Landorf and Keenan (2002) also compared the two measures to assess the effectiveness of foot orthoses in people with plantar fasciitis. They also found that the FHSQ was more sensitive in measuring health related quality of life in this client group and

recommended this should be the preferred choice when assessing the effectiveness of foot orthoses. The outcomes of podiatric surgery in 140 patients were investigated using the FHSQ (Bennett, Patterson et al. 2001) and suggested that surgery gave favourable results for patients in relation to pain, physical function and improved general foot health. Positive results were also found in a similar study conducted in the UK measuring FHSQ scores before and after podiatric surgery, with the UK study demonstrating comparable results in all but one criterion (Claisse, Jones et al. 2005). However, though the FHSQ was found to be further validated in a study by Nancarrow (2001) when assessing the effectiveness of insoles, it was found that this may be a time-consuming way of finding out if a podiatric intervention has worked. It was suggested that the same information might be elicited by simply asking the patient. Barnett et al, (2005) also criticise these measures as they have been designed by clinicians and do not take into account the patient's view and perception of their foot health.

Some measures have been developed which are more patient centred. Garrow (2000) developed and validated a tool to measure foot pain and disability sensitive to individuals with a range of different problems affecting mobility. It consists of 19 questions regarding daily activities and asks about pain experienced whilst conducting these, during the past month. There are three responses - *none of the time, on some days, on most or everyday*. This measure has been recommended for use in a variety of clinical and population settings and was later used by Waxman and colleagues (2003) in an RCT measuring the effect of a self care foot programme for older people. The Podiatry Health Questionnaire (PHQ) was developed to be self completed and was evaluated by Macran et al (2003) in individuals across four UK podiatry departments, where it was found to be a useful tool to assess foot-related health. Another measure specific to people with rheumatoid arthritis has been recently published called the Foot Impact Scale (Helliwell, Reay et al. 2005). It was designed based on the results of patient interviews and a postal survey and consists of a 51-item questionnaire investigating impairments, footwear, activities and participation. Initial results suggest the tool has external validity and is reliable. The Bristol Foot Score (Barnett, Campbell et al. 2005), was also formulated after consultations with groups of patients and on an individual basis and consists of 15 items with various responses for each. Each possible answer for the different questions are numbered, the total score is calculated and the higher the final score the more problematic an individual perceives their foot problem to be. It involves three inter-related topics; foot pain, footwear and general foot health.

Once developed, it was used to assess outcomes of nail surgery and found that the pre and post-operative scores for the sample group showed a significant difference (the post-operative scores being lower), suggesting nail surgery was beneficial. Interestingly, when compared with an existing scoring system used by the local podiatry department to determine access to the service, there was no correlation between the two measures. The authors suggest that patient as well as practitioner views should therefore be considered when assessing the usefulness and efficacy of different podiatric interventions.

In the current arena of evidence-based practice, a standardized, validated outcome measure would give useful information to both podiatrists themselves and service commissioners on the effectiveness of specific podiatric interventions. However, a large number of patients would need to be included, across different centres to gain data that is representative and meaningful. This study would also need to be prospective involving a long time frame to assess the success of different podiatric treatments conducted on a number of occasions over many months or years. Therefore, after reviewing the literature it was decided to adopt a more qualitative approach. One major reason for this was to include the views and experiences of patients to give more specific and sensitive information. It would also fit with the current patient centred philosophy ingrained in the NHS modernisation agenda.

2.6 NURSING MODELS

By determining the modern role of podiatric practice, assessing its effect from a patient perspective and producing a new or re-definition of core podiatry, a model for practice could be developed which should be suitable for the delivery of services within the NHS. The development and use of models is not common in podiatry but they can be frequently found in nursing as they aim to “*capture and define the nature of nursing*” (Heath 1998), though Fawcett (1984) believes they are more conceptual and therefore reflect an “*abstract system of global concepts*” which in turn can generate theory. In nursing, many have been developed in the last two decades around the four main areas reflecting practice: person, environment, health and nursing (Fawcett 1984). Meleis (1985) divides models into three areas of different theory: needs-based which includes Roper et al’s Activities of Living (1980) and Orem’s Self Care Models (1985); interaction represented by King’s Open System Model (1981) and outcomes including Roy’s Adaptation Model (1980), Neuman’s Health Care System Model (1989) and

Roger's Science of Unitary Human Beings (1986). Nursing models have been developed to answer the question: "What is nursing?" (Reilly 1975) to produce an original body of knowledge which Wimpenny (2002) believes enables nursing to move away from the medical model. They have been widely accepted and incorporated into practice though as Tierney (1998) summarises, they are not always practical, can restrict alternative possibilities for theory development and may no longer be relevant as nursing knowledge has developed beyond the need for conceptual models. Silva (1986), criticises their lack of empirical validation whilst Tierney (1998) further states that no single model has been produced to encompass the whole of the nursing process, merely a number of co-existing models are present and reflect different aspects of care.

As knowledge underpinning the evidence-base and philosophical leanings of podiatric practice is either scarce or non-existent, the production of a model for core podiatry based on findings from this thesis and on the elements found in many nursing models if applicable, would be beneficial and go towards answering the research question: What is the practice of core podiatry?

Summary

It is believed that traditional podiatry care involves the treatment of nails, corns and calluses which have been shown to be some of the most common foot problems experienced by the population, especially older people. Though up to 80% of people can suffer from foot problems, only 2 million were treated by NHS podiatry services in 2004/05. The overwhelming demand for podiatry care has led to re-profiling by some services to concentrate treatment on those with the greatest need. Targeting care at specific high-risk groups has resulted in reduced provision of core treatments by some departments, which has been accompanied by budgetary cuts to core services due to the poor evidence base to support it. Increasing the evidence to keep or discontinue this type of podiatry care is therefore an important issue for the profession as much of the recent published research concentrates on the more specialist areas of biomechanics, surgery and care of the high-risk foot.

These issues have led to the formation of the main research aim, to determine the function and purpose of core podiatry practice. Three different phases of research were then carried out; each with their own related research questions and aims. The first phase investigated what constitutes current podiatric practice by surveying podiatrists. The second phase evaluated the effectiveness and value of core podiatry by interviewing a sample of patients, all of whom were older people. The third phase aimed to define core podiatry through a concept analysis method using podiatry literature and data from the first two phases of the study. Each phase follows on chronologically from the last, with the conclusions informing the next stage of work. The methods used for each phase and the rationale for using them are described in more detail in the following chapter.

CHAPTER 3

METHODOLOGIES

3.1 THE PHILOSOPHICAL BASIS OF THE STUDY FOR PHASES I, II AND III

Philosophical values are bound tightly in the research process with a basic belief system or worldview, known as a paradigm, guiding an investigation. The school of philosophy underpinning this work is derived from analytic philosophy, which according to Baldwin (2000, p. 29) aims to investigate multifaceted structures, refining them to simpler elements to remove ambiguity. This was associated with the logical positivists who wished to use: “...*rigorous accounts of logic and of meaning in attempts to penetrate, and in some cases to dispel, traditional philosophical questions*” (Crimmins 2006). Linguistic or ordinary language philosophy has developed from these initial roots where the emphasis was put on language and the meaning of words and Gottlob Frege was a dominant figure believing language consisted of symbols representing concepts (George and Heck 2000, p. 296-297). This school was also informed by the writings of Wittgenstein who adopted a dispositional view according to Rodgers (2000b, p. 16-20) in his later works, specifically *Philosophical Investigations*, as he believed concepts were associated with habits or functions of certain behaviours. Gilbert Ryle further developed areas of linguistic analysis by examining the use of a concept to dissolve any philosophical confusion (Lyons 2000, p. 788).

This philosophy has guided the development of concept analysis, as examining the common use of words can reveal meaning (Rodgers 2000b, p.16-20). Subsequently, nurse researchers and theorists have provided methods (Chinn and Jacobs 1987; Walker and Avant 1988; Chinn and Kramer 1991; Schwartz-Barcott and Kim 2000) to guide the process of concept analysis, considered the importance of contextual issues and debated whether concepts should or should not have clear boundaries, as they may change over time (Rodgers and Knafl 2000).

This study is divided into three phases, with each one being developed and informed by the results of the previous phase and the overall purpose of this thesis. A variety of methods are used but linguistic philosophy has been the guiding school of thought running through this whole body of work, as the function and practice of core podiatry is associated with the use of the terms to denote it and the associated meanings.

The principles underpinning the use of the different methods in Phases I, II and III will now be described.

3.2 PHASE I: BACKGROUND, QUESTIONS AND METHOD

Phase I of this study proposed to explore the current role of podiatry to investigate if core podiatry still forms a large part of the skills performed despite an increase in the scope of practice over the last three decades. Merriman (1993), found that though there have been developments in modern podiatry, regular treatment of the nails and the removal of corns and calluses still makes up a large proportion of the tasks performed by podiatrists, resulting in only a small percentage of time being spent on more specialist roles. Similarly, an Australian study (Jackson 1999) investigating the podiatry treatment received by 272 patients over a three month period, found that the most common type of care given was palliative foot and nail care, though no exact definition was given for this. Fifty two per cent of patients required this type of care and 95% had repeat appointments. A larger Australian survey of 2111 podiatry interventions also found that a large number of treatments involved removal of callus and toe nail care (over 40%) though wound dressings were carried out much of the time (Tucker 2003). This study however, involved acute podiatry services, rather than a combination of community and hospital based ones, which may account for the high incidence of patients receiving care for wounds. The risk status of patients included in this study was also not specified. No other studies could be identified examining the type of care given by podiatrists in the UK and overseas so the three research questions for this phase of the thesis are as follows:

3.2.1 Research questions for Phase I

1. What is the current professional role of UK podiatry?
2. Do differences occur in role according to work sector?
3. What are podiatrists' views on the traditional podiatric role?

3.2.2 Method: Postal Survey

A postal survey was employed and this was sent to a sample of SCP members, to define current podiatric practice. Full details of the specific questionnaire, its design and justification for use will be discussed in Chapter 4.

A Discussion of Survey Methods

Surveys can be used to elicit information from a sample of the population so this was chosen as the most appropriate method. They can take the form of interviews where the researcher asks a number of questions and records the response and can either be in

person, via a telephone, or through a self-administered questionnaire (Polit and Hungler 1999). Surveys are a popular research tool in podiatry and have been used widely to determine the incidence of foot problems in different populations (Levy 1992; Merriman 1993) whilst some involving podiatrists have assessed a variety of professional issues (Macdonald and Capewell 2001; Farndon and Nancarrow 2003:) or have been used to gauge the effectiveness of specific podiatric interventions (Price, Tasker et al. 2002; Walter, Ng et al. 2004). A number of advantages and disadvantages are associated with the use of different survey methods. Face to face interviews can allow more complex data to be collected as the interviewer is on hand to clarify any problems, open-ended questions can be asked (McColl, Jacoby et al. 2001) and response rates are often higher when compared with postal surveys. However, some studies have shown that the ethnicity of respondents and interviewers can affect the answers given (Schaeffer 1980). Frey and others (1995) believe the characteristics of the interviewers will not affect the replies if telephone interviews are carried out and they are cheap and quick to administer when compared with face-to-face interviews. However, those members of society without a telephone will automatically be excluded from the survey, which Oppenheim thinks (1992) introduces an element of bias.

Postal surveys using a self-completed questionnaire are probably the most common as they are cheap to administer when compared with face-to-face interviews, can cover a large geographical area for the cost of postage, eliminate the potential for interviewer bias found in the other two methods and they avoid the potential of the respondents being unavailable (McColl, Jacoby et al. 2001). However, Bourque and Fielder (1995), recommend using an accurate and current list of the population under study before a sampling frame is determined. Response rates are also generally lower than in face-to-face and telephone interviews allowing non-response bias to be a potential problem though reminders are advocated to lessen this (Moser and Kalton 1971). This factor may have elicited skewed results in some of the foot surveys that have been carried out, as people with foot problems may be more likely to take part, which could give higher incidences of certain conditions. It is recommended that postal survey questionnaires should be short, and easy to complete without the assistance of others (Bourque and Fielder 1995) though there is no guarantee that other members of the household may complete the questionnaire on behalf of the respondent.

The actual format of the questionnaire has been discussed widely in the literature, especially the inclusion of *don't know* or a neutral response. Some authors recommend the omission of this response category as it does not affect response rates, presents a questionnaire in a simpler format (Poe, Semman et al. 1988) and avoids the respondent opting for the middle ground (Bishop 1987). Hawkins and Coney (1981) however, advocate the use of a *don't know* option to reduce the rate of uninformed responses. Response order has also been shown to affect survey results. Primacy effects where the first category is selected and recency effects where the last option is picked have been shown to occur in all types of surveys; though Schuman and Presser believe (1981) primacy effects may be more likely to occur in postal surveys. To avoid this, it has been suggested to change the order of response categories for each question, though this can make completion of the questionnaire more time consuming. When given a statement which requires agreement or disagreement, Ayidiaya and McClendon (1990) found that agreement would be higher if the statement was written in a forced choice format, this is known as the 'acquiescence effect'. A space for free comments alongside each question has also been found to increase response rates (Trice and Dolan 1985).

Response rates

McColl et al, (2001) suggests that those who respond to a survey are more likely to be interested in the topic under discussion and have a higher socio-economic status. A number of recommendations have been made by Dillman (1978) to increase response rates. They fall into three categories – minimising the cost of responding, maximising rewards of responding and establishing trust. Using a clear and concise questionnaire and reducing the financial costs incurred in responding can minimise responder costs. Adding interesting questions, valuing and supporting the respondent's views and monetary or material incentives can maximise responder rewards. By showing how results will be used, using a professional format and collaborating with well regarded individuals or organisations, trust with the respondent can be established. Surveys are most commonly used in quantitative research, where measures and analysis is based on causal relationships between variables, but when using qualitative research methods a more interpretative and naturalistic approach to enquiry is required (Denzin and Lincoln 1994).

3.3 PHASE II: BACKGROUND, QUESTIONS AND METHOD

After the components of current practice were identified (see Figure 1), the next part of the thesis proposed to find out the effect of core podiatry for service users, specifically older people, based on a simple definition of this area of practice formulated from responses given in the survey. A quantitative approach using previously validated outcome measures could be used to investigate if core podiatry improves foot related quality of life. However, a qualitative approach was chosen, as it was felt important to explore the views and experiences of patients receiving core podiatry and the importance this has for them, as this has not been carried out before and fits in with current NHS policy. When there is little research evidence about a particular subject, an inductive reasoned approach to explore open questions is often encouraged, as an initial method. The results of which can then be used to test theoretically derived deductive hypotheses and gives a detailed and rich account of the subject under investigation capturing personal perspectives and experiences (Patton 1990).

Qualitative methods are rarely used in podiatric research, which is surprising due to the humanistic nature of the profession. It may be due to its close adherence to the medical model, which traditionally has always followed a more quantitative line of enquiry. The few qualitative studies that have been conducted are mostly by UK podiatrists and mainly around the areas of professionalisation (Borthwick 1999a; Borthwick 2000b), service delivery (Farndon, Vernon et al. 2004; Vernon 2004) and research (Vernon 2005). It was felt important in this project to involve service users as their input in measuring the effects of health care interventions is recommended in recent government health policy documents. The current modernisation agenda has seen a major shift of paradigm in the NHS where the involvement of patients in the decision making process has become paramount with explicit references being made to the use of surveys and forums in order to help services become more patient centred (Department of Health 2000a).

Service users are also being encouraged to become involved in health service projects in conjunction with decision makers and researchers by helping to refine questions and methodologies to ensure their relevance to NHS goals (Department of Health 2001b). Hanley et al (2001) found that the majority of centres who had involved consumers in the research process of randomised controlled trials, saw it as a positive experience and in some cases it led to more relevant and clearer questions being asked. It has been

advised that barriers that prevent collaboration between professionals and patients should be defined through research in order to implement clinically effective care and evaluate its impact on patient-centred outcomes (Duff, Kelson et al. 1996). The use of consumers in research is not however, always easy to implement, as technical language can often cause problems in understanding. A project involving guideline development concluded that although consumers should be involved, it is not a straightforward process and there are not as yet, clear ways to accomplish this (Van Wershe and Eccles 2001). However Telford and colleagues (2004) have recently developed eight principles for successful user involvement in research after conducting an expert workshop and Delphi exercise to find a consensus, though this work is still to be tested and developed.

Current podiatric services do not sit well in the current modernisation agenda as they are still generally designed around pathology-focused treatments rather than patient-centred care pathways, though the issues of more preventative models of care are finally becoming incorporated into some areas of practice. The political context of NHS podiatry therefore has to be considered when examining service delivery. Though patients were not directly involved in the design of this thesis, it was felt important to adopt a patient centred view rather than a professionally defined measure to determine the effects of core podiatry treatment and as a result of conclusions made at the end of Phase I (see Figure 1).

Phase II of this study will aim to explore the effect of core podiatry for service users, specifically older people, by focusing on three specific areas.

3.3.1 Research questions for Phase II

1. What are the reasons that patients attend for podiatry treatment?
- 2a). Do patients think the treatment they receive is effective?
- 2b). What value do patients ascribe to receiving this type of care?
3. What do patients think would happen to their foot health if treatment was not available?

3.3.2 Method: Semi-Structured Interviews using a Thematic Analysis

This phase of the thesis used semi-structured interviews following a qualitative line of enquiry. Justification for the types of methods used and an explanation of the findings will be given in Chapter 5. In the following section an overview of the relevant types of qualitative techniques used in this thesis will be discussed.

3.3.3 Qualitative Research Processes to Ensure Rigour

A number of criticisms have been levelled at the qualitative research process, including the lack of scientific rigour as well as generalisability and reproducibility issues (Mays and Pope 1995). Whilst quantitative research methods aim to ensure accuracy by eliminating or reducing bias, qualitative methodologies accept that total detachment from the researcher is impossible, as they will impact on the meaning, context and interpretation of the work (Horsburgh 2003). The role of the researcher and their reflexivity is seen to be an important factor, as it recognises: *“the need to incorporate the subjective value of the researcher’s feelings and attitudes into consideration of the findings”* (Hammersley 1992, p. 142). Guba and Lincoln (1994) describe four techniques to try and ensure qualitative research techniques are rigorous: credibility, dependability, confirmability and transferability.

Credibility

The methodology for a study should be selected on the grounds that it will produce credible findings. In quantitative research this is referred to as *validity* a term also assigned by some authors when discussing qualitative research to show if a description accurately represents the phenomena it is intending to describe and explain (Hammersley 1992, p. 69). *Credibility* is a term more commonly used in qualitative studies (Guba and Lincoln 1989, p. 236) and aims to: *“match what is reported by the researcher to the phenomenon under investigation”* (Long and Johnson 2000). This is further strengthened by the use of member checks or participant validation. Some studies return the findings to participants to see if there is agreement, but this is potentially fraught with problems as each individual may be unable to validate the research as a whole, and only merely comment on their own aspect of involvement (Morse 1998). Authors have noted other associated problems, Bloor (1997) believes this method does not constitute validation and Hammersley and Atkinson (1995) feel this process can be highly problematic because if the researcher conducts the participant validation, there may also be an issue that a degree of bias is introduced.

Dependability

This is: “*the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions*” (Hammersley 1992, p. 67). It is similar to *reliability* in quantitative research but Koch (1994) believes *dependability* is a more appropriate term and it should ensure data collection is consistent (Long and Johnson 2000).

Confirmability

To counteract criticisms of bias, Popay et al, (1998) suggests the researcher should clearly represent the processes in which the data has been collected, analysed and presented. A ‘decision trail’ explaining the theoretical, methodological and analytical decisions made throughout the study should be available to the reader (Koch 1994) to identify to what extent the researcher has made their methods transparent (Popay, Rogers et al. 1998).

Transferability

This refers to whether the study findings can be transferred to other populations in similar circumstances and is also known as *generalizability*. Morse (1999) believes if qualitative research is not generalizable then it is of little use. However, some authors think the issue of transferability should be left up to the reader of the published research rather than being made explicit by the researcher (Sandelowski 1986).

Triangulation

This method is used to improve validity and has been defined as; “*the employment of multiple data sources, data collection methods or investigators*” (Long and Johnson 2000). Streubert and Carpenter (1999, p. 300-307) describe four types of triangulation: data (the use of more than one source of data in a single investigation), methods (using two or more methods in the same investigation), investigator (the use of two or more researchers with different backgrounds working on the same study) and theory (using more than one theory during the analysis process of the same data set, may be used to test one theory over another). Negative or unexpected cases must also be reported and explained where possible to add further credibility to a study.

3.3.4 Sampling

The sampling techniques used in qualitative research are often as complex as those used in quantitative studies. Murphy et al (1998) after reviewing the literature divide sampling into four main areas.

Probability sampling

This has been defined as a form of random sampling whereby every unit of the universe under study has the same known probability of being included (Murphy, Dingwall et al. 1998) however, it has been criticised as being inappropriate in qualitative research as it allows generalisation (Lincoln and Guba 1985). Silverman (1989) thinks it is also often impractical to use and Miles and Huberman (1984) believe the numbers involved in this type of study are often too low to allow statistical significance and could also add bias to the sample.

Opportunistic sampling

This is sampling that “*follows no strict, logical plan*” but is of little value unless the findings are set in context (Honigman 1982). This type of sampling may be a justified in initial, exploratory research.

Non-random for representativeness

This is a sample chosen from the area under study but the results may be used and generalized to a larger population. This can occur if the settings to which generalisation are required share the characteristics of the setting in the particular study (Delamont and Hamilton 1976). Hammersely (1992) suggests that to improve the representativeness of qualitative findings statistics about the population which generalisations are being made should be used to inform the selection of subjects. However, some authors have criticised this viewpoint, Lincoln and Guba (1985) believe it is the reader of the research that should decide if the findings are generalisable based on their knowledge of the subject under investigation and the researcher’s description of the context in which the findings were produced.

Theoretical Sampling

This type of sampling is advocated in a grounded theory approach according to Cutcliffe (2000) and is sampling “*...in which new observations are selected to pursue analytically relevant distinctions rather than to establish the frequency or distribution*

of phenomena” (Emerson 1981). Though Coyne (1997) believes purposeful sampling is used first and is then followed by theoretical sampling.

Purposive/Purposeful Sampling

Murphy et al (1998) state that all the sampling types previously mentioned other than probability are a form of purposive sampling as described by Kuzel (1986). Schatzman and Strauss (1973) however refer to ‘selective’ sampling but give it a similar definition to those defining a purposive sampling technique. Purposive and theoretical sampling are often seen as synonymous, the only difference being if the purpose behind the sample is theoretically defined. Coyne (1997) also distinguishes between the two stating that theoretical sampling is a type of purposive sampling that has demonstrated its theoretical relevance to the evolving theory. Patton (1990) describes fifteen sampling types all of which are described as purposeful while Sandelowski (1995) describes only three kinds but all again are said to be purposeful.

Sampling techniques are used to identify specific individuals who are to be investigated in a study. The use of interviews to find out further information about the group is a common method used in qualitative research.

3.3.5 Interviews

A number of different types of interviews are available to the qualitative researcher, these include: structured, semi-structured and in-depth (Britten 1995). Kvale (1996) describes seven stages to an interview investigation:

1. Thematising – deciding on the aim of the study
2. Designing – considering all the factors which need to be included in order to gain the required information from the study
3. Interviewing – composing a suitable interview schedule which will include a reflective approach to capture and explore the views and idea of the interviewees
4. Transcribing – changing the oral language into written text
5. Analysing – choosing an appropriate method of analysis considering the aims of the study and philosophical perspective
6. Verifying – employing suitable methods to ensure the data can be generalized where possible (member checks, analysis triangulation)

7. Reporting – synthesising the data into a report which represents the situation under investigation and reveals meanings and/or theories which have been generated from the analysis.

Thematizing determines the purpose of the investigation and the concepts to be explored (Kvale 1996) as highlighted by Chadwick's (2002) study which consisted of people with diabetes and a foot ulcer to explore why the incidence of ulcerations were not reducing in a specific geographical location though amputation levels were. The findings suggested that knowledge about foot care education was poor, its availability was mixed and future education would be more beneficial if delivered on an individual basis.

The design of the interview is also important and should be based on obtaining the intended knowledge for a particular study; a guide or schedule with a reflective approach to the knowledge sought is also advised (Kvale 1996). A multi-centre investigation into the requirements of new patients applying for podiatric care conducted by Farndon and others (2004) used a guide designed around three main research questions. Analysis of the results highlighted the importance of incorporating more curative treatments into the provision of podiatry services in conjunction with increasing foot care awareness educational programmes for both potential users and other health care professionals.

There are a number of different types of analysis available to the qualitative researcher, and the one used should depend on the purpose and the type of investigation and be based on interview transcripts. However, most use a constant comparative method to identify themes, some of which can be linked across individual cases. Borthwick and Clark (2004) use this method to explore the views of non-registered podiatrists regarding the implications of professional closure prior to its introduction.

3.3.6 Thematic Analysis

Miles and Huberman (1984) state that most qualitative research analysis methods involve coding data to identify similarities and differences that will enable the researcher to construct meaning or generate theory from the findings. Thematic analysis has been defined as: "*a method for identifying, analysing and reporting patterns (themes) within data*" (Braun and Clarke 2006). This process can be used to

analyse qualitative data generated by different research methods according to Boyatzis (1998) and Ryan and Bernard (2000). Braun and Clarke (2006) however, believe that thematic analysis can be used as an independent research method, regardless of the philosophical stance of the researcher. The decisions for its use, its utilisation and the findings that are generated should match the initial assumptions of the study and be made explicit to the reader during the final written report. This method should be able to supply a detailed and rich description of the data. Though most qualitative research techniques adopt a more inductive approach when compared with quantitative methods, Ryan and Bernard (2000) view thematic analysis as either coming from an inductive or deductive stance. Themes or patterns may be identified that emerge from the data (Patton 1990) or be deduced based on the original aims of the research and guided by the interview questions asked. Pope and colleagues (Pope et al. 2000) also reiterate this point when discussing the framework approach for analysing data, by stating that a deductive overview is employed based on predetermined aims and objectives though the themes will still be grounded in the data reflecting participants' accounts.

During the analysis phase in a qualitative study, data or text is processed or reduced by the researcher so it can be more easily manipulated and themes or patterns can be identified. Braun and Clarke (2006) describe this as consisting of familiarity with the text, the generation of initial codes, searching for themes, reviewing themes, defining and naming themes before producing a final report. The analysis phase is said to be complete if no new themes are emerging or being found in the data (saturation).

Writing up qualitative research

When writing up interview based research, narratives should be included along with the presuppositions of the researcher and the process by which these merged during the analysis. This should allow the reader to evaluate the quality of the research believes Draucker (1999), however, the social contexts of the participants experiences should also be considered during interpretation along with self-reflection of the personal experiences of the researcher to show how views and interpretations expressed in the work were shaped. Draucker (1999) also suggests the inclusion of descriptions where the interpretations of the researcher and participants vary to show the open nature of the interpretation, how the themes were derived and the interpretive framework used. Corben (1999) believes the setting in which the research took place should be mentioned to clarify the development of concepts.

3.4 PHASE III: BACKGROUND, QUESTIONS AND METHOD

The results of phases I and II demonstrated the constituents of current practice and service users experiences of core podiatry, but highlighted confusion in both the terminology used and inconsistencies in definitions (see Figure 1).

This final phase will treat core (traditional) podiatry as a concept in order to investigate it in further depth to define and clarify it. A concept has been described as an abstract or concrete event (Norris 1982) or is based on observations of certain behaviours such as '*hope*' or characteristics such as '*professional*' (Polit and Hungler 1999). The method of concept analysis has been widely used in nursing over the last twenty years though Wilson (1969) had earlier described its use in an educational setting. Viewing core podiatry as a concept will help to unpick components of this practice in order to promote theory and develop a model for core podiatry care. The research questions for this phase of the thesis were as follows:

3.4.1 Research Questions for Phase III

- What is the current definition of core podiatry?
- What are the attributes and characteristics of core podiatry practice?
- Is core podiatry still relevant in the current context of the NHS?
- What changes need to be made to core podiatry practice to attain a contextual fit?

3.4.2 Method: Concept Analysis

Researchers, all of whom have a slightly different emphasis relating to the proposed outcome, have developed a number of different methods of concept analysis. A discussion and review of the main methods and their use in nursing will now be presented. A summary of each approach is illustrated in Table 1.

Table 1: Approaches to Concept Analysis & Development

(adapted from: Rodgers, B. L. and K. A. Knafl (2000). *Concept Development in Nursing: Foundations, Techniques and Applications*. Philadelphia, W.B. Saunders Co: 44-45).

Approach	Underpinnings	Purpose	Phases
Chinn & Jacobs (1983/1987)	Wilson (1969)	To arrive at a tentative definition of the concept and a set of criteria by which one can judge whether or not the empirical phenomena associated with the concept exist in a particular situation	<ol style="list-style-type: none"> 1. Identify concept 2. Specify aims 3. Examine definitions 4. Construct cases 5. Test Cases 6. Formulate criteria
Chinn & Kramer (1991)	Wilson (1969) Walker & Avant (1988)	To produce a tentative definition of the concept and a set of tentative criteria for determining if the concept exists in a particular situation	<ol style="list-style-type: none"> 1. Select concept 2. Clarify purpose 3. Identify data sources 4. Explore context & values 5. Formulate criteria
Waker & Avant (1983/1988)	Wilson (1969)	To distinguish between the defining attributes of a concept and its irrelevant attributes	<ol style="list-style-type: none"> 1. Select concept 2. Determine aim of analysis 3. Identify all uses of concept 4. Determine defining attributes 5. Construct a model case 6. Construct additional cases 7. Identify antecedents and consequences 8. Define empirical referents
Rodgers (1989)	Price (1953), Toulmin (1972), Rorty (1979)	To clarify the current use of a concept with attention to contextual and temporal aspects; to provide a clear conceptual foundation as a heuristic for further inquiry	<ol style="list-style-type: none"> 1. Identify the concept of interest 2. Identify surrogate terms 3. Identify sample for data collection 4. Identify attributes of the concept 5. Identify references, antecedents, consequences of concept 6. Identify related concepts 7. Identify a model case 8. Conduct interdisciplinary and temporal comparisons
Schwartz-Barcott & Kim (1986)	Reynolds (1971), Schatzman & Strauss (1973)	To identify, analyze, and refine concepts in the initial stage of theory development	<ol style="list-style-type: none"> 1. Theoretical phase 2. Fieldwork phase 3. Analytical phase

Wilson; Chinn and Jacobs

Early nursing literature investigating concepts uses methods based on the work of the educationalist Wilson (1969), who used 11 steps to concept analysis to aid his students in “*answering questions of a conceptual nature*” (Avant 2000). This logical positivist approach (Wilson 1971) could help identify essential features of a concept in order to clarify ones that were vague. Chinn and Jacobs (1987) adapted this for nursing to arrive at a *tentative definition* of a concept and derive a set of criteria by which it can be judged. Their methods have been used in studies to define empathy (Forsyth 1980), social isolation (Warren 1993) and normalization (Deatrick, Knafl et al. 1999) and were refined by Chinn and Kramer (1991) to help create conceptual meaning through empirical evidence.

Walker and Avant

Walker and Avant (1988) used concept analysis to define the relevant attributes of a concept and saw this process as one of three ways to develop concepts. The other two being developing new concepts (concept synthesis) and translating concepts across disciplines (concept derivation). Their method differs slightly from that of Chinn and Jacobs and Chinn and Kramer, as noted by Knafl and Deatrick (2000), due to the different order that the process of concept analysis is conducted. Walker and Avant construct a model case, which identifies the presence or absence of the criteria associated with the concept, detailing the antecedents, consequences and empirical referents of the concept as part of the analysis. Chinn and Jacobs and Chinn and Kramer use case construction as part of the defining process and do not specifically identify the concept’s antecedents and consequences. Walker and Avant’s method has been used in studies to define the attributes of mother-daughter identification (Boyde 1985), intuition (Rew 1986) and professional nurse autonomy (Wade 1999). Baldwin (2003) criticises this and Wilson’s approach for providing an entity view, which takes the concept out of context and therefore excludes some conceptual meaning. It has also been criticised by Rodgers (1989a) as being poorly understood and without a philosophical foundation.

Rodgers

Rodgers evolutionary model (2000a) focuses on the ‘use’ phase of concept development aiming to clarify it. She criticises Wilson’s reductionist approach as static (1989a) and

adopts a dispositional view that looks at the concept in reality according to Baldwin (2003). This is based on the philosophies of Wittgenstein, Ryle and Toulmin (Rodgers 2000a) and emphasises examining language for commonalities (Gallant, Beaulieu et al. 2002) or attributes. Analysis therefore should focus on the current meaning and use of the concept and not produce a rigid definition as this may and could change over time.

This is a very prescriptive and systematic method with specific sampling techniques identified in order to review the most appropriate literature. Attributes, antecedents, consequences and references of the concept are identified similar to some other methods of concept analysis previously outlined, in conjunction with the identification of surrogate terms and the context in which the concept is used. Rodgers also advises producing a true example of the concept derived from empirical work rather than the researcher constructing a model case, which may not solely be comprised from the literature. She employs this method to clarify the use of the concept of health policy (Rodgers 1989b).

Morse

Morse uses similar criteria in her concept analysis method but emphasises that the attributes or components of a concept should be common in every situation where the concept is used though context will influence this (Morse and Doberneck 1995). Data derived from qualitative research methods can be used to develop concepts and in turn develop clinical based theory. Morse and co-authors (1996) also advocate that the maturity of a concept should be evaluated before it can be analysed, developed, modified or delineated. A mature concept is well developed with distinct boundaries, whereas immature concepts are poorly defined and may not have identified characteristics, preconditions (antecedents) and outcomes (consequences). Morse' view that well developed concepts will have clear boundaries delineated is opposite to Rodgers view, who believes concepts can change over time, so will not be strictly confined. Immature concepts will require further analysis either using qualitative research methods or using the literature to identify them and develop them towards maturity.

The Hybrid Model

A number of research articles using concept analysis have used a combination of methods to define or clarify concepts. The Rodgers or Morse model is widely used to

determine characteristics or maturity of a concept from the literature but this has been built upon by Schwartz-Barcott and Kim (2000) who take the process further to enable concept development and theory construction. Their three stage Hybrid Model uses a combination of theoretical, empirical analysis and a final analytical stage. They state that this method is useful in investigating significant phenomena in nursing as it allows concepts to be studied in a new context or to identify new features of a known concept.

3.4.3 Uses of Concept Analysis in Nursing Research

Rodgers Method

Endacott (1997) proposed to use Walker and Avant's model to analyse the concept of need but found difficulties with the amount of literature to comprehensively analyse and the rigid method, eventually settling on Rodgers approach as the most appropriate.

Gordon (2000) used Rodgers model to clarify the concept of clinical supervision by producing a working definition that was then used to examine the need, use and perceptions of good supervision as well as identifying models of supervision and the preparation required for clinical supervisors. The paper concludes with a proposed new definition of clinical supervision in nursing. The concept of self-management of Type 1 diabetes in children was clarified by Schilling and others (2002) using the evolutionary model. The literature search spanned a greater time scale than advocated by Rodgers to explore how the concept had changed over time. A number of definitions were found from the literature and a new one was formulated based on the identified attributes.

Consequences of self-management were not listed as they were not the focus of the study but a conclusion was made that further empirical work was required to clarify and revise this in children with this disease.

August-Brady (2000) uses Rodgers method to examine the concept of flexibility, as it is rarely defined in nursing literature. This study derived a new definition of the concept, which was pertinent to nursing in the new millennium. A study of the art of nursing by Jenner (1997) using the same method began with a dictionary definition of art, though Rodgers does not advocate this. However, the author went onto propose a derived definition after concept analysis had been undertaken that the art of nursing is: *"the intentional creative use of oneself based upon skill and expertise, to transmit emotion and meaning to another."* Comfort was more clearly defined and found to be a construct used in other nursing concepts, after Siefert (2002) undertook a Rodgerian concept analysis, though its operationalization is linked to the various contexts in which

it is used. A model for cultural competence in nursing was produced by Rosenjack Burchum (2002), which incorporated the identified attributes of the concept after analysis. Deatrick and co-authors (1999) refined and developed the concept of normalization based on the results of two analyses conducted ten years apart. Though the Chinn and Jacobs method was used the authors were guided by Rodgers view of the dynamic nature of concepts affected by the context they are placed within. This study concluded that normalization has changed over time and is affected by the contexts of illness and family.

Walker and Avant's Method

Johns (1996) examined the concept of trust from a clinical and organisational perspective using Walker and Avant's method of concept analysis (1988) and searched the literature across different disciplines as advocated by Rodgers (2000a). She supplemented the analysis with her own process/outcome model and concluded that trust is applicable to both the clinical and organisation aspects of nursing but further qualitative research was required to define the concept further. Smith (1995), in a study of altruism also using the same method, compared the concept with self-neglect and co-dependence to define it and identify its attributes. The author also concludes that further qualitative studies are recommended to develop this concept further in nursing. Facilitation from a nurse educator and counselling perspective was investigated by Burrows (1997) using the same method. The definitions of the concept were derived from the literature and supplemented with personal definitions from other nurses, leading to the production of a tentative redefinition. Almond (2002) used Walker and Avant's method to analyse the concept of equity in health visiting. Confusion was found with the use of this concept but a new definition, which could be used to evaluate service provision and uptake, was proposed after a literature review. Shattell (2004) also used the same method to derive a new definition of risk and claims this will aid future research in the area of risk identification. This method combined with some qualitative data was used to explore empowerment in people with enduring mental health problems and led to the production of an empowerment model to inform future research (Finfgeld 2004).

Morse Method

Morse and Doberneck (1995) used interviews from four different groups of patients to explore and refine the concept of hope once components of the concept were identified

from a television documentary. By comparing the different types of hope in each group of patients, seven universal and abstract components of hope were identified in a model, which was validated by previous work. Ryles (1999) determined the level of maturity of the concept of empowerment in mental health nursing according to the Morse method. This was then combined with Rodgers method to clarify empowerment and relate it to mental health nursing. Though the paper concluded that there were uncertain approaches to defining this concept based on the literature review, the author failed to produce a definition or comment on the level of maturity found.

Hupcey et al (2001) carried out a comprehensive investigation of trust in relation to the disciplines of nursing, medicine, psychology and sociology using the Morse model to evaluate the level of maturity of the concept. It was found to be an immature concept and was developed based on the literature and directed by the unanswered questions derived from the initial analysis. A definition of the concept of trust was produced consisting of its conceptual components, antecedents, preconditions, attributes, boundaries and outcomes with commonalties identified across disciplines. Baldwin (2003) uses an 'eclectic' mix of several approaches to concept analysis to investigate patient advocacy and describes three essential attributes which need to be present for true advocacy to be realised.

The Hybrid Model

This model was used to analyse the concept of withdrawal (DeNuccio and Schwartz-Barcott 2000) where the specific research aims were to find a universal definition of the concept, examine the relationship between definitions and investigate how the concept has been measured. Analysis of the concept through a literature review resulted in the development of a working definition of withdrawal, which was then investigated through a fieldwork phase using observations and informal interviews. The final analysis stage presented an expanded definition of withdrawal including degrees of progression of the concept in conjunction with an expansion of tools to measure it.

Maijala and colleagues (2000) explored the composition and manifestations of the concept of envy through subjective experience using the Hybrid model. The literature review used a combination of Wilson's and Walker and Avant's criteria and looked across several disciplines to define a working definition of envy. This was then used in the fieldwork phase, which took a phenomenological approach using interviews with

key actors who had experienced envy. In the final analysis, the working definition of the concept was re-evaluated, developed and refined based on the previous stages and evaluated for maturity using the Morse model. A study of professional identity also used the Hybrid model and a combination of methods to analyse and refine the concept from the literature (Ohlen and Segesten 1998). Literature was analysed using Walker and Avant's analytical goals and Rodger's evolutionary model and the fieldwork phase involved semi-structured interviews with nurses. The final analysis identified a comprehensive description of the concept, which was similar to presenting a model case. Hutchfield (1999) also uses a combination of Rodger's model for the literature review in conjunction with a fieldwork phase as advocated by the Hybrid Model to explore family-centred care. This paper did not develop a working definition but identified key characteristics of the concept and identified model, contrary and borderline cases, stating this was a requirement of the Rodger's model. This however, is not the case, as Rodger's advocates identifying a true exemplar of the concept in a generic way if possible. Steel (2003) uses the Hybrid Model to explore the susceptibility of women in a rural population to breast cancer. She concluded that the particular cohort did not see themselves as being susceptible to the disease and outlined specific areas that required further research to improve this outcome.

3.5 Ethical Considerations

All research projects should consider if the procedures employed adhere to professional, legal and social obligations to protect the study participants from harm. Polit and Hungler (1999) detail a number of ethical considerations under three main headings:

- Beneficence (freedom from harm and exploitation, and the risk to benefit ratio)
- Respect and human dignity (the right to self-determination, full disclosure and respect)
- Justice (the right to fair treatment and privacy).

Any research conducted within the NHS must first gain both ethical committee and research governance approval before it is carried out. The study participants once identified should be approached via an invitation letter, which describes why they have been asked to take part and gives details of the study. An information sheet should be provided giving specific details of the study that is written in a user-friendly format. This should include information about the duration of the study, the time commitment required from each participant, the potential risks and benefits, the right to withdrawal

at any time and confidentiality issues. Once participants have read the overall aims of the project and understood what is required of them, they must then give their informed consent by completing a consent form. Special attention may be required if vulnerable groups are included in a study including children, people with mental health problems, learning difficulties, the terminally ill, pregnant women and those in institutionalised care.

Implications for this study

In both the practitioner survey and patient interviews confidentiality was assured, as data was anonymised during the reporting process. Podiatrists in the survey were only identified according to their main area of practice (NHS, private or combination) and patients who took part in the interviews were given a numerical identifier. It was made explicit to patients that if they did not want to take part in the study, their decision would not affect their right to future podiatry treatment. Information generated from this thesis was then entered onto a password-protected computer, this data was only retrievable by the researcher. Similarly all audiotapes were kept in a locked cupboard and will be destroyed at the end of the study.

Summary

The justification for the formation of the research questions which make up Phases I, II and III of this study have been described. A discussion of the different methods used in each section of the thesis has been detailed. Further information of how each method was used in each particular phase and why, is given in the opening sections of the following three chapters.

CHAPTER 4

PHASE I

WHAT IS THE CURRENT PROFESSIONAL ROLE OF PODIATRY?

4.1 INTRODUCTION TO PHASE I

A postal survey of working podiatrists was chosen as the most appropriate method to determine if core podiatry still forms part of current practice and if so, to what extent. As podiatrists work both in the private, public, commercial and educational sectors, a comparison of differences in work practices across these areas was also included. This set a basis for further investigations, though Phases II and III of this work place emphasis on practice carried out in the NHS. The views of podiatrists on the traditional podiatric role were also sought in this survey as these may be influencing changes in practice. The research questions for this phase of the study were:

Part 1

1. What is the current professional role of UK podiatry?
2. Do differences occur in role according to work sector?

Part 2

3. What are podiatrists' views on the traditional podiatric role?

Approval was sought and given for this stage of the study from the local ethics committee and research governance team.

4.2 METHOD

Pilot Study

A pilot questionnaire was formulated based on topics included in the practical clinical training modules as part of the podiatry undergraduate degree at Huddersfield University, which was being taught in 2000 (University of Huddersfield 1997a, 1997b). The 3 year degree course covered the following practical aspects of podiatric practice: nail care, scalpel techniques, the manufacture of palliative devices including simple insoles, the manufacture of functional foot orthoses, the management of the high risk patient and nail surgery. Concepts of health promotion and the role of footwear in foot health were also included in the syllabus. The questions were also based on the clinical experience of working podiatrists.

The questionnaire consisted of a small number of open demographic questions and a larger section of closed questions with pre-coded responses (Appendix IV:I). The order of the responses remained the same throughout the questionnaire as it was thought this would allow it to be completed more quickly. A space was left next to each question

for alternative responses to me made if necessary as advised by Trice and Dolan (1985) to increase response rates. A Flesch-Reading ease was calculated at 61, documents with a score between 60-70 should be easy to read and understand (University of Memphis 2006). Twenty-five podiatrists working in a local podiatry department were sent the pilot questionnaire, from which 14 were returned. Based on the comments received from this initial sample of podiatrists, there appeared to be no problems with the main content of the questionnaire.

Postal questionnaire to identify core podiatry⁵

The pilot questionnaire was modified slightly to determine the work sector of the responding podiatrists, as this version was being distributed to professionals working across all areas. Two further questions were added, one to get a snapshot of each clinician's working day at the time the questionnaire was completed and the other was included to ascertain what podiatrists thought represented traditional podiatric care.

This questionnaire (Appendix IV:II) was then used to carry out a postal survey from a sampling frame of podiatrists who were members of SCP. This comprised of 6980 practising podiatrists at the time the survey was conducted (The Society of Chiropractors and Podiatrists 2000). A postal survey was chosen to allow for a large number of subjects across a wide geographical area to be included in the sample. The questionnaire was sent out in the February 2001 edition of 'Podiatry Now', which is a monthly journal distributed to all members of SCP. The company that prints this journal randomly assigned the questionnaire to 2500 subscribed members, the sample size was calculated based on an expected 40% response rate and the advice of a statistician. A short letter explaining the aim of the survey (Appendix IV:III) and a pre-paid envelope for return accompanied it.

4.3 FINDINGS – PART 1

Characteristics of respondents

Six hundred and sixty-eight questionnaires were returned (26.72% response rate). One hundred and fifty-six (23%) respondents were male and 512 (77%) female. The largest

⁵ Results from Phase 1 of the thesis were published as the following articles:
Farndon, L. J., D. W. Vernon, et al. (2002). "The Professional Role of the Podiatrist in the New Millennium: An analysis of current practice: Paper 1." *The British Journal of Podiatry* 5(3): 68-72.
Farndon, L., D. W. Vernon, et al. (2002). "The Professional Role of the Podiatrist in the New Millennium: Is there a gap between professional image and scope of practice? Paper II." *British Journal of Podiatry* 5(4): 100-102.

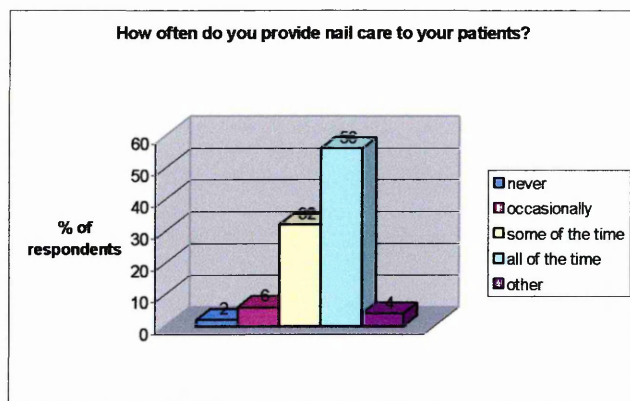
number of podiatrists that completed the questionnaire (160) had qualified less than 6 years ago, the response according to number of years since qualification showing a negative correlation. Respondents were predominantly aged 31 to 40 years, with 5 missing responses. Some respondents indicated that they worked in a number of different areas; these questionnaires were grouped together and referred to as *combination* to reflect a variety of work settings. Sixty-two per cent were working in the NHS, 24% in private practice and 14% in a combination or other area. The questionnaires were analysed according to work sector to identify any differences. A list of the respondents areas of work and their characteristics can be found in Appendices IV:IV and IV:V.

Replies across all work sectors were also compared as a number of podiatrists made comments adjacent to each question. These were grouped into common themes to compare understanding of the differences shown.

Most common areas of clinical practice

Figure 2 below shows an example of the common distribution of results from this section of the questionnaire.

Figure 2



Further details illustrating the distribution of responses are presented in Appendix IV:VI. Nail care, corn and callus removal and the provision of foot care and footwear advice were the most commonly practised areas of podiatry across all work sectors. Over 50% of podiatrists carried out these practices all of the time. Private practitioners however, were found to provide nail care more frequently than NHS podiatrists

(81%:55%) and at the same time, provided footwear advice less frequently (48%:60-65%). Corn and callus removal and foot care advice was provided all of the time by over half of respondents across work areas.

Fewer NHS podiatrists provided regular nail care when compared with private practitioners, this may be attributed to a number of factors. The use of foot care assistants (FCAs) within the NHS was widely mentioned as well as the adoption of strategies to encourage self or carer nail care both of which have been previously recommended as ways to improve the efficiency of podiatry services (Kemp and Winkler 1983). NHS podiatrists also commented on departmental policies where nail care was not provided for low risk clients illustrating that re-profiling strategies (Smith 1982; Tippins 1998; Moore, Farndon et al. 2003), appear to have been adopted on a wider scale. Difficulties implementing such strategies when nail care is still expected by the majority of older patients, could account for the higher proportion of nail care still being provided in the private sector where treatment is tailored for fee-paying patients.

Less common areas of clinical practice

Graphic illustrations of the results from this section of the questionnaire can be found in Appendix IV:VII. Biomechanical evaluations were carried out less frequently than nail care, callus and corn removal and foot health education across all work sectors, as was the prescription of insoles and orthoses. Reasons given for this were:

- A specialist podiatrist only carried out this work
- There was insufficient time or lack of facilities
- Podiatrists did not have the appropriate level of training
- Some podiatrists referred to other colleagues for this service (those working in private practice)
- It was too expensive to provide (those working in private practice)

Private practitioners provided footwear advice less often. Reasons for this discrepancy could not be obtained from the data though there were comments from respondents working across all areas about problems in giving this type of advice due to poor client compliance.

At risk clinics were undertaken more frequently in NHS and combined working situations than in private practice. Between 43-45% of NHS podiatrists and the combined group worked in this type of clinic some of the time whereas 48% of private practitioners never undertook this type of work. Though taking part in 'at risk' clinics occurred in the NHS more frequently than in private practice, comments were received from both sectors regarding the mixed nature of routine caseloads with 'at risk' patients. Some private practitioners stated that NHS departments saw the majority of patients with diabetes therefore there was not a need for additional private treatment.

Less than 45% of podiatrists across all work sectors regularly took part in nail surgery. Podiatrists working solely in the private sector were less likely to undertake this work when compared with the other two groups. Twenty-eight per cent of private practitioners responded that they never carried out nail surgery compared with 14-17% of podiatrists in the NHS and combined groups. Reasons given for this were lone working where it was not advisable for health and safety reasons or domiciliary practices where it was not possible.

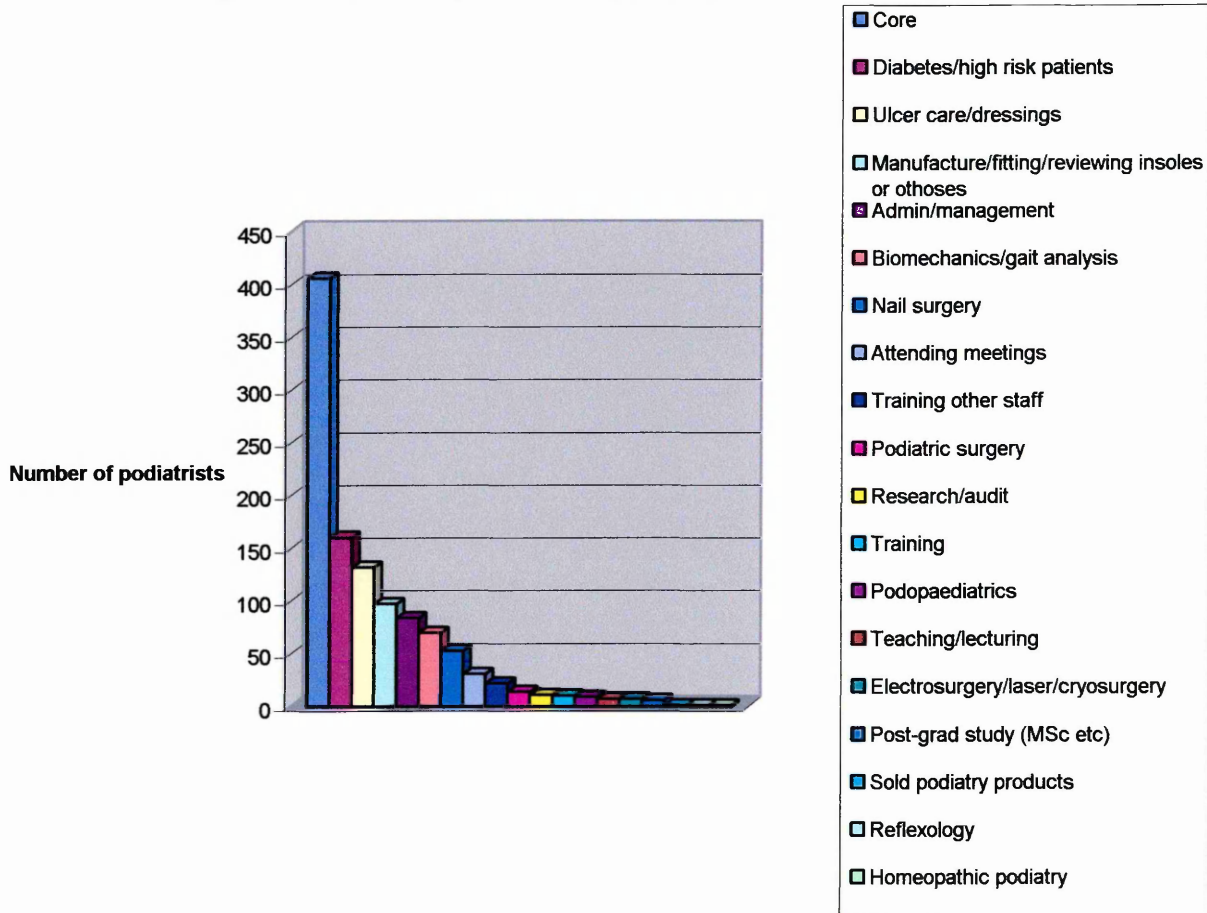
Podiatric surgery was only carried out by 4% of podiatrists across all work sectors, though the combination group and private practitioners carried this out more frequently than NHS podiatrists. The small number of respondents undertaking foot surgery is not surprising as the total number of practitioners qualified to do this at the time of the survey was only 138 (Andrews 2001).

What did you do today or on your last working day?

Not all respondents completed this section of the questionnaire and many practitioners listed several different responses indicating that they had carried out a range of activities on the day in question. The most frequent area of practice was core podiatry, with 406 podiatrists stating that they had been involved in this for all or part of the day. Any respondent who stated that they had given foot health or footwear education was attributed to the core section of practice. The next most frequent activity was the care of patients with diabetes or other high-risk problems (160 responses), followed by ulcer care and dressings (132 responses) and the manufacture, fitting or review of insoles or orthoses (97 responses).

Though the majority of podiatrists conducted core podiatry on the day the survey was completed, a number of additional areas of current practice not included in the first section of the survey were identified and includes both clinical and non-clinical tasks. Figure 3, graphically illustrates the results from this section.

Figure 3: What did you do today or on your last working day?



4.4 FINDINGS- PART 2

Traditional podiatry is only the treatment of nails, corns and callosities

This statement asked for one of the following responses - *agree*, *disagree* or *don't know*. The word *traditional* was used to try and elicit what podiatrists thought was the established professional role, as *tradition* is defined as: “*an inherited, established, or customary pattern of thought, action or behaviour*” (Merrian-Webster online 2001). However, core podiatry was adopted as a more accurate term to represent this area of practice after the survey.

Results from Part 1 of the survey, suggested that the main area of clinical practice carried out was nail care, corn and callus removal and the provision of footwear and foot care advice. Although 50% of respondents said that they carried out these practices all of the time, there was an overwhelming disagreement with the above statement (Appendix IV:VIII). Many wrote comments about traditional podiatry to explain their response and these were analysed using the method of content analysis described by Krippendorff (1980). Comments were listed and grouped according to similarities, and themes were identified. Two podiatrists carried out this analysis independently and then compared the themes that had been assigned in order to test consistency. A table of themes and examples of narrative accounts illustrating them can be found in Appendices IV:IX-XII. Five main themes and associated sub-themes were identified and are illustrated in Table 2.

**Table 2: THEMES INFLUENCING THE CORE ROLE OF
PODIATRY**

THEME	SUB-THEME
IMAGE	Public perception
	Professional perception (evolving)
INCREASED SCOPE OF PRACTICE	Clinical advancements
	Prevention and foot health education
	Homeopathy
	Holistic
	Psychosocial
TERMINOLOGY	Definition of Chiropody
	Definition of Podiatry
	'Traditional'
WORK SECTOR	
TRAINING	

Professional image

Professional image was a main identified theme and consisted of two sub-themes; public and professional perceptions of podiatry. Many respondents suggested that patients, and the public in general perceived the professional role as only nail, corn and callus care:

“This is the present day perception of patients”

“I think the general public thinks this”

The professional’s perception of image was equivocal:

“Traditional podiatry is constantly evolving, so we have to constantly evolve with it”

and reflects awareness of the need for practice and professions to change and develop:

“The profession is changing for the better”

Others, like:

“We do not promote ourselves and our abilities well enough”

were more self-deprecating.

Increased scope of practice

Many practitioners thought that though nail, corn and callus care were still part of podiatry a number of other areas should be included in the current role reflecting an increased scope of practice. These could be described as clinical advancements,

“Includes nail surgery, biomechanics and insoles where appropriate”

preventive care and foot health education,

“...the monitoring and treatment of feet ‘at risk’ to prevent complications”

homeopathy,

“Homeopathic treatment such as tea tree oil can be a useful non-invasive form of treatment for mycotic nails”

the holistic approach to care,

“Is the care of the whole foot and the person to whom it belongs”

and psychosocial aspects,

“We also end up counselling patients”

Terminology

The terminology of the statement used in the survey about traditional podiatry caused a wide variety of comments. Most respondents felt nail, corn and callus care described *chiropody* not *podiatry*, for example,

“These are chiropody skills which fall into a podiatrists scope of practice”

and,

“I disagree that podiatry is chiropody”

Podiatry is seen to have a more expansive role:

“Podiatry should mean the medical and surgical specialism of the foot”

One practitioner still thought the term podiatrist should not be used by all professionals but reserved,

“...for those practitioners specialising in other services (nail surgery, biomechanics, bone surgery)”

The problems caused by using two terms was commented on,

“Podiatry should have been a protected word to relate to the lower limb specialist, now podiatry/chiropody are inter-changeable with the non-registered sector, therefore a confusing word”

The use of the word traditional also caused a large number of comments; some stated that it was an inappropriate word to use,

“You cannot have traditional podiatry as the term hasn’t been in use long enough”

or was dependent on a number of factors,

“Traditional can be a misleading word and can be interpreted differently depending on the number of years since qualification”

“Only 20% of our practice is traditional”

Work sector

The scope of practice appeared to be affected by work sector though comments were made from both private and NHS workers regarding limitations.

“Within private practice there are not many opportunities to practise nail surgery and podiatric surgery”

“Sadly in the NHS there is very little time for doing more than traditional podiatry”

Training

This was mentioned as a possible influence on the traditional role.

“A lot depends on the qualification of the clinician”

“At the present time, essential skills with scalpels and other instruments still need to be encouraged”

4.5 DISCUSSION

Membership of SCP was 7,959 in December 2000 (The Society of Chiropodists and Podiatrists 2000) with 6980 practising podiatrists; the results of this study therefore represent a self-selected sample of 9.6% of working members. The low response rate is similar to that of the annual SCP council election, which was 27% in 2001, suggesting a poor response may be expected when balloting members. Alreck and Settle (1995) also describe response rates of around 30% when postal surveys are used. Replies may have been increased if a follow up letter had been sent out. Bristow and Dean (2003) in their survey of members regarding evidence-based practice issues report a 51% response rate after a reminder letter and advert had been placed in a professional journal. However, the gender distribution of respondents was similar to that of the SCP total membership at the time (Andrews 2001) and subsequent surveys of members of SCP (Bristow and Dean 2003) and managers of NHS podiatry departments (Farndon and Nancarrow 2003) has found comparable findings regarding the numbers of male and female podiatrists.

The most frequent area of clinical practice identified by this survey is nail care; the removal of corns and calluses and the provision of footwear and foot care advice. The last two tasks were not in the original tentative definition of traditional podiatry used in the questionnaire, but can now be added to describe the ‘core’ podiatric role. There were however, some differences when comparing work carried out in the NHS and private practice. The current role does not appear to have changed dramatically in the new Millennium since Merriman’s (1993) review of the professional role though there has been an increase in the scope of practice. Similar findings have also been found in Australia (Jackson 1999; Tucker 2003), though a small American study indicates that this core work is being replaced with a more surgically focused practice by a number of US podiatrists (Chumbler and Brooks 1993).

Consumer demand where traditional treatments are still expected by the majority of clients may influence to a degree the type of care that is being provided. This was

highlighted by the work conducted by Macdonald and Capewell (2001) who found that NHS podiatrists were frustrated by carrying out low-skill tasks though patients desired an increase in this type of palliative care and were opposed to relatives or voluntary groups carrying out basic foot care for them. The age range of clients will also affect the type of care provided. Over half of the population of NHS patients treated by podiatrists are older people (Health and Social Care Information Centre 2005), and survey evidence shows that this group have a higher incidence of foot problems, which requires core podiatry. This may account for the higher incidence of these tasks being carried out. However, core podiatry was carried out to the same extent in private practice, though there is no data to show the age of clients receiving care in this sector.

The NHS plan (Department of Health 2000a) advises ‘smarter’ working across professional boundaries where each profession must identify its core skills to determine what it shares with other health care professionals. This exercise can also help define what tasks others may carry out. In some NHS podiatry services, nail care for low risk patients is provided by others (patients themselves, foot care assistants, relatives or carers) enabling podiatrists to carry out the more specialist roles. This shift in service delivery has been recommended to better utilise the skills of the podiatrist (NHS Executive 1994). A change from the palliative model of care to a more curative one will also increase the range of podiatric skills on offer to the patient.

Comments made by respondents in part 2 of this survey, identified five main themes which influence the core podiatric role regardless of work sector or whether there was agreement or disagreement with the statement about traditional podiatry. More remarks were made around the themes of image, increased scope of practice and terminology than work sector and training. The use of terminology to both accurately describe the profession and core type care appears to be a contentious issue, as many podiatrists commented that the word *traditional* could not be used alongside *podiatry*. One reason given for this was that the latter was a new term, though it has actually been in existence for over twenty years in the UK. A large number of podiatrists are still practising who qualified before the introduction of graduate training so they may still regard themselves as chiropodists rather than podiatrists, but this could not be demonstrated from the survey data. Other tasks were described relating to the scope of practice of podiatry, many of which could represent more specialist roles such as biomechanics and surgery, but these were not added to the new definition of core podiatry at this stage as

it was the tasks being carried out the majority of the time by podiatrists which was the emphasis of this study. However, there was a disparity between what podiatrists reported were skills, which constituted most of their professional time, compared with their own personal definitions of traditional podiatric practice. This suggests that core podiatry could possibly consist of a number of tasks, but Phase III of this thesis investigated this issue in further depth.

The findings appear to confirm that there are differing perceptions of the professional role amongst patients and podiatrists, which may be associated with the issue of low status. This reinforces the evidence identified from previous studies and discussed in Chapter 1 (Skipper and Hughes 1984; Mandy and Mandy 2000; Vernon 2004). Although the profession has expanded and incorporated new ways of working, the perception of podiatrists is that this has not been communicated to patients and the general public, which may be contributing to an image problem. This issue was further corroborated by Vernon et al's (2005) study of podiatry status in the UK that highlighted the profession was not well understood both by the public and careers advisers. SCP mention in their strategic plan that raising the public's awareness of the value of podiatry is a major objective (The Society of Chiropodists and Podiatrists 2001b), though it gives no detail on how this would be approached. There is therefore an urgent need to change the public's perception of the podiatric role in conjunction with allowing the profession to fully utilise the skills falling within the current scope of practice.

As a postal survey was used, a wide geographical coverage (across the whole of the UK) was assured to a random sample, though less than 10% of self-selected members of SCP at the time, responded. The low response rate may have been because a reminder letter was not sent out, but this was impossible to do with the sampling method used. Also some podiatrists who received a questionnaire had retired and therefore felt that they were unable to complete it. Though low response rates have been previously reported when balloting members of SCP for professional council elections, the researcher expected a larger number of replies to this questionnaire as it was focusing on practice issues. A large proportion of respondents had been qualified for less than ten years and were younger than 40, which may also have influenced the results. It could be assumed that those with less clinical experience may be in more junior positions, especially in the public sector, which may account for the high numbers

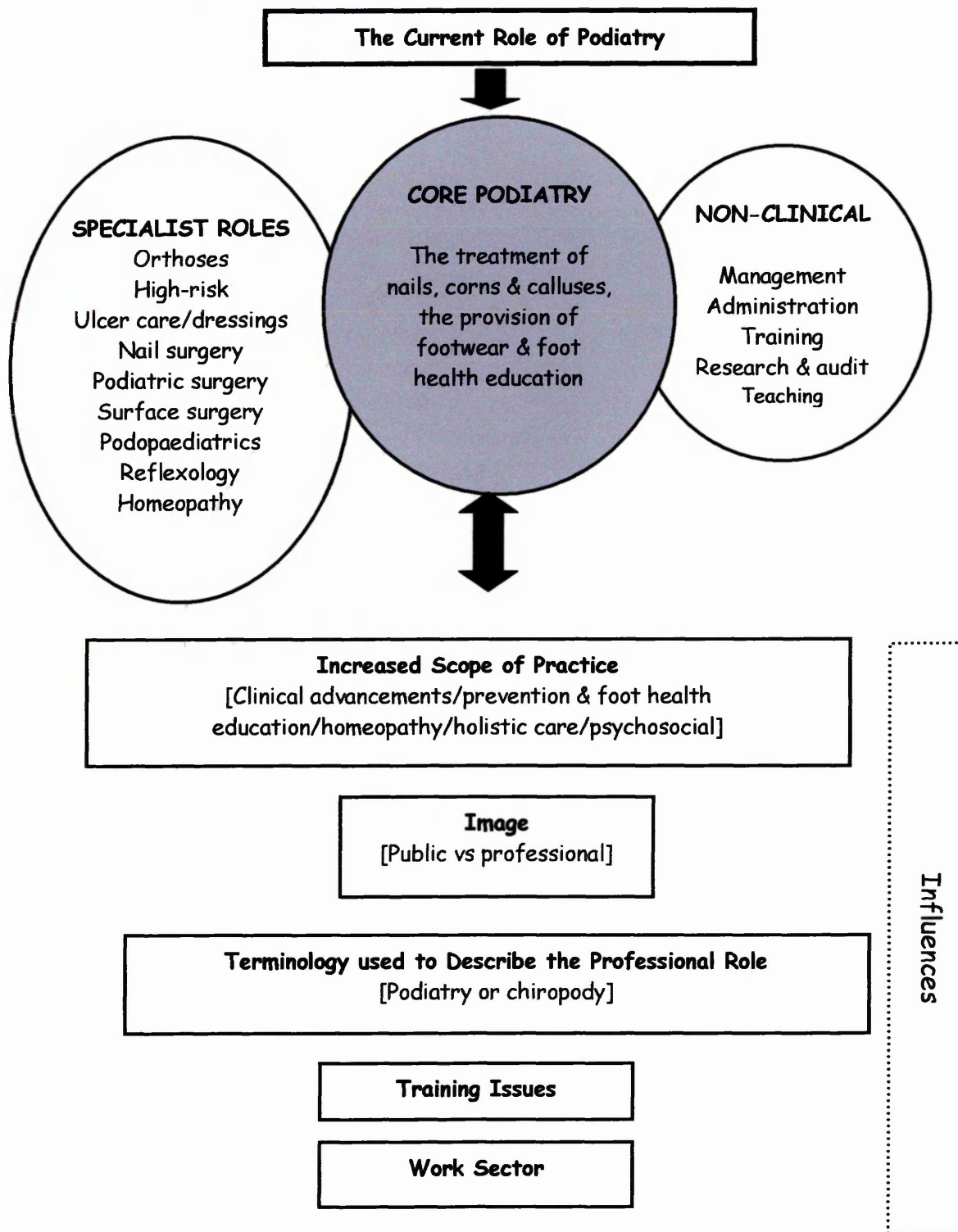
conducting routine work in this survey. However, these results concur with a more recent survey based on 68% of the total number of NHS podiatry services which reported that 54% of podiatrists were employed in junior positions (Farndon and Nancarrow 2003).

The issues surrounding the public's view of podiatry and the use of terminology to accurately describe the professional role are important for the whole of the profession. This is further corroborated by Vernon et al's (2005) study that found the concurrent use of the two terms *chiropodist* and *podiatrist* was thought to confuse those outside the profession. However, since this survey was conducted the term *podiatrist* has become more widespread, especially in the public sector, illustrated by a recent review of the recruitment section of one of the main professional journals for SCP members – Podiatry Now (The Society of Chiropodists and Podiatrists 2005b) where none of the advertisements used the term *chiropodist*. As the profession begins to adopt this term more frequently it is assumed that public recognition will improve. However, as closure of both titles; *chiropodist* and *podiatrist* has now been achieved (Health Professions Council 2005b), those practitioners who were previously unregistered and have not applied to be HPC listed through the grandparenting clause or been denied access, may still continue to work under another title, such as *foot health practitioner* (Foot Health School 2005). This may only serve to further confuse the general public as the issue of the appropriate use of titles and their associated roles will still not be clearly defined.

The results of this survey have identified the tasks carried out by podiatrists as well as some influencing themes. This has led to the development of a conceptual framework to illustrate the professional role of podiatry (Figure 4).

Figure 4

A Conceptual Framework Identifying the Current Professional Role of Podiatry



Summary

The following conclusions have been made based on the results of Phase I of this study:

- The treatment of nails, corns and calluses and the provision of footwear and foot health education are tasks representing the **core** area of practice
- The majority of podiatrists who responded to the survey conducted core podiatry most of the time and this appears to be the same in both the private and public sectors
- Core podiatry treatment may be being carried out more widely as over 50% of patients receiving NHS podiatry are older people, and age is associated with an increase in foot problems requiring core care (there is no comparable data for patients receiving care in private practice)
- There are some differences in the podiatric treatments provided dependent on the work sector supplying the care. Private practitioners gave footwear advice, prescribed insoles & orthotics, took part in 'at risk' clinics & carried out nail surgery less frequently than NHS podiatrists, but provided nail care, performed corn & callus removal and carried out biomechanical evaluations more frequently than their NHS colleagues
- A number of other clinical areas, which were not included in the questionnaire, were identified as constituents of current podiatry, including podopaediatrics, soft tissue surgery and alternative therapies. Some further non-clinical areas were identified including administrative and training duties.
- There was overall disagreement that *traditional podiatry* is only the treatment of nails, corns and calluses
- The issues of scope of practice, image and the use of terminology were identified as major themes associated with and affecting the core podiatric role
- Minor themes influencing the role were identified as work sector and training issues

CHAPTER 5

PHASE II

WHAT EFFECT DOES CORE PODIATRY HAVE ON SERVICE USERS?

5.1 INTRODUCTION TO PHASE II

Though British podiatry has undergone an increased scope of practice in the last 30 years and has devolved specialist areas including nail and foot surgery, the treatment of foot conditions associated with specific systemic diseases such as diabetes mellitus and rheumatoid arthritis and podiatric biomechanics; the main area of practice identified by the survey in Phase I is still core podiatry, though there may be some local variations. The survey also found that there was a disparity between the public and professional perception of the podiatric role compounded by the use of two interchangeable terms (*chiropody* and *podiatry*) to describe it, though podiatrists appear to be more commonly adopting the terms *podiatry* and *podiatrist* in the last few years. The confusion amongst the general public and other health care professionals regarding the profession role, may be contributing to an image problem. Professional identity and image are issues that appear to be important to podiatrists and have also been highlighted by previous researchers and discussed in Chapter 1 (Larkin 1983; Skipper and Hughes 1983; Mandy 2000; Mandy and Tinley 2004).

However, the main emphasis of this thesis is to investigate and clarify the role of core podiatry, now it has been shown to still form a large part of current practice. Part of this investigation should consider the effects of core podiatry and the value this has for patients, especially older people who received much of this care. This is an important factor requiring further study to assess whether core podiatry should be retained in the ever-changing health arena, where evidence must be given to justify clinical interventions (Department of Health 2000c). A podiatric outcome measure will not be used to assess the treatment effectiveness, as it was decided a more patient centred approach should be adopted to integrate with current health philosophy. Phase II of this study therefore aims to investigate service users experiences of core podiatry using a thematic analysis approach (Braun and Clarke 2006).

Horsburgh (2003) recommends that reflexivity should play a part in the qualitative research process, where the researcher should state their position and views, as total detachment is impossible and involvement in the whole process will contribute to the interpretation of the data (Mason 1996). As a working podiatrist, I have 18 years experience of delivering core podiatry care to individual patients; I have not however

ever been in receipt of treatment myself. My knowledge therefore is based on a practitioner rather than a patient view. I believe core podiatry care to be useful, as I am aware of the immediate relief it offers to some patients, but I am unsure as to the long-term effect it has on both a physical and emotional level.

The researcher conducted semi-structured interviews on patients immediately after an episode of core podiatry care. The three main research questions were:

1. What are the reasons that patients attend for podiatry treatment?
- 2a). Do patients think the treatment they receive is effective?
- 2b). What value do patients ascribe to receiving this type of care?
- 3). What do patients think would happen to their foot health if treatment was not available?

Analysis of the interview transcripts aimed to answer the three research questions including the effectiveness and value of core podiatry from the patient's perspective. By determining the core podiatric experience, it is hoped that this may inform the debate around the future of NHS podiatry services, including whether core podiatry should be retained in a constantly shifting health arena. The results may also suggest areas for further investigation.

Local ethical committee and research governance approval was sought and given for Phase II of the study.

5.2 METHOD

Sampling for Phase II

A purposive sampling approach was used for this part of the study, in order to recruit appropriate subjects to investigate the phenomena in question. Purposive sampling (often referred to as purposeful) allows the selection of information-rich cases for in-depth study (Patton 1990) and illustrates the feature or process in which the researcher is interested. The type of purposive sampling used was the non-random for representativeness sampling technique as defined by the criteria in Chapter 4.

The first level of sampling was to choose the case; this is the group or settings to be studied. Existing low risk patients who have been receiving regular treatment from

Sheffield South West Podiatry Services for core podiatry problems were the chosen case. The factors under investigation were their experiences of core podiatry that is receiving treatment to nails, corns and calluses and the receipt of footwear and foot health advice. Theory testing was not taking place, i.e. that core podiatry is a positive experience and improves foot health. The experience of receiving this type of treatment was being investigated in order to generate theory about core podiatry.

The numbers of patients required for selection were not pre-determined according to qualitative methods, as data collection continued until saturation occurred. Saturation of data is where no new themes appear to be emerging (Streubert and Carpenter 1999). However, for the purposes of fulfilling ethical committee requirements a maximum number of patients needed to be made explicit so it was decided that up to 20 patients would be recruited. The researcher selected suitable low risk patients by reading a number of record cards from one particular clinic in Sheffield. By examining the previous treatments outlined on the record cards it was possible to select patients who had received care for nails, corns and/or calluses. Footwear and foot health advice is normally given to every patient in this podiatry department but it is not always documented, so this criterion was omitted for the selection process as it was assumed this had been given if required. None of the patients selected had received previous podiatry treatment from the researcher but had received a number of treatments from different podiatrists working at the clinic. It was believed that an accurate experience would be better obtained from such subjects.

Twenty patients were initially identified who met the selection criteria and were booked to receive a routine appointment in the next 4 weeks in one clinic. Each patient was then sent a letter inviting him or her to take part in the study along with an information sheet and consent form (Appendices V:I, V:II and V:III). They were asked to contact the clinic receptionist if they wished to take part. From the original number, 13 patients agreed to take part and interviews were carried out on 10 patients. Three were lost; one due to illness, one did non-attend the appointment and one patient did not have time to participate in an interview after the podiatry treatment. After an initial analysis of the 10 transcripts, the researcher decided to carry out a further 4 more interviews to ensure data saturation had been achieved. In total, interviews were conducted on 14 patients, as no new themes were emerging at this point.

In qualitative studies, within-case sampling as described by Hammersley and Atkinson (1995) needs to be considered as it takes into account the time, people and context. In the case of this study the time the interviews were carried out were during normal office hours and were predetermined by the patients as they are given a choice of day and time when making their individual podiatry appointments. The people in the sample were podiatry patients and their age, gender, length of time receiving treatment and frequency of treatment was collated in order to illustrate to the reader, whether this was a representative and typical sample of routine NHS podiatry patients. The context of the study was in a podiatry clinic directly after an episode of care where the experience should still be fresh.

Interviews

The interview schedule was devised to answer the three main research questions for this phase of the thesis (Appendix V:IV). There were three different types of questions included in the schedule according to the definitions described by Patton (1990). These were questions of knowledge, opinion/values and those to establish experiences or behaviour. Background and demographic questions were not asked as this information was found from the podiatry record card for each participant. The interviews were taped and transcribed verbatim at a later date by the researcher.

5.3 ANALYSIS

Data analysis involved coding data into themes in order to draw conclusions (Jasper 1994), which is common in qualitative studies using transcriptions. With interviews sentences, paragraphs or sections of text can be coded to represent a theme or idea (Hewitt-Taylor 2001). Themes can either be predetermined based on the research questions or generated by the data as the analysis progresses.

In this study a thematic analysis was conducted (Braun and Clarke 2006) using the framework approach described by Ritchie and Spencer (1994) as the researcher found it to be a comprehensive approach to generate and interpret themes. It involves five key stages:

1. Familiarization

The transcriptions were read a number of times to get an overview of the content.

2. Identifying a thematic framework

Key issues, concepts and themes were identified according to the three main research questions. The data were then examined and referenced according to these three main aims with emergent issues being derived from the respondents according to any pattern of particular views or experiences.

3. Indexing

The thematic framework was then systematically applied to the data in its textual form.

4. Charting

Charts were then devised with headings and subheadings drawn from the thematic framework and research questions. The charts represented themes for each respondent.

5. Mapping & Interpretation

The data were sifted and charted according to core themes and analysed in order to define concepts, find associations and provide explanations for the data.

Using this method, a thematic framework was collated based on the three main research questions. Each major theme was used to generate new themes as the transcripts were re-read and the analysis progressed. Charts were generated for each theme with sub-themes identified across the study sample. An interview summary was completed directly after the interviews for each participant to establish if emergent themes were new or had already been identified (Appendix V:V).

Analysis triangulation

Some researchers advise returning themes derived from the analysis back to respondents for further confirmation (Colaizzi 1978) but others disagree as it is the responsibility of

the researcher to find deep meanings from the data (Giorgi 2000) and it does not necessarily increase the credibility of the findings (Hammersley and Atkinson 1995). The interviewees in this study would doubtless have been able to comment on their individual accounts from their interaction with the researcher, but to improve the verification process it was decided to use multiple analysts to review the findings as advised by Mays and Pope (1995). This method is known as analysis triangulation and is described by Patton (1990). It reduces the potential for bias and improves the reliability of the data. There are a number of ways to perform this, but for this study a variation on the method described by Douglas (1976) was used. After the main researcher had performed the initial first level analysis where a number of themes were identified to answer the three main research questions, five researchers then analysed the data independently and compared their findings.

Method

- Lists of excerpts were generated for each subject where each one illustrated a particular theme (Appendix V:VI).
- The list was given to five podiatrists who had recent experience of analysing qualitative data in a similar way
- They were told the three main research questions in the thematic framework and then asked to allocate each excerpt to one of the three major themes
- They were also asked to assign a sub-theme of their choice to each excerpt, this was done individually
- The group went through each excerpt and read out their assigned main theme and sub-theme
- A discussion was convened with the group in order for them to decide which themes were the most appropriate and their reasons for coming to those decisions
- The researcher made a note of each theme but did not contribute to the discussion
- In some cases a variety of terms were assigned to a theme where the group felt it represented a number of different issues
- The themes were then tabulated to illustrate the researcher and group allocations and descriptions (Appendix V:VII)

Discussion of differences

The major themes assigned to each excerpt were different between the researcher and analysis group in only three cases (highlighted by red font in Appendix V:VII). In all of these examples, the text used could have been allocated to one or more of the major themes. There were differences as the researcher was aware of the questions that were asked in the interviews which guided the allocation, however though the group were given an outline as to the general content of the interview schedule, they did not have the benefit of the full transcripts so were unaware as to what the questions were.

The allocation of sub-themes differed between the researcher and group on more occasions. This was to be expected, as themes were not given during this part of the exercise as the group were asked to generate their own. On a number of occasions the themes assigned used different words between the researcher and group analysts but after consulting a thesaurus the words used were found to have similar meanings in all cases. The differences in the terms used are represented in Appendix V:VII by an asterix.

5.4 FINDINGS

Demographic profile of the participants

Though it is more common to report demographic data in quantitative studies, it is done here to illustrate to the reader the characteristics of people who took part in the study.

This will hopefully show that the participants were what many podiatrists would identify as *typically routine* podiatry patients, i.e. they were all older people, as this group has a higher incidence of more common foot problems which requires core podiatry care. A total of 14 patients were interviewed, 11 females (79%) and 3 males (21%). Their ages ranged from 68-87 years with a mean age of 78.5 years. The participants had been attending for podiatry treatment for an average of 10 years, and the average interval between appointments was 14 weeks (Appendix V:VIII).

Table 3: Reasons for Attendance for Podiatry

Themes				
Referred to the service by another health care professional	Current foot problem	Suffering from a foot deformity	Unable or unsuccessful self care	Pain

Table 3 lists the sub-themes associated with the reasons for attendance. For more examples of narratives to illustrate these themes see Appendix V:IX.

A few patients had originally been referred to the service by another health care professional:

“I was first sent here by my practice nurse at my general practitioners, there was something wrong with my feet and she said you would be better off attending this chiropody clinic” (Subject 9)

“I used to pay £10 to have them done and then the doctor got me coming here” (Subject 6)

But all patients described a current foot problem as a reason to attend for treatment; most of these problems were either corns or callus:

“I’ve got corns on the little toes and a bit (callus) under the feet” (Subject 3)

“I can’t get down to cut my nails for a start, I do have one or two corns, I’ve always had bad feet” (Subject 6)

Some of these lesions were associated with a foot deformity, or foot deformities were in conjunction with corns or callus:

“Well I have a bunion and it’s pushed me toe up and that’s the problem there, I’ve got corns on it” (Subject 1)

“Hard skin yes, I think its formed with my bunions being out of shape...I make a lot of hard skin under my feet” (Subject 10)

All the patients in the study described an inability to care for their own feet:

“With having arthritis in the wrist I just can’t get down to cut them” (Subject 5)

“I used to do my nail myself but they’re getting thick and I’ve got very distorted toe nails on my hammer toes and I find it difficult to do them myself” (Subject 11)

Or had made unsuccessful attempts at self-care as a reason to attend for treatment:

“Sometimes when the corn hurts and you start to mess about with it, sometimes it bleeds or sometimes it gets worse” (Subject 8)

“I bought some corn plasters and they were hopeless. . .it was hurting that much I thought I’ll try that, but it was just an absolute waste of money” (Subject 1)

Everyone described a degree of pain associated with their foot problems, which had also led them to seek treatment:

“I’m in that much pain with my feet” (Subject 10)

“Sometimes I can’t hardly walk, I daren’t touch a matchstick on the floor with my feet at times” (Subject 13)

Table 4: The Effects and Value of Core Podiatry Treatment

Themes						
Treatment maintains foot health & alleviates pain	Long- standing care	Foot problems improve or are cured	Professional care	Mobility	Self care advice	Confidence / assurance

Table 4 illustrates the sub-themes generated when investigating the effects and value of core podiatry treatment. For more illustrations see Appendix V:X.

The demographic profile illustrated that the majority of patients in the study had been attending for a number of years. The long-standing care they had received also emerged

as a theme here. Some patients foot problems can be improved after receiving core podiatry:

“I’ve got a few corns she does those, which is not very often because she’s clearing them up for me” (Subject 6)

“I had corns on my little toes and bunions which were inflamed, oh yes, when I originally came . . .but you see over the months they’ve gradually got better” (Subject 12)

Or cured with regular podiatry care:

“Originally I came because I’d got seed corns under both feet, and they’ve [the podiatrists] sorted them out wonderfully” (Subject 2)

Treatment also maintains foot health:

“Well when I’ve had my feet done I feel champion, can walk a lot better, I feel on top of the world when they’ve been done” (Subject 14)

“When I’ve been and I’ve been treated, that is peace for a certain period of time” (Subject 9)

and alleviates pain:

“Well they feel a lot better when they’ve been cut properly” (Subject 3)

“You can walk on air when you come out [referring to the feeling after treatment]” (Subject 11)

In some people the podiatry treatment they received improved their mobility:

“I used to walk but it was with pain . . . without coming here I think I would be in trouble” (Subject 2)

“I couldn’t walk too far because they were painful. All I wanted to do was to get on a bus, tram car and ride, ride, but now I don’t mind having a good walk” (Subject 13)

Whereas one patient, though in pain with her feet, did not feel this affected her mobility:

“No, I wouldn’t say that (referring to her feet stopping her from doing any activity) it’s just painful when I’m walking” (Subject 1)

And some felt their mobility was not affected by their foot problems:

“I walk a lot, I walk miles” (Subject 11)

Some felt the professional care they received was better than care they could have provided for themselves:

“You can’t manage your toes like you people, you (are) professional to do it” (Subject 8)

“Just getting off more of the hard skin that I wouldn’t be able to do” (Subject 7)

And this helped give confidence and reassurance:

“You can talk to the podiatrist, if there’s anything that’s on your mind that you want to ask them they will give you the information” (Subject 9)

“I feel assured that somebody has seen that there’s nothing going wrong with my feet at all” (Subject 2)

Most people had been given some form of self-care or footwear advice by the podiatrists and had tried to adhere to this:

“She said do you use slippers, and I said yes, and she says well don’t, so I don’t wear slippers now and they have (his feet) been better” (Subject 6)

“The podiatrist told me how to do it and I’ve been able to do it myself, my toenails, from then” (Subject 9)

Though all the people questioned felt the treatment they received was effective, most wanted to come more frequently. One person made a comment that she preferred to see the same podiatrist for continuity of care, whereas another was quite happy with different podiatrists at each visit to the clinic.

Table 5: Perceived Outcome if Podiatry Treatment were no Longer Available

Themes		
Deterioration in foot health	Unable to manage self care	No family/friends to provide some foot care

The sub-themes around the main theme of perceptions about individual's conditions if treatment were no longer available are illustrated in Table 5. For more extensive narratives see Appendix V:XI.

Everyone felt their feet would deteriorate if they were not given core podiatry treatment:

"Well I actually feel as though if I didn't come and have treatment . . . I would find it extremely difficult to walk" (Subject 9)

"I don't know what you'd do if they didn't cut it out (referring to podiatry treatment to a corn) it would just get worse and worse, really red" (Subject 1)

As they were unable to manage either some or all of their own foot care:

"I can't do my nails very well myself; I can't do the big toenails because they are thick" (Subject 2)

"I mean I would probably have to try something to get rid of it myself but you can't" (Subject 1)

Some people did not have any relatives who could help with their foot care:

"I have had people to help me cut my nails, but they've all died off now so I'm left without anyone to help me" (Subject 3)

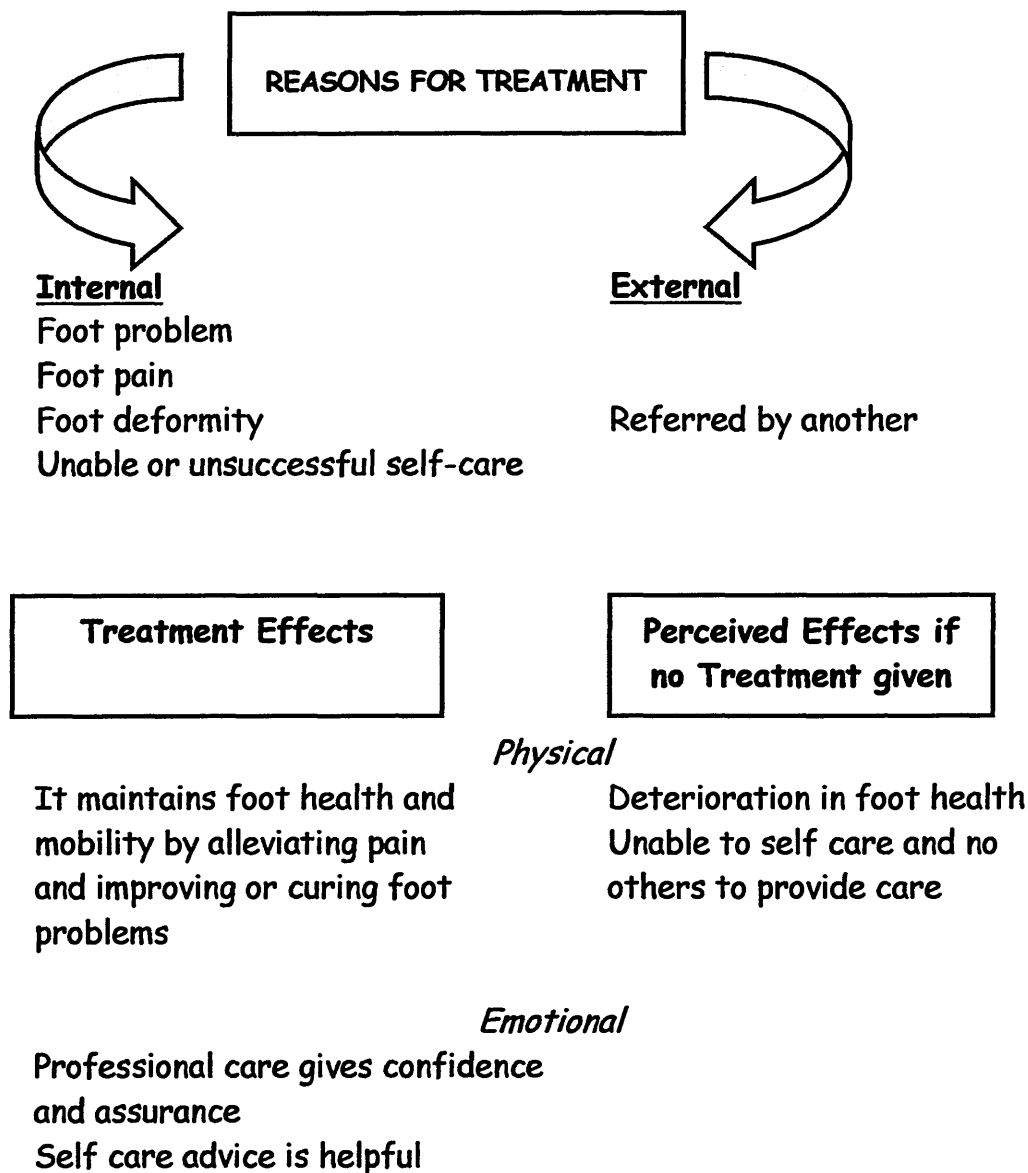
"You see if I left my nail I couldn't manage to do that, and I've nobody at home you see" (Subject 4)

Figure 5 diagrammatically represents the themes generated from the patient interviews.

Figure 5: The Experience of Core Podiatry

Core Podiatry is:

The treatment of nails, corns and calluses and footwear and foot health education, which is long-standing and frequent



5.5 DISCUSSION

A definition of core podiatry was derived from the survey results in Phase I of this thesis. Patients were then sampled accordingly for Phase II of the study. From analysis of the interviews, three other facets in the definition of core podiatry that were not found in Phase I were highlighted. Core podiatry can be frequent, often long standing and is carried out by experts (clinicians). This modified definition considers that core podiatry care appears to be required on a regular basis in order for patients to benefit from it and it needs to be undertaken by someone trained to perform it, as patients themselves cannot carry out many of its constituents.

Internal and external factors appear to define why people attend for podiatry treatment. The internal factors are self-explanatory and to be expected, these include suffering from a foot problem, a foot deformity, being in pain or a combination of these. Some or all of these problems cannot be dealt with by the individual themselves as the knowledge or skills to perform such tasks are not available. By attending for core podiatry, a professional diagnosis is therefore provided with associated treatment and advice if required. One external factor was identified; this was referral to the clinic by another health care worker, as they deemed specialist advice and treatment might be required.

The effects of receiving core podiatry treatment appear to be wholly beneficial, though patients may be reporting positive changes to please the researcher, which was commented on in Redmond et al's study (1999) who coined this the 'gratitude effect'. In some cases foot problems can be cured, but more commonly in this group of patients treatment improves a foot problem and in conjunction alleviates pain, therefore preserves foot health at a level, which is comfortable for a period of time. This can have a positive affect on mobility in some cases. Receiving core podiatry can also have an impact on the entire person, rather than being a purely physical benefit, as it can give confidence and assurance, as well as alleviating foot problems. Overall, core podiatry as seen from a user perspective appears to provide both a physical and emotional effect, thus affecting the whole person.

Most patients perceived their foot health would deteriorate if podiatry treatment were no longer given, though an element of bias may have been introduced here. As patients

may have thought their future care from the podiatry service may be withdrawn if they informed the researcher that they could manage their own foot care regardless of whether this was a reality or not. The researcher had not come into contact with any of the study participants before the interviews were carried out but, as a podiatrist working in the department where the study was taking place, was aware of this potential effect. To try and alleviate this, the researcher discussed this potential problem with each subject prior to commencement of the interviews.

The perceived deterioration in foot health is multi-factorial, as foot problems could worsen due to the lack of professional treatment to sustain them at a comfortable level and this can cause distress. Patients talked of being frightened to care for their own feet in case they caused any harm and would worry if a professional was not checking them at regular intervals. Most people also believed they would be unable to provide similar care for themselves or did not have anyone else to do this for them. This highlights, that whilst some self-care can take place, such as nail care for those that can manage to do this, there is an area of care that cannot be undertaken by anyone other than a podiatrist at the moment – that is the reduction of corns and calluses. As this is a specialist area of care and requires expert knowledge and skills in order to carry it out.

Summary

The following conclusions have been made based on the results of Phase II of this study:

- People are either referred for core podiatry care by a health care professional or seek this treatment themselves because of a foot problem, which can be associated with pain and deformity or because they are unable to manage their own foot care
- Core podiatry care can preserve foot health by curing or improving foot problems, or maintaining foot health which in turn reduces pain and can affect mobility and quality of life
- Core podiatry can affect the whole person, is seen as beneficial by those who receive it, especially older people whilst self care advice is seen to be useful
- Most people perceived their foot health would deteriorate if core podiatry were no longer available
- Older people are unable to provide some of their own foot care due to mobility problems and cannot provide more technical foot treatments associated with core podiatry as they do not possess the specialist knowledge and skills to undertake this

CHAPTER 6
PHASE III
DEFINING CORE PODIATRY

6.1 INTRODUCTION TO PHASE III

Some of the components of modern core podiatry care have been identified in Chapters 4 and 5 and include the treatment of nails, corns and calluses and the provision of footwear and foot health information. Much of this care is still performed at frequent intervals and is long standing to preserve foot health. It is a treatment carried out by experts and comprises of certain technical skills which patients are unable to perform for themselves. It can be beneficial to those older people who receive it and some also assign an emotional value to it, as regular surveillance and treatment provides them a degree of reassurance. A more in-depth exploration of the function and practice of core podiatry is now required to investigate if any more elements are associated with this type of care to enable the formulation of a model for practice. Any model, to be appropriate and in context, should be able to illustrate the most appropriate configuration of future NHS core podiatry services.

Based on the evidence collated so far, core podiatry appears to be a poorly defined but complex concept consisting of a group of phenomena but largely based on tacit knowledge. This knowledge forms a large part of professional learning in the allied health professions and is based on the work of Eraut (1998) who asserted that people do not know what they do and Polyani (1967), who coined the term 'tacit knowledge' to describe what we know but cannot tell. In the podiatry profession this large amount of non-propositional knowledge has caused problems in a variety of areas. Confusion has been caused both within and outside the profession by the simultaneous use of two different titles (chiropodist and podiatrist), whilst the tasks associated with each one do not appear to have been clearly defined whilst the overall scope of practice in the UK has increased quite dramatically over the last 30 years. This confusion in what is the exact purpose and function of podiatry has contributed to an image and status problem believes Larkin (1983) and Borthwick (1997) and has led to the re-profiling of services (Macdonald and Capewell 2001; Moore, Farndon et al. 2003) to cope with the continuing high demand for podiatry care (Health and Social Care Information Centre 2005). The recent grandparenting procedure has led to an influx of over 2000 (The Society of Chiropodists and Podiatrists 2005a) clinicians to the HPC register able to practise as podiatrists (Health Professions Council 2005b), and the new proposed changes including in Commissioning a Patient-led NHS (Department of Health 2005a) will also influence the design and delivery of future podiatry services. Now appears to be the ideal time to help make transparent the components of core podiatry to clarify the

tacit or 'hidden' nature of knowledge and develop a model of care. A concept analysis using core (traditional) podiatry as the concept would therefore appear to be a suitable method to use for this next stage of the thesis as it can: "*elicit clarification, identification and meaning of words*" (Baldwin 2003).

Morse and colleagues (1996) describe concepts as simple or complex entities accounting for large processes whereas Meleis (1985) states that they are mental images tinted with the theorist's perception, experience and philosophical bent. The phenomenon, or group of phenomena, of a concept is defined through literature and practice examples (Walker and Avant 1988), forms the theoretical realm of a discipline, and is a building block of theory (Chinn and Jacobs 1987). There is some slight disagreement amongst some nurse researchers regarding whether concepts should be clearly defined as Morse and others (1996) believe, or are dynamic changing over time and therefore may need to be re-defined to remain useful in practice as Rodger's advocates (2000a). Morse and Doberneck (1995) describe six different approaches to concept analysis in order to develop, delineate, compare, clarify, correct or identify a concept.

Concept analysis methods have been used widely in the nursing profession over the last two decades to improve theory testing in nursing according to Schwartz-Barcott and Patterson (2002). The different methods of concept analysis developed and refined for nursing have already been discussed in Chapter 3 these however have not been used before in podiatry. The nursing profession appears to be a number of stages ahead of podiatry when examining the philosophical underpinnings and models of care that guide practice. Currently the podiatry profession does not embrace clearly stated and defined philosophies though Borthwick (1997) in his work on professionalisation strategies used in British podiatry employs Weber's concepts of social closure, professional dominance and autonomy to guide his thinking. Models of care specific to podiatric practice and derived from empirical work have also not been produced except for Vernon et al's (2004) paradigm for shoe wear patterns which proposed a new concept of primary walking intention that could potentially form the basis of a new model underpinning podiatry practice.

The aim of this next stage of work is therefore to examine the concept of core podiatry in order to clarify, refine it, produce a working definition and develop it further. This

will then be used to produce a new definition of the concept by comparing and contrasting analysis of the literature and related qualitative data towards developing a model for core podiatric practice.

The development of Concept Analysis

The philosophical basis for concept analysis stems from analytic philosophy, which led to the development of specific schools of thought examining language known as linguistic or ordinary language philosophy. These were informed by the works of Frege, Wittgenstein and Ryle (George and Heck 2000, p. 296-297; Lyons 2000, p. 788). Rodger's quotes Ryle's work as a major influence on the development of concepts, as he saw concepts as abstract features but which were "*directly related to the ability to perform certain tasks*" and the use of a word would identify an individual's understanding of the concept. She goes on to cite Toulmin's research as giving further insight, as conceptual ambiguities could highlight gaps in knowledge, which may be limiting professional and scientific development (Rodgers 2000b). The nursing profession has therefore embraced this method as a process to assess concept maturity and develop and clarify blurred and confused concepts.

Proposed method and justification

Morse and colleagues (1996) advises assessing the maturity of the concept, as mature ones may not require further clarification if they are well defined, have distinct attributes, delineated boundaries, preconditions and outcomes. Immature concepts however, will need further research to develop them towards maturity using literature as data, supplemented by qualitative research if necessary (Morse, Mitcham et al. 1996). The maturity of core podiatry will be assessed based on the original literature review conducted for this thesis and the results of Phases I and II, if found to be immature or partially mature, a concept analysis will be instigated using The Hybrid Model (Schwartz-Barcott and Kim 2000). This appears to be the most appropriate after reviewing the different methods in Chapter 3, as its combination of a literature review, fieldwork phase and final analysis phase, will allow all the data previously generated in this thesis to be utilized towards defining the concept of core podiatry.

These methods appear to be the most pertinent to my study and my philosophy as they will be able to produce a working definition of core podiatry, which is applicable to current practice but open to refinement through future work if required. This definition

should promote theoretical clarity and suggest refinements to the contribute of knowledge related to podiatric practice as well as explicate what core podiatry is, in order to assess whether this area of practice needs to continue and if it does, what modifications are required before it can be appropriately configured into future NHS podiatry services. Once the rudiments of core podiatry have been identified, the speciality areas could also be examined using the same process. However, these specialist areas such as treatment of the high-risk patient and podiatric surgery will not be addressed in this analysis, as it is core aspects of care that are the significant areas for this study.

6.2 METHOD

Assessing the maturity of the concept of core podiatry⁶

The process of assessing the maturity of the concept of core podiatry was carried out using the method advocated by Morse and others (1996) and Hupcey et al (2001). It uses four main criteria:

- *Epistemological (is the concept well defined and clearly positioned in the literature?)*

There are relatively few definitions of podiatry in the literature, but the ones that were found seem to encompass the whole professional scope of practice. None specifically separate core work from more specialist areas (The Society of Chiropodists and Podiatrists 2001d). Results from the survey in Phase I also showed that practitioners gave a variety of definitions for traditional podiatry with no definite consensus of opinion (see Chapter 4). From an epistemological view there does not seem to be a clear definition or consensus on core podiatry.

- *Pragmatic (does the concept fit with the phenomena common to the discipline?)*

This aspect of assessing maturity investigates if the operationalization of the concept matches with practitioner observations (Fasanacht 2003). Again there is some confusion to determine this aspect of the maturity of core podiatry based on the results of the practitioner survey. Though core podiatry appeared to be carried out the majority of the time by the respondents in the survey and

⁶ Core podiatry has been adopted in this thesis as the term to accurately portray what was once described as traditional/routine/general type care. Therefore when reviewing the literature, the terms *traditional*, *routine* and *general* will also be included to represent core work.

Redmond et al, (1999) comment that a large part of routine podiatric practice involves the treatment of nails, corns and callus, there is still confusion over what exactly constitutes this type of care.

- *Linguistic (is the concept used consistently across a variety of contexts?)*

The synonymous use of the terms chiropody and podiatry appear to cause a great deal of confusion amongst podiatrists, other health care professionals and the general public. This was highlighted by the many comments made by practitioners in the Phase I survey who felt there was a difference between what podiatrists thought constituted traditional podiatry or chiropody and what patients believed was chiropody. The general public according to podiatrists are often unsure as to the exact meaning of podiatry. This has also been commented on by others (Foxall 1999). Podiatrists themselves, also gave a number of different definitions for traditional podiatry in the survey, further corroborating that this concept may not be clearly defined.

- *Logical (are the relationships to concepts clearly defined and congruent with the attributes of the concept?)*

Rodgers does not believe that this criterion for assessing a concept is necessary as she views concepts as dynamic entities that change over time (Rodgers 2000a). However, core podiatry does not seem to be clearly defined and does overlap with other aspects of podiatric care, most commonly the specialist areas (The Society of Chiropodists and Podiatrists 2004c). This may be because a clear definition of core podiatry has never been produced and has changed over time as the profession has evolved and increased its scope of practice.

Core podiatry appears to be an immature concept from this assessment. The main question that has arisen from this exercise is that though *chiropody* and *podiatry* are used as synonymous terms, they may represent different aspects of care. This has caused confusion both within the profession and outside it. Traditional podiatry is the term I originally adopted to represent the routine work carried out by podiatrists, this was then modified and termed core podiatry. Further investigation is now required to clarify and define the concept based on an analysis of its attributes, antecedents, consequences and context.

Literature Review

Rodger's Evolutionary Model was used to conduct a new literature review to analyse the concept of core podiatry. This model involves a cyclical process and aims to provide clarification of the concept at a particular time and in a particular context. It is based on inductive enquiry and rigorous analysis of literature pertaining to the concept and will not provide a definitive definition of the concept that has rigid boundaries but will reveal attributes of the concept at the time, which may evolve further. This is important in the podiatry profession as the context is ever changing, especially in the public sector where changes in health policy exert a vast degree of influence over NHS podiatry services. This in turn affects the private and commercial sectors.

The search terms used were: *chiropody/podiatry*, *chiropodist/podiatrist*, *routine chiropody/routine podiatry*, *traditional chiropody/traditional podiatry*, *general chiropody/general podiatry*, *core chiropody/core podiatry* and *foot care*. Four years of English language documents were searched both internationally and in the UK from 1998 – 2002 using a CD ROM of published podiatry research produced by the Podiatric Research Forum (Vernon 2003) and a hand search of The British Journal of Podiatry and Podiatry Now. Medline, Cinahl, Embase and Proquest were searched electronically as well as government and professional websites relevant to podiatry. Articles were discounted if they were about specialist areas of podiatry or about podiatry practice outside the UK, as it is specifically British podiatry, which is the emphasis for this study. Literature in related disciplines; medicine, nursing, physiotherapy and occupational therapy were also searched. Rodgers (2000a) also includes relevant seminal works that may not come into the selected time frame to ensure a comprehensive coverage of the literature. Additional references highlighted from an article's bibliography were consulted if they appeared to be relevant to the subject. A 20% random sample of the retrieved literature is recommended if there are a large number of articles (Rodgers 2000a), but as the total number of articles was relatively small in this study, all were included. Relevant literature was summarized and inserted into tables according to the following categories: definitions, surrogate terms, attributes, antecedents, consequences, referents, context and related concepts to aid the analysis process.

Fieldwork Phase

Findings from the concept analysis of the literature using the evolutionary model were then used as a basis to guide further research, provide more clarity on the concept and develop it further. This combination of literature review and subsequent fieldwork for concept development and theory construction forms the Hybrid Model (Schwartz-Barcott and Kim 2000), details of which have been previously discussed. Data from Phases I and II of this study (podiatrists' views on the traditional podiatric role and patients' experiences of core podiatry), were reanalysed using Rodger's method, to explore the antecedents, attributes, consequences and context of core podiatry. A working definition of the concept is often produced at the end of the literature review to guide further analysis. However, as one had already been adopted for the survey in Phase I and this was based on the clinical expertise of the research team and an undergraduate syllabus, which was in use at the time (University of Huddersfield 1997a, 1997b), a definition was not produced until the final analytical phase. Analysis will also concentrate on the contextual features of the concept, surrogate terms and related concepts and references when the concept is used. It will also identify any disagreements about the concept and changes in it over time though it is not the purpose of this thesis to track the advancement of core podiatry, as care that is provided now is the most important factor. However, a brief discussion of the evolution of podiatry will be undertaken according to its defining attributes to investigate if they have changed: "*by convention, redefinition or to maintain a useful, applicable and effective concept*" (Rodgers 2000a). An exemplar of the concept will be identified and future implications, hypotheses and further development of the concept discussed.

6.3 FINDINGS - LITERATURE REVIEW

A total of 65 separate excerpts were included in the analysis. Though there were a number of research articles pertaining to aspects of core podiatry in the literature, a large proportion of the relevant information was derived from *grey literature*. This is literature that has not been peer reviewed and can include editorials, newsletters, reports, working papers and government documents (Auger 1989). This is not an uncommon finding when reviewing a practice profession where much of the knowledge is taught and passed down through the generations without formal evaluation through empirical work.

6.3.1 Definitions of core podiatry

Though Rodgers evolutionary method formulates meaning from the attributes of the concept rather than its definitions (Rodgers 2000a), some papers do report a discussion on definitions after conducting a concept analysis (Rosenjack Burchum 2002; Siefert 2002). Definitions of core chiropody/podiatry were found mainly in the grey literature and will be briefly discussed in order to set the context of this stage of the thesis.

Runting (Runting 1932) described chiropodists as those who *“treat scientifically and effectively such foot disabilities as corns, verrucae and nail affections together with the palliative treatment of bunions: and protect and correct malalignments . . . includes advice as to footwear.”* This definition has not evolved a great deal over the next 70 years as Prior (1998) notes: *“The traditional role of the podiatrist treating nail disorders and corn/callous formation still represents the majority of the caseload.”* However, DiMaggio (1995) sees the podiatrist in a more complex role, as: *“a specialist who studies foot pathology from a structural and functional standpoint and who treats medical problems dealing with the foot.”* Potter (2004) also describes podiatrists as treating a *“complex range of conditions using a variety of techniques to manage painful foot conditions and often have the ability to provide immediate pain relief.”*

There were very few actual descriptions of core podiatry in the literature, especially in the podiatry journals. This may be because it is assumed that practitioners are so familiar with this concept that it does not require further specification. Descriptions were however found regarding the types of podiatry services available, including a community (Salvage 1999), clinical (Quality Assurance Agency for Higher Education 2001) or specialist provision (Clelland and McCann 1999) consisting of independent and autonomous practitioners (Prior 1998; The Society of Chiropodists and Podiatrists 1999a). The rudiments of core podiatry were the assessment, diagnosis and management of foot and lower limb pathologies including nail problems, corns and callus (Clelland and McCann 1999; McAdam and Webb 2001; Quality Assurance Agency for Higher Education 2001; Health Professions Council 2003). This care can restore or maintain mobility (The Society of Chiropodists and Podiatrists 2001c; Brodie 2002) and is often given to older people (Salvage 1999; Brodie 2002), though it is also available *“from birth to old age”* (University of Huddersfield 2004).

6.3.2 Identified attributes of core podiatry

Clelland and McCann (1999) note that podiatry ranges from: “*The traditional view of treating problems (e.g. corns, hard skin, and bunions) to diagnosing congenital/acquired foot problems and detecting changes of systemic diseases in the feet.*” Which suggests an evolution from providing simple treatments to a more holistic view involving more complex procedures including the diagnosis and “... *management of patients with foot and lower limb disorders*” (The Society of Chiropodists and Podiatrists 2004a). Borthwick (1999b) reinforces this, as he believes podiatrists now include: “*new, previously unrecognised pro-pathologies*” into their scope of practice. He does however, regard this as primarily to extend the professional authority of podiatry rather than a simple evolution of the profession over time. The main attributes of core podiatry identified from the literature can be divided into three discrete areas: assessment & diagnosis, treatment, health promotion & communication (see Table 6).

Table 6: Attributes of the Concept of Core Podiatry Derived from the Literature

Assessment & Diagnosis	
Use medical diagnostic equipment	Use of Doppler to identify at risk feet (Tweedie 2002)
Request drugs & clinical tests	Request medicaments & antibiotics from GPs (Kalra, Prior et al. 2000) Conduct & request clinical & lab tests (Quality Assurance Agency for Higher Education 2001) Send skin & nail samples for microscopy culture (Prior 1998)
Use clinical reasoning & evidence based practice	Require up to date knowledge, skills & reasoning (University of Huddersfield 1997a,b; Pooke 2000; Health Professions Council, 2003) Interpret physiological, medical & biomechanical data (University of Huddersfield 1997; Health Professions Council, 2003)
Treatment	
Treatment of nails/ corns /callus/ verrucae with mechanical, chemical, homeopathic, surgical or thermal treatment modalities	Nails - cutting (Prior 1998); nail drill (Iillsley and Borthwick 2002); medicament application for fungal nails (Stepney and Robinson 1998); tea tre oil for fungal nails (Goodwin and Hardiman 2000); surgery (McCourt 1999). Corns - scalpel removal (Prior 1998); padding (Springett, Parsons et al. 2002); salicylic acid (Potter 1999); electrodessication (Anderson and Burrow 2001) Callus - scalpel removal (McCourt 1998); salicylic acid (Potter 2000) Verrucae - debridement (Goodwin and Hardiman 2000); electrosurgery (Lelliott and Robinson 1999); cryotherapy (Editorial 1998a)
Treatment of musculoskeletal disorders & the prescription & manufacture of orthoses Treatment of wounds	Treatment of sport injuries & musculoskeletal disorders (Weir and Carline 1998; Brodie 2002; Williams 2002) Use of orthoses (Prior, 1998;Barlow, 1998; MacSween, Brydson et al. 1999). Wound healing and wound prevention (Tweedie 2002)
Administer drugs & medicaments	Administer or supply pharmacological agents (Quality Assurance Agency for Higher Education 2001)
Health Promotion & Communication	Self care advice (Tippins 1998; O'Boyle and Fleming 2000; Chatfield 2002) Foot health education (Murray and Tavener 1998; Prior 1998; Chatfield 2002) Communication (Editorial 1998b; Quality Assurance Agency for Higher Education 2001;Health Professions Council, 2003)

Assessment and Diagnosis

Before treatment can commence, a thorough assessment of the patient must be undertaken and a diagnosis made. This can involve the use of diagnostic equipment such as a Doppler ultrasound, which detects vascular flow in the lower limb (Tweedie 2002) or be dependent on the results of clinical tests that podiatrists can undertake or request such as microscopy to confirm a fungal nail infection (Prior 1998). Podiatrists can also ask for drugs such as antibiotics and medicaments to be prescribed by GPs (Kalra, Prior et al. 2000) as part of a treatment regime for their patients. A physical assessment of the lower limb involving a neurological, vascular, dermatological and podiatric examination is also necessary (University of Huddersfield 1997a and 1997b) in conjunction with recording the patient's local and general medical condition (Editorial 1998b) to aid diagnosis. This is dependent on interpreting the results of the assessment based on research, reasoning and problem solving skills (Health Professions Council 2003).

Treatment

Most of the literature pertaining to the attribute of core podiatry consisted of descriptions of the ranges of treatments available. These can be divided into two main areas; those involving the nails, corns, calluses and verrucae and the treatment of musculoskeletal disorders which includes the prescription and manufacture of orthoses. Simple treatments for toenails involve cutting as noted by Prior (1998) or mechanical debridement with an electric drill (Blair, Burrow et al. 1999; Illsley and Borthwick 2002). More invasive procedures for ingrowing toenails include surgical removal, which McCourt (1999) describes as the most common method of treatment taught in podiatry schools. Stepney and Robinson (1998) states that mycotic nails can either be treated with mechanical debridement, topical medicaments, be avulsed during nail surgery or undergo laser therapy. Goodwin and Hardiman (2000) however, describe the use of a homeopathic treatment with tea tree oil as effective for a fungal toenail infection.

Corns are a foot problem most commonly treated by scalpel reduction (Health Professions Council 2003) but Springett et al (2002) describe a variety of other possible treatments including the application of padding, applying emollients or electrodesiccation of the corn. The latter is a surgical procedure and was found to resolve some lesions by Wilkinson and Kilmartin (1998) and can be an effective

treatment for painful corns (Anderson and Burrow 2001). Springett and colleagues (2002) also find the use of topical medicaments, most commonly involving salicylic acid to be an effective treatment, which concurs with a study by Potter (2000). A podospray drill applied to the corn site, after scalpel debridement was shown to reduce the size of a number of painful corns in a small two-centre audit conducted by Farndon and Marriot (2002) while homeopathic treatments using Marigold Therapy also in conjunction with scalpel reduction, reduced the pain associated with corns and extended the treatment times for patient's in Davies and Murgatroid's study (2002). Callus was also most often treated by scalpel debridement (Prior 1998; Health Professions Council, 2003), which McCourt (1998) notes needs to be undertaken frequently. Alternatively, salicylic acid preparations can be used to remove callus (Potter 2000).

Verrucae were also subject to similar treatments as corns, that is scalpel debridement (Chapman and Visaya 1998), the application of homeopathic medicaments (Goodwin and Hardiman 2000) and acid preparations (Prior 1998). Lelliot and Robinson (1999) found electrosurgery therapy to be both cost effective and safe whereas Rankin and Swinscoe (2002) described a number of treatments including the application of thermal modalities, chemicals and lasers. Some of the treatments above are undertaken after the administration of local anaesthesia. The use of specific drugs and medicaments either via injection or applied topically is stated as part of the components of podiatry by the Quality Assurance Agency for Higher Education (2001).

Fewer articles were found discussing the treatment of musculoskeletal disorders, the prescription and manufacture of orthoses and the treatment of wounds. This may be because though aspects of all these areas may come into core podiatry care, they are now more commonly seen as components of more specialist treatments, which were excluded from this literature search. Williams (2002) describes podiatrists as the key practitioners in managing patients with musculoskeletal disorders, which involve correcting foot function with orthoses (Prior 1998; Brodie 2002). Barlow (1998) discusses the prescription of shock absorbing orthoses as an effective treatment for patients with blistering disorders and MacSween and others (1999) found some specific types of orthoses improved stride length and comfort in patients with rheumatoid arthritis. The treatment of sports injuries was only mentioned in a few papers, one a case study (Weir and Carline 1998) and another was a descriptive article about the roles of podiatrists (Brodie 2002). Wound healing and prevention was also only mentioned

in one article and this was a description of vascular assessment techniques rather than an empirical study (Tweedie 2002). The paucity of articles in these areas is probably due to the exclusion of specialist areas of podiatric care.

Health Promotion and Communication

Linked with the assessment, diagnosis and treatment of patients, core podiatry also includes the attributes of health promotion and communication, both with patients, their carers and other health care professionals. A number of studies discuss the trend for podiatrists to encourage patients to care for their own feet wherever possible. Chatfield (2002) in an audit of packages of care describes giving self-care advice to empower patients, as does Tippins (1998), in his description of re-profiling a podiatry department. Foot health education and promotion is integral to podiatrists work especially the areas of preventative advice, believes O'Boyle and Fleming (2000) with the theory of health promotion being delivered at undergraduate level to equip student podiatrists for practice (Murray and Tavener 1998). Communication with patients and carers (Quality Assurance Agency for Higher Education 2001) in diagnoses, treatment plans and the potential risks of any treatments can reduce the possibility of complaints according to SCP (Editorial 1998b). The HPC believe (Health Professions Council 2003) the education of the general public and other health professionals can heighten awareness of the role of podiatry and is important to ensure patients receive seamless care.

6.3.3 Surrogate terms

It is essential to consider surrogate terms, these are words, which are different but may be representing the same concept (Rodgers and Knafl 2000). The only surrogate term identified from the literature for the concept of core podiatry was *chiropody*.

6.3.4 Antecedents of core podiatry

The most commonly reported antecedent or "*situation preceding an instance of the concept*" (Cowles and Rodgers 2000) found in the literature was a foot problem. This could be a result of a medical or podiatric condition. Lever (1999) in his paper includes the following conditions requiring podiatric referral: biomechanical abnormalities, ingrown toenails needing surgery, pathological callus, skin lesions, toe nail conditions, infections or ulcerations. The most frequently described foot conditions, which require core podiatry care are thickened, deformed, or fungal toenails (Illsley and Borthwick 2002); ingrowing toenails (Chapman and Kishore 1998) and corns and callus affecting

lower limb function (Quality Assurance Agency for Higher Education 2001). Foot trouble in older people, was the single physical health symptom associated with chronic difficulties of daily living according to Salvage (1999). This could consist of an inability to provide self nail care or to manage corns and callus (Chatfield 2002). McAdam and Webb (2001) believe the scope of modern podiatry should be to treat painful and disabling foot conditions.

6.3.5 Consequences of core podiatry

The main consequences of core podiatry were to resolve or improve a foot condition in order to maintain foot health (The Society of Chiropodists and Podiatrists 2001c). This is especially pertinent in older people as Parmar (2001) and Brodie (2002) both state that podiatry can resolve foot problems, which in turn can maintain mobility and so improve quality of life. Salvage (1999) agrees with this believing podiatry can help older people to keep their independence as it can maintain locomotor function and tissue viability. Core podiatry can also alleviate pain and reduce the impact of disabilities according to the Quality Assurance Agency for Higher Education (2001). Podiatry care can contribute to the reduction of falls in the elderly by treating conditions such as corns, ulcers and deformities and providing advice on inappropriate footwear (Hughes 2002). However the treatment is not always curative and preventative, some people require continuing care according to the HPC (Health Professions Council 2003) which is reinforced by Cant's study (1999) where 24% of patients in the sample were found to require long term foot care. Only a few articles commented on the reduction of pain as a consequence of core podiatry care. Prud'homme and Curran (1999) found patients suffered with less pain after their corns had been enucleated which concurs with findings by Redmond et al (1999) who presented the results of seventy-nine patients with painful callus before undergoing scalpel reduction of the lesions. They found patients reported a reduction in pain after treatment that was statistically significant. Woodburn and Stableford (2000) also found that scalpel debridement of plantar callus has a significant impact on forefoot pain though the effects were short term and there were only a small number of patients in the study.

A number of outcome measures have been developed to measure the effects of core podiatry and have been previously commented on in Chapter 2. Garrow et al (2000) describe the development and validation of a tool to measure foot pain and disability and recommended that this could be used in different settings to measure different

aspects of podiatry care. It was later used to measure foot disability in a study involving two groups of older people comparing usual podiatry care with a self-management programme (Waxman, Woodburn et al. 2003). The Foot Function Index (FFI) (Budiman-Mak, Conrad et al. 1991), though out of the time frame for the literature review was included as it was the first outcome measure to be developed specifically for podiatry treatments. Again it aims to measure the impact of foot problems on function using pain, disability and activity as outcomes. A Podiatry Health Questionnaire (Macran, Kind et al. 2003) was assessed on a number of patients from different UK podiatry departments and suggested that it was an adequate tool to measure foot health. Other measures have been produced but have been published in American (Bennett, Patterson et al. 1998) and Australian journals (Bennett and Patterson 1998) and have not been used widely in the UK.

6.3.6 Empirical Referents

Rodgers describes these as “*data pertaining to applications of the concept. . . to identify scope of the context and enhance clarity*” (Rodgers 2000a). A number of articles were found investigating the need for podiatry care. Salvage (1999), describes it as a high need and cost effective service for older people whereas Philp (2002) thinks podiatrists have a major role in treating problems that threaten independence and an active life. Podiatry treatment was thought to reduce falls in the elderly as highlighted by Hughes (2002), though he believes podiatrists are still underused in fall prevention teams. A survey of 3000 disabled people found there was an unmet need for podiatry care in those aged less than 75 years old compared with people who were older (Kent, Chandler et al. 2000). However, a small study of 50 patients with systemic sclerosis by Sari-Kouzel et al (2001), found that over half attended for regular podiatry treatment and 90% knew where to seek help for foot care if they required it.

A number of re-profiling exercises have been undertaken to target NHS podiatry care at those with the greatest need (Tippins 1998; Macdonald and Capewell 2001; Moore 2002), though Campbell and colleagues (2000; 2002) found many patients discharged from a podiatry service as being low risk, then went onto develop more serious foot problems which elevated their risk status. This illustrates and reinforces that core podiatry care can preserve foot health which is important to individual's unable to provide this care for themselves, either due to advancing age or because the knowledge and skills required to carry it out is not present.

Several studies have shown that core podiatry can reduce pain and have been previously mentioned in the consequences section (Prud'homme and Curran 1999; Redmond, Allen et al. 1999) as have studies using outcome measures (Budiman-Mak, Conrad et al. 1991; Bennett, Patterson et al. 1998; Garrow, Papageorgiou et al. 2000; Macran, Kind et al. 2003; Waxman, Woodburn et al. 2003).

Only one article was found involving children and describes the use of a footwear assessment score to compare the fit of children's shoes (Byrne and Curran 1998), this again is probably because specialist areas of treatment were removed from the review.

6.3.7 Context

The majority of articles retrieved were regarding care given in the NHS as podiatry is a core service and SCP believes it should remain so (The Society of Chiropodists and Podiatrists 1999a). However the number of episodes of care (which would include core podiatry) has fallen from 2.4 million to 2.2 million between 1990 and 2001/2 (Department of Health 2002). The number of new patients treated has also decreased, though it is thought that more complex cases are now being seen as risk rather than age are criteria used to determine need, so such cases would require more clinical time (the Society of Chiropodists and Podiatrists 2001a). This is reinforced by Cant's (1999) study, who found less than a quarter of patients applying for podiatry care were older people however this is contradicted by a study conducted in the same year where older people represented the largest portion of a podiatry caseload (Salvage 1999).

There are wide variations in podiatry services (The Society of Chiropodists and Podiatrists 2002) despite recommendations by SCP (1999a) that access should be standard throughout the UK. This is highlighted by a number of re-profiling exercises described to redesign (Macdonald and Capewell 2001) or restrict access to core podiatry services based on risk (Mandell 2001). Campbell and others (2002) state however that, there are deficiencies in some current discharge criteria, which can result in an unmet need for podiatry services for older people. This is due to a combination of disinvestments and a poor evidence base for the efficacy of podiatry treatments (Campbell, Bradley et al. 2000), which contributes towards a poor professional status, believes Borthwick (1999b).

Status and image were found to be important contextual components in core podiatry. Mandy and Mandy (2000) when comparing two professional groups, describes high levels of emotional exhaustion, depersonalisation and lack of personal accomplishment experienced by podiatrists more than by physiotherapists. These are all signs of burnout according to Mandy and can be attributed to a number of factors including patients' lack of understanding of podiatry. Prior (1998) believes the term podiatry is not well understood by older patients though adopting the term podiatry in place of chiropody gives the profession a more glamorous image according to Liggins (1999). Extending the scope of practice of podiatry which in turn challenges professional boundaries has been employed as a means of improving image and in turn extending disciplinary power Brothwick (1999b) believes. However, there is still a poor image and low professional prestige which Parmar (2001) comments on. She complained to the government on behalf of SCP regarding a television advert portraying a podiatrist in an unprofessional manner. Her major criticism was that such a depiction would not promote a good professional image to the public. The 'cut and come again' cycle (Tulley 2000) may also add to the image problem of core podiatry which Larkin (1983) describes as a '*Cinderella service*'.

6.3.8 Related Concepts

These are similar concepts but do not have all the same attributes of the one under study and by identifying these, the contextual basis of the concept can be set (Rodgers 2000a). The main related concept identified from the literature was the use of assistants or carers to provide some aspects of core podiatry. Simple nail care in the NHS can be given by foot care assistants (Prior 1998) whereas other trained carers should provide basic nail care within social services believes SCP (The Society of Chiropodists and Podiatrists 1999a). Staff in nursing and residential homes can also supply this 'social' nail care after the appropriate training has been given (Clelland and McCann 1999).

6.3.9 Interdisciplinary differences of core podiatry

Very few articles were located in journals for other professional groups and there appeared to be no obvious interdisciplinary differences regarding core podiatry. However, a few studies did include the provision of podiatry care. Rijken and Dekker (1998) found that podiatrists treated fewer patients with chronic diseases than other rehabilitation therapists, though Wilkinson's study (1997) of stroke patients less than 75 years old, discovered that podiatry and district nursing were the most commonly

provided services. No real definitions or descriptions of the attributes of core podiatry were found other than Larkin's (1983) comment that they (chiropodists) can "*diagnose and treat patients without medical referral*" and there is a private component to practice. He also describes a poor professional image, regarding podiatrists as '*Cinderella practitioners*' with negative self-perceptions.

6.3.10 Development of a working definition for core podiatry

Results from Phase I of this study produced a slightly modified definition of core podiatry to include the provision of footwear and foot health education with the treatment of nails, corns and callus. Phase II then adapted this further to include: the treatment of nails, corns and calluses and footwear and foot health education, which is long-standing and frequent. No new working definition was therefore formulated based on the results of the literature review; instead it was decided to produce a final definition for core podiatry during the analytical phase in order to combine all of the new information derived through this analysis.

6.4 FINDINGS - FIELDWORK PHASE (COMMENTS FROM PODIATRISTS ON TRADITIONAL PODIATRY)

In the professional survey discussed in Chapter 4, respondents were asked to agree or disagree with the statement: *Traditional podiatry is only the treatment of nails, corns and callosities*. Though 73% disagreed with the statement, virtually all those who replied commented on what they thought was traditional podiatry and a content analysis was performed on their accounts, the results of which have been previously discussed. For the purposes of this next stage of analysis, the statements were re-analysed using Rodger's evolutionary approach to derive attributes, consequences, antecedents, empirical referents and the context of traditional podiatry

6.4.1 Definitions of traditional podiatry

Most podiatrists felt the definition given for traditional podiatry was too simplified; it should cover the treatment of the lower limb, as one respondent noted:

"Traditional podiatry involves treatment of all lower limb, external and soft tissue conditions"

Service issues were mentioned, where podiatry is a needs led service consisting of working in specialist areas and includes being part of multi-disciplinary teams and liaising with other health care professionals.

Many comments were made that the patient and public perception of podiatry is the treatment of nails, corns and calluses but this is markedly different to podiatrists' views of the professional role:

"This statement is true according to the general public's view"

The general public's lack of knowledge regarding podiatry leads to a closed view of the profession. This is also affected by poor self-promotion from podiatrists themselves:

"We do not promote ourselves and our abilities well enough"

However, a number of podiatrists felt podiatry was evolving as it now encompasses new and more advanced treatments.

6.4.2 Identified attributes of traditional podiatry

These can be arranged into the three identical themes identified from the literature review, though some further new sub-themes emerged from this data. Some podiatrists commented on assessment and diagnosis briefly, and this included the use of clinical reasoning and evidence-based practice. The treatment of nails, corns, callus and verrucae were again identified though there were less remarks about this. This may have been due to the fact that treatment of all these conditions except verrucae was stated in the question and therefore did not require further comment from the respondents. The range of modalities available to treat these common conditions were similar to those found in the literature review and included surgery, thermal and homeopathic treatments.

Clinical skills with the appropriate instruments were required for a competent practitioner. The treatment of musculoskeletal disorders and the prescription and manufacture of orthoses and wound care was mentioned, but the new attributes of podiatric surgery and high-risk foot care were also included. These were not found when reviewing the literature as they are deemed as more specialist areas of practice, so articles involving surgery and diabetes were excluded. There were a large number of statements that included health promotion and communication as important factors in traditional podiatry. These were divided into a number of sub-themes: preventative foot care, education and screening for risk factors; psychosocial aspects and holistic approaches to care. Podiatrists put a good deal of emphasis on the role of education especially in the prevention of foot problems. The psychosocial aspect of care was not

picked up from the literature but a small number of practitioners felt traditional podiatry included:

“...social worker, listener, friend, helper, carer...”

As well as treating the patient holistically:

“(Podiatry) is the care of the whole foot and the person to whom it belongs”

6.4.3 Antecedents of traditional podiatry

Only a few comments were made which fell into this category but concurred with the findings from the literature review. One podiatrist thought traditional podiatry was to treat *“an underlying pathology which is either medical or mechanical”* whereas another felt it was required for *“poor foot care, compliance and sometimes biomechanical abnormality”* and treated a *“clinical need”*.

6.4.4 Consequences of traditional podiatry

Only one statement was found regarding the outcome of podiatry, that it would hopefully lead to the discharge of the patient.

6.4.5 Context

Differences between chiropody & podiatry

A large number of podiatrists made comments about traditional podiatry that clearly highlight the context of the concept. Opinions were given about the differences in scope of practice of the two terms (chiropody and podiatry), as one practitioner stated:

“These are chiropody skills which fall into a podiatrists scope of practice”

Whereas podiatry was attributed to a more specialist role with a greater scope of practice, including foot surgery. These extended skills however are not always used; some remarked that traditional work was still carried out, as this is what patients require.

Terminology

On the whole podiatrists did not agree that the term *traditional* could be used alongside the term *podiatry*, *chiropody* would have been a better choice. The two words are supposed to be synonymous but it is clear that some podiatrists attach a different meaning including a greater scope of practice to the term podiatry. Since the survey was completed however, the use of podiatry and podiatrist has superseded chiropody and chiropodist in many areas, which suggests both practitioners and the profession as a whole have finally decided to move with the times and adopt the modern title.

However, it is unclear what constitutes the practice of chiropody and podiatry and whether they are different.

Training

The improvement and expansion in the training of undergraduate podiatrists and continual professional development was thought by some to affect the type of care that can now be provided to patients, though this new knowledge was underused by some:

“Podiatrists have to take their heads out of sacks and use their brains and qualifications now to provide a better quality of treatment and care”

An increase in theoretical knowledge however can result in a lack of competence to perform the clinical skills required for traditional podiatry. One respondent eloquently highlighted this:

“I know ‘specialists’ in podiatric biomechanics who could not reduce onychogryphosis or recognise a mosaic verruca”

Work sector

The type of treatment provided to patients appeared to be dependent on work sector though the views expressed were conflicting. Some felt traditional podiatry was prevalent in NHS departments because that is what services provide and patients require, though others thought more specialist areas of practice could be provided more easily in the NHS when compared with private practice.

Image

Image problems were also highlighted which concur with the literature review findings. Podiatrists commented that some patients and other health care professionals saw traditional podiatry as a ‘cut and come again’ service which perpetuates a poor image derived from a perceived narrow scope of practice. However, some podiatrists felt this was outdated and damaging to the profession and the image was changing for the better, but it still required a degree of self-promotion to improve it.

6.4.6 Related concepts

Some of the themes identified pertaining to the context of traditional podiatry can also be seen as related concepts. Some podiatrists saw chiropody as representing nail, corn and callus care whereas podiatry included this, but involved an extended scope of practice. So though chiropody can be seen as a surrogate term, it is also a related concept, but is different to traditional podiatry as this encompasses a much broader definition to include treatment of the lower limb, which is holistic and incorporates

preventative education and screening. However, this confusion in the use of interchangeable terms: *chiroprody* and *podiatry*, which may actually represent different concepts is baffling to both podiatrists themselves and also to the patients and general public who are unaware of the difference.

6.5 FINDINGS - FIELDWORK PHASE (THE PATIENT EXPERIENCE OF CORE PODIATRY)

Fourteen semi-structured interviews were conducted with patients after they had received core podiatry care in an NHS clinic. Core podiatry was defined based on the results of the analysis of Phase I; further details have previously been discussed in Chapter 5. The interviews were re-analysed using Rodger's method for concept analysis. All the transcripts were read and suitable text was assigned a theme and placed in one or more of the following headings to identify antecedents, attributes, consequences and context.

6.5.1 Identified Attributes of Core Podiatry

Treatment and health promotion and communication were identified as two major attributes, which concurs with findings from the literature review and practitioner survey. The types of conditions that required treatment have already been previously identified except the treatment of verrucae. None of the patients in this sample had a verruca, this may be due to one of two reasons; the NHS podiatry service the patients attended had a separate verrucae clinic, so if a patient had this condition they would not have been in the routine clinic from which the sample was taken, and this group of patients were all older people and had a mean age of 78 years and verrucae are more commonly reported in younger ages (Williams, Potter et al. 1993). Similar treatments were identified to those found in the literature, but there was less variety. For example, the use of homeopathic or surgical remedies for corns and calluses was not mentioned by any of the patients. This may be a training issue where the podiatrists providing care in this NHS clinic did not have the necessary skills to use these modalities, people requiring these types of treatments may be seen in specialist clinics or it may have been due to their age. Surgical interventions are less common in very elderly people due to the potential problem of reduced healing rates.

Similar aspects of health promotion and communication were found to be the same as the literature review. Self care advice, footwear and foot health issues were all

identified, some patients commented that this advice or praise gave them reassurance that their foot health was fine and they were achieving desired results when self caring. This may be similar to the psychosocial aspect of care reported by some practitioners in the survey. Core podiatry can have a holistic effect, as it provides both physical relief and emotional comfort. Some patients also commented on the professional nature of the care and advice, as they felt this was better coming from someone who they perceived to be the ‘expert’. The final attribute, which was not picked up from the previous analysis, was service issues. Patients felt core podiatry care was a necessary and useful service with helpful staff providing it. The on-going nature of the treatment was also mentioned whether it was at a routine or more intensive interval, which helped with continuity of care. The main attributes are summarized in Table 7.

Table 7: The Attributes of Core Podiatry Derived from Patient Interviews

ATTRIBUTES			
Main themes	Treatment	Health promotion & Communication	Service issues
Sub-themes	Nail cutting/filing	Footwear advice	Intensive treatment
	Enculeation of corns	Foot health advice	Regular treatment
	Reduction of callus	Praise, advice, reassurance	Continuity
	Application of padding and medicaments	Professional advice and care	Helpful staff
	Treatment for foot deformities	Further referral (footwear/surgery)	Useful service
	Manufacture of silicone devices		Necessary service
	Biomechanics		
	Foot check	Social skills	
	Prescription of orthoses		

6.5.2 The Antecedents of Core Podiatry

The main antecedent identified by patients was a foot problem, which could be single or multiple. The conditions identified were similar to those found in the literature review. Some patients were advised to attend for podiatry care by another health care professional or had referred themselves, as they were unable to provide their own self-care or particular professional care for some more complex foot problems. Reasons given for this inability to carry out foot care practises were immobility, age or other medical problems. Symptoms associated with a foot condition were also a major factor in seeking care; these were pain, discomfort and immobility (see Table 8).

Table 8: The Antecedents of Core Podiatry Derived from Patient Interviews

ANTECEDENTS				
Main themes	Referred by a health care professional	Unable to provide own self foot care or treatment equivalent to professional care due to immobility/age/other medical problems	Foot Problem (single or multiple)	Symptoms associated with foot problem
Sub-themes			Foot deformity Corns Callus Long or thick toenails Inflamed joints Biomechanical problems	Pain Discomfort Immobility

6.5.3 The Consequences of Core Podiatry

The main consequences identified were that core podiatry cures or improves some foot pathologies or preserves the feet in an acceptable condition, which patients perceive is beneficial. This concurs with results from the literature review which found podiatry care aims to resolve or improve foot conditions in order to maintain foot health (The Society of Chiropractors and Podiatrists 2001c). Though this care does not always cure a problem, patients felt it was helpful, effective and useful as it improved the pain, which could be associated with some foot lesions and in turn provided comfort. Some patients commented that treatment only gave short-term relief from pain, which reinforces that the maintenance aspect of core podiatric care is an important feature. Pain relief can lead to an improvement in mobility for some and allowed one patient to be able to wear a different style of shoe.

It was clear from the interviews that patients assign a degree of emotional value to receiving core podiatry as they see it as expert care that can provide advice and in turn gives them reassurance. People used words such as *relieved*, *comforted*, *helpful*, *satisfied* and *useful* to describe their feelings associated with receiving this care. This emotional benefit therefore appears to be important to patients; it is not just the physical outcome of core podiatry care, which is helpful. This aspect of podiatry is somewhat underplayed by clinicians, and was not picked up from the literature and survey analysis. To assess the value patients put on the actual treatment, a question was asked in the interviews regarding the perceived outcome if core podiatry were no longer given. Most people felt their feet would deteriorate as they would be unable to provide either their own self care or the professional expert treatment that may be required this in turn could lead to pain, which may affect mobility and cause distress (See Table 9).

Table 9: The Consequences of Core Podiatry Derived from Patient Interviews

CONSEQUENCES			
Main themes	Treatment of foot problems gives:	Perceived outcome if no treatment given	Emotional values
Sub-themes	Cure Improvement Maintenance Pain relief Benefit Comfort Helpful Effective Useful Short-term pain relief and comfort Successful Improves mobility and activities of daily living Improves walking Allows different shoes to be worn	Pain Deterioration in foot health as unable to self care or provide equivalent professional and expert care Immobility Upset	Reassurance Advice Satisfied with service Professional care Useful treatment

6.5.4 The Context of Core Podiatry

Some of the themes identified, which were pertinent to the context, were also found in some of the other areas explored in the concept analysis (see Table 10). Foot problems and the pain associated with them affected activities of daily living in some patients, but others stated they coped with their foot problem and it did not affect their lifestyle. This may be because they were receiving care, which maintained their feet in a comfortable state or that their foot condition was not severe enough to affect mobility. Most patients commented self-care, some could undertake a degree of this, whereas others were

unsure what to do or had tried and found it to be too difficult or unsuccessful. Some felt they could not provide this care themselves or had no one else to do this for them (family or carers). Again the emotional aspects of receiving core podiatry were identified as major themes. Though overall, people were happy and satisfied with the service, one saw it as a 'treat'; they were worried about the deterioration in their foot health if they could no longer receive podiatry care. Some were frightened of the potential for self-inflicted injuries if they had to undertake their own care and were reassured that professional treatment was being provided.

The expectations of care were mixed, some felt treatment would improve or cure their foot condition whereas others thought this was an unachievable goal. This again is an interesting factor that was not highlighted by the literature review and survey. This confusion in what an outcome of care can achieve may be due to podiatrists inability to clearly state outcomes at the beginning of a treatment regime, or could be due to the maintenance nature of some core care, where a cure is not always possible or required. This theme was reinforced by the treatment intervals commented on by patients where the average total length of time the sample group had been attending for NHS podiatry care was 10 years with a mean treatment interval of 14 weeks. Though some patients thought they were being seen according to their needs, and intervals between treatments had been tailored to reflect this, virtually everyone said they would like more frequent treatment. This is a positive factor but is probably an unachievable expectation in NHS podiatry services, which are universally oversubscribed.

Table 10: The Context of Core Podiatry Derived from Patient Interviews

CONTEXT						
Main themes	Activities of daily living	Self-care	Treatment intervals	Emotional aspects	Expectations	Care is:
Sub themes	Pain restricts activities	Can undertake some	Correct for foot problems	Fear of causing problems if self care	Corn will resolve	Professional
	Foot condition affects activities	Medical or other mobility problems affect self-care	Reduced interval to match patient's needs	Happy with the service	Treatment can cure problems	Continuing
	Foot condition does not affect activities	Unsure how to self-care	Feet have improved with more frequent treatment	Worried about complications of surgery	Would like a cure	Alternative private care available
	Age affects foot health	Unsuccessful self-care	Occasionally requires more frequent treatment	Satisfied with service	Foot problems cannot be cured	
		No family, friends to provide self-care	Self care increases treatment intervals required	Foot pain affects emotions	A cure would render treatment unnecessary	
		Difficulty self caring		Frightened to self care due to inflicting injury		
		Able to provide some self-care	Long term treatment	Good service		
		Painful self-care	Would like more frequent treatment	Worry if no care available		
			Frequent treatment interval	Reassurance if future care is available		
			Emergency treatment available	Treatment seen as a treat		
			Occasional treatment	Foot health would deteriorate if no treatment available as unable to self care		

6.6 FINDINGS - ANALYTICAL PHASE

A True Exemplar

Based on the results of the concept analysis using both the literature and fieldwork a true exemplar of core podiatry has been derived. The following excerpt illustrates an example of the concept and represents a subject who took part in the Phase II interviews to determine a patient's experience of core podiatry:

Mrs Smith is a 76-year-old lady who had been attending the podiatry clinic since 1996 and the average interval between her appointments was approximately four months. She used to have regular private treatment when she was working but could no longer afford it when she retired and referred herself to the local NHS podiatry service. She comes for regular care where the podiatrist cuts her nails, removes some hard skin with a scalpel and enucleates one corn. Mrs Smith reports her feet feel very comfortable for a time after they have been treated, but it is the pain from her corn and nails which lets her know it is time to return to the clinic for further treatment. She does not think the treatment she receives is improving her feet, only maintaining them at a comfortable level, but she believes her feet would deteriorate if she were unable to have continued podiatry care. The main reason for this is that she would be unable to perform similar care for herself. She has tried to use corn plasters in the past but found them to be ineffective. She reported that her foot problems did not really affect her quality of life as she could cope with the short-term pain that her corn caused her until she returned for her next appointment.

6.6.1 A New Definition of Core Podiatry

By analysing the components of core podiatry a new definition has been produced:

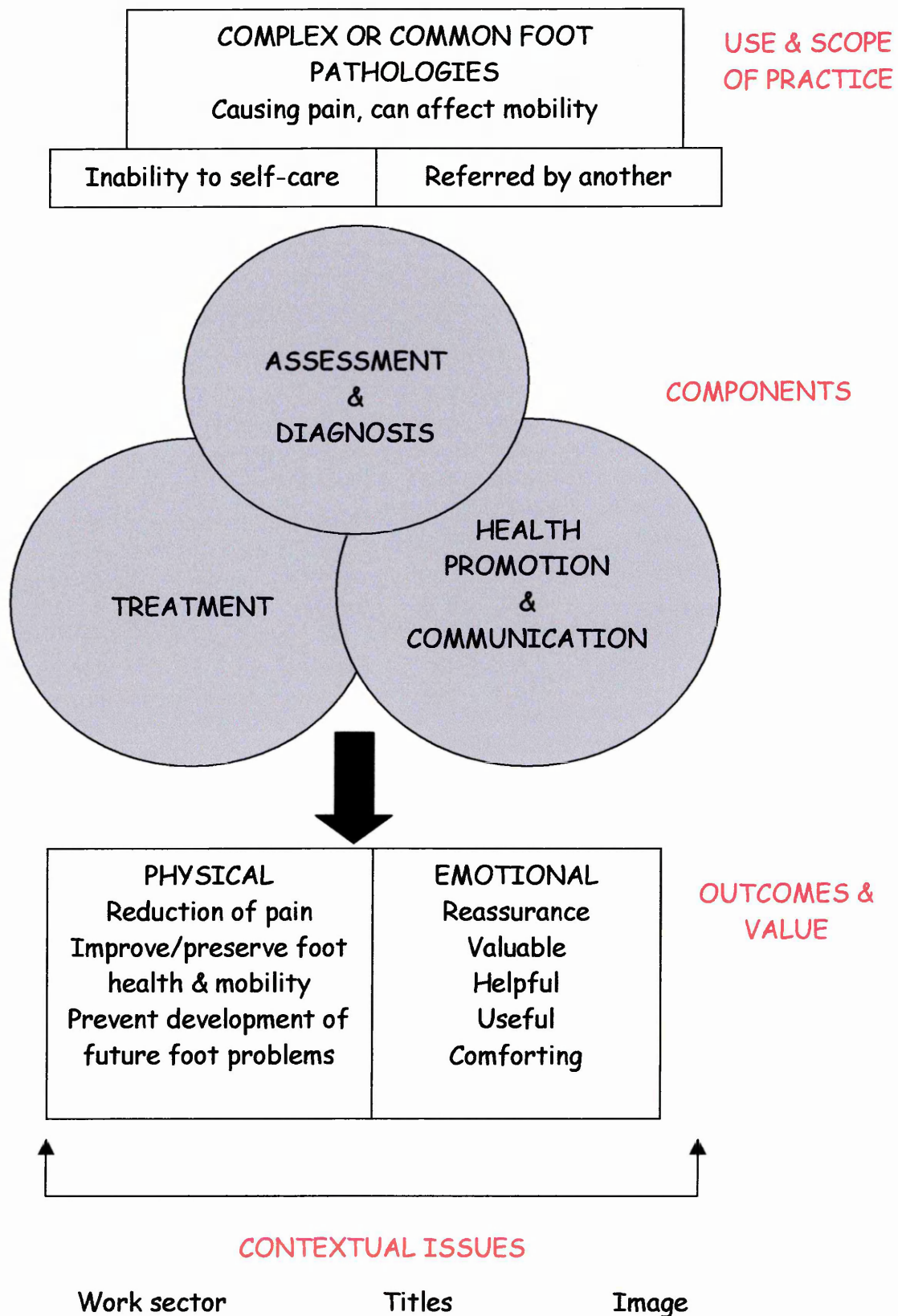
Core podiatry involves the assessment, diagnosis and treatment of common and more complex lower limb pathologies, many of which are painful. These foot problems can affect mobility and be associated with the toenails, soft tissues and musculoskeletal system and are more commonly experienced by older people. At its most basic level, simple foot care is sometimes required for people unable to do this for

themselves due to increasing age, reduced mobility or other medical problems. Core podiatry also deals with more complex conditions requiring professional and expert care. A wide variety of treatment modalities are used (manual debridement; applying medicaments or padding, using thermal and surgical techniques and the manufacture of orthoses) to reduce pain and preserve or improve foot health, but the effects are often short-term. There is a holistic view to the care, incorporating screening and surveillance to prevent the development of future foot problems and using health promotion to increase self-care where possible. Also, some of those who receive core podiatry, especially older people, assign it a degree of emotional value and perceive their foot health would deteriorate if it were no longer provided as it can benefit the whole person.

6.6.2 A Model for Core Podiatry

Based on the concept analysis a model for core podiatry has been formulated (Figure 6). It consists of four main sections: use & scope of practice, components, outcomes & value and context. By examining the new definition for core podiatry and this model it is possible to clarify the concept, indicate where there are gaps in knowledge which may direct future research to facilitate how this newly defined role can be incorporated into current NHS services.

Figure 6: A MODEL FOR CORE PODIATRY



6.6.3 A Discussion of the New Definition of Core Podiatry

The differences between this new definition and ones presented in the earlier sections of this thesis are many and may be dependent on a number of factors.

Increased Scope of Practice

The description used for traditional podiatry in the survey (Phase I) was very simple, only consisting of the treatment aspect of care without inclusion of the diagnostic and educational components. Prior (1998) also defines traditional work in a similar distilled way, incorporating the treatment of nails, corns and calluses. This original definition was then modified based on the survey results to include the provision of footwear and foot health education. This is very similar to Runting's (1932) early interpretation of chiropody, though he included the management of verrucae and mentioned the palliative nature of some treatments. The definition evolved further based on the findings of Phase II and included care, which is provided by an expert, can be long-standing, required at frequent intervals and also gives a degree of emotional reassurance. Descriptions from the literature expanded further on this to include the treatment of foot problems associated with both the structural and functional components affecting the foot (DiMaggio 1995) and incorporating the pain relief outcome that podiatry care can offer (Potter 2004).

This new definition encompasses both the general and more complex nature of the use, scope of practice, components of care, outcomes and value and context of core podiatry. The scope of practice now not only includes the treatment of toenails and soft tissues as in the original definition but also includes the musculoskeletal system highlighting a more functional approach to care. Though the treatment of musculoskeletal conditions may often be designated as 'specialist' areas, knowledge regarding foot function is also required in order to provide core podiatry care. There is a range of treatments available to the podiatrist based on an evaluation of the patient where an assessment and diagnosis will take place. Some of the treatments employed now (manual debridement, the use of medicaments and padding) are very similar to the ones used as far back as the 1930s (Runting 1934) and are based on tacit knowledge that has been passed down the generations of practitioners. There is some research evidence to support some of these treatments (Potter 1999; Redmond, Allen et al. 1999; Potter 2000; Springett, Parsons et al. 2002), but much of it is derived from small studies. Surgical and functional techniques have become more common in the modern podiatric spectrum since the

introduction of local anaesthesia courses in the 1970s and the inclusion of biomechanics in undergraduate training in the 70s and 80s. Some newer technologies have also become amalgamated into current treatment regimes including the use of electrodesiccation for corns (Anderson and Burrow 2001) and cryotherapy and electrosurgery for the treatment of verrucae (Editorial 1998a; Lelliott and Robinson 1999).

Targeting NHS Podiatry Services

The current recipients of core podiatry treatment are now more likely to have a clinical and/or medical need, especially if applying to NHS services (Tippins 1998; Lever 1999; Moore, Farndon et al. 2003). This targeting of treatment has led to a more diverse age range of patients being seen. Though older people still make up just over half of the combined NHS podiatry caseloads (Health and Social Care Information Centre 2005), those who can manage their own foot care are often encouraged to do this through educational programmes, or relatives/carers are shown how to provide this social type of care (Clelland and McCann 1999; Moore, Farndon et al. 2003). There is now a more holistic view to the delivery of care with health promotion, screening and surveillance becoming increasingly more important aspects of core podiatry to prevent the onset of some foot problems and help preserve an individual's foot health. Though some of the simpler, social aspects of foot care can be taught to others, there is still a degree of core podiatry that requires an expert to carry it out at the moment. The overall effect of core podiatry is to cure, improve or preserve and sustain foot health by relieving pain, which in turn may have a positive affect on mobility, especially in older people. However, the effect of some treatments still appear to be short-term in many cases, which highlights the maintenance and palliative nature of this type of podiatry care. This may be contributing to an image problem, especially amongst podiatrists, as though preserving an individual's foot health is an important and valuable contribution to overall health care, the use of more complex procedures and treatments may intimate higher status and skills. Also more curative treatment options and alternatives to repeated care must be investigated. There is also little research evidence to evaluate the effect of core podiatry. Specific outcome measures have been produced for use in podiatry (Budiman-Mak, Conrad et al. 1991; Bennett and Patterson 1998; Garrow, Papageorgiou et al. 2000; Macran, Kind et al. 2003), but these do not appear to be used routinely in current practice.

An important aspect included in this new definition of core podiatry is the value it has to those who receive it. This appears to be especially pertinent to older people, who perceive their foot health would deteriorate if they could no longer have treatment as they may be unable to provide equivalent care themselves. Current NHS policy advocates incorporating user views in the design and delivery of services (Department of Health 2000a), however some podiatry departments have been reconfigured based on budgetary cuts (Tippins 1998; Campbell, Bradley et al. 2000) without prior consideration of clients needs and wishes. This treatment, by preserving or restoring foot health in turn gives reassurance and peace of mind that further deteriorations may not occur, helping to maintain mobility. Keeping older people on their feet is an important aspect of core podiatry care and should be emphasised and promoted.

Speciality Areas

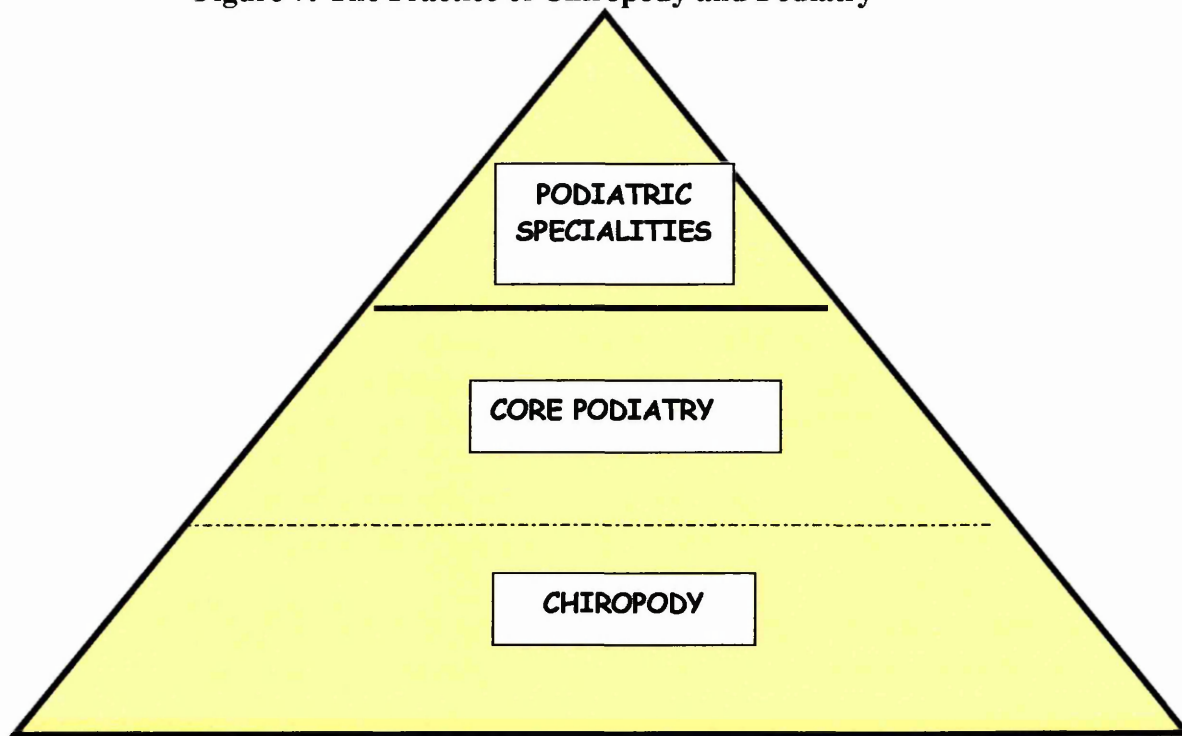
The majority of practitioners that completed the professional survey disagreed with the original description of traditional (core) podiatry. It was unclear whether this was because they objected to the simplicity of the definition, which may be associated with a poor professional self-image corroborated by both the literature and this thesis, or whether practitioners merely thought that the traditional or core role included a wider scope of practice than stated in the questionnaire. Many of the alternative definitions suggested by the respondents incorporated more specialist areas of care but there does seem to be a clear distinction between this and the general treatments being provided. They all come under the umbrella of podiatry but the blurring of boundaries between the different specialities may account for the disagreement and confusion amongst practitioners. More clearly defined routes of training for specialist podiatrists are required to reflect the distinct differences in some of these roles. A recent survey of NHS podiatry departments (Farndon and Nancarrow 2003) found that 92% employed specialist podiatrists and 27 different categories of specialism were identified. The most common specialty areas were diabetes and biomechanics and though there are now specific courses in both, some leading to Masters level, there is still no definite or mandatory route to become a specialist though this has been called for by some (Young 2003). Further investigation of the main podiatric specialties using the method of concept analysis may help to more clearly define them, which in turn would help to guide the training required to become a specialist, as part of the development of the profession.

Defining core podiatry and the potential to define the specialty areas of practice would be useful to support the Agenda for Change Policy (Department of Health 2001a) as part of the Government's modernisation of the NHS (Department of Health 2000a). By October 2005, all NHS workers should have undergone a job evaluation, with each type of job being scored and matched to a single integrated pay spine according to 16 pre-determined criteria. This is linked to the Knowledge and Skills Framework (NSF) (Department of Health 2004b) to ensure each individual provides a high quality service by continuing their professional development. Clarification of what core podiatry is could begin the process of determining the rudiments of the specialist aspects of care and guide the development of educational and research strategies to support both the individual clinician through their career progression according to the Agenda for Change principles, and drive professional and organisational requirements in order for specialities to continue to progress.

Context: Titles, Image and Work Sector

The evolution of core podiatry has been affected by a number of contextual features, which has influenced the application of the concept. One of the main areas of disagreement and conflict within the podiatry profession centres on the use of the titles *chiropodist* and *podiatrist* and the associated images of the two. One of the reasons that the term *core* was substituted for *traditional* when prefixing podiatry was that many practitioners who completed the survey in Phase I were unhappy with the word *traditional* being used alongside *podiatry*. Some pointed out that the latter was a relatively new term in this country. However, if the terms *chiropodist/chiropody* and *podiatrist/podiatry* are supposed to be synonymous, this surely should not have been a problem. There appears to be a perception amongst podiatrists that chiropody represents the routine type work, which was eloquently described by Vernon and others (2005) as “*the bedrock of therapeutic function*” and podiatry may encompass this but also includes an extended scope of practice comprising of more complex and specialist areas. They could be two different concepts, sharing some similar attributes (see Figure 7).

Figure 7: The Practice of Chiropody and Podiatry



The confusion with the use of terminology is associated with image, as some wish to lose the representation of a chiropodist treating toenails, corns and calluses and replace it with a more glamorous extended scope practitioner or specialist podiatrist (Borthwick 1997). Borthwick (1999b) also believes that the foot has symbolic connotations with dirt and odour, which compounds this image problem. The public and other health care workers perception of the podiatric role is also not always clearly understood (Mandy and Tinley 2004) affecting the perceived status of some podiatrists (Vernon, Borthwick et al. 2005). Since the survey was conducted the use of the term podiatrist has become a lot more common, especially in the NHS, which is reflected by the complete absence of the term in current job vacancies in one of the main professional journals (The Society of Chiropodists and Podiatrists 2005b). However there are two major problems with adopting this title, the general public and some health care practitioners are still unsure as to what the modern term means (Farndon, Vernon et al. 2004) and both titles *chiropodist* and *podiatrist* have been protected by the HPC when the profession was closed in July 2005. This may lead to the increased use of the term chiropodist again in the private sector, by those who were previously non state-registered, but now registered with the HPC, but as yet no evidence exists to support this belief. However, those private practitioners who decide not to be grandfathered into the HPC may

practise under an alternative title, such as *foot health practitioner* (Foot Health School 2005), which may also add to the confusion.

All podiatrists were private practitioners until the inception of the NHS in 1948 and even then they still worked on a sessional basis for many years, though the re-organisation of the NHS in 1974 led to priority classes being introduced to determine those patients who could receive podiatry treatment (Dagnall 1983). Even now a large number of podiatrists work in the private and commercial sectors (The Society of Chiropodists and Podiatrists 2003). This has shaped the development of the profession and led to different applications of the concept of core podiatry in different contexts. In the last five years many NHS departments have reduced the amount of core work provided (Mandell 2001) and re-defined their practice to include more complex skills that could improve professional image. However, some patients denied core podiatry treatment may seek alternative care in the private or commercial sectors where it is still being provided, as clients are fee paying (Farndon, Vernon et al. 2002b). There is therefore a potential disparity in what is being provided in public and private practice, as the reduction in core podiatry in the NHS is not patient led but a result of budgetary constraints or recruitment and retention problems influenced by a poor image where moving away from core work may elevate professional status.

The inclusion of chiropody, now podiatry practice into the NHS was also affected by two other issues; medical dominance, which restricted the development of podiatry as with other similar allied health professions (Larkin 1983; Vernon, Borthwick et al. 2005) and a lack of professional closure leading to a large element of non state-registered practitioners practising in the private and commercial sectors. The in fighting amongst professional groups representing both the then state and non-state registered sectors probably slowed down the development of the profession even further. Protecting professional boundaries to ensure the non-registered contingent were restricted to working outside the public sector also took place. This was paralleled by some podiatrists desire to encroach on a specific area of practice normally carried out by doctors, with the introduction of podiatric surgery. This caused some discontent amongst the three institutions representing state registered podiatrists for a number of years until unification was achieved under the umbrella of SCP in 1998 (Editorial 1997a). These issues have affected the development of the concept of core podiatry, as underpinning common practises with an evidence base or scholarly learning for

advancement, were not main concerns until recent years due to the many socio-political problems facing the profession.

This new definition of core podiatry and the associated model incorporates the theoretical, clinical and communicative skills of the podiatrist with the aim of curing or improving a foot condition to preserve an individual's foot health. It can affect the whole person both physically and emotionally, though some outcomes appear to be short-term as repeated treatment at regular intervals is required to ensure a positive effect is sustained.

Summary

The following can be summarized from the results of Phase III of this thesis.

- Core podiatry practice has been defined and consists of three components: assessment and diagnosis, treatment, health promotion and communication
- Core podiatry is provided primarily to older people as this group has a higher incidence of common foot problems requiring this type of care and may be unable to carry out some self-care.
- The process of core podiatry incorporates the theoretical, clinical and communicative skills of the podiatrist to reduce pain and improve or preserve foot health and mobility
- The effects of core podiatry are often short-term and there is a repetitive and maintenance nature to some of the care
- Work sector, image and the use of titles were the main contextual issues affecting core podiatry
- Core podiatry has evolved from chiropody and consists of more complex components of care

7.1 CORE PODIATRY AND ITS INTEGRATION INTO THE HEALTH CARE SYSTEM

Core podiatry has been defined by an in-depth investigation, to determine its current function and practice. This process has yielded a number of key themes. How these relate to current health policy documents will be discussed in the following section to establish the most appropriate way of changing and integrating core podiatry care into the newly modernized NHS whilst still considering the unique elements of podiatry. A review of health documents has identified some common topics that would need to be incorporated into a coherent strategy for the delivery of future core podiatry services.

7.1.1 The NHS Modernisation Agenda: Influences on Podiatry

Patient Centred Care

This is a recurrent theme in health policy and was included in the NHS plan (Department of Health 2000a), which details a number of proposals to improve future healthcare provision based on consultation with both the public and NHS staff. Further documents re-emphasise the need to deliver services based on the needs of patients (Department of Health 2000c) taking into account user experiences and avoiding rationing of care based on age (Department of Health 2001c). Standards for Better Health (Department of Health 2004a) proposes putting patients first by providing more personalised care, which considers individuals wishes and is delivered in partnership with both patients, care givers and other relevant stakeholders. Our health, our care, our say (Department of Health 2006), also reinforces the message of the delivery of more personalised care and better access. Increasing the importance of the user in the design and delivery of services (Department of Health 2004a) is expected to reduce the previous paternalistic philosophy of health care, which has contributed to the disempowerment of patients in the past.

The model for core podiatry developed during this thesis (Figure 6: Chapter 6) includes service users experiences of core practice as well as the importance of the continued provision of this care. Core podiatry can provide treatment for painful and sometimes debilitating foot conditions as individuals are unable to perform similar tasks themselves as some of the care requires utilization of specialist knowledge and skills. Both the physical and emotional outcomes after receiving this type of care are also considered in the model.

Prevention and Self Care

Linked to empowering users of health care services is the issue of health promotion to prevent disease and increase self-care where appropriate. This was included in both the NHS plan (Department of Health 2000a), which was an overview of modernisation for the whole of the NHS, and Meeting the Challenge (Department of Health 2000c), which was specifically designed to support and acknowledge innovative work carried out by the allied health professions (AHPs) to benefit patients. It is believed that such professionals can have a central role in the delivery of health promotion. Both the National Service Frameworks (NSFs) for Older People and Diabetes (Department of Health 2001c; Department of Health 2001d; Department of Health 2003) emphasise promoting care that will increase independence and encourage adopting active and healthy lifestyles. Empowering individuals is seen as a key area to improve self-care or: “...actions people take for themselves, their children and their families to stay fit and maintain good physical and mental health” (Department of Health 2004a) though professionals must also be able to support self-care initiatives by providing suitable education and training to patients. Prevention of illness is therefore one of the major goals of current health policy (Department of Health 2006).

The components of the core podiatry model comprise of three interlinking elements, one of which is health promotion and communication. Some of this health promotion will include both preventative and self care education to improve the overall foot health of an individual.

New Ways of Working and Extension of Existing Roles

To aid the delivery of patient centred care, new ways of working have been advised for all health care professionals where possible aided by the Modernisation Agency (Department of Health 2000c). These should aim to break down both professional and service demarcations and barriers by introducing standard guidelines and protocols for common conditions to ensure the best professional or multi-disciplinary team can deliver a designated service. These changes were deemed necessary as: “*Traditional demarcation lines between professional groups and between professional and non-professional groups are not conducive to delivering high-quality, patient-centred care*” (Department of Health 2000b). In addition to Government recommendations for AHPs, the Chief Allied Health Professions Officer (East 2003) has also included in her 10 key

roles for staff some similar themes, including: the development and extension of the practitioner role, to work with protocols, apply the best available evidence and use evaluative thinking, to be central in health promotion and improve collaborative working.

Changing and extending existing roles, especially in the AHPs (Department of Health 2000c) and nursing includes the introduction of prescribing rights. So far over 2,600 nurses are supplementary prescribers and pharmacists are now being trained to perform similar tasks (Department of Health 2005c). However, extending similar rights to podiatrists, physiotherapists and radiographers is still in the early stages. The recommendation to allow other health care professionals to prescribe drugs was made in conjunction with introducing consultant therapist grades to increase professional scopes of practice enabling practitioners to perform a wider range of tasks traditionally performed by doctors, including ordering investigations and diagnostic tests. It was felt that these changes could lead to more effective and less disjointed services (Hewitt-Taylor 2003) and reduce the problem of national variations in some types of health care. However, to date only a small number of consultant posts exist for podiatrists.

The model for core podiatry did not consider specialist areas of practice, which would represent some of these new extended roles including prescribing and developing consultant positions. The introduction of guidelines and protocols however, may be pertinent to the delivery of future core podiatry services, especially if someone else such as an assistant practitioner can deliver this type of care. The current blurring of specialist and generalist podiatric roles has hindered developing new ways of working so clarifying the core role represented by the model of care may improve this problem.

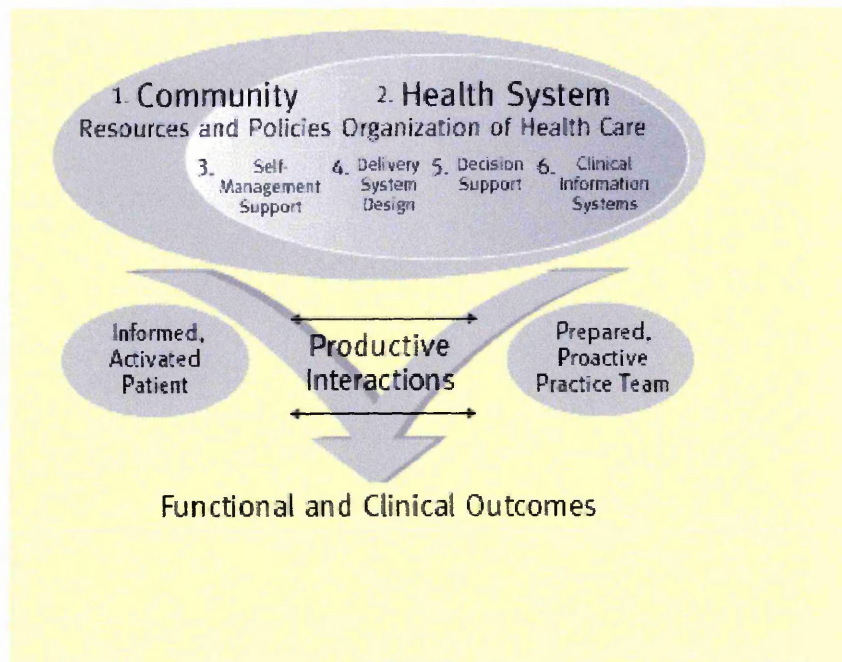
One of the main conclusions to be drawn after reviewing relevant policy documents, is that AHPs including podiatrists are being encouraged to work in new ways, whether this is independently or part of multi-disciplinary teams and using available opportunities to extend their professional scope of practice where possible to ensure patient care is optimal. Existing and new developments or treatments should be based on the best available evidence and be supplemented where appropriate with protocols. There is also a drive to increase health promotion and preventative work to reduce the overall burden of chronic and long-term care to the health service. A new strategy for core podiatry services will therefore have to consider many or all of these matters. Models

for the delivery of healthcare, specifically in nursing, have been previously discussed in Chapter 2. After reviewing the literature concerning models of care and considering the findings of this thesis, the core podiatry model presented in Chapter 6 could be adapted to fit an existing model of care. The Chronic Care Model (CCM) appears to be extremely suitable as it includes references to some of the most pertinent issues in current UK health and it would allow consolidation of the findings of this thesis.

7.2 THE CHRONIC CARE MODEL

This was first developed to manage chronic disease in the US and is based on literature reviews and expert opinion (Wagner 1998). There are 6 main components, which are incorporated into 3 main overlapping areas: the community, the healthcare system and the provider organisation (see Figure 8). The overall aim is to improve outcomes for people suffering from long-term conditions (Epping-Jordan, Pruitt et al. 2004). This is achieved by producing informed and active patients who work in partnership with a prepared and proactive practice team to deal with functional and clinical outcomes related to a chronic disease (Wagner 1998).

Figure 8: Overview of the Chronic Care Model⁷



Anderson (2003) does however comment on problems associated this model specifically its use in the US, as an overall national policy to manage long-term illness does not exist. In the UK, Lewis and Dixon (2004) believe that the majority of the model's components can already be found in the NSFs but they acknowledge that disease specific models, like this one, do not account for people suffering from multiple conditions or a single condition not yet addressed by NSFs, and the development of a generic model may be more applicable and useful in the future. The CCM does include many elements recommended in current UK health policy documents for managing long term illness, that is empowering patients and increasing multi-disciplinary team working for health professionals and developing intermediate care services. Use of models such as this one does sustain the disease specific approach to healthcare, which follows a medicalised route and does not always take into account the new patient focused ethos of the NHS. However, the CCM has been advocated as a useful tool to reconfigure services for chronic diseases (Lewis and Dixon 2004) and is followed by a number of US healthcare providers in the Kaiser Permanente organisation, which is a Health Maintenance Organisation. A comparison of Kaiser Permanente services with the NHS

⁷ ©ACP-ASIM Journals and Books, reprinted with permission. ICIC is a national programme supported by The Robert Wood Johnson Foundation with direction and technical assistance provided by Group Health Cooperative's MacColl Institute for Health care Innovation.

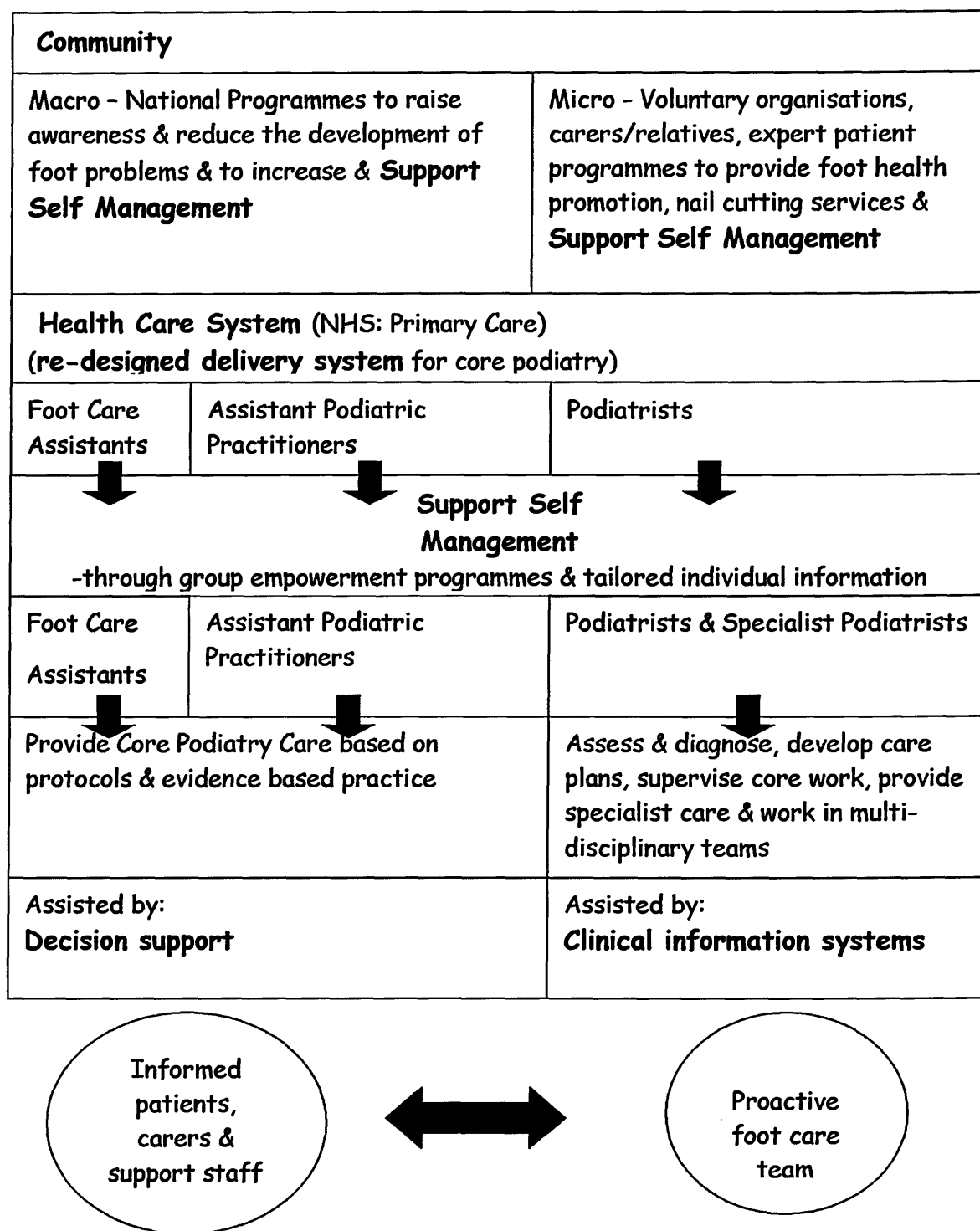
conducted by Feachem and others (2002), found that though both cost the same per head the former performed better. They report less hospital admissions and use of day beds when compared with the NHS, which is achieved, by more convenient primary care services and more rapid access to specialist services. This was felt, by Feachem and Sekhri (2005) to be due to true integration of services. This includes a focus on chronic disease with seamless care, use of multi-disciplinary teams, financial integration and a shared vision and culture within the organisation (Ham, York et al. 2003). This could be achieved in the UK health system if there was a vertically integrated organisation responsible for all the care of a specific geographical population though they acknowledge there would be a number of problems with GP and consultant autonomy and their resultant contracts (Feachem and Sekhri 2005).

Use of the CCM has been shown to improve care of long term conditions and reduce associated costs in a number of studies reviewed by Bodenheimer and colleagues (2002), especially in the field of diabetes. Siminerio et al (2005), implemented three specific areas of the model: decision support, self-management and delivery system, into a redesign of a number of American primary care diabetes practises. They found that patients gained more knowledge about their condition and became empowered which in turn improved some specific measures of diabetes control. Another American study involving chronic diseases including diabetes and hypertension (Stroebe, Gloor et al. 2005) found that there was a clinically significant improvement in over half of the patients who took part in a small pilot project using the CCM, and it was concluded that it is an effective framework to improve the delivery of care. However, two main problems have been found which can affect its ongoing success according to Bodenheimer et al (2002). The model is often dependent on a visionary clinical leader and if this individual leaves the organisation the system can fail to function as well and changes to financial resources can affect continuation of a CCM programme. It has been recommended that if this model is to be relevant to the UK the three areas of macro policy, actual patient care and the needs of the patients should be incorporated (Wagner 2004).

I therefore propose that though foot pathologies that require core podiatry care are not an actual chronic disease, many chronic conditions such as arthritis can cause foot problems and a lot of these require long term care to sustain them at a comfortable level, especially in older people. The function and purpose of core podiatry has been clarified

through this in-depth analysis and a new definition and model for core podiatry has been produced. This can now be assimilated with the key principles of the CCM to produce a model for the proposed delivery of future core NHS podiatry services (see Figure 9).

Figure 9: A Model for the Delivery of Core Podiatry Services (adapted from the Chronic Care Model)⁸



OUTCOME = PRESERVING FOOT HEALTH

⁸ Text in bold font refers to each criterion in the Chronic Care Model

7.3 A MODEL FOR THE DELIVERY OF CORE PODIATRY SERVICES

In the CCM 6 interlinking factors are combined to deliver care based on producing the required functional and clinical outcomes. The following section will discuss how podiatry services would need to be configured and adapted to deliver core podiatry care considering the research generated from this thesis and this CCM model.

7.3.1 Informing the Community in Self Management

The community as a whole would need to be informed in foot health promotion as the foundation to try and prevent the development of future foot pathologies. There would be two aspects to this preventative strategy, one at macro level involving national programmes to raise awareness of foot health through the media and one at micro level. On a smaller scale, areas of a local community could offer some preventative education in foot health, encouraging self-treatment for simple foot conditions and providing some simple nail care. Developing local strategies to support self-care is a recommendation of a recent government policy to help people with long-term conditions (Department of Health 2005b) in combination with targeting health policy at illness prevention (Department of Health 2006). In the case of foot care prevention, this could include charities, which support older people, such as Age Concern and Help the Aged, luncheon clubs and also involve volunteers, relatives and carers in providing some of this simple nail care. Many similar initiatives like this are being piloted at the moment in some areas of the country (Moore, Farndon et al. 2003), but national standards and protocols could be produced to roll this programme out across the UK. This could also be linked into The Expert Patient Programme, which is an initiative to help people manage long term, or chronic illness such as arthritis by becoming empowered to deal with aspects of the disease themselves (Department of Health 2001e). Expert patients could be trained to give simple foot health education especially to older people in specific programmes to “*develop the confidence, knowledge and skills to manage their conditions better*” (National Primary Care R&D Centre 2003). The government have recently stated that they propose to treble investment in this particular programme (Department of Health 2006). If preventative education reduces the development of some simple foot problems and the individuals or their carers can perform some of this care, a reduction in the number of referrals to services for core podiatry care may take place over time. This may also provide reassurance to individuals highlighting that they are dealing with their foot problems appropriately and safely, without the need for a referral to the podiatry service for expert treatment.

7.3.2 Changing The Health Care and Delivery System Design to develop the Assistant Practitioner

Changing the current health care system to embrace the introduction of assistant practitioners has been mentioned in a number of government reports as part of the modernisation agenda. Assistant practitioners are alluded to in one report discussing the development of workers who are not trained to graduate-equivalent level (Department of Health 2000b) whereas another policy document discusses increasing the scope of practice of assistants to improve career progression and fill possible gaps in staffing, linked to NVQ training levels to ensure development and skills are appropriate to the tasks undertaken (Department of Health 2000c).

Growing and changing the NHS workforce to fit into the modernisation agenda or the 'skills escalator' (Department of Health 2005d) is being implemented to ensure that staff are able to develop whilst working and progress up the career pathway as well as accessing and exiting health careers at different levels according to an individual's personal aspirations. Again in this document the delegation of work and tasks to others is mentioned, a reference to the assistant practitioner role. Some more recent reports give more prescriptive advice regarding how to develop, implement, evaluate and support role redesign for the NHS workforce, including assistant practitioners. A report outlining 10 high impact changes to improve service delivery (NHS Modernisation Agency 2004) mentions redesigning and extending roles, which in turn should improve patient care, improve staff retention and counteract the use of professional staff such as podiatrists on routine clinical tasks. Assistant practitioners could perform two aspects of core podiatry. They could give foot health promotion and preventative advice to potential patients, their carers and support staff and provide simple treatments for nails, corns and calluses including using a scalpel, which is an extension of the current Foot Care Assistant role. These podiatric assistant practitioners would be developed to give patient care previously undertaken by a registered professional using pathways and protocols (NHS modernisation Agency 2005) with the appropriate training and on-going supervision.

Using protocols, which have been developed, based on the best available evidence and taking in account service user views is a recurrent and important theme in the modernisation agenda, though a potentially contentious issue. Professional autonomy

and expert knowledge could be diluted if some more complex work is based on formulaic and simple protocols and Benner (1984) believes structured guides may reduce the intuitive nature of an expert practitioner. The NHS Plan (Department of Health 2000a) recommended that by 2004 the majority of health care staff should be using agreed protocols for common conditions and the delivery of care should be reviewed locally, to ensure it is suitable for the patient and the most appropriate clinician is providing it. Whether this has come to fruition across the whole of the health sector is still not clear, but a further document, Meeting the Challenge (Department of Health 2000c) also specifically emphasises the use of protocol-based care, which is based on clinical skills, and the patients needs rather than traditional ways of working. A protocol could be produced based on the new definition of core podiatry, considering the function and purpose of this area of practice and utilizing the assistant practitioner determined through the knowledge generated from this thesis. This could also go towards establishing the purpose of all NHS podiatry services, a recommendation of a large Work Force Confederation Project into podiatry services (Vernon 2004). This protocol could use the database of research into podiatry (Vernon 2002) to identify appropriate research and convene a group of experts to review the evidence for each aspect of core podiatry care. This would help to standardise practice for certain conditions that are cost effective and based on the best available evidence (Goodman 2000) and determine who could carry out specific tasks and what training would be required in order to perform them. It would also fit in with the research priorities identified for podiatric practice (Vernon 2005). This used a Delphi exercise and found that the most important research areas were: *research into treatment effectiveness*, *targeting of services*, *cost-effectiveness of treatment* and *measures of effectiveness*. All of these could be examined through developing a protocol for core podiatry and developing assistant practitioners to carry out many of the tasks.

A protocol of core podiatry care would be a problem-based protocol, where the problem is a foot condition (Modernisation Agency and National Institute for Clinical Excellence 2004). Research evidence would be examined in the 3 areas identified as constituting core podiatry of assessment and diagnosis, treatment and health promotion and communication. This thesis has already identified that service users – specifically older people find core podiatry helps to preserve their foot health and is beneficial. This evidence along with published work associated with patient expectations and satisfaction with podiatry care should be incorporated into the protocol. The objective

of a protocol for core podiatry based on the issues identified from this thesis, would be to increase the number of curative treatments on offer to patients for foot problems by increasing specialist podiatry services and in turn reduce the number of palliative type treatments and episodes of care required by some, but this type of care could still be performed when required, by Foot Care Assistants and assistant podiatric practitioners. A baseline assessment would need to be carried out and these objectives could then be measured through the numbers of patients discharged due to a cure, a reduction in patients in the service who return for routine and repeat type treatments and numbers of patients who are treated by assistant practitioners. Though protocols should be based on evidence and have a national perspective, it has been recommended that they should be locally developed and delivered to meet individual service needs (Modernisation Agency and National Institute for Clinical Excellence 2004).

Changing the health care and delivery systems by facilitating the use of assistant practitioners would enable podiatrists and specialist podiatrists to develop further and concentrate their skills by treating more complex cases and increase their working in multi-disciplinary teams. A Health Service for all the Talents (Department of Health 2000b) calls for more multi-disciplinary working based on what is required from a particular service and then which staff would be best to deliver this. In conjunction with developing a protocol for core podiatry, areas where podiatry can contribute to a multi-disciplinary team should also be explored and expanded upon. Currently some podiatrists in certain departments work in intermediate care, diabetes, orthopaedic screening, rheumatology and footwear clinics (Farndon and Nancarrow 2003). Whether podiatrists could contribute to other types of multi-disciplinary teams could be explored in further depth.

Delivering core podiatry services based on the CCM may reduce the overall need for this type of care by increasing foot health promotion which in turn may reduce the development of some foot problems. People requiring core podiatry treatment and entering a service will be given information to allow them to become informed and active whilst working in conjunction with a proactive foot health team which should improve or preserve individuals' foot health. It will also go towards producing a more patient led service, which is the overarching theme of the NHS modernisation agenda (Department of Health 2005a).

The main findings of the thesis and the implications for the podiatry profession will be discussed in this final chapter along with the obstacles encountered during the research process and the resultant changes and developments made towards the synthesis of new knowledge. These factors were guided by the socio-historical development of the podiatry profession in the UK, the principles employed in the development of models of care and ordinary language (linguistic) philosophy, from which concept analysis is derived.

The purpose and function of *core* podiatry practice has been determined and a new definition constructed. The analysis to determine this is based on the premise that “traditional” podiatry is a conceptually blurred concept founded on mainly tacit knowledge, derived from both the colloquial usage of this term, personal views and definitions generated by podiatrists and the common practises associated with them. *Core* podiatry was adopted as the term to illustrate the cornerstone of practice, which has a wider scope than attributed to “traditional” podiatry, originally chiropody. Podiatry has evolved from chiropody and though they have different etymologies, the two terms are often used to represent the same areas of practice. Chiropody involves the treatment of common foot problems such as corns, verrucae and nail problems to give relief (Runting 1932), whereas “traditional” podiatry includes this and the provision of footwear and foot health advice, with the care often been long-standing, repeated at regular intervals and delivered on the whole to older people. The function of *core* podiatry comprises of three interlinking components: assessment/diagnosis, communication/ health promotion and treatments for common and complex lower limb pathologies associated with the toenails, soft tissues and musculoskeletal system, many of which are painful. The purpose is to alleviate pain by improving and preserving foot health in conjunction with providing advice to reduce the development of foot problems, encourage self care where appropriate and provide reassurance. Core podiatry treatment has both a physical and emotional affect, thus benefiting the whole person. By defining core podiatry a collective, coherent view has been produced, based on the literature, professionals definitions, user experiences and the meanings of the terms used to describe this area of practice.

The current constituents of modern podiatry practice were determined by the practitioner survey and confirmed that though the profession has undergone a vast degree of change and expansion since the 1970s, especially with the introduction of

local anaesthesia and podiatric surgery, the majority of work still conducted by podiatrists was “traditional” podiatry, though there was confusion in the exact definition of this amongst podiatrists. As virtually no empirical evidence had been conducted prior to the survey to give specific information about practice, the initial belief that traditional type treatments still formed a large part of care was confirmed. A number of unexpected issues were identified, including disagreement surrounding the tasks associated with traditional podiatry and the correct use of terminology to define this. No previous study has investigated the actual rudiments of chiropody and podiatry before to indicate whether they are actually two different inter-related areas. The lack of consensus from podiatrists in what represents the traditional role, also suggests this may not be a well-established concept. An image problem from both within the profession and outside it was also highlighted which corroborates with previous research from both the UK (Mandy 2000; Mandy and Mandy 2000) and overseas (Skipper and Hughes 1983; Mandy and Tinley 2004), whilst a recent study has gone onto reinforce this theme (Vernon, Borthwick et al. 2005).

The original tentative definition of traditional podiatry was revised and termed *core* podiatry, as it appears to represent the rudiments of podiatric practice (including tasks associated with chiropody) from which all other developments have stemmed. However, core podiatry care is being phased out by some podiatry departments due to financial constraints where targeting care at those with the greatest risk is now more commonly carried out (Tippins 1998; Campbell, Bradley et al. 2000; Moore 2002) and there is a lack of available evidence to support its continuation (Borthwick 1997). The reduction in the provision of core services may also be due to some podiatrists, especially those working in the NHS, being keen to expand their knowledge and skills and therefore wishing to spend less time delivering these types of treatments (Farndon and Nancarrow 2003). This may also be associated with a desire by podiatrists to improve the overall professional image, as the terms often associated with this area of care – *routine, traditional, general, basic, maintenance*, suggest a habitual type of practice consisting of low skilled tasks.

The value core podiatry care has to those who receive it has never really been truly investigated via a qualitative method and is an important issue to consider in the current patient centred culture of the NHS. This was explored through the patient interviews with older people and found service users reported that core podiatry could resolve

some of their foot problems, preserve foot comfort and in a number of cases help to maintain mobility. However, its long-term affects are currently negligible, as it appears to be required at frequent intervals for the effects to be sustained. These findings were not unexpected, as anecdotally podiatrists believe core treatments are beneficial to patients but are aware of the repetitive nature of many of them. People who receive this type of care also assign an emotional value to it as it was seen to be of benefit thus reducing the possibility of deterioration, which provides reassurance. These were interesting conclusions and highlight the importance of involving users in future podiatric research. Their wants, needs and experiences are significant parts of the treatment procedure and should be encouraged and incorporated into relevant projects.

As core podiatry was not a well-established concept, it was defined using a concept analysis technique following the Evolutionary and Hybrid Models. These methods are used widely in nursing but have not been previously employed in any podiatric research. This may be due to the *medicalisation* of podiatry where research has often followed a more quantitative approach. However, some interesting findings have been produced from nursing researchers using these techniques, as it allows for an in-depth analysis of many aspects of services, treatments and emotions represented by practitioner and patient interactions. *Words mean a lot* and this is highlighted in the podiatry profession by the difficulty created when using two interchangeable terms to describe it, when they are representing different areas of practice. The concept of core podiatry was therefore examined to clearly identify the meaning of the words and the associated practises of the term, to develop it towards maturity and produce a new definition and model for core podiatry. This new definition is much more complex than the original one used at the beginning of this thesis, in conjunction with the model it indicates that core podiatry practice has evolved from chiropody over the past three decades, to include some different and new areas reflecting an increased scope. A definition of core podiatry generated by research findings has never been produced before. The one now presented should be dynamic and continue to evolve over time based on new developments in practice as Rodger's advocates (Rodgers 2000a).

With the production of a new definition and model, it was then necessary to assess how this newly classified area of core practice can be assimilated into the current health care system. Considering current health policy recommendations and the context in which podiatry sits within the NHS, a new strategy for the design and delivery of core podiatry

services was produced which was adapted from The Chronic Care Model. Foot problems that require core podiatry are often chronic in nature or a result of chronic illnesses affecting the feet, such as osteoarthritis. Therefore The Chronic Care Model appeared to be an appropriate framework in which to reconfigure future core podiatry services. The new model delegates some of the practice constituents of core podiatry to others. At a macro level, this includes involving the wider community in health promotion activities, which could take the form of national promotional campaigns in the media, which has been alluded to before by SCP (2000) but has never really come to fruition, perhaps due to the associated financial implications. On a micro level, involving the local community in preventative foot health campaigns including the voluntary sector, charity organisations and linking with the expert patients programme, would require both funding and staff and may need to be part of an overall national strategy. Enabling others to provide some of the core work is also not a new idea, and programmes to expand on existing voluntary nail cutting services should be encouraged.

The new proposed strategy for the delivery of core podiatry services, also recommends that an assistant podiatry practitioner should be developed to carry out many of the core tasks previously attributed to podiatrists, including the delivery of some foot health promotion and the treatment of corns and callus. Again, this is not a new idea and is already being discussed at a local level in some podiatry departments. However, if it were to be implemented appropriately it would need to be based on national standards but with local training programmes being developed according to varying service issues. With the appropriate education and supervisory requirements in place for assistant practitioners, podiatrists would be able to continue to develop and participate in specialist areas of practice. This role division would account for and may counteract the reduction in core podiatry treatments by some NHS services, which has been criticised by patients and charities alike (Age Concern 1998; Jones, Lindsey et al. 2005). However, this still may be subject to a great deal of debate amongst the podiatry profession as scalpel use is often seen as unique to podiatrists and has been fiercely contested in the past (Editorial 1994). With the recent recommendations from the Department of Health that changes will need to be made to NHS purchasing at PCT level by 2008, this reluctance to allow others to perform tasks previously carried out by podiatrists may be increased. Some podiatrists may feel assistants could be used to provide essential services as a cheaper option.

This work has continually considered the context in which podiatry sits, the main emphasis here being the NHS, though some data in the earlier part of the thesis includes all work sectors where podiatry care takes place and practice in other countries has been investigated and commented upon. The major external force exerting change over the profession has been government health policy, which continues to shape and influence professional developments. Another powerful factor affecting advancement has been concern by some podiatrists in relation to unregistered practitioners, as the latter have been able to work in the private sector until profession closure arrangements were finalised in 2005. The battle for closure and the perceived associated benefits that this may have appears to have monopolized the time of some major professional bodies representing podiatrists which could have hindered further professional expansion.

Limitations and Alternative Approaches

The professional survey yielded a relatively small response rate (27%), which was unexpected but may have been compounded by the absence of a follow up letter being sent out to potential respondents. This was due to the method chosen to distribute the questionnaire, which did not allow for a subsequent reminder, though it did ensure a truly random sample could be achieved across a wide geographical area. Some respondents returned their questionnaires unopened, as they were no longer in practice, which was not anticipated, but has also occurred in a more recent survey (Bristow and Dean 2003), highlighting this is an important consideration. An alternative list of practising podiatrists complete with their addresses would have been difficult to obtain at the time and the administrative duties involved in distributing the survey in an alternative way would have been far greater. If a 40% response rate had been achieved, this would have represented just under a third of practising members of SCP at the time, which would have been a huge sample. The actual number received, though smaller than expected, is still higher than most professional surveys of individual UK podiatrists previously carried out with only 23% of SCP members voting in a recent election (2004).

The patient interviews were not conducted by an independent researcher, which may have potentially influenced the responses given, though this problem was considered and discussed with the patients who took part. Carrying out the interviews in the patients' own homes may have been more favourable to receiving more open information, but this would have been difficult to carry out logistically within a

restricted time frame. Interviews were also carried out directly after treatment to ensure the experience was fresh in the minds of the subjects, and this again would have been more difficult to achieve if visits were made to each of their houses.

Though the emphasis of this thesis was the core podiatric role, using a concept analysis approach to determine the characteristics of some more specialist areas of podiatric practice such as in biomechanics and diabetes, at the same time, may have highlighted some shared tasks. This could have been useful to more clearly define and differentiate the many different areas of podiatric practice.

Future Research

This work has indicated a number of areas where future research would be beneficial. Concept analysis techniques could be used to more clearly define the specialist areas of podiatry which would help to contribute towards developing standard learning and training pathways, allowing the possibility for further professional developments at both an undergraduate and post-graduate level. This method could also be promoted to other allied health professions to help determine and clarify specific areas of practice. A larger evidence base for the effectiveness of *core* podiatry treatments needs to be developed and disseminated. This could use already validated outcome measures specific to podiatry, but would need to involve a large patient population in a number of centres to give a truly representative picture. Such quantitative measures around the improvement or resolution of foot pathologies could be supplemented with some additional qualitative data around user experiences and beliefs about core podiatry care. Assessing the value of preventative foot health promotion is also worthy of further investigation using a longitudinal study over a number of years to assess if this area of practice can actually reduce the development of some foot pathologies.

Developing and increasing preventative foot health promotion programmes should be employed in conjunction with expanding services, which may offer a potential cure for a foot problem such as podiatric surgery. This should be discussed in more detail at a national level whilst considering developing new treatments that might also offer a cure through utilising new techniques and skills. Some of these issues have been confirmed in a more recent study to improve the status of podiatrists (Farndon, Vernon et al. 2004) and may also reduce the current burden on NHS podiatry departments. Use of particular terms to describe practice should be removed from professional language as

they have suggested that this area of care was low skilled and may be linked to poor status. This new definition for core podiatry should be introduced and disseminated across the podiatry profession and included in future undergraduate curriculums with emphasis being placed on the outcome; that is to preserve foot health. This can contribute to the overall health improvement of the population and is especially important in an ageing society. The propositional knowledge generated from this thesis can also be used to inform future organisation and service developments using the Chronic Care Model and could provide a firm and robust evidence to support the proposed new NHS commissioning procedures.

Failure to obtain professional closure may have been an issue, which has misdirected the emphasis of some podiatrists over a number of years with the outcome of reducing or restricting development opportunities. As closure has now been recently achieved, new ways of working and configuring services to fit into the demands and requirements of the NHS as part of *Commissioning a Patient-led NHS* (Department of Health 2005a) is both timely and amenable to podiatrists and the profession as a whole. To quote Ryle (1971): “*What were we unable to do before we had acquired it*” referring to conceptual ambiguities and associated knowledge development. Now core podiatry has been clarified and a consolidated view produced, it can be defended, researched, developed and promoted to the public, other health care professionals, commissioners and stakeholders and could lead to exciting changes within the profession.

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APPENDICES

APPENDIX II:I - Results of Foot Surveys

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
Merrill, H. E., J. Frankson, et al	1967	US	1011	*	Nursing homes	Expert exam	Women had higher incidence of foot problems than men	25% corns, 23% bunions, 14% calluses	44% were receiving podiatry care	
Clarke, M.	1969	UK	1096 285 were examined	All ages	*	interview/expert exam on sub-group	70-90% of people had trouble with their feet			Only 14% examined were older people
Heifand, A. E	1968	US	1366	Older people	Independently living	Expert examination & follow up interview on a sub-section	74% had foot pain, 56% suffered from corns & callus (Interview reporting)	78% callus, 65% dry skin, 56% fungal nails		
Hsu, J. D.	1971	US	426	Over 65 yrs	Foot clinic	Expert exam		36% of foot problems related to skin & nails		
Ebrahim, S. B. J., R. Sainsbury, et al	1981	*	100	65 years and older	Hospital in-patients	Expert examination	19% had painful feet Foot deformities do not always cause pain	66% had difficulty cutting their nails, 39% had lesser toe deformities		Nail cutting defined as a foot problem
Kemp, J. T. and J. T. Winkler	1983	UK	3 separate groups Group 1 (unmet need) = 32 Group 2 (waiting list patients) = 394 Group 3 (current patients) = 540	Group 1 = Elderly Group 2 = majority elderly	Podiatry clinic	Expert examination & interview	Group 1 = 59% had foot trouble Group 2 = 32% required urgent care 50% required palliative care & 22% could see an FCA Group 3 = After re-assessment those pts requiring maintenance care fell from 91 to 81%	Group 1 = corns, nails, pain & calluses most common problems Group 2 = 61% had difficulty cutting their nails Group 3 = 91% received maintenance podiatry (chronic palliation /nail care /treatment of one lesion)		
Hung, L., Y. Ho, et al	1985	*	166	65 years and older	In-patients	Expert exam & interview	50% had at least one foot deformity	20% had bunions &/or digital deformities, 7% reported foot discomfort		
Vetter, N. J., D. A. Jones, et al	1985	UK	1286	Over 70 years	Own home	Interview	52% required help with foot care Between 15-23% of patients were unable to cut their own toenails			Mainly a descriptive study

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
Cartwright, A. and G. Henderson	1986	UK	543	65 yrs and older	*	Interview = 543 Sub-section 382 expert exam	52% had foot trouble, 56% had foot pain/discomfort	Self-reported 50% toe nail cutting problems, 47% callus, 45% nail problems & 34% corns. After examination Most common problems were lesser toe deformities, bunlons, thick nails & corns/callus	A quarter of examined sample were not receiving podiatry care though they required it and two-fifths would have been suitable for FCA care.	Self-selected sample for interview and follow up so may be biased. Patients and pod's used different definitions for foot problems so unable to compare. Classified cutting nails as a foot problem
Elton, P. J. and S. P. Sanderson	1987	UK	1154	Over 65 years	*	Expert exam = 999 Interview = 154	There is an unmet need for podiatry services	Thick nails, foot deformities then callus. Nail problems and corns/callus more prevalent in women.	41% were receiving podiatry and a further 30% required it	Not clear if those requiring treatment were interviewed or examined.
Black, J. R. and W. E. Hale	1987	US	733	65 years and over	*	Self completed questionnaire	The total population were limited in daily activities by corns, toe nail problems & bunlons (stat. Sig). Callus & corns were more prevalent in women	22.5% had nail problems, 20.2% had callus, 16.1% had corns, 13.4% had bunlons		
Brodie, B. S., C. L. Rees, et al	1988	UK	700	All ages	Own homes	Interview then expert exam	More foot problems were reported in older age groups (over 50%). Some foot problems could be prevented with appropriate footwear and better nail care	The most common foot problems in people over 64 years were callus, nail problems, corns and toe deformities	Health promotion strategies should be used alongside more curative treatments	

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
White, E. G. and G. P. Mulley	1989	*	96	Over 80 years	Independently living	Expert examination	70% had trouble looking after their feet 30% had painful feet	68% corns/callus, 56% nail pathologies, 48% lesser toe deformities, 34% had bunions		
Levy, L. A.	1992	US	119,631	All ages	*	Self completed questionnaire	Foot problems were more prevalent in the older age groups. The most commonly occurring were corns/callus followed by foot deformities	50 per thousand had ingrown toenails, 41 per thousand had corns/callus 34.6 per thousand had bunions (in over 65s)		Only asked about foot problems in the proceeding 12 months Self reported, respondents not asked if they were receiving treatment for foot problems. Association with medical problems were not investigated
Greenberg, L. (BrimmCo mm study) This paper compared this study and the previous one)	1994	US	1003	All ages	*	Telephone survey	20% more foot problems were found in this study when compared to the previous one. There was no difference in foot problems in women	124 per thousand had corns/callus, 77 per thousand had toenail problems, 56 per thousand had bunions	Most commonly treated problems by podiatrists are those of the toenails, corns/callus and bunions. Foot infections were most commonly treated by a doctor	The study asked about foot problems with no time limit which may account for the higher incidence than in the previous paper

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
Benvenuti, F., L. Ferrucci, et al	1995	Italy	459	65 years and older	Independently living	Expert exam	22% had foot pain when standing Foot problems were associated with the presence of pain (stat. sig.) & affected activities of daily living	65% had callus or corns, 30% had thick nails, 21% had first toe deformities, 8% had fungal nails & 5% ingrowing nails		
Crawford, V. L. S., R. L. Ashford, et al	1995	UK	248 results based on 128 not receiving podiatry	75 years and older	Independently living	Questionnaire completed by researcher	96% had problems cutting their toenails	48% had corns, 36% had callus, 7% had ingrown nails	52% receiving podiatry	Nail cutting classed as a foot problem. Only a small sample reported ingrowing nails but thickened or deformed nails were not recorded and may have been more common
Heifand, A. E., H. L. Cooke, et al	1996	US	88	Older people	Residential care	Expert exam	30% had at least 2 foot problems. All the group had foot pain/discomfort	More than 50% had corns/callus, thick or thin nails or bunions		Small study
Robbins, J. M., L. S. Roth, et al.	1996	US	81	1-76 years	Homeless	Expert exam	Over 50% had nail problems and corns/callus	Most common problems – nail pathologies, corns/callus, fungal diseases, neurological problems, bunions & foot injuries		Large age range, small study, different problems found in this type of population

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
Harvey, I., S. Frankel, et al	1997	UK	560	Over 60 years	*	Expert exam	53% had 3 or more foot problems		Only 33% had received podiatry care in the last year	Did not state actual foot problems in the results
Heifand, A. E., H. L. Cooke, et al	1998	US	417	Over 60 years	Residential care	*	84% had foot problems 45% had painful feet	33% had corns, 23% had callus, 24% had bunions and 28% had painful toenails		It was assumed a podiatrist conducted the examination but this was not made clear.
Munro, B. R. and J. R. Steele	1998	Australia	128	Over 65 years	Own homes	Self administered postal questionnaire	71% had foot problems 44% experienced pain with their feet. Women suffered from more foot problems than men.	29% had thick nails &/or skin problems, 26% had corns, 25% had swollen feet and/or bunions.	Over half the group had never visited health personnel about their feet	Self-selected sample, so more likely to fill in questionnaire if had foot problems
Gorter, K. J., M. M. Kuyvenhoven, et al	2000	Holland	1130	65 years and older	Non-institutionalised care	Self administered postal survey	60% had foot pain. 8 out of 10 had foot complaints which were musculoskeletal.	20% had toe nail problems.		Large study but did not specify types of foot problems
Menz, H. B. and S. R. Lord	2001	Australia	135	75-93 years	Community dwellings	Expert exam	87% had at least one foot problem. 21% suffered from painful feet. Women had higher incidence of pain, bunions, callus/corns & lesser toe deformities	74% had bunions, 49% had lesser toe deformities, 31% had callus, 14% had digital corns	Podiatry intervention can ease foot pain and therefore has the potential to improve mobility for older people	

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatric care	Problems with the study
Helfand, A.E.	2004	US	1000	Over 65 years	Independently living, attending or referred to podiatric clinic	Expert exam	75% history of foot pain, 94.2% had onychodystrophy, 64.2% had one or more foot deformity 42% had arthritis and 57% had diabetes. A large percentage had chronic diseases and associated neurovascular problems which in association with foot problems can affect mobility and activities of daily living.	77% had hyperkeratosis, bunions (53%), fungal toenails (59%), and thickened nails (47%). Between 2 – 4% infection or ulceration, 11% with a preulcerative lesion. 36% were wearing inappropriate footwear. A neurovascular assessment was included which identified a high proportion of the study group had peripheral arterial disease and/or sensory loss whereas the medical assessment identified that 48% had foot pain, 35% nail disorders, 28% corns/calluses	All study group went to receive a podiatric intervention and education	Patients attending or referred to podiatric clinic so incidence of foot problems and chronic medical problems may have been higher than in control population
Crews, C.K. et al.	2004	US	309	All	Psychiatric out-patients	Self reported	People with mental health problems report higher incidence of foot problems than the general population. 80% had at least one foot problem.		Not stated	

* Denotes that no information was found

APPENDIX II:II

The Range of Subjects Covered by Research Publications in Podiatry and Related Journals (1999-2002)

Subject area	Number of References
Biomechanics	95
Foot surgery	91
Diabetes	80
Fungal infections	18
Heel pain	17
Skin	12
Footwear	11
Anatomy/Older people/Tissue viability	10
Pain control/Foot injury	9
Clinical outcomes/Hallux	8
Arthritis/Cross infection control/Professionalisation/Radiography	7
Mangement/Nail surgery	6
Verrucae/Medical/Education	5
Bone disease/Podopaediatrics	4
Epidemiology/Forensic podiatry/Health promotion/Pharmacology/Research/Technologies/Treatment records	3
Sports/Rehabilitation/Podiatric databases/Neuromuscular disorders/Homeopathic podiatry/Congenital disorders/Assessment/Health & Safety at work	2
Clinical supervision/Clinical audit/Foot health/Genetic disorders/Hypnosis/Inflammation/Limb dominance/Onychocryptosis/Physical therapy/Prescribing/Proprioception/Public health/Stress	1

APPENDIX II:III

The Journals Containing Podiatry Related Research and Numbers of Articles (1999-2002)

Journal	Number of references
Journal of the American Podiatric Medical Association	185
The Foot	71
British Journal of Podiatry	51
Journal of Foot and Ankle Surgery	30
The Diabetic Foot	22
Australasian Journal of Podiatric Medicine	21
Podiatry Now	17
Practical Diabetes International	7
Journal of Biomechanics	5
Diabetes Care	5
The Cochrane Library	4
Clinical Rehabilitation	2
Health Technology Assessment	1
Podiatric Research Forum newsletter	1
Australasian Journal of Physiotherapy	1
Diabetes Education	1
Disability and Rehabilitation	1
International Journal of Rehabilitation Research	1
Journal of Clinical Microbiology	1
Journal of Forensic Identification	1
Journal of Korean Medical Science	1
Lasers in Surgery and Medicine	1
MD Computing	1
Military Medicine	1
Rev Rheum Eng Ed	1
Scandinavian Journal of Primary Health Care	1
Stroke	1

APPENDIX IV:I
Professional Role Pilot Questionnaire

Age
Sex Male Female

Number of years since qualification
Number of years working for the NHS

Please answer the following questions according to your role as a Podiatrist within the NHS.

1. How often do you provide nail care for your patients?
never occasionally some of the time all of the time other [please state]

2. How often do you perform callus and corn removal for your patients?
never occasionally some of the time all of the time other [please state]

3. How often do you give foot care advice to your patients?
never occasionally some of the time all of the time other [please state]

4. How often do you give footwear advice to your patients?
never occasionally some of the time all of the time other [please state]

5. How often do you perform biomechanical evaluations of your patients?
never occasionally some of the time all of the time other [please state]

6. How often do you prescribe simple insoles or orthotics or both for your patients?
never occasionally some of the time all of the time other [please state]

7. How often do you participate in nail surgery?
never occasionally some of the time all of the time other [please state]

8. How often do you treat patients in specific 'at risk' clinics? [e.g. diabetes]
never occasionally some of the time all of the time other [please state]

9. How often do you carry out Podiatric surgery?
never occasionally some of the time all of the time other [please state]

**Thank you for completing this questionnaire, please could you return it
Lisa Farndon in Fulwood House.**

APPENDIX IV:II

Professional Role Questionnaire

For each question please mark a cross in the box representing your response.

If you work in more than one area (e.g. private and NHS) please answer the questions for the area you work in the majority of the time or copy the questionnaire and complete one for each area of your work.

Age	Sex	Number of years since qualification	What area do you work in?		
	Male		NHS	Education	Other[please state]
	Female		Private	Retired	

Part 1

1. How often do you provide nail care for your patients?
never occasionally some of the time all of the time other [please state]

☐
☐
☐
☐
☐
2. How often of you perform corn and callus removal for your patients?
never occasionally some of the time all of the time other [please state]

☐
☐
☐
☐
☐
2. How often do you give foot care advice to your patients?
never occasionally some of the time all of the time other [please state]

☐
☐
☐
☐
☐
3. How often do you give footwear advice to your patients?
never occasionally some of the time all of the time other [please state]

☐
☐
☐
☐
☐
4. How often do you perform Biomechanical evaluations on your patients?
never occasionally some of the time all of the time other [please state]

☐
☐
☐
☐
☐
5. How often do you prescribe simple insoles, orthotics, or both for your patients?
never occasionally some of the time all of the time other [please state]

☐
☐
☐
☐
☐
6. How often do you carry out nail surgery?
never occasionally some of the time all of the time other [please state]

☐
☐
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☐
7. How often do you treat patients in specific 'at risk' clinics? [e.g. diabetes]
never occasionally some of the time all of the time other [please state]

☐
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☐
☐
☐
8. How often do you carry out Podiatric surgery?
never occasionally some of the time all of the time other [please state]

☐
☐
☐
☐
☐

Part 2

9. What did you do today or on your last working day? (please state)

11. "Traditional podiatry is only the treatment of nails, corns and callosities"
- Agree
Disagree
Don't know
Other

Thank you for completing this questionnaire, please return it in the pre-paid envelope

Sheffield South West

Primary Care Trust

Podiatry and Dietetic Services
Centenary House
Heritage Park
55 Albert Terrace Road
Sheffield
S6 3BR
Tel: (0114) 2262008/9
Fax: (0114) 2262129
e-mail: lisaf@chsheff-tr.trent.nhs.uk

[date as postmark]

Dear Colleague,

As part of a PhD programme I am conducting some research into the 'traditional' role of podiatry. The aim of this preliminary work is to identify which aspects of podiatry are being carried out in different professional sectors. It is envisaged that this will help to justify current clinical practice and highlight areas that may need further development. Your response is therefore very valuable.

I would be most grateful if you could complete the attached questionnaire, which should take no longer than a few minutes. If you work in more than one area (i.e. private practice and NHS) please reply for the area that you work in the majority of the time. You may also photocopy the form if you wish to reply for each separate area of your work. Could you please return it by February 28th 2001 in the pre-paid envelope provided. All replies will be treated in confidence.

Many thanks for your help,

Yours sincerely

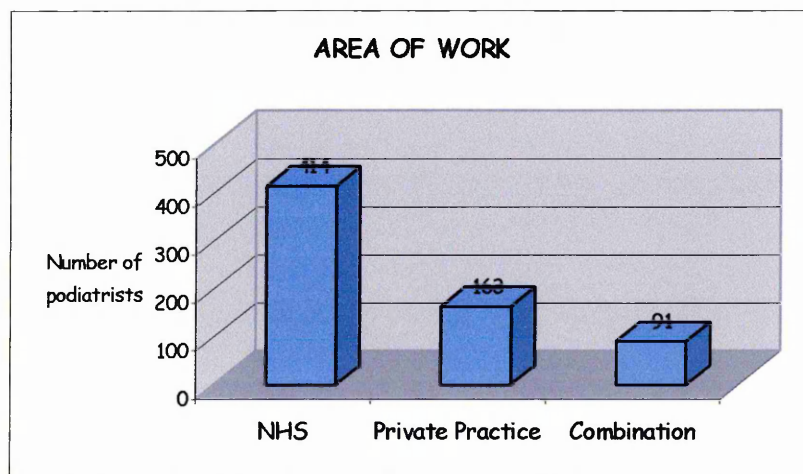
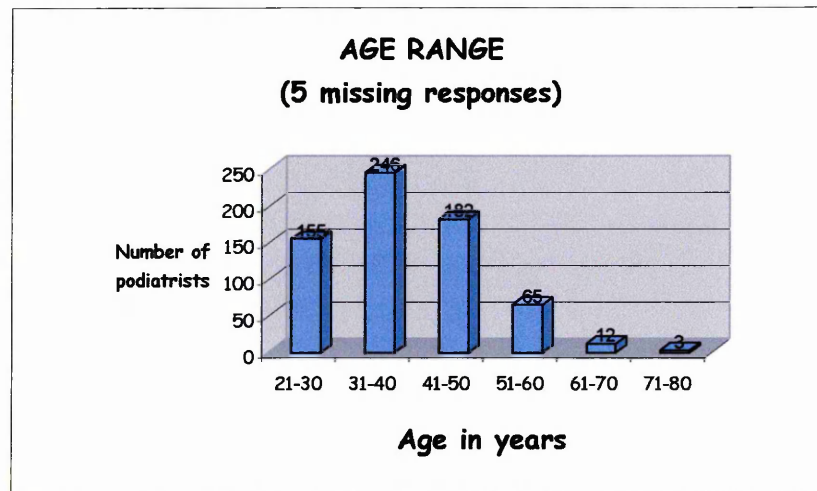
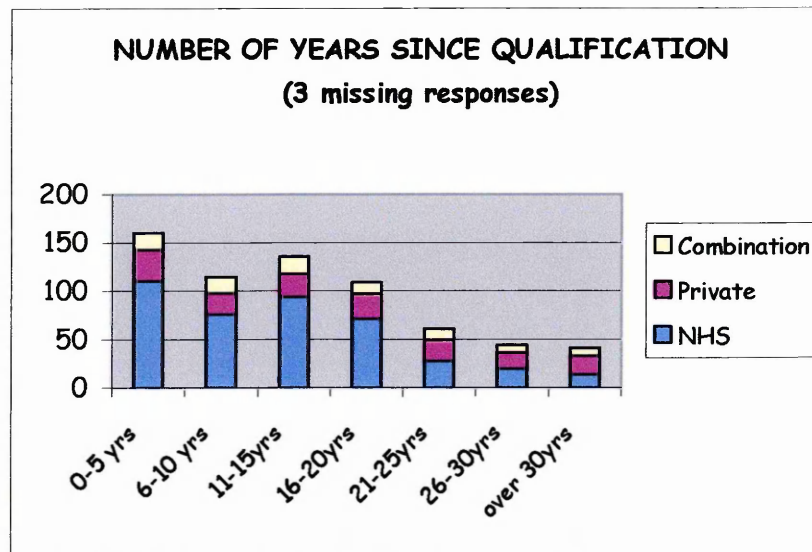
Lisa Farndon
Podiatric Development Facilitator

APPENDIX IV:IV
Surveyed Podiatrists Area of Practice (n=668)

AREA OF PRACTICE	NUMBER OF PODIATRISTS
NHS	414 (62%)
PRIVATE	163 (24%)
COMBINATION/OTHER	91 (14%)
DISTRIBUTION OF PODIATRISTS IN A COMIBINATION OF WORK SECTORS	
NHS/Private	59
Education	10
Education/Private	7
NHS/Education	5
NHS/Private/Education	3
NHS/Semi-retired*	2
Private/Semi-retired*	2
NHS/Private/Semi-retired*	2
Retired*	1

*as defined by respondents

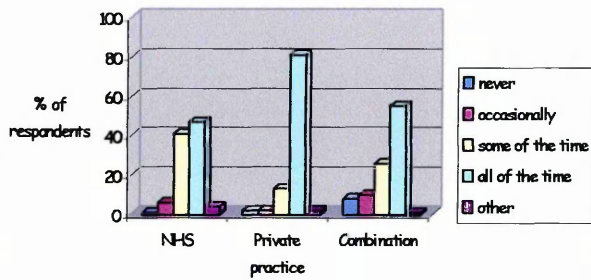
APPENDIX IV:V **Characteristics of Survey Respondents (n=668)**



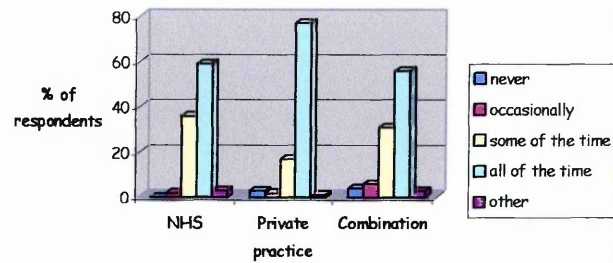
APPENDIX IV:VI

Most Common Areas of Clinical Practice Identified from the Survey

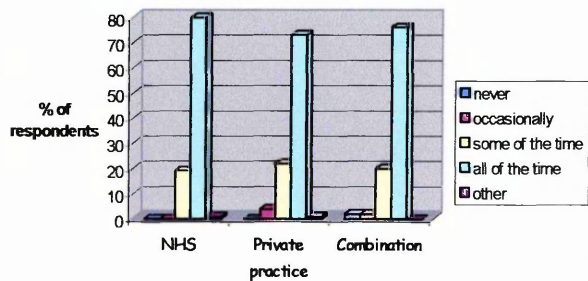
How often do you provide nail care to your patients?



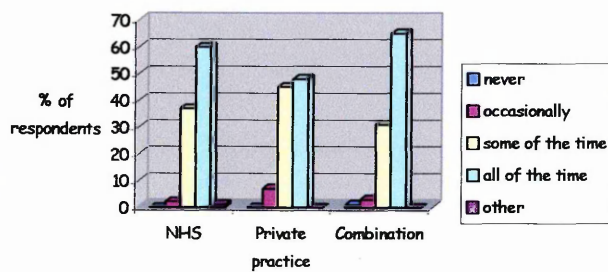
How often do you perform corn and callus removal for your patients?



How often do you provide footcare advice to your patients?

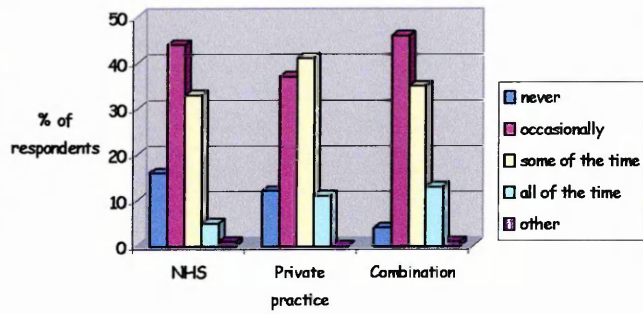


How often do you provide footwear advice to your patients?

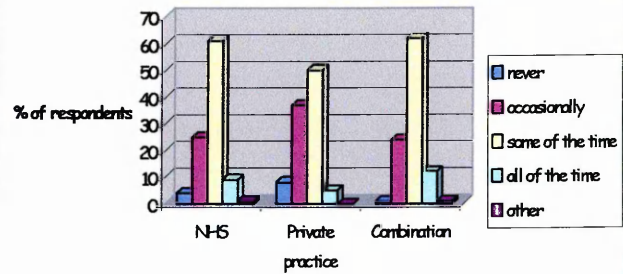


Less Common Areas of Clinical Practice Identified from the Survey

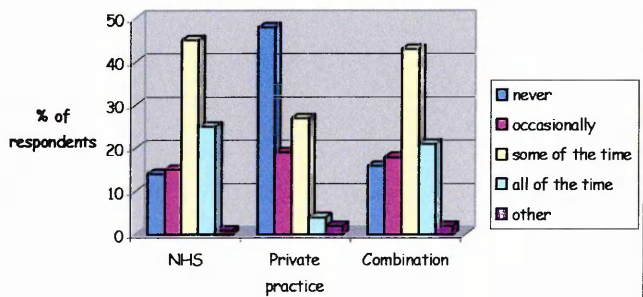
How often do you provide biomechanical evaluations on your patients?



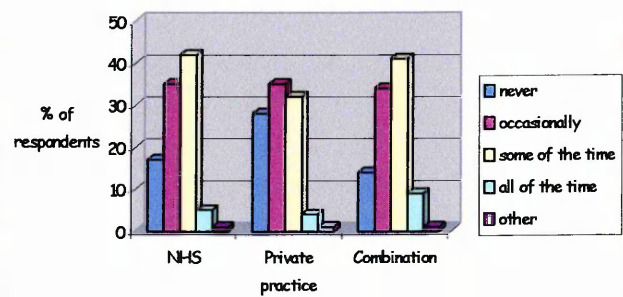
How often do you prescribe simple insoles, orthotics, or both for your patients?



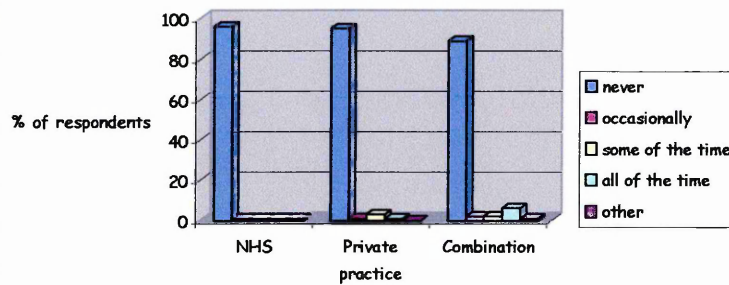
How often do you treat patients in specific 'at risk' clinics?



How often do you carry out nail surgery?

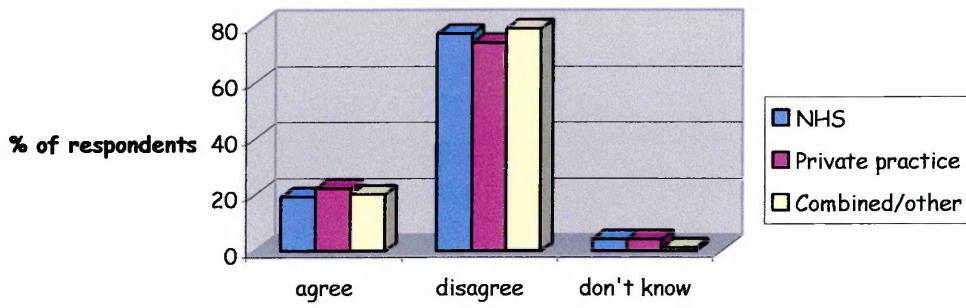


How often do you carry out podiatric surgery?



APPENDIX IV:VIII

"Traditional podiatry is only the treatment of nails, corns and callosities": Podiatrists' replies to this statement



APPENDIX IV:IX

Themes Identified in Response to: “Traditional Podiatry is only the Treatment of Nails, Corns and Callosities”
(Analysis by response and area of work)

RESPONSE	NHS		PRIVATE THEMES		COMBINATION OF WORK AREAS
	AGREE		Patients' perceptions of chiropody/podiatry Increased scope of practice Preventative foot-care and health education Terminology used Holistic approach Other	Patients' perceptions of chiropody/podiatry Psychosocial Increased scope of practice Terminology used Specific issues relating to area of work	
	DISAGREE		<p>Increase scope of practice Terminology used Patients' perceptions of chiropody/podiatry Preventative foot-care and health education Holistic approach Homeopathy Training issues Specific issues relating to area of work Other</p>	<p>Increase scope of practice Preventative foot-care and health education Holistic approach Homeopathy Psychosocial Terminology used</p>	<p>Increased scope of practice Terminology used Holistic approach Homeopathy Training issues</p>
	DON'T KNOW		<p>Terminology used Increase scope of practice Patients' perception of chiropody/podiatry Holistic approach Specific issues relating to area of work Other</p>	<p>Patients' perceptions of chiropody/podiatry Holistic approach Terminology used Other</p>	<p>Terminology used</p>

APPENDIX IV:X
Themes Identified from Positive Responses to the Statement and Examples of Narratives Illustrating each Theme

	THEME	NHS	PRIVATE	COMBINATION OF WORK AREAS
AGREE	Patients' perception of chiropody/podiatry	"Patients don't realize what podiatrists are capable of doing"	"This is the present day perception of patients"	"Cut and come again - bread and butter work"
	Increased scope of practice	"Podiatry today is seen to involve further treatments (biomechanics and surgery)"	"Includes; sepsis, blisters etc"	"Biomechanics, simple insoles, assessment and casted orthoses"
	Preventative foot-care and health education	"Plus, health education, health promotion and palliation"		
	Terminology used	"Podiatry should have been a protected word to relate to the lower limb specialist, now podiatry and chiropody are interchangeable and also being used by the non-registered sector, it is a confusing word"	"The use of the word 'podiatry' should be kept for those practitioners specialising in other services"	
	Holistic approach	"An essential part for diagnosis is what lifestyle your patient has"		
	Psychosocial		"Plus, social worker, listener, friend, carer and helper"	
	Training issues			"At the present time, essential skill with scalpels and other instruments still need to be encouraged"
	Specific issues relating to area of work		"Within private practice there are not many opportunities to practice nail surgery and podiatric surgery."	
	Other	"Podiatrists have to take their heads out of sacks and use their brains and qualifications now to provide a better quality of treatment and care"		

APPENDIX IV:XI **Themes Identified from Negative Responses to the Statement and Examples of Narratives Illustrating each Theme**

DISAGREE	THEMES	NHS	PRIVATE	COMBINATION OF WORK AREAS
	Patients' perception of chiropody/podiatry	"I think the general public thinks this"		
	Increased scope of practice	"Podiatry has always been about treating foot pathology and dysfunction, nails and corns are one physical aspect of care, it does not and never has constituted podiatry"	"The treatment of foot problems below the ankle"	"Traditional podiatry/chiropractic is the treatment of the lower limb"
	Preventative foot-care and health education	"Covers a wide range of foot health education"	"Podiatry should look always to prevent problems occurring"	
	Terminology used	"Traditional 'podiatry' is a misnomer, 'podiatry' is a new term, traditional 'chiropractic' is more accurate"	"The 'traditional' is misleading"	"This definition refers to 'chiropractic', 'podiatry' should mean the medical and surgical specialism of the foot"
	Holistic approach	"Is the care of the whole foot and the person to whom it belongs"	"Podiatry should look after patients as a whole"	"Traditional podiatry is the holistic care of the feet and the mechanics of the locomotor system"
	Psychosocial		"We also end up counselling patients"	
	Training issues			"A lot depends on the qualification of the clinician"
	Homeopathy	"Homeopathic treatments such as tea tree oil, can be a useful non-invasive form of treatment for mycotic nails"	"Homeopathic treatments may help with verrucae and callus"	"Homeopathic treatment"
	Specific issues relating to area of work	"Sadly in the NHS there is very little scope for doing more than traditional podiatry."		
	Other	"This outdated notion is damaging to the profession"		

APPENDIX IV:XII

Themes Identified from 'don't know' Responses to the Statement and Examples of Narratives to Illustrate Themes

	THEMES	NHS	PRIVATE	COMBINATION OF WORK AREAS
DON'T KNOW	Patients' perception of chiropody/podiatry	"This statement is true according to the general public's view, we do not promote ourselves and our abilities well enough"	"That's what people seek and call 'chiropody'"	
	Increased scope of practice	"Podiatry has changed its face and services provided, however, nail surgery and cryotherapy were provided before 'podiatry/otherwise 'chiropody'"		
	Terminology used	"The term suggests an 'historical' perspective, a practice that is no longer carried out"	"I disagree that 'podiatry' is 'chiropody'"	"These are chiropody skills which fall into a podiatrist's scope of practice"
	Holistic approach	"It depends how far back in time 'traditional' applies to, we should all be making holistic assessments and treatments"		
	Specific issues relating to area of work	"The above is all one can get time for with NHS through put."		
	Other	"The above is all one can get time for with NHS through put"	"We keep an open mind to new ideas"	

Sheffield South West

Primary Care Trust

Podiatry and Dietetic Services
Centenary House
Heritage Park
55 Albert Terrace Road
Sheffield
S6 3BR

Tel: (0114) 2262008/9

Fax: (0114) 2262129

E-Mail: lisaf@chsheff-tr.trent.nhs.uk

(date as postmark)

Dear

As you are an existing podiatry patient and receive routine treatment at Central Health Clinic you have been selected to take part in a research project.

Would you please take the time to read the enclosed information sheet which outlines details of the study. If you require any further information regarding this please do not hesitate to contact me on the above number.

Many thanks,

Lisa Farndon
Podiatric Development Facilitator

(May 2002: Version 1)

**CHALLENGING THE TRADITIONAL ROLE OF PODIATRY: SERVICE USERS'
EXPERIENCES OF CORE PODIATRY**

INFORMATION SHEET FOR PARTICIPANTS

You are invited to participate in a study to investigate patients' experiences of routine podiatric care. Please take time to read the following information carefully and decide whether or not you wish to take part. Discuss it with others if you wish.

"Why have I been asked to take part in this study?"

You have been chosen along with a number of other people because you attend a clinic for routine care.

"How long will the study last?"

The study will last approximately two years, but you will only be required to contribute on one occasion.

"What will it involve?"

If you decide to take part in this study, after your next clinic appointment, you will be asked to stay a little while longer to answer a number of questions about your experiences of receiving routine treatment. No expenses are payable as the interview will take place after your podiatry appointment.

First of all, you will be asked to sign a form consenting to the interview and to keep it along with this information sheet. The interview will last approximately 40 minutes and you can say as little or as much as you want to each question you will be asked. It will be taped so that nothing that you say is forgotten.

"How often will I have to visit the clinic?"

Only for your usual treatment.

"What if I do not wish to take part?"

This will in no way affect your right to podiatry care.

"What if I change my mind during the study?"

You are free to withdraw from the study at any time without any effect on your treatment.

"What will happen to the information from the study?"

The tape will be destroyed at the end of the research project and any information collected about you during the course of the interview will be kept strictly confidential so that you cannot be recognised from it.

When the study has been completed the results will be used in my PhD thesis and published in a peer reviewed journal. You will not be identified in my thesis or the journal article or any future publications from this project. If you wish to have a copy of the published paper(s) I will be pleased to provide you with one.

"Are there any risks associated with taking part?"

There are no risks and, therefore, there are not special compensation arrangements. Non the less, if you are harmed due to someone's negligence, then you may have grounds for legal action but you may have to pay for it. If you wish to complain, or have any concerns about any aspect of the way you have been approached or treated during the course of this study, the normal National Health Service complaint mechanisms are available to you.

“Who do I complain to?”

If you have any concerns or questions about this study you should contact me or you may wish to contact Helen Cawthorne (Clinical Governance Manager: Sheffield South West Primary Care Trust), The Old Station Yard, Archer Road, Millhouses, Sheffield.

“What do I do to take part?”

Please telephone Lisa Farndon – 0114 2262125

Thank you for your time.

Lisa Farndon
Podiatric Development Facilitator (Podiatry Services, SW PCT)
Centenary House, 55 Albert Terrace Road, Sheffield, S6 3BR.
Tel: 0114 2262125

May 2002 (version 1)

**CHALLENGING THE TRADITIONAL ROLE OF PODIATRY: SERVICE USERS'
EXPERIENCES OF CORE PODIATRY**
CONSENT FORM

Study Number:

Patient Identification Number for this study:

Name of Researcher: Lisa Farndon

Please give your consent to participating in the study by answering the following questions

Have you read the information sheet about this study? Yes ☐ No ☐

Have you been able to ask questions about this study? Yes ☐ No ☐

Have you received answers to all your questions? Yes ☐ No ☐

Have you received enough information about this study? Yes ☐ No ☐

Which investigator have you spoken to about this study?.....

Are you involved in any other studies? Yes ☐ No ☐

• If you are, how many? ☐

Do you understand that you are free to withdraw from this study:

• At any time? Yes ☐ No ☐

• Without giving a reason for withdrawing? Yes ☐ No ☐

Do you agree to take part? Yes ☐ No ☐

Your signature will certify that you have had adequate opportunity to discuss the study with the investigator and have voluntarily decided to take part. Please keep your copy of this form and the information sheet together.

Signature of participant..... Date.....

Signature of researcher..... Date.....

Signature of person taking consent (if not researcher).....

Date.....

1 for patient; 1 for researcher; 1 to be kept with podiatry notes
consent form May 2002: version 2

APPENDIX V:IV

INTERVIEW SCHEDULE (May2002:Version 1)

Research Question: What are service users' experiences of core podiatry

Patient identifier _____
Age _____
Length of time receiving podiatry care _____
Foot problem _____

Treatment interval _____
Medical/surgical history _____

Introduction

"Thank you for talking to me. We're always aiming to improve the podiatry service and your views are very important to us. I'm asking people like you who receive routine podiatry treatment about your experiences, whether it benefits you or not and if there is anything that would help improve your foot health further."

"This interview will last about 30 minutes, depending on how much you want to tell me." (Tape recorder put onto the table).

"As you can see, I have a tape recorder. I would like to tape what you say so that I will not make any mistakes trying to remember what you say or forget important things. It's just to let me listen closely to what you are saying so that I don't have to make notes. The tape interview will be transcribed so that I can put all of your views down on paper. Any comments I report will be anonymous. If you wish you can listen to your tape, at the end of the interview or any time later, or read the transcript and change what you have said. However, if you'd rather not be recorded, please don't be afraid to say so."

(Give information sheet to client).

"Please read this information sheet."

(Wait)

"Is everything clear? Will you answer a few questions for me? And can we use the tape recorder?"

Give consent form "Please tick your answer to each question and sign at the bottom of the page"

(Put information sheet and consent form in envelope and hand it to the patient. "Please keep your copies and your forms safe, thank you")

RESEARCH QUESTION: What reasons do patients attend for podiatry treatment?

1a) "Will you please give me some reasons why you come for chiropody treatment?"

Prompts

"Does it make your feet feel better?"

"Is it because you've always come for treatment?"

1b) "What foot problems do you currently have?"

RESEARCH QUESTION: Do patients think the treatment they receive is effective?

2a) "What did the podiatrist do to your feet today?"

2b) "Do you think you get any benefits from receiving this treatment?"

Prompts

If "YES" – "What are they?"

If "NO" – "Why not?"

2c) "How do your feet feel after you have been for treatment?"

2d) "Does your foot problem stop you from doing anything at all?"

3a) "Do you think the treatment you have received works?"

Prompts

If "YES" – "Why is this?"

If "NO" – "Why not?"

4a) "How long will it be before you feel you need treatment again?"

4b) "How will you know this?"

"Well we've talked about the treatment that you've just received and the effects this has on you, I now want to ask you a few questions about some broader aspects of the service you receive and your foot care"

5a) "Do you feel receiving treatment is improving your foot condition?"

OR

"Does receiving treatment just keep them the same?"

OR

"Does receiving treatment make them worse?"

5b) "Could you explain how you know this?"

RESEARCH QUESTION: What do patients think would happen to their foot health if treatment was not available?

6a) "What do you think would have happened if you hadn't received this treatment?"

6b) "What if anything could have been done better to improve your foot care?"

"Thank you for answering these questions, do you have anything further to add?"

Interview Summary

Interviewee:1

Key Points

1. Corn on one toe
2. Would prefer more frequent treatment
3. Treatment maintains
4. Feet would deteriorate if no treatment

Themes

	Already noted	New
1:Reason for attendance (current foot problem/deformity/unsuccessful self care/pain)		✓
2:Is treatment effective (maintains foot health & alleviates pain/long standing care/foot problems improved or cured/mobility not affected/self care advice taken)		✓
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)		✓

Key Quotes

Quote	Associated theme/code
<i>It is very painful, just before I come</i>	1: Pain
<i>It makes it lot easier when you've been</i>	2: Maintains foot health & alleviates pain
<i>The chiropodists told me to get lace-ups and not to wear slippers in the house</i>	2: Self care advice taken
<i>I don't know what you'd do if they didn't cut it out it would just get worse and worse, really red</i>	3: Deterioration in foot health
<i>I mean I would probably have to try something to get rid of it myself but you can't</i>	3:Unable to manage self care

Reflections on interview

- The treatment she gets she would be unable to do for herself
- Pain is the indicator for when feet require further treatment

Implications

- Podiatry treatment maintains but does not cure her foot problems, but she would be unable to provide this care for herself

APPENDIX V:V (cont)

Interview Summary

Interviewee:2

Key Points

1. Treatment has cured 2 different foot conditions
2. Attending for regular reviews gives her confidence
3. Prefers same podiatrist each visit for continuity
4. Her foot health would deteriorate if the treatment ceased

Themes

	Already noted	New
1:Reason for attendance (current foot problem/deformity/unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/foot problems improved or cured/professional care/mobility not affected/frequency of treatment/self care advice taken/confidence & assurance/continuity of staff/range of treatments offered)	✓	✓
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)	✓	

Key Quotes

Quote	Associated theme/code
<i>I would be in pain because my big toenails would dig into the tops of my toes</i>	1: Pain
<i>I'm confident that they make my feet alright, I'm confident that I won't be in pain because I come</i>	2: Professional care
<i>I feel assured that somebody has seen that there's nothing going wrong with my feet at all</i>	2: Confidence & assurance
<i>I feel that I like to see the one person, for that continuity</i>	2: Continuity of staff
<i>I can't do my nails very well myself, I can't do the big toenails because they are thick</i>	3:Unable to manage self care

Reflections on interview

- Has confidence in the service
- Would not be able to provide foot care treatment herself

Implications

- Though podiatry care cures some problems it may still be required for maintenance care or for re-assurance

Interview Summary

Interviewee:3

Key Points

1. Has painful foot deformity (hammer toe)
2. Requires a degree of nail care, though has been encouraged to file by podiatrist
3. Would like more frequent treatment
4. Has no family or friends to help with self care

Themes

	Already noted	New
1:Reason for attendance (current foot problem/deformity/unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/long standing care/foot problems improved or cured/mobility affected/frequency of treatment/self care advice taken)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care/no family or friends to provide foot care)	✓	✓

Key Quotes

Quote	Associated theme/code
<i>(unable) I've no one to cut them for me, that's the main reason why I come</i>	1: Unable to self care
<i>She says me feet are a lot better to what they've been today</i>	2: Foot problems improved or cured
<i>Well I can't walk as much as I used to do, they do catch on your toes on your shoes and things</i>	2: Mobility affected
<i>I can't cut my toenails very well, but she says they don't have to do, they have to be filed</i>	2: Self care advice taken
<i>I have had people to help me cut my nails, but they've all died off now so I'm left without anyone to help me you see</i>	3:No family or friends to provide foot care

Reflections on interview

- Patient wants nail care though can manage herself after self care advice given
- Has a foot deformity which the service is unable to cure

Implications

APPENDIX V:V (cont)

Interview Summary

Interviewee:4

Key Points

1. Feet have improved since originally started coming for treatment
2. Patient still requires a degree of maintenance care
3. Has had treatment intervals extended as feet have improved though patient would prefer to come more frequently

Themes

	Already noted	New
1:Reason for attendance (current foot problem/deformity/unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/long standing care/foot problems improved or cured/mobility affected/frequency of treatment/self care advice taken/confidence & assurance)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care/no family or friends to provide foot care)	✓	

Key Quotes

Quote	Associated theme/code
<i>(unable) I can't bend down as well to do them myself</i>	1: Unable to self care
<i>Well when I used to come every three months, they used to be good, but it gets to the end of three months now I know I have got to struggle to do something with them</i>	2: Frequency of treatment
<i>I try filing them in between</i>	2: Self care advice taken
<i>I can't get ingrowing toe nails out like they do</i>	3: Unable to manage self care
<i>but you see if I left my nails I couldn't manage to do that, and I've nobody at home you see</i>	3: No family or friends to provide foot care

Reflections on interview

- There is a difference between professional and self care
- Though feet have improved patient would still like more frequent treatment

Implications

Interview Summary

Interviewee:5

Key Points

1. Requires nail care only
2. Has painful bunion but treatment cannot cure this problem
3. Cannot manage own nails due to arthritis

Themes

	Already noted	New
1:Reason for attendance (current foot problem/referred to service by other/deformity/unable to self care/pain)	✓	✓
2: Is treatment effective (maintains foot health & alleviates pain/ mobility affected/frequency of treatment/self care advice taken)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)	✓	

Key Quotes

Quote	Associated theme/code
<i>She recommended me to come down here (podiatrist who treated his wife)</i>	1: Referred to service by other
<i>(unable)with having arthritis in the wrist I just can't get down to cut them you know</i>	1: Unable to self care
<i>My nails yes, digging in as I was walking down, so they were ready for cutting as I just couldn't walk</i>	2: Mobility affected
<i>And [she's] given me a leaflet about some contraption I can get for this bunion</i>	3: Self care advice taken
<i>I would have to go private</i>	3: Unable to manage self care

Reflections on interview

- There is a difference between professional and self care
- Though feet have improved patient would still like more frequent treatment
- Could not manage himself if podiatry care ceased, would have to seek private care

Implications

Change first question to: "Can you give me some reasons why you come for podiatry treatment?"

Interview Summary

Interviewee:6

Key Points

1. Used to have private treatment until GP referred her for NHS podiatry
2. Her feet have improved since receiving treatment
3. She used to perform self treatment when younger but is unable to now

Themes

	Already noted	New
1:Reason for attendance (current foot problem/referred to service by other/deformity/unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/ foot problems improved or cured/professional care/mobility was affected before treatment/frequency of treatment/self care advice taken)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care/used to self treat but too frightened now)	✓	✓

Key Quotes

Quote	Associated theme/code
<i>I used to pay £10 to have them done and then the doctor got me coming here</i>	1: Referred to service by other
<i>I need to come but they haven't got any worse</i>	2: Maintains foot health & alleviates pain
<i>They did when I first started coming, pain shows in your face with your feet, don't it. But they're marvellous now</i>	2: Mobility was affected has now improved
<i>she said do you use slippers, and I said yes, and she says well don't, so I don't wear slippers now and they have been better</i>	2: Self care advice taken
<i>Well years ago, I used to do them myself, I got a corn blade and everything, well I couldn't do them, I'd be a bit frightened now with the condition in case I cut myself or anything like that</i>	3: Used to self treat but too frightened now

Reflections on interview

- Has acted on some self care advice and this has worked
- She does not require more frequent treatment that is given

Implications

APPENDIX V:V (cont)

Interview Summary

Interviewee:7

Key Points

1. Registered partially sighted therefore initially referred by podiatry due to this
2. She still manages own nail care safely

Themes

	Already noted	New
1:Reason for attendance (current foot problem/referred to service by other/ unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/ long standing treatment/foot problems improved or cured/professional care/mobility not affected/frequency of treatment/self care advice taken/confidence & assurance)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)	✓	

Key Quotes

Quote	Associated theme/code
<i>if there's a corn naturally it hurts a little</i>	1: Pain
<i>it certainly feels a little better when they've taken away some hard skin especially when they've treated the little soft corns</i>	2: Maintains foot health & alleviates pain
<i>Just getting off more of the hard skin that I wouldn't be able to do</i>	2: Professional care
<i>I use a nail file, every few days I do that</i>	2: Self care advice taken
<i>The hard skin would get much worse, yes and the corn too, that would</i>	3: Deterioration in foot health

Reflections on interview

- She manages her own nail care in between but could not treat the rest of her problems as professional care is required

Implications

New prompt "How would you feel if we could cure your foot problem, would you still want to come back to the service?"

Interview Summary

Interviewee:8

Key Points

1. Managed self care of corns until she retired
2. Does not believe her current foot problems could be cured though they have improved since receiving treatment

Themes

	Already noted	New
1:Reason for attendance (current foot problem/referred to service by other/ unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/professional care/mobility not affected/confidence & assurance/continuity of staff)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)	✓	

Key Quotes

Quote	Associated theme/code
<i>but sometimes when the corn hurts and you start to mess about with it, sometimes it bleeds or sometimes it gets worse</i>	1: Unable to self care
<i>you can't manage your toes like you people, you professional to do it</i>	2: Professional care
<i>there's somebody there to really look at them properly</i>	2: Confidence & assurance
<i>Yes, I like people but I expect everyone to do it</i>	2: Continuity of staff
<i>You need the proper treatment for them because if your feet are digging in you make get bad feet, they may bleed and it can even turn gangrenous and you don't know, so its best to come to the proper place and get them done</i>	3: Deterioration in foot health

Reflections on interview

- Patient does not require continuity of staff

Implications

Do patients think their foot problems can be cured?

APPENDIX V:V (cont)

Interview Summary

Interviewee:9

Key Points

1. If feet cured would still like to come back occasionally for checks
2. Can manage own nail care after podiatrists advice

Themes

	Already noted	New
1:Reason for attendance (current foot problem/referred to service by other/foot deformity/unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/professional care/mobility not affected/frequency of treatment/self care advice taken/confidence & assurance)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care/would like occasional checks if feet cured)	✓	✓

Key Quotes

Quote	Associated theme/code
<i>I couldn't actually get to my toes to do my toenails</i>	1: Unable to self care
<i>I can walk quite easily for whatever period of time until they start to develop again</i>	2: Maintains foot health & alleviates pain
<i>they could check the soles of my feet which obviously I cannot see</i>	2: Professional care
<i>Podiatrist told me how to do it and I've been able to do it myself, my toenails from then</i>	2: Self care advice taken
<i>I would appreciate being able to come down and have it done by the podiatrist</i>	3: Would like occasional checks if feet cured

Reflections on interview

- Patient does believe feet conditions could be cured but would still like to come back for checks

Implications

Interview Summary

Interviewee:10

Key Points

1. Would not want to come back if her feet were cured
2. Offered potentially curative treatment (podiatric surgery) but declined
3. Can self care her nails, tried unsuccessful self care of corns

Themes

	Already noted	New
1:Reason for attendance (current foot problem/foot deformity/unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/foot problems improves or are cured/professional care/mobility not affected/frequency of treatment/self care advice taken)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)	✓	

Key Quotes

Quote	Associated theme/code
<i>I did try it and I cut my foot didn't I (referring to hard skin)</i>	1: Unable to self care
<i>I'm in that much pain with my feet</i>	1: Pain
<i>Well it eases off but it soon builds back up again (pain)</i>	2: Maintains foot health & alleviates pain
<i>I can't get it off you see and she can and I benefit from coming here definitely</i>	2: Professional care
<i>I don't know, I wouldn't know what to do</i>	3: Unable to manage self care

Reflections on interview

- There is a difference between professional care and self care
- Some self care is successful (nails/footwear change/application of padding or medicaments) and some is unsuccessful (corns and callus)

Implications

Interview Summary

Interviewee:11

Key Points

1. Requires routine care
2. Can manage nails in between appointments
3. Don't expect foot problems to be cured
4. Would like a pedicure

Themes

	Already noted	New
1:Reason for attendance (current foot problem/deformity/unable to self care)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/ mobility not affected/frequency of treatment/confidence & assurance)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)	✓	

Key Quotes

Quote	Associated theme/code
<i>I find it difficult to do them myself</i>	1: Unable to self care
<i>I like to have them just done to make sure they're alright</i>	2: Confidence/assurance
<i>You can walk on air when you come out</i>	2: Maintains foot health & alleviates pain
<i>Well they really would get bad because the skin would get so thick and hard</i>	3: Deterioration in foot health
<i>my nails, really I've got a deformed hammer toe, that would be impossible for me to cut</i>	3: Unable to manage self care

Reflections on interview

- Is quite fit and health and can manage own nail care in between appointments
- Does not expect a cure, purely maintenance

Implications

Podiatry treatment maintains but does not cure her foot problems

Interview Summary

Interviewee:12

Key Points

1. Originally came due to gout which podiatry care was unable to treat
2. Foot problems have improved to a degree since attending
3. Would like more frequent treatment
4. Mobility was affected when first attending but has improved due to the treatment

Themes

	Already noted	New
1:Reason for attendance (current foot problem/deformity/unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/ long standing care/foot problems improved or cured/mobility affected/frequency of treatment/self care advice)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)	✓	

Key Quotes

Quote	Associated theme/code
<i>I can't bend down anyway to do my own nails</i>	1: Unable to manage self care
<i>Oh I had corns, I had corns on my little toes and bunions which were inflamed, oh yes when I first originally came yes. But you see over the months they've gradually got better</i>	2: Foot problems improved or cured
<i>Yes, yes it immobilised me really</i>	2: Mobility affected
<i>Well they would be worse wouldn't they, I would be hobbling about</i>	3: Deterioration in foot health
<i>Can't do them myself</i>	3: Unable to manage self care

Reflections on interview

- Some foot problems have improved since attendance and thinks others problems may also improve
- Nail care will always be required as unable to do them herself

Implications

Believes podiatry can cure her foot problems, but will still require nail care

APPENDIX V:V (cont)

Interview Summary

Interviewee:13

Key Points

1. Can manage self nail care after advice
2. Foot problems were affecting mobility
3. Foot problem have improved since receiving treatment

Themes

	Already noted	New
1:Reason for attendance (current foot problem/ unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/ long standing care/foot problems improved or cured/mobility affected/frequency of treatment/self care advice/confidence & assurance)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)	✓	

Key Quotes

Quote	Associated theme/code
<i>when I look down or bend down I'm frightened of falling</i>	1: Unable to manage self care
<i>she's told me what to do and I've took her advice and I'm doing it</i>	2: Self care advice
<i>she says I'm well looking after them, before I used to neglect them</i>	2: Confidence/assurance
<i>I couldn't walk too far because they were painful</i>	2: Mobility affected
<i>They would get worse if I didn't come here</i>	3: Deterioration in foot health

Reflections on interview

- Some foot problems have improved since attendance which has improved his mobility
- Treatment is now maintaining foot health

Implications

Would not be able to manage self care himself accept nail care which he does in between appointments

Interview Summary

Interviewee:14

Key Points

1. Treatment intervals have been reduced because her feet were quite bad
2. Had a lot of foot surgery to try and correct deformities
3. Has arthritis which causes a lot of foot pain

Themes

	Already noted	New
1:Reason for attendance (current foot problem/deformity/unable to self care/pain)	✓	
2: Is treatment effective (maintains foot health & alleviates pain/foot problems improved or cured/mobility affected/frequency of treatment/self care advice/confidence & assurance)	✓	
3:Outcome if no treatment given (deterioration in foot health/unable to manage self care)	✓	

Key Quotes

Quote	Associated theme/code
<i>Well when they start paining underneath</i>	1: Pain
<i>She's says they're not too bad just now</i>	2:Confidence/assurance
<i>Well when I've had my feet done I feel champion, can walk a lot better, I feel on top of the world when they've done</i>	2: Maintains foot health & alleviates pain
<i>Oh yes, a lot better, they were bad, they were terrible when I first came. I used to have a lot of corns built up you know</i>	2: Foot problems improved or cured
<i>I don't think I would be able to walk properly, I would be immobile</i>	3: Deterioration in foot health

Reflections on interview

- Mobility has improved as some foot problems have improved
- Happy with treatment and service

Implications

Due to surgery and arthritis needs very frequent treatment in order to maintain her mobility

APPENDIX V:VI

Excerpts from Narratives to Illustrate Particular Themes for Group Analysis

SUBJECT 1

Well I have a bunion and its pushed me toe up and that's the problem there, I got corns on it

The bunion's pushed me big toe and pushed that one up like that

I bought some corn plasters and they were hopeless

It is very painful, just before I come

It makes it lot easier when you've been

a few years

Just keeping them nice, I don't think you can improve them, do you?

[it doesn't stop her from doing anything) No, I wouldn't say that, its just painful when I'm walking

The chiropodists told me to get lace-ups and not to wear slippers in the house

I don't know what you'd do if they didn't cut it out it would just get worse and worse, really red

I mean I would probably have to try something to get rid of it myself but you can't

SUBJECT 2

I had a corn underneath

but I've got one,that's always coming up there, so I had a corn underneath (referring to bent toe)

but I know I can't see to my feet

I would be in pain because my big toenails would dig into the tops of my toes

they are absolutely wonderful now

Originally I came because I'd got seed corns under both feet, and they've sorted them out wonderfully

I'm confident that they make my feet alright, I'm confident that I won't be in pain because I come

I used to walk but it was with pain, you know but I didn't sort of let it get me down really, but I would be, without coming here, I think I would be in trouble

I would like two months, but they've put me on three months now

I keep them right myself in fact there is very little to do now, because I do them every day with Vaseline

I feel assured that somebody has seen that there's nothing going wrong with my feet at all

I feel that I like to see the one person, for that continuity

APPENDIX V:VI (cont)

There's the biomechanics there as well if you need them

Oh absolutely, no question, absolutely (referring to affect if did not have treatment)

I can't do my nails very well myself, I can't do the big toenails because they are thick

SUBJECT 3

I've got corns on the little toes and a bit under the feet

Hammer toes that catch on my shoes

I've no one to cut them for me, that's the main reason why I come

they stick up like that and they rub on the shoes

Well they feel a lot better when they've been cut properly

I've been coming for about twenty years

She says me feet are a lot better to what they've been today

Well I can't walk as much as I used to do, they do catch on your toes on your shoes and things

If I could come for ten minutes, it only her takes her ten minutes, more often I would be happier

I can't cut my toenails very well, but she says they don't have to do, they have to be filed

Oh they'd get much worse if I didn't come here

Well if I couldn't come here I shouldn't get them cut

I have had people to help me cut my nails, but they've all died off now so I'm left without anyone to help me you see

SUBJECT 4

I've got a corn and there's hard skin underneath

Yes you can see it there
(referring to bent toe)

I can't bend down as well to do them myself

they were sore

When I first started coming they were really bad because I had to pop in before the three months was up to see if they could just push me in for ten minutes or something like that because my corn and skin underneath were bad

about three years

they've improved since I came you know

It does, because sometimes they feel right sore to walk on

Well when I used to come every three months, they used to be good, but it gets to the end of three months now I know I have got to struggle to do something with them

APPENDIX V:VI (cont)

I try filing them in between

Well she says they are getting much better, they weren't bad today

Oh I think they would get worse because when they're not attended to, you know.

I can't get ingrowing toe nails out like they do

but you see if I left my nails I couldn't manage to do that, and I've nobody at home you see

SUBJECT 5

Well it is a little bit hard (referring to hard skin over heels)

She recommended me to come down here (podiatrist who treated his wife)

I've got a very large bunion on the left foot

with having arthritis in the wrist I just can't get down to cut them you know

its very, very sore

how comfortable I feel when I've been here

for about 5 years now

My nails yes, digging in as I was walking down, so they were ready for cutting as I just couldn't walk

I wish I could come about every month

And [she's] given me a leaflet about some contraption I can get for this bunion

They would get worse

I would have to go private

SUBJECT 6

I do have one or two corns

I used to pay £10 to have them done and then the doctor got me coming here

I get sore bunions

Well my nails are long and I can't get down to cut them myself

I get sore bunions

I need to come but they haven't got any worse

I've got a few corns she does those, which is not very often because she's clearing them up for me

It's coming here that's done it definitely yes

APPENDIX V:VI (cont)

They did when I first started coming, pain shows in your face with your feet, don't it. But they're marvellous now (referring to mobility)

Well I usually go about this four month, you know, last week, I thought well I'll be glad when I get my nails cut, but another week doesn't make any difference

she said do you use slippers, and I said yes, and she says well don't, so I don't wear slippers now and they have been better

Oh definitely yes (referring to feet getting worse if did not have treatment)

Well I couldn't do them myself, I couldn't get down to do my nails

Well years ago, I used to do them myself, I got a corn blade and everything, well I couldn't do them, I'd be a bit frightened now with the condition in case I cut myself or anything like that

SUBJECT 7

...a slight corn I have on one toe

through the GP, but it was recommended that I should come here

I can't see to trim the nails or do anything

if there's a corn naturally it hurts a little

it certainly feels a little better when they've taken away some hard skin especially when they've treated the little soft corns

I've had it for a good long time now since 1985 I think it is

Well its certainly very, very much better, I'm very grateful for the treatment here

Just getting off more of the hard skin that I wouldn't be able to do

walking is alright

I come about three times a year

I use a nail file, every few days I do that

they always remark what good condition they're in actually

The hard skin would get much worse, yes and the corn too, that would

Just getting off more of the hard skin that I wouldn't be able to do

SUBJECT 8

It's a corn

They asked me to come here (referring to previous podiatrist)

but sometimes when the corn hurts and you start to mess about with it, sometimes it bleeds or sometimes it gets worse

I'm not comfortable

APPENDIX V:VI (cont)

Because when they want doing I'm comfortable

you can't manage your toes like you people, you professional to do it

Well not really stop me from doing anything, but you do what you do in pain

there's somebody there to really look at them properly

Yes, I like people but I except everyone to do it

You need the proper treatment for them because if your feet are digging in you make get bad feet, they may bleed and it can even turn gangrenous and you don't know, so its best to come to the proper place and get them done

Well, I suppose I would have to just go along with it in pain because you can't manage your toes like you people

SUBJECT 9

I also have calluses and corns on the underside of my right foot

I was first sent here by my practice nurse at my general practitioners

[It's] associated with the arthritis which has caused my toes to actually curl
I couldn't actually get to my toes to do my toenails

like walking on very small stones (referring to hard skin on sole of foot)

I can walk quite easily for whatever period of time until they start to develop again,

they could check the soles of my feet which obviously I cannot see

all that I want to do I can do

the treatment time is three months apart, usually after about two months, about nine weeks approximately, then I can start to feel it

Podiatrist told me how to do it and I've been able to do it myself, my toenails from then,

you can talk to the podiatrist, if there's anything that's on your mind that you want to ask them they will give you the information

Well I actually feel as though if I didn't come and have treatment on the underside of my feet probably in within a period of a year I would find it extremely difficult to walk

I couldn't actually get to my toes to do my toenails
I would appreciate being able to come down and have it done by the podiatrist.

SUBJECT 10

I've got hard skin

I've got bunions

I did try it and I cut my foot didn't I (referring to hard skin)

I'm in that much pain with my feet

APPENDIX V:VI (cont)

Well it eases off but it soon builds back up again
(pain)

No worse, they're better definitely

I can't get it off you see and she can and I benefit from coming here definitely

I do the washing and all that, things like that, but I complain about my feet the whole time

I wish I could come more often actually

I buy the things she's told me to send for

Well they keep building up more skin don't they

I don't know, I wouldn't know what to do

SUBJECT 11

it's the hard skin really

I've got very distorted toe nails on my hammer toes

I find it difficult to do them myself

You can walk on air when you come out

I walk a lot, I walk miles

I probably would go once a month just for the sheer luxury of having my feet massaged

well I like to have them just done to make sure they're alright

Well they really would get bad because the skin would get so thick and hard and my nails, really
I've got a deformed hammer toe

that would be impossible for me to cut

SUBJECT 12

Its, my nails and a corn

...a corn on my bunion

I can't bend down anyway to do my own nails, I can't bend down, so that's one thing anyway

that's painful

I would hate not to come

Over the years, oh yes. I've been coming quite a while

Oh I had corns, I had corns on my little toes and bunions which were inflamed, oh yes when I
first originally came yes. But you see over the months they've gradually got better

Well I can walk better

I think I didn't used to be as long in between appointments

APPENDIX V:VI (cont)

answer to did she take footwear advice]
Well in a way, yes

Well they would be worse wouldn't they, I would be hobbling about

Oh now because you see the thing I have is that I can't bend as easily as I used to do, its an effort. I mean I can't get my foot up, you know, my leg up, because that comes with old age doesn't it?

SUBJECT 13

Well its hard skin, calluses

before I used to neglect them

I daren't touch a matchstick on the floor with my feet at times

[in response to how do your feet feel after treatment] Champion

[length of time receiving treatment] About six year

No, the nails are growing and she cuts them and files them and the hard skin, sometimes I can't hardly walk, I daren't touch a matchstick on the floor with my feet at times, but not now

I couldn't walk too far because they were painful, all I wanted to do was to get on a bus, tram car and ride, ride, but now I don't mind having a good walk

Now then, this is the problem, sometimes I'm ready in about 8-10 weeks

but I've had a few words a few weeks ago with Lucy and she's told me what to do and I've took her advice and I'm doing it

she says I'm well looking after them, before I used to neglect them

They would get worse if I didn't come here

I've been telling her I've started going dizzy now, I've been going to the doctors, when I came last time and up to now I've been going to doctors with going dizzy and when I look down or bend down I'm frightened of falling

I'm frightened of cutting myself

SUBJECT 14

She's took thick skin from underneath and she's cut my nails, she's put some of that black stuff on one of my toes, where I generally have a corn

I've had a lot of foot surgery, I'm taking about some years back though, cause I had an instep put in that one

No, I couldn't do them myself

I get a lot of pain in it

Well when I've had my feet done I feel champion, can walk a lot better, I feel on top of the world when they've done

APPENDIX V:VI (cont)

Oh yes, a lot better, they were bad, they were terrible when I first came. I used to have a lot of corns built up you know

Walking about, I don't walk too far away, I have a walk round the flats where we are, to get used to my legs because if I sat I know they'd set

it used to be every three months, well there were times they were that bad that she said oh you'll have to come every six weeks, you can't carry on like this, keep building up

[In response to did we advice you to get special footwear]

Yes, and I'm waiting for another pair

She's says they're not too bad just now

I don't think I would be able to walk properly, I would be immobile

I couldn't do them myself

APPENDIX V:VII - Triangulation of themes using a group analysis approach

1 = Reason for attendance to podiatry 2 = Effects & Value 3 = Perceived outcome if no treatment given/available

RELEVANT QUOTES	Researcher main question	Analysis Group main question	Researcher themes	Analysis Group themes
SUBJECT 1				
Well I have a bunion and it's pushed me toe up and that's the problem there, I got corns on it	1	1	Current foot problem	Foot problem/pathology
The bunion's pushed me big toe and pushed that one up like that	1	1	Foot deformity*	Foot problem/pathology*
I bought some corn plasters and they were hopeless	1	1	Self care* (unsuccessful)	Self treatment*/unsuccessful
It is very painful, just before I come	1	1	Pain	Pain
It makes it lot easier when you've been	2	2	Treatment maintains foot health/alleviates pain	Pain relief/outcomes of treatment
[how long have you been coming] a few years	2	2	Long standing care	Duration of problem/service provision
Just keeping them nice, I don't think you can improve them, do you?	2	2	Foot problems improve/or are cured	Self knowledge/patient perception
[it doesn't stop her from doing anything] No, I wouldn't say that, it's just painful when I'm walking	2	2	Mobility	Pain/Mobility
The chiropodist told me to get lace-ups and not to wear slippers in the house	2	2	Self care advice	Advice
I don't know what you'd do if they didn't cut it out it would just get worse and worse, really red	3	3	Deterioration in foot health	Self knowledge/pain/deterioration

I mean I would probably have to try something to get rid of it myself but you can't	3	3	3	Unable to manage self care*	Self treatment*/patient perception
SUBJECT 2					
I had a corn underneath	1	1	1	Current foot problem	Foot problem
but I've got one,that's always coming up there, so I had a corn underneath (referring to bent toe)	1	1	1	Foot deformity	Foot problem
but I know I can't see to my feet	1	1	1	Self care* (unable)	Lack of self treatment*/mobility/disability
I would be in pain because my big toenails would dig into the tops of my toes	1	1	1	Pain	Pain/lack of self treatment
they are absolutely wonderful now	2	2	2	Treatment maintains foot health/alleviates pain	Outcome of treatment
Originally I came because I'd got seed corns under both feet, and they've sorted them out wonderfully	2	2	2	Foot problems improve/or are cured	Outcome of treatment/improvement
I'm confident that they make my feet alright, I'm confident that I won't be in pain because I come	2	2	2	Professional care*	Outcome of treatment*/perception of pain
I used to walk but it was with pain, you know but I didn't sort of let it get me down really, but I would be, without coming here, I think I would be in trouble	2	2	2	Mobility	Outcome of treatment/pain
I would like two months, but they've put me on three months now	2	2	2	Frequency of treatment	Service provision
I keep them right myself in fact there is very little to do now, because I do them every day with Vaseline	2	2	2	Self care* advice**	Self knowledge**/self treatment*
I feel assured that somebody has seen that there's nothing going wrong with my feet at all	2	2	2	Confidence/assurance	Outcome of treatment/Reassurance
I feel that I like to see the one person, for that continuity	2	2	2	Continuity of staff	Continuity/service provision
There's the biomechanics there as well if you need them	2	2	2	Range of treatments offered	Provision of treatment/preference

Oh absolutely, no question, absolutely (referring to the fact feet would get worse if did not have treatment)	3	3		Deterioration in foot health	Outcome of treatment/deterioration
I can't do my nails very well myself, I can't do the big toenails because they are thick	3	1		Unable to manage self care*	Self treatment*
SUBJECT 3					
I've got corns on the little toes and a bit under the feet	1	1		Current foot problem	Foot problem
Hammer toes that catch on my shoes	1	1		Foot deformity	Foot problem/foot deformity
I've no one to cut them for me, that's the main reason why I come	1	1		Self care* (unable)	Lack of self treatment*
they stick up like that and they rub on the shoes	1	1		Pain	Deformity
Well they feel a lot better when they've been cut properly	2	2		Treatment maintains foot health/alleviates pain	Outcome of treatment
I've been coming for about twenty years	2	2		Long standing care	Service provision
She says me feet are a lot better to what they've been today	2	2		Professional care*	Outcome of treatment*
Well I can't walk as much as I used to do, they do catch on your toes on your shoes and things	2	2		Mobility	Mobility
If I could come for ten minutes, it only her takes her ten minutes, more often I would be happier	2	2		Frequency of treatment	Service provision
I can't cut my toenails very well, but she says they don't have to do, they have to be filed	2	2		Self care advice	Advice
Oh they'd get much worse if I didn't come here	3	3		Deterioration in foot health	Deterioration/outcome of treatment/patient perception
Well if I couldn't come here I shouldn't get them cut	3	3		Unable to manage self care*	Outcome of treatment*/patient perception
I have had people to help me cut my nails, but they've all died off now so I'm left without anyone to help me you see	3	3		No family/friends to provide foot care	Unable to manage self care
SUBJECT 4					
I've got a corn and there's hard skin underneath	1	1		Current foot problem	Foot problem
Yes you can see it there (referring to bent toe)	1	1		Foot deformity	Foot problem/deformity
I can't bend down as well to do them myself	1	1		Self care* (unable)	Lack of self treatment*

they were sore	1	1	Pain	Pain
When I first started coming they were really bad because I had to pop in before the three months was up to see if they could just push me in for ten minutes or something like that because my corn and skin underneath were bad	2	2	Treatment maintains foot health/alleviates pain	Pain
[how long have you bee coming for treatment] about three years	2	2	Long standing care	Service provision
they've improved since I came you know	2	2	Foot problems improve/or are cured	Service provision/outcome of treatment
It does, because sometimes they feel right sore to walk on	2	2	Mobility	Pain/mobility
Well when I used to come every three months, they used to be good, but it gets to the end of three months now I know I have got to struggle to do something with them	2	2	Frequency of treatment	Service provision/pain/lack of self treatment
I try filing them in between	2	2	Self care* advice	Self treatment*
Well she says they are getting much better, they weren't bad today	2	2	Confidence/assurance	Outcome of treatment/reassurance
Oh I think they would get worse because when they're not attended to, you know	3	3	Deterioration in foot health	Outcome of treatment/service perception
I can't get ingrowing toe nails out like they do	3	3	Unable to manage self care*	Unable to self treat/outcome of treatment*
but you see if I left my nails I couldn't manage to do that, and I've nobody at home you see	3	3	No family/friends to provide foot care*	Lack of self treatment*
SUBJECT 5				
Well it is a little bit hard (referring to hard skin over heels)	1	1	Current foot problem	Foot problem
She recommended me to come down here (podiatrist who treated his wife)	1	1	Referred to service by other	Advice
I've got a very large bunion on the left foot	1	1	Foot deformity	Foot problem
with having arthritis in the wrist I just can't get down to cut them you know	1	1	Self care* (unable)	Lack of self treatment*/mobility

its very, very sore	1	1	Pain	Pain
how comfortable I feel when I've been here	2	2	Treatment maintains foot health/alleviates pain	Outcome of treatment
[how long have you been coming for treatment] for about 5 years now	2	2	Long standing care	Service provision
My nails yes, digging in as I was walking down, so they were ready for cutting as I just couldn't walk	2	2	Mobility	Foot problem/mobility
I wish I could come about every month	2	2	Frequency of treatment	Service provision
And [she's] given me a leaflet about some contraption I can get for this bunion	2	2	Self care advice	Advice
They would get worse	3	3	Deterioration in foot health	Deterioration/outcome
I would have to go private	3	3	Unable to manage self care	Financial/self knowledge/service provision
SUBJECT 6				
I do have one or two corns	1	1	Current foot problem	Foot problem
I used to pay £10 to have them done and then the doctor got me coming here	1	1	Referred to service by other	Service provision/financial
I get sore bunions	1	1	Foot deformity	Pain/deformity
Well my nails are long and I can't get down to cut them myself	1	1	Self care* (unable)	Mobility/lack of self treatment*
I need to come but they haven't got any worse	2	2	Treatment maintains foot health/alleviates pain	Outcome of treatment
I've got a few corns she does those, which is not very often because she's clearing them up for me	2	2	Foot problems improve/or are cured	Outcome of treatment
It's coming here that's done it definitely yes	2	2	Professional care	Outcome of treatment
They did when I first started coming, pain shows in your face with your feet, don't it. But they're marvellous now (referring to mobility)	2	2	Mobility	Mobility/pain relief
Well I usually go about this four month, you know, last week, I thought well I'll be glad when I get my nails cut, but another week doesn't make any difference	2	2	Frequency of treatment	Service provision

she said do you use slippers, and I said yes, and she says well don't, so I don't wear slippers now and they have been better	2	2	Self care advice	Advice
Oh definitely yes (referring to feet getting worse if did not have treatment)	3	3	Deterioration in foot health	Deterioration/self knowledge
Well I couldn't do them myself, I couldn't get down to do my nails	3	3	Unable to self care*	Lack of self treatment*
Well years ago, I used to do them myself, I got a corn blade and everything, well I couldn't do them, I'd be a bit frightened now with the condition in case I cut myself or anything like that	3	3	Fear	Self treatment
SUBJECT 7				
...a slight corn I have on one toe	1	1	Current foot problem	Foot problem
through the GP, but it was recommended that I should come here	1	1	Referred to service by other	Service provision/referral route
I can't see to trim the nails or do anything	1	1	Self care (unable)	Unable to manage self care
if there's a corn naturally it hurts a little	1	1	Pain	Pain
it certainly feels a little better when they've taken away some hard skin especially when they've treated the little soft corns	2	2	Treatment maintains foot health/alleviates pain	Outcome of treatment
I've had it for a good long time now since 1985 I think it is	2	2	Long standing care	Foot problem/service provision
Well its certainly very, very much better, I'm very grateful for the treatment here	2	2	Foot problems improve/or are cured	Outcome of treatment
Just getting off more of the hard skin that I wouldn't be able to do	2	2	Professional care*	Self treatment*/knowledge/outcome of treatment
walking is alright	2	2	Mobility	Mobility
I come about three times a year	2	2	Frequency of treatment	Service provision
I use a nail file, every few days I do that	2	2	Self care advice*	Self treatment*
they always remark what good condition they're in actually	2	2	Confidence/assurance	Reassurance/advice
The hard skin would get much worse, yes and the corn too, that would	3	3	Deterioration in foot health	Outcome of treatment/deterioration
Just getting off more of the hard skin that I wouldn't be able to do	3	3	Unable to manage self care*	Patient perception/lack of self treatment*

SUBJECT 8					
It's a corn	1	1	1	Current foot problem	Foot problem
They asked me to come here (referring to previous podiatrist)	1	1	1	Referred to service by other	Service provision/referral route
but sometimes when the corn hurts and you start to mess about with it, sometimes it bleeds or sometimes it gets worse	1		1	Self care (unable)	Self care/in pain
I'm not comfortable	1		1	Pain	Pain
Because when they want doing I'm comfortable	2		1	Treatment maintains foot health/alleviates pain	Pain
you can't manage your toes like you people, you professional to do it	2		2	Professional care*	Perception/outcome of treatment*
Well not really stop me from doing anything, but you do what you do in pain	2		2	Mobility	Social activity/mobility/pain
there's somebody there to really look at them properly	2		2	Confidence/assurance	Service perception
Yes, I like people but I except everyone to do it	2		2	Continuity of staff	Perception of entitlement
You need the proper treatment for them because if your feet are digging in you make get bad feet, they may bleed and it can even turn gangrenous and you don't know, so its best to come to the proper place and get them done	3		3	Deterioration in foot health	Perception/prevention
Well, I suppose I would have to just go along with it in pain because you can't manage your toes like you people	3		3	Unable to manage self care	Pain/Deterioration
SUBJECT 9					
I also have calluses and corns on the underside of my right foot	1		1	Current foot problem	Foot problem
I was first sent here by my practice nurse at my general practitioners	1		1	Referred to service by other	Referral route
[It's] associated with the arthritis which has caused my toes to actually curl	1		1	Foot deformity	Foot deformity/lack of self treatment
I couldn't actually get to my toes to do my toenails	1		1	Unable to self care	Self care
like walking on very small stones (referring to hard skin on sole of foot)	1		1	Pain	Pain

I can walk quite easily for whatever period of time until they start to develop again,	2	2	Treatment maintains foot health/alleviates pain	Mobility
they could check the soles of my feet which obviously I cannot see	2	2	Professional care	Unable to manage/prevention
all that I want to do I can do	2	2	Mobility	Mobility
the treatment time is three months apart, usually after about two months, about nine weeks approximately, then I can start to feel it	2	2	Frequency of treatment	Service provision
Podiatrist told me how to do it and I've been able to do it myself, my toenails from then,	2	2	Self care* advice	Self treatment*/advice
you can talk to the podiatrist, if there's anything that's on your mind that you want to ask them they will give you the information	2	2	Confidence/assurance	Advice/reassurance
Well I actually feel as though if I didn't come and have treatment on the underside of my feet probably in within a period of a year I would find it extremely difficult to walk	3	3	Deterioration in foot health	Perception/deterioration
I couldn't actually get to my toes to do my toenails I would appreciate being able to come down and have it done by the podiatrist.	3	1	Unable to manage self care*	Lack of self treatment*
SUBJECT 10				
I've got hard skin	1	1	Current foot problem	Foot problem
I've got bunions	1	1	Foot deformity	Deformity
I did try it and I cut my foot didn't I (referring to hard skin)	1	1	Self care* (unable)	Lack of self treatment*
I'm in that much pain with my feet	1	1	Pain	Pain
Well it eases off but it soon builds back up again (pain)	2	2	Treatment maintains foot health/alleviates pain	Pain/outcome of treatment
No worse, they're better definitely	2	2	Foot problems improve/or are cured	Outcome of treatment
I can't get it off you see and she can and I benefit from coming here definitely	2	2	Professional care*	Outcome of treatment*
I do the washing and all that, things like that, but I complain about my feet the whole time	2	2	Mobility	Mobility/activity

I wish I could come more often actually	2	2	Frequency of treatment	Service provision
I buy the things she's told me to send for	2	2	Self care advice	Advice
Well they keep building up more skin don't they	3	3	Deterioration in foot health	Perception/deterioration
I don't know, I wouldn't know what to do	3	3	Unable to manage self care	Lack of self knowledge
SUBJECT 11				
it's the hard skin really	1	1	Current foot problem	Foot problem
I've got very distorted toe nails on my hammer toes	1	1	Foot deformity	Foot problem
I find it difficult to do them myself	1	1	Self care* (unable)	Lack of self treatment*
You can walk on air when you come out	2	2	Treatment maintains foot health/alleviates pain	Outcome of self treatment
I walk a lot, I walk miles	2	2	Mobility*	Activity*
I probably would go once a month just for the sheer luxury of having my feet massaged	2	2	Frequency of treatment	Service provision
well I like to have them just done to make sure they're alright	2	2	Confidence/assurance	Preventative/reassurance
Well they really would get bad because the skin would get so thick and hard and my nails, really I've got a deformed hammer toe	3	3	Deterioration in foot health	Perception/deterioration
that would be impossible for me to cut	3	3	Unable to manage self care*	Lack of self treatment*
SUBJECT 12				
It's, my nails and a corn	1	1	Current foot problem	Foot problem
...a corn on my bunion	1	1	Foot deformity	Deformity
I can't bend down anyway to do my own nails, I can't bend down, so that's one thing anyway	1	1	Self care* (unable)	Lack of self treatment*
that's painful	1	1	Pain	Pain
I would hate not to come	2	2	Treatment maintains foot health/alleviates pain	Outcome of treatment
Over the years, oh yes. I've been coming quite a while	2	2	Long standing care	Service provision
Oh I had corns, I had corns on my little toes and bunions which were inflamed, oh yes when I first originally came yes. But you see over the months they've gradually got better	2	2	Foot problems improve/or are cured	Outcome of treatment

Well I can walk better	2	2				Outcome of treatment/mobility
I think I didn't used to be as long in between appointments [answer to did she take footwear advice] Well in a way, yes	2	2				Service provision
Well they would be worse wouldn't they, I would be hobbling about	2	2				Advice
	3	3				Perception/deterioration
Oh now because you see the thing I have is that I can't bend as easily as I used to do, it's an effort. I mean I can't get my foot up, you know, my leg up, because that comes with old age doesn't it?	3	3				Lack of self treatment*/mobility
SUBJECT 13						
Well its hard skin, calluses	1	1				Foot problem
before I used to neglect them	1	1				Lack of self treatment*
I daren't touch a matchstick on the floor with my feet at times	1	1				Pain
[in response to how do your feet feel after treatment] Champion	2	2				Outcome of treatment
[length of time receiving treatment] About six year	2	2				Service provision
No, the nails are growing and she cuts them and files them and the hard skin, sometimes I can't hardly walk, I daren't touch a matchstick on the floor with my feet at times, but not now	2	2				Outcome of treatment
I couldn't walk too far because they were painful, all I wanted to do was to get on a bus, tram car and ride, but now I don't mind having a good walk Now then, this is the problem, sometimes I'm ready in about 8-10 weeks	2	2				Pain/mobility
but I've had a few words a few weeks ago with Lucy and she's told me what to do and I've took her advice and I'm doing it	2	2				Advice
she says I'm well looking after them, before I used to neglect them	2	2				Reassurance
They would get worse if I didn't come here	3	3				Deterioration

I've been telling her I've started going dizzy now, I've been going to the doctors, when I came last time and up to now I've been going to doctors with going dizzy and when I look down or bend down I'm frightened of falling	3	3	3	Unable to manage self care	Self care/mobility
I'm frightened of cutting myself	3	3	3	Fear	Lack of self treatment
SUBJECT 14					
She's took thick skin from underneath and she's cut my nails, she's put some of that black stuff on one of my toes, where I generally have a corn	1	1	1	Current foot problem	Foot problem
I've had a lot of foot surgery, I'm taking about some years back though, cause I had an instep put in that one	1	1	1	Foot deformity	Deformity
No, I couldn't do them myself	1	1	1	Self care (unable)	Lack of self care
I get a lot of pain in it	1	1	1	Pain	Pain
Well when I've had my feet done I feel champion, can walk a lot better, I feel on top of the world when they've done	2	2	2	Treatment maintains foot health/alleviates pain	Outcome of treatment/mobility
Oh yes, a lot better, they were bad, they were terrible when I first came. I used to have a lot of corns built up you know	2	2	2	Foot problems improve/or are cured	Outcome of treatment
Walking about, I don't walk too far away, I have a walk round the flats where we are, to get used to my legs because if I sat I know they'd set	2	2	2	Mobility	Mobility
it used to be every three months, well there were times they were that bad that she said oh you'll have to come every six weeks, you can't carry on like this, keep building up	2	2	2	Frequency of treatment	Service provision
[In response to did we advice you to get special footwear] Yes, and I'm waiting for another pair	2	2	2	Self care advice	Advice
She's says they're not too bad just now	2	2	2	Confidence/assurance	Reassurance
I don't think I would be able to walk properly, I would be immobile	3	3	3	Deterioration in foot health	Mobility
I couldn't do them	3	3	3	Unable to manage self care	Lack of self treatment

APPENDIX V:VIII
Demographic Profile of Subjects from Phase II

**Age in Jan-Feb 2003 (when interviews were conducted)*

Subject	Gender	*Age	Length of time receiving treatment (years)	Treatment intervals (weeks)
1	Female	74	7	16
2	Female	79	6	12
3	Female	82	16	16
4	Female	82	11	12
5	Male	75	7	14
6	Female	76	7	16
7	Female	86	16	16
8	Female	82	16	16
9	Male	68	6	12
10	Female	72	1	12
11	Female	76	10	16
12	Female	81	6	12
13	Male	79	12	14
14	Female	87	13	6
	79% females 21% males	Mean 78.5yrs	Mean 10yrs	Mean 14 weeks

APPENDIX V:IX - THEMATIC FRAMEWORK

1: Reason for attendance to podiatry

Themes						
	<i>Current foot problem</i>	<i>Referred to service by other</i>	<i>Foot deformity</i>	<i>Self care</i>	<i>Pain</i>	
1	Well I have a bunion and its pushed me toe up and that's the problem there, I got corns on it		The bunion's pushed me big toe and pushed that one up like that	(unsuccessful) I bought some corn plasters and they were hopeless	It is very painful, just before I come	
2	I had a corn underneath		but I've got one,that's always coming up there, so I had a corn underneath (referring to bent toe)	(unable) but I know I can't see to my feet	I would be in pain because my big toenails would dig into the tops of my toes	
3	I've got corns on the little toes and a bit under the feet		Hammer toes that catch on my shoes	(unable) I've no one to cut them for me, that's the main reason why I come	they stick up like that and they rub on the shoes	
4	I've got a corn and there's hard skin underneath		Yes you can see it there (referring to bent toe)	(unable) I can't bend down as well to do them myself	they were sore	
5	Well it is a little bit hard (referring to hard skin over heels)	She recommended me to come down here (podiatrist who treated his wife)	I've got a very large bunion on the left foot	(unable) with having arthritis in the wrist I just can't get down to cut them you know	its very, very sore	
6	I do have one or two corns	I used to pay £10 to have them done and then the doctor got me coming here	I get sore bunions	(unable) Well my nails are long and I can't get down to cut them myself	I get sore bunions	

7	...a slight corn I have on one toe	through the GP, but it was recommended that I should come here		(unable) I can't see to trim the nails or do anything	if there's a corn naturally it hurts a little
8	It's a corn	They asked me to come here (referring to previous podiatrist)		but sometimes when the corn hurts and you start to mess about with it, sometimes it bleeds or sometimes it gets worse	I'm not comfortable
9	I also have calluses and corns on the underside of my right foot	I was first sent here by my practice nurse at my general practitioners	[It's] associated with the arthritis which has caused my toes to actually curl	I couldn't actually get to my toes to do my toenails	like walking on very small stones (referring to hard skin on sole of foot)
10	I've got hard skin		I've got bunions	I did try it and I cut my foot didn't I (referring to hard skin)	I'm in that much pain with my feet
11	it's the hard skin really		I've got very distorted toe nails on my hammer toes	(unable) I find it difficult to do them myself	
12	Its, my nails and a corn		...a corn on my bunion	(unable) I can't bend down anyway to do my own nails, I can't bend down, so that's one thing anyway	that's painful
13	Well its hard skin, calluses			(unable) before I used to neglect them	I haven't touch a matchstick on the floor with my feet at times
14	She's took thick skin from underneath and she's cut my nails, she's put some of that black stuff on one of my toes, where I generally have a corn		I've had a lot of foot surgery, I'm taking about some years back though, cause I had an instep put in that one	(unable) No, I couldn't do them myself	I get a lot of pain in it

APPENDIX V:X -THEMATIC FRAMEWORK

2: The Effects & Value of Core Podiatry Treatment

Themes										
	Treatment maintains foot health /alleviates pain	Long standing care	Foot problems improve/ or are cured	Professional care	Mobility	Frequency of treatment	Self care advice	Confidence/ assurance	Continuity of staff	Range of treatments offered
1	It makes it lot easier when you've been	a few years	Just keeping them nice, I don't think you can improve them, do you?		[it doesn't stop her from doing anything) No, I wouldn't say that, its just painful when I'm walking I used to walk but it was with pain, you know but I didn't sort of let it get me down really, but I would be, without coming here, I think I would be in trouble		The chiropodists told me to get lace-ups and not to wear slippers in the house			
2	they are absolutely wonderful now		Originally I came because I'd got seed corns under both feet, and they've sorted them out wonderfully	I'm confident that they make my feet alright, I'm confident that I won't be in pain because I come		I would like two months, but they've put me on three months now	I keep them right myself in fact there is very little to do now, because I do them every day with Vaseline	I feel assured that somebody has seen that there's nothing going wrong with my feet at all	I feel that I like to see the one person, for that continuity	There's the biomechanics there as well if you need them
3	Well they feel a lot better when they've been cut properly	I've been coming for about twenty years	She says me feet are a lot better to what they've been today		Well I can't walk as much as I used to do, they do catch on your toes on your shoes and things	If I could come for ten minutes, it only her takes her ten minutes, more often I would be happier	I can't cut my toenails very well, but she says they don't have to do, they have to be filed			

4	When I first started coming they were really bad because I had to pop in before the three months was up to see if they could just push me in for ten minutes or something like that because my corn and skin underneath were bad	about three years	they've improved since I came you know		It does, because sometimes they feel right sore to walk on	Well when I used to come every three months, they used to be good, but it gets to the end of three months now I know I have got to struggle to do something with them	I try filing them in between	Well she says they are getting much better, they weren't bad today		
5	how comfortable I feel when I've been here	for about 5 years now			My nails yes, digging in as I was walking down, so they were ready for cutting as I just couldn't walk	I wish I could come about every month	And [she's] given me a leaflet about some contraption I can get for this bunion			
6	I need to come but they haven't got any worse		I've got a few corns she does those, which is not very often because she's clearing them up for me	It's coming here that's done it definitely yes	They did when I first started coming, pain shows in your face with your feet, don't it. But they're marvellous now (referring to mobility)	Well I usually go about this four month, you know, last week, I thought well I'll be glad when I get my nails cut, but another week doesn't make any difference	she said do you use slippers, and I said yes, and she says well don't, so I don't wear slippers now and they have been better			

7	it certainly feels a little better when they've taken away some hard skin especially when they've treated the little soft corns	I've had it for a good long time now since 1985 I think it is	Well its certainly very, very much better, I'm very grateful for the treatment here	Just getting off more of the hard skin that I wouldn't be able to do	walking is alright	I come about three times a year	I use a nail file, every few days I do that	they always remark what good condition they're in actually		
8	Because when they want doing I'm comfortable			you can't manage your toes like you people, you professional to do it	Well not really stop me from doing anything, but you do what you do in pain			there's somebody there to really look at them properly	Yes, I like people but I except everyone to do it	
9	I can walk quite easily for whatever period of time until they start to develop again,			they could check the soles of my feet which obviously I cannot see	all that I want to do I can do	the treatment time is three months apart, usually after about two months, about nine weeks approximately, then I can start to feel it	Podiatrist told me how to do it and I've been able to do it myself, my toenails from then,	you can talk to the podiatrist, if there's anything that's on your mind that you want to ask them they will give you the information		

1 0	Well it eases off but it soon builds back up again (pain)		No worse, they're better definitely	I can't get it off you see and she can and I benefit from coming here definitely	I do the washing and all that, things like that, but I complain about my feet the whole time	I wish I could come more often actually	I buy the things she's told me to send for		
1 1	You can walk on air when you come out				I walk a lot, I walk miles	I probably would go once a month just for the sheer luxury of having my feet massaged		well I like to have them just done to make sure they're alright	
1 2	I would hate not to come	Over the years, oh yes. I've been coming quite a while	Oh I had corns, I had corns on my little toes and bunions which were inflamed, oh yes when I first originally came yes. But you see over the months they've gradually got better		Well I can walk better	I think I didn't used to be as long in between appointments	[answer to did she take footwear advice] Well in a way, yes		

1 3	[in response to how do your feet feel after treatment] Champion	[length of time receiving treatment] About six year	No, the nails are growing and she cuts them and files them and the hard skin, sometimes I can't hardly walk, I daren't touch a matchstick on the floor with my feet at times, but not now		I couldn't walk too far because they were painful, all I wanted to do was to get on a bus, tram car and ride, ride, but now I don't mind having a good walk	Now then, this is the problem, sometimes I'm ready in about 8-10 weeks	but I've had a few words a few weeks ago with Lucy and she's told me what to do and I've took her advice and I'm doing it	she says I'm well looking after them, before I used to neglect them	
1 4	Well when I've had my feet done I feel champion, can walk a lot better, I feel on top of the world when they've done		Oh yes, a lot better, they were bad, they were terrible when I first came. I used to have a lot of corns built up you know		Walking about, I don't walk too far away, I have a walk round the flats where we are, to get used to my legs because if I sat I know they'd set	it used to be every three months, well there were times they were that bad that she said oh you'll have to come every six weeks, you can't carry on like this, keep building up	[In response to did we advice you to get special footwear] Yes, and I'm waiting for another pair	She's says they're not too bad just now	

APPENDIX V: XI - THEMATIC FRAMEWORK

3: Perceived Outcome if Podiatry Treatment were no longer given or available

Themes				
	Deterioration in foot health	Unable to manage self care	No family/friends to provide foot care	Other
1	I don't know what you'd do if they didn't cut it out it would just get worse and worse, really red	I mean I would probably have to try something to get rid of it myself but you can't		
2	Oh absolutely, no question, absolutely (referring to affect if did not have treatment)	I can't do my nails very well myself, I can't do the big toenails because they are thick		
3	Oh they'd get much worse if I didn't come here	Well if I couldn't come here I shouldn't get them cut	I have had people to help me cut my nails, but they've all died off now so I'm left without anyone to help me you see	
4	Oh I think they would get worse because when they're not attended to, you know.	I can't get ingrowing toe nails out like they do	but you see if I left my nails I couldn't manage to do that, and I've nobody at home you see	
5	They would get worse	I would have to go private		
6	Oh definitely yes (referring to feet getting worse if did not have treatment)	Well I couldn't do them myself, I couldn't get down to do my nails		Well years ago, I used to do them myself, I got a corn blade and everything, well I couldn't do them, I'd be a bit frightened now with the condition in case I cut myself or anything like that
7	The hard skin would get much worse, yes and the corn too, that would	Just getting off more of the hard skin that I wouldn't be able to do		
8	You need the proper treatment for them because if your feet are digging in you make get bad feet, they may bleed and it can even turn gangrenous and you don't know, so its best to come to the proper place and get them done	Well, I suppose I would have to just go along with it in pain because you can't manage your toes like you people		

9	Well I actually feel as though if I didn't come and have treatment on the underside of my feet probably in within a period of a year I would find it extremely difficult to walk	I couldn't actually get to my toes to do my toenails	I would appreciate being able to come down and have it done by the podiatrist.
10	Well they keep building up more skin don't they	I don't know, I wouldn't know what to do	
11	Well they really would get bad because the skin would get so thick and hard and my nails, really I've got a deformed hammer toe	that would be impossible for me to cut	
12	Well they would be worse wouldn't they, I would be hobbling about	Oh now because you see the thing I have is that I can't bend as easily as I used to do, its an effort. I mean I can't get my foot up, you know, my leg up, because that comes with old age doesn't it?	
13	They would get worse if I didn't come here	I've been telling her I've started going dizzy now, I've been going to the doctors, when I came last time and up to now I've been going to doctors with going dizzy and when I look down or bend down I'm frightened of falling	I'm frightened of cutting myself
14	I don't think I would be able to walk properly, I would be immobile	I couldn't do them myself	

The professional role of the podiatrist in the new Millennium: an analysis of current practice. Paper 1

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ABSTRACT

The results of a postal survey to determine the current professional podiatric role across work sectors are described. The survey was randomly distributed to 2500 podiatrists through an edition of *Podiatry Now*. A final statement was included on the traditional role of podiatry for comment, the results of which will be published in Paper II. Six hundred and sixty-eight questionnaires were returned (a 27% response rate). The results indicated that most podiatrists carried out nail care, the removal of corns and calluses and the provision of foot care and footwear advice some or all of the time, though there were some differences when comparing work carried out in the NHS and private sector. Fewer podiatrists carried out biomechanical evaluations, orthotic prescription, 'at risk' clinics and nail surgery, though there were differences across work sectors. Podiatric surgery was only carried out by a small number of respondents across all work areas. A snapshot of current areas of working identified the wide scope of practices that currently constitutes podiatry, though the main one appeared to be routine work.

INTRODUCTION

Podiatry possesses and utilises 'a corpus of specialist knowledge and skills' that, according to Neale,¹ characterise it as a profession. Traditionally podiatry has included the treatment of foot lesions to enable patients to remain ambulatory, independent and active, often relying on palliative treatments, some for life.² Recent advances over the last 20 years have however led to the introduction of a surgical and biomechanical element, increasing the professional scope of practice. The introduction of podiatric surgery in the 1970s further expanded professional boundaries by challenging 'existing limits to the scope of practice'.³ Despite these developments, in 1993 Merriman⁴ concluded that a large proportion of podiatric practice still involved nail care, corn and callus removal, with only a small percentage of time spent on more specialist roles. There have been no more recent studies in this area.

This study aimed to identify what was the current professional role of podiatry in the new Millennium to determine whether this has changed with the expansion in practice and what differences exist between work sectors.

METHOD

Questionnaire: Design and Pilot

A pilot questionnaire was formulated, consisting of pre-coded responses to a number of questions regarding professional practice. The questions were based on topics included in the practical clinical training modules of the podiatry undergraduate degree and the clinical experience of working podiatrists. The final question asked; 'What did you do today or on your last working day?' to obtain a snapshot of podiatrists' working life when the questionnaire was completed. The pilot questionnaire was distributed to National Health Service (NHS) community-based podiatrists to test its efficacy and ease of reading. No problems were identified, so an identical format was used for the postal questionnaire (Appendix 1).

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Postal Survey

The questionnaire was randomly distributed in a cross-sectional, confidential postal survey of podiatrists who were members of The Society of Chiropodists and Podiatrists (SCP). A postal survey was chosen to allow for a large number of subjects to be included in the sample across a wide geographical area. Two thousand five hundred questionnaires were distributed amongst the members of SCP with the February 2001 edition of *Podiatry Now*, along with an explanatory letter and pre-paid envelopes. The sample size was calculated based on a 40% response rate and on the advice of a statistician.

RESULTS

Characteristics of respondents

Six hundred and sixty-eight questionnaires were returned (26.72% response rate). Similar distributions to SCP members have in the past also elicited poor response rates.⁴ One hundred and fifty-six (23%) respondents were male and 512 (77%) female. The questionnaires were analysed according to the professional area of work (NHS, private practice and combination/other) to determine whether work sector differences existed. A list of the respondents' areas of work (Table 1) and respondents' characteristics (Figures 1a-b) are illustrated.

Results From Section 1 (Figure 2)

Most common areas of clinical practice (2a-d)

Nail care (2a), corn and callus removal (2b) and the provision of foot care (2c) and footwear advice (2d) were the most commonly practised areas of podiatry across all areas of work sector. Over 50% of podiatrists carried out these practices all of the time. Private practitioners, however, were found to provide nail care more frequently than NHS podiatrists (81%: 55%), and at the same time provided footwear advice less frequently (48%: 60-65%). Corn and callus removal and foot care advice were provided all of the time by over half of respondents across all work areas.

Table 1. Area of practice (n=668).

Area Of Practice	Number Of Podiatrists
NHS	414 (62%)
Private	163 (24%)
Combination/Other	Total: 91 (14%)
NHS/Private	59
Education	10
Education/Private	7
NHS/Education	5
NHS/Private/Education	3
NHS/Semi-Retired*	2
Private/Semi-Retired*	2
NHS/Private/Semi-Retired*	2
Retired*	1

*as defined by respondents

Less common areas of clinical practice (2e-i)

Insole and orthotic prescription (2f) was carried out less frequently than nail care, callus and corn removal and education across all work sectors, but more frequently than biomechanical evaluations (2e).

Work in 'at risk' clinics was undertaken more frequently in NHS and combined working situations than in private practice (2g). Between 43 and 45% of NHS podiatrists and the combined group worked in this type of clinic some of the time, whereas 48% of private practitioners never undertook this type of work.

Less than 45% of podiatrists across all work sectors regularly took part in nail surgery (2h). Podiatrists working solely in the private sector were less likely to undertake this work when compared with the other two groups: 28% of private practitioners never carried out nail surgery compared with 14-17% of podiatrists in the NHS and combined groups.

Podiatric surgery was only carried out by 4% of podiatrists across all work sectors (2i), though the combination group and private practitioners carried this out more frequently than NHS podiatrists.

Results from Section 2 (Figure 3)

Not all respondents completed this section of the questionnaire and many practitioners listed several different responses indicating that they had carried out a range of activities on the day in question (Figure 3).

The most frequent area of practice was routine podiatry, with 406 podiatrists stating that they had been involved in this for all or part of the day during the completion of the questionnaire. Respondents who stated that they had given foot health or footwear education were also listed under the routine section of practice.

DISCUSSION

Membership of SCP was 7,959 in December 2000² with 6980 practising podiatrists. The results of this study therefore represented a self-selected sample of 8.4% of the members. The low response rate to this questionnaire was comparable with returned voting papers for election to the council in 2001, which was 27%, suggesting that low response rates could be expected when balloting members. The gender distribution of respondents was also similar to that of the total membership.²

Section 1

When comparing responses across work areas there were some interesting differences. Respondents made many comments adjacent to each question and these were grouped into common themes to compare understanding of the differences showed.

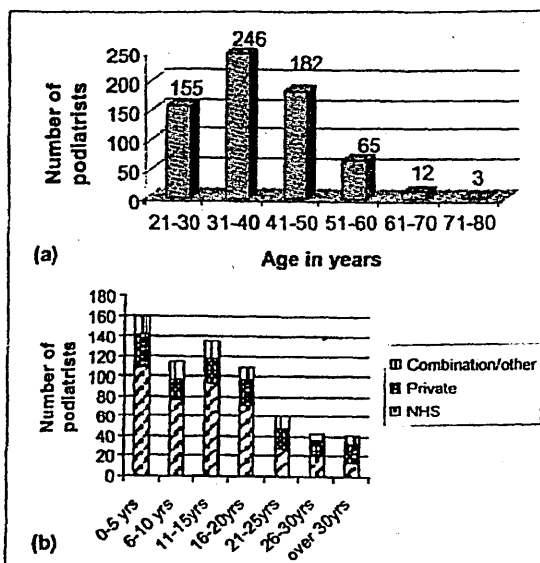


Figure 1. Characteristics (n = 668). (a). Age range of respondents (5 missing responses). (b). Number of years since qualification (3 missing responses).

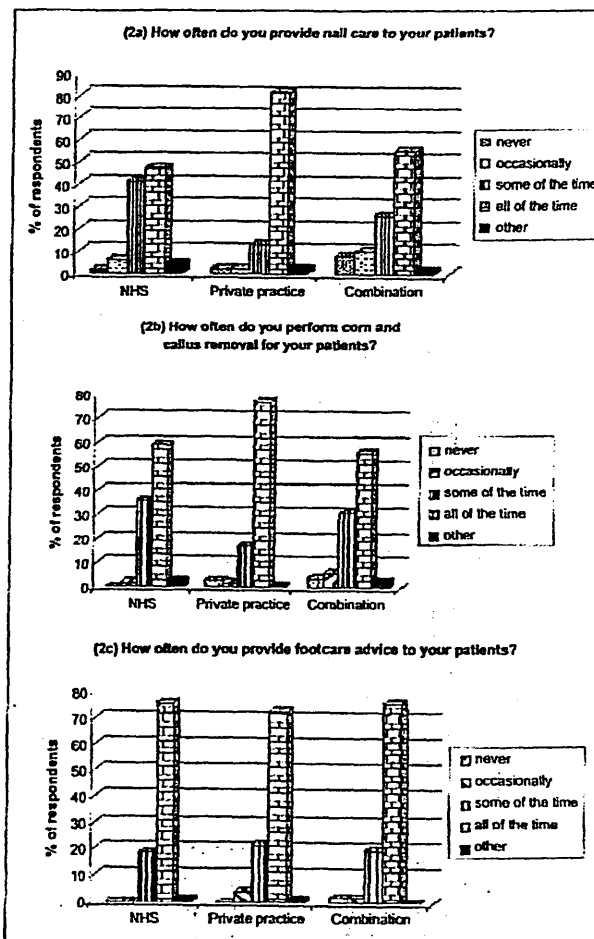


Figure 2(a-c). Responses according to professional areas of work.

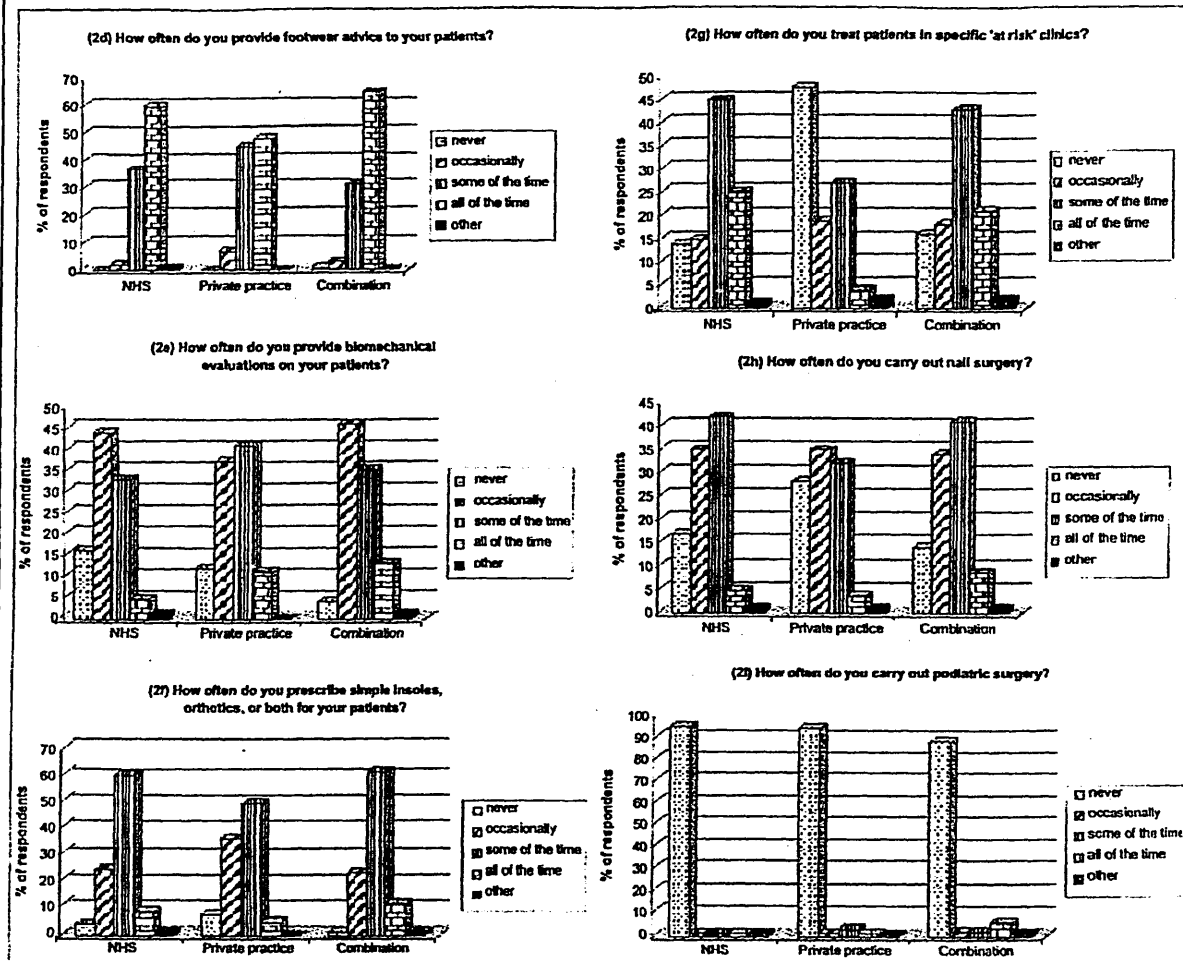


Figure 2(d-i). Responses according to professional areas of work.

Nail care

The lower number of NHS podiatrists that provided regular nail care compared with private practitioners may be attributed to a number of factors. The use of foot care assistants (FCAs) within the NHS was widely mentioned as well as the adoption of strategies to encourage self or carer nail care, both of which have been previously recommended as ways to improve the efficiency of podiatry services.⁶ NHS podiatrists also commented on departmental policies where nail care was not provided for low-risk clients, illustrating that re-profiling strategies which have taken place in some departments^{2,8} have been adopted on a wider scale. This allows for a more targeted approach to care⁶ but may be a result of disinvestment in service provision.⁶ There can be difficulties in implementing such strategies when nail care is still expected by the majority of older patients, which may lead to them seeking this treatment elsewhere. This could account for the higher proportion of nail care provision from private podiatrists where care is tailored for fee-paying patients.

Footwear advice/biomechanical evaluations/provision of insoles or orthoses

Footwear advice was provided less often by private practitioners. Reasons for this discrepancy could not be obtained from the data collected though comments from respondents working in all areas

highlighted problems in giving this type of advice due to poor client compliance. There was little difference across work sectors in the provision of insoles/orthoses. Few podiatrists carried out biomechanical evaluations. A number of reasons were given for this:

- In the NHS a specialist podiatrist only carried out this work.
- Insufficient time/lack of facilities.
- Podiatrists did not have the appropriate level of training.
- Referred on to other colleagues for this service (private practice).
- Could not be provided due to cost implications (private practice).

'At Risk' work

Taking part in 'at risk' clinics occurred in NHS podiatrists' working practice more frequently than in private practice, but comments were received from both sectors regarding the mixed nature of routine caseloads with 'at risk' patients. Some private practitioners stated that NHS departments saw the majority of patients with diabetes therefore there was no need for additional private treatment.

Nail surgery

Similarly, podiatrists working solely in the private sector were also less likely to carry out nail surgery. Reasons given for this were lone working where it was not advisable for health and safety reasons or domiciliary practices where it was not possible.

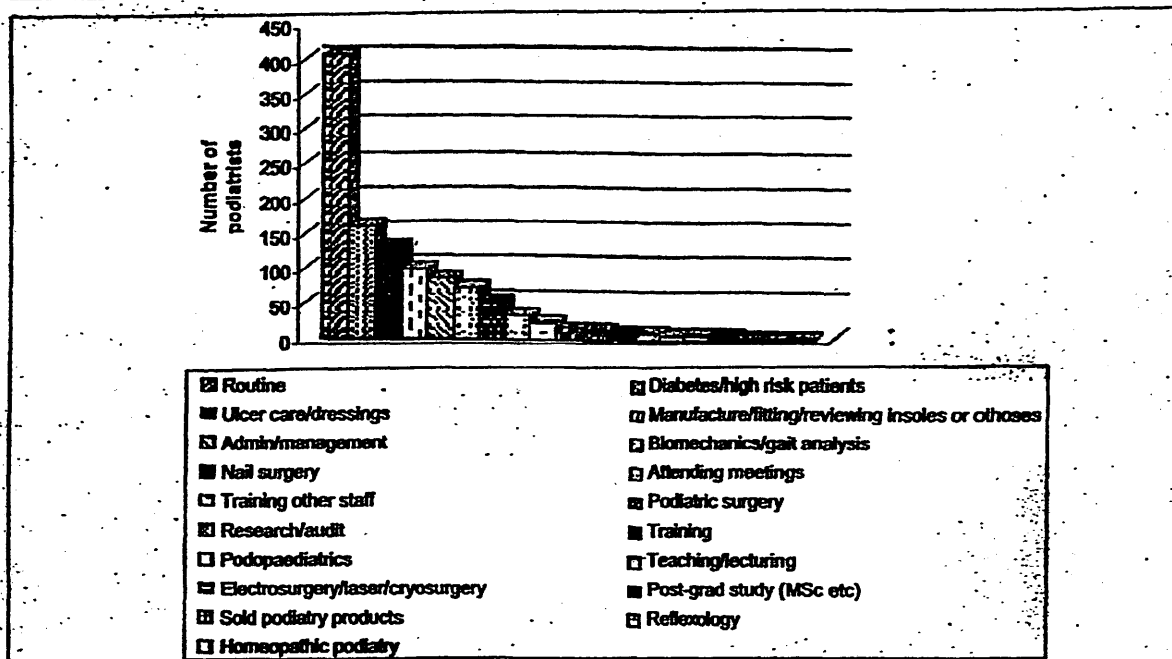


Figure 3. 'What did you do today or on your last working day?'

Podiatric surgery

Podiatric surgery was only carried out by a small number of respondents, which is not surprising considering the total number of practitioners qualified to do this during the study was 138.

Section 2

This question identified a number of additional areas of current podiatry practice not included in the first section of the survey. The majority of podiatrists, however, conducted routine podiatry most of the time on the day the survey was completed. The list of practices indicated by respondents in this section could be broadly divided into clinical and non-clinical work. The clinical section consisted of routine and more specialist areas of work, some of which were not identified in section 1 of the survey (ulcer care, podopaediatrics, electrosurgery/laser/cryosurgery, reflexology and homeopathic podiatry). The non-clinical section consisted of management, administrative duties and training/research.

CONCLUSION

Data from this section of the survey have indicated that the most frequent area of clinical practice is nail care, the removal of corns and calluses and the provision of footwear and foot-care advice – tasks that could be described as 'core podiatry'. There were however, some differences when comparing work carried out in the NHS and private practice. The current role does not appear to have changed dramatically in the new Millennium since Merriman's review of professional practice² in 1993 though there has been an increase in scope of practice. This may be due to consumer demand where traditional treatments are still expected by the majority of clients. This was highlighted by the work conducted by Macdonald and Capewell¹¹ who found that NHS podiatrists were frustrated by carrying out low-skill tasks though patients desired an increase in this type of palliative care and were opposed to relatives or voluntary groups carrying out basic foot care for them.

The NHS plan¹² advises 'smarter' working across professional boundaries where each profession must identify its core skills to determine what it shares with other health care professionals. This exercise can also help define what practices others may carry out. In some NHS podiatry services nail care for low-risk patients is often provided by others (e.g. patients themselves/podiatry assistants/relatives or carers) to enable podiatrists to carry out the more specialist roles. This shift in service delivery has been recommended to better utilise the skills of the podiatrist.¹³ A change from the palliative model of care to a more curative one will also increase the range of podiatric skills on offer to the patient. However, a change in public perception of the professional role will be required before podiatrists can fully use the skills that currently fall into the podiatric scope of practice.

Further discussion on the professional role of podiatry and a content analysis of comments received to the statement: 'Traditional podiatry is only the treatment of nails, corns and callosities' can be found in Paper II.

ACKNOWLEDGMENTS

We would like to thank all the podiatrists who took time to complete and return this survey, Jim Chapman and Andrew Beardsall (Community Health Sheffield Clinical Effectiveness Department) for their help and time with scanning the results of the survey and Tracey Carnall and Carolyn Fullerton (Community Health Sheffield Podiatry Department).

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APPENDIX 1

PROFESSIONAL ROLE QUESTIONNAIRE

For each question please mark a cross in the box representing your response.

If you work in more than one area (e.g. private and NHS) please answer the questions for the area you work in the majority of the time or copy the questionnaire and complete one for each area of your work.

Age	Sex	Number of years since qualification	What area do you work in?		
	Male		NHS	Education	Other (please state)
	Female		Private	Retired	

Section 1

	never	occasionally	some of the time	all of the time	other [please state]
1. How often do you provide nail care for your patients?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. How often of you perform corn and callus removal for your patients?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. How often do you give foot care advice to your patients?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. How often do you give footwear advice to your patients?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. How often do you perform biomechanical biomechanical evaluations on your patients?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. How often do you prescribe simple insoles, orthotics, or both for your patients?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. How often do you carry out nail surgery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. How often do you treat patients in specific 'at risk' clinics? [e.g. diabetes]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. How often do you carry out Podiatric surgery?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 2

10. What did you do today or on your last working day? (please state)

The professional role of the podiatrist in the new Millennium: is there a gap between professional image and scope of practice? Paper II

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ABSTRACT

This is the second paper investigating the professional role of podiatry based on 668 responses to a postal questionnaire. The results of the first section of the questionnaire were published in the August 2002 edition of *The British Journal of Podiatry*. A content analysis approach was used to investigate responses made to the statement: 'Traditional podiatry is only the treatment of nails, corns and calluses'. This identified a number of common themes across different work areas, regardless of whether podiatrists agreed or disagreed with the statement. The main identified themes were professional image, increased scope of practice, the use of terminology to accurately describe the professional role, training issues and specific issues relating to work sector. There still appears to be a degree of confusion amongst the profession regarding the use of the terms 'chiropody' and 'podiatry', which may compound the problem of professional image. Further work is required to investigate ways to improve the image of podiatry in order for it to compete in the health care arena of the new Millennium.

INTRODUCTION

According to the dictionary definition,¹ chiropodist and podiatrist are synonymous terms even though the Greek meanings of the two words are different. Chiropodist is derived from the Greek for hand (*kheir*) and foot (*podos*): a person concerned with the hand and the foot. Podiatrist comes from the Greek for foot (*podos*) and physician (*iatrios*): physician of the foot.² Although the term podiatrist is relatively new in the UK, it has been in use since 1914 in one state of the United States and was coined by Dr M Lewi.³ The introduction of podiatric surgery during the 1970s in the UK led to many practitioners who did not carry out surgery still retaining the term 'chiropodist' to allow for a distinction between the two areas of practice.

Since the introduction of degree level courses in 'podiatric medicine' in the 1990s to attain State Registration, and with the expansion in clinical procedures, many practitioners who do not practice podiatric surgery have adopted the term 'podiatrist'. This has led to the term 'podiatry' being used more frequently than 'chiropody' to represent the current scope of professional practice more accurately.

This paper describes the second set of results obtained from a postal survey designed to investigate the current professional role of podiatry, an analysis of responses to a statement eliciting podiatrists' views of the traditional role of podiatry. Results from the first section of the questionnaire were presented and discussed in the August 2002 edition of *The British Journal of Podiatry*.

METHOD

Two thousand five hundred questionnaires were randomly distributed in the February edition of *Podiatry Now* (2001). In order to investigate podiatrists' views on their traditional role, respondents

were asked to respond to the statement: 'Traditional* podiatry is only the treatment of nails, corns and callosities' by choosing between 'Agree', 'Disagree' or 'Don't know'. They could also add a free comment. *Footnote: A tradition is defined as: 'an inherited, established, or customary pattern of thought, action or behaviour'.⁴ Traditional was used here to try and elicit what podiatrists thought was the established professional role.

FINDINGS

Six hundred and sixty-eight completed questionnaires were returned; a response rate of 26.72%. While this is a poor response rate, it is the proportion of the membership that votes in postal ballots.⁵ One hundred and fifty-six (23%) of the respondents were male and 512 (77%) were female. The further characteristics of the respondents were described in the previous paper.

Traditional podiatry is only the treatment of nails, corns and callosities

Results from the first section of the questionnaire, which consisted of a series of closed questions, suggested that the four main areas of clinical practice were nail care, corn and callus removal and the provision of footwear and foot-care advice. Although 50% of respondents said that they carried out these practices all of the time, there was an overwhelming disagreement with the above statement. Over 73% of podiatrists across all work areas disagreed with the statement (see Figure 1). Many of them also wrote comments that were analysed using the method of content analysis advocated by Krippendorff.⁶ Comments were listed and grouped according to similarities and themes were identified. Two podiatrists carried out this analysis independently and then compared the themes that had been assigned in order to test consistency. Five main themes were identified: professional image, increased scope of practice, the use of terminology used to describe the professional role, issues relating to specific work sector and training issues (see Table 1).

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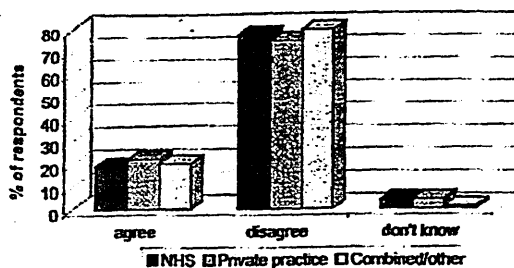


Figure 1. Response of podiatrists to the statement 'Traditional podiatry is only the treatment of nails, corns and callosities'.

Professional image

This consisted of two sub-themes, public perceptions of podiatry and professional perceptions of podiatry. Many respondents suggested that patients and the public in general perceived the professional role as only nail, corn and callus care:

'This is the present day perception of patients'

'I think the general public thinks this'

The professional's perception of image was equivocal:

'Traditional podiatry is constantly evolving, so we have to constantly evolve with it'

and reflects awareness of the need for practice and professions to change and develop:

'The profession is changing for the better'

Others, such as:

'We do not promote ourselves and our abilities well enough'

were more self-deprecating.

Increased scope of practice

Many practitioners commented that, although nail, corn and callus care were still part of podiatry, the expansion of role had led to a number of other areas being included in current practice. These could be described as clinical advancements:

'Includes nail surgery, biomechanics and insoles where appropriate'

preventive care and foot health education,

'...the monitoring and treatment of feet at risk' to prevent complications'

homeopathy,

'Homeopathic treatment such as tea tree oil can be a useful non-invasive form of treatment for mycotic nails'

the holistic approach to care,

'Is the care of the whole foot and the person to whom it belongs' and psychosocial aspects.

'We also end up counselling patients'

Terminology

The terminology of the statement caused a wide variety of comments. Most respondents felt nail, corn and callus care, described 'chiropody' not 'podiatry', for example:

THEME	SUB-THEME
IMAGE	Public perception Professional perception (evolving)
INCREASED SCOPE OF PRACTICE	Clinical advancements Prevention and foot health education Homeopathy Holism Psychosocial
TERMINOLOGY	Definition of Chiropody Definition of Podiatry 'Traditional'
WORK SECTOR	
TRAINING	

Table 1. The traditional role of podiatry: identified themes.

'These are chiropody skills that fall into a podiatrist's scope of practice' and

'I disagree that podiatry is chiropody'

Podiatry is seen to have a more expansive role:

'Podiatry should mean the medical and surgical specialism of the foot'

One practitioner still thought the term podiatrist should not be used by all professionals but be reserved

'...for those practitioners specialising in other services (nail surgery, biomechanics, bone surgery)'

The problems caused by using two terms was commented on

'Podiatry should have been a protected word to relate to the lower limb specialist, now podiatry/chiropody are inter-changeable with the non-registered sector, therefore a confusing word'

The use of the word 'traditional' also caused a large number of comments. Some stated that it was an inappropriate word to use

'You cannot have traditional podiatry as the term hasn't been in use long enough'

or was dependent on a number of factors

'Traditional can be a misleading word and can be interpreted differently depending on the number of years since qualification'

'Only 20% of our practice is traditional'

Work sector

The scope of practice appeared to be affected by work sector though comments were made from both private and NHS workers regarding limitations.

'Within private practice there are not many opportunities to practice nail surgery and podiatric surgery'

'Sadly in the NHS there is very little time for doing more than traditional podiatry'

Training

This was mentioned as a possible influence on the traditional podiatric role.

'A lot depends on the qualification of the clinician'

'At the present time, essential skills with scalpels and other instruments still need to be encouraged'

DISCUSSION

Five main themes were identified as influences on the traditional podiatric role regardless of work sector and whether the respondents agreed or disagreed with the statement. More comments were made about the themes of image, increased scope of practice and terminology than work sector and training. The findings appear to confirm the gap between patients' and podiatrists' perceptions of the professional role identified in previous studies. Skipper and colleagues investigated the place of podiatry within the US health care system.⁷ They identified low visibility, credibility and lack of a strong professional self-image for podiatrists. Similarly, a study of burnout in UK podiatrists identified isolation and lack of public understanding of the professional scope of practice as key issues.⁸ Although the profession has expanded and incorporated new ways of working, the perception of podiatrists is that this has not been communicated to patients and the general public, which may contribute to the image problem.

The use of terminology to describe the profession accurately was also highlighted as a major theme. Many podiatrists commented that 'traditional' could not be used alongside 'podiatry' as the latter was a new term, although it has been in existence for over 20 years in the UK. Whether this is due to the large number of podiatrists currently working who qualified before the introduction of graduate training, who still regard themselves as 'chiropodists', is unclear. Before the image of podiatry can be changed in the public's mind an agreement across the profession on the terms to be used to best describe current practice should be obtained.

CONCLUSION

This work is based on 8.4% of the membership of The Society of Chiropodists and Podiatrists (SCP) and is from a self-selected sample, but the issues surrounding the public's view of podiatry and the use of terminology to accurately describe the professional role are important for the whole of the profession. SCP mention in their strategic plan that raising the public's awareness of the value of podiatry is a major objective.⁹ Further work is required to investigate the divide between the public and professional perception of podiatry in order to identify ways to bridge the gap.

ACKNOWLEDGEMENTS

We would like to thank all the podiatrists that took the time to complete and return the survey and for their interesting and illuminating comments on this subject.

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WHAT IS THE EVIDENCE FOR THE CONTINUATION OF CORE PODIATRY SERVICES IN THE NHS: A REVIEW OF FOOT SURVEYS

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ABSTRACT

The purpose of this paper is to evaluate what evidence exists to support core podiatry services by reviewing foot survey data on the amount and type of foot conditions suffered in different populations. Twenty-six articles published between 1967 and 2004 inclusively were appraised. The most common conditions reported were problem nails, corns, callus and toe deformities though some complex functional foot problems were not screened for in many of the studies. Results from the combined surveys suggest many of the foot problems found would require core podiatry care. This however, is currently being phased out in some NHS podiatry departments. Further research is required to assess outcomes on foot health after receiving core podiatry to increase the evidence-base of this central podiatric role. This should be carried out in conjunction with implementing more preventative strategies to reduce the development of some common foot problems and developing assistant practitioners in podiatry to provide much of this core work.

INTRODUCTION

In 1993 Merriman [1] noted that despite developments in modern podiatry, a large proportion of practice still involved nail care and corn and callus removal with only a small percentage of time spent on more specialist roles. She also commented that much of this care was palliative and many patients received it for life. A later Australian study [2] investigating the podiatry treatment received by 272 patients over a three month period found similar results, with 52% of patients requiring this type of care, and the majority returning for repeat appointments. A recent survey of podiatrists to determine the current role of professional practice and published in two parts [3, 4], also found that nail, corn and callus care and the provision of foot wear and foot health advice was carried out the majority of the time by respondents, highlighting there has been little change over the last 10 years. This area of practice was termed *core podiatry* by the authors, as it appears to represent the areas of podiatry that have been carried out for many years [5], and constitutes the rudiments of the profession.

As the scope of practice of modern podiatry has increased dramatically over the last thirty years with the introduction of local anaesthesia, podiatric surgery, biomechanics and high-risk foot care [6], podiatrists are now more keen to use their extensive skills to treat patients with more complex foot problems [7]. Between 1995 and 1998 approximately 2.4 million people were treated by NHS podiatry services annually, but this figure has since fallen year on year to 2.1 million in 2003/04 [8]. This reduction may be a result of budgetary cuts that have been placed on some services [9] in conjunction with an introduction of re-profiling programmes to ensure podiatry care is targeted at those with the greatest need [10-12]. In 2001, a survey of 32 podiatry services in the UK showed that 75% now restricted access for new patient referrals whereas only two services had done this before 1995 [13]. Borthwick [14] notes that the lack of a persuasive evidence base to support core podiatry was thought to be the reason for a vast contraction of NHS podiatry services nationally and Harvey et al [15], in their survey of foot morbidity, believed the low status afforded to podiatry services resulted in the NHS giving low priority to the treatment of foot problems.

This is compounded by an image problem for the profession, which appears to affect status. Skipper and Hughes [16], in a small American survey, found podiatrists ranked themselves lower than many other medical workers on income, authority and prestige - all status indicators. A British study of work stress and burnout in podiatrists found that this was associated with a number of key issues including work overload, isolation, lack of career structure and lack of public understanding of the professional scope of practice [17, 18]. A comparative study of burnout in newly qualified British and Australian podiatrists [19] found higher levels of occupational stress than indicated by published data for other health workers. This was associated with geographic and professional isolation. The lack of professional status was also a major theme and was linked with patients' poor understanding of the podiatric role and scope of practice. These results are corroborated by more recent UK studies, which report that podiatry is a poorly understood and isolated profession [20] with concerns over its' status "*in the eyes of other professionals, patients and self-alike*" [21]. An urgent need to deal with the public, professional and managerial lack of understanding of the podiatric role is recommended.

There is, therefore, a widespread lack of clarity with regard to the need for core podiatry to be provided by the NHS. The purpose of this paper was to collate and review the epidemiological surveys published on foot problems to identify what the evidence is for

the continuation of core podiatry services and investigate where future research should be conducted to improve the evidence base for this type of care.

METHOD

To locate appropriate studies a hand search was conducted of *The Chiropodist* and its successors, *The Journal of British Podiatric Medicine* and the *British Journal of Podiatry* from 1982 to 2004 using the search terms: foot problems, incidence, prevalence, epidemiology, corns and callus. Other British podiatry journals published during this time were excluded as they were not easily accessible or had not been peer reviewed. The time frame was chosen, as these journals could be easily located from a colleague's personal library collection and when referring to a list of foot surveys published in *The Chiropodist* between 1946 and 1969 [22], the majority of previous British studies had been conducted on children or were screening for specific foot problems such as warts. The Ovid Online database was also searched using the same search terms and with the same time frame. A number of articles were included outside the selected time frame if they were seminal works, consisted of a large sample group or had been referred to in more recent publications. Disease specific epidemiological studies surveying people with diabetes or rheumatoid arthritis were excluded, as the emphasis of this paper was to ascertain the types and amounts of foot problems experienced by the general population.

FINDINGS

Twenty-six articles were located on the type and amount of foot problems that occur in different populations. A summary of these papers is shown in Table 1. The majority highlight the high incidence of foot pathologies amongst the population, specifically older people, and the inadequacy of NHS podiatry services to cope with such a huge demand.

Surveys from the UK

One of the first published surveys to identify the prevalence of foot problems in the UK was conducted by Clarke [23], in 1969 and estimated that 70-90% of people over 65 years of age had trouble with their feet. In 1983 Kemp and Winkler [24] carried out a large study looking at need and efficiency in foot care. They also investigated the foot care requirements of mainly older people. Subjects were divided into three groups: those who had not yet applied for podiatry care, those on a waiting list and those currently receiving it. Fifty-nine per cent of the first group reported that they had foot trouble, though the total number in this group was relatively small; of the group waiting for treatment, 32% were deemed to require urgent care through podiatry assessment and 91% of the current patients were receiving maintenance care. Sixty-one per cent of patients waiting for treatment had difficulty cutting their own nails or were doing them badly. The authors concluded that podiatry services were ineffective as podiatrists were cutting nails despite the fact that others with less qualifications could do this and the high amount of maintenance care provided could be supplemented with more preventative educational and curative strategies. These findings were echoed in a large regional survey conducted by Brodie et al [25], who concluded that many foot problems could be prevented through the use of appropriate footwear and better nail care strategies including self-care where applicable. They suggest adopting more curative strategies would to improve patient care.

Cartwright and Henderson [26] surveyed 543 people aged 65 and over, all of whom took part in an interview with a sub-section of those surveyed receiving a foot

examination. Over half the group had foot pain or discomfort and stated that their feet caused them trouble, with the most commonly reported foot care need being problems with nail cutting. This was followed by callus, nail problems and corns. After examination by a podiatrist the most frequent foot care problems were found to be lesser toe deformities, bunions, thick nails and corns and callus. Over a quarter of those surveyed did not receive podiatry care for their foot problems, though it was deemed necessary after the examination. The authors concluded that the demand for podiatry service attention was greater than the provision, which could result in increased mobility problems in the elderly. Biases and idiosyncratic use of definitions in this study cast doubt on the validity of the findings: a self-selected sample was surveyed; the definitions used to describe foot problems were different between the subjects and podiatrists; and an inability to cut toenails was classed as a foot problem rather than a possible consequence of another dysfunction. Nonetheless, the conclusion that demand outstrips provision agrees with podiatrists' everyday experience and the findings of other studies.

A number of studies backing up this earlier work have suggested that there is an unmet need for podiatry care in the UK. A Welsh survey involving 1286 people aged over 70 years found that 52% required help with foot care and between 15-23% were unable to provide their own nail care [27]. Elton and Sanderson's similar sized survey found 30% of people aged over 65 required podiatry care but were not receiving it [28]. The most commonly occurring conditions identified were thick nails, foot deformities and corns/callus. This study however presented results from two different methods of enquiry: patient interviews and patient foot examinations. As 13% of the results were based on respondent interview the incidence of some more complex foot deformities may have been under-reported. It did however, find that some foot problems were more prevalent in women than men, which concurs with previous findings (see Figure 1). Another survey looking at very elderly people (over 80 years) found that 70% had trouble looking after their feet and 30% suffered from painful feet [29]. Corns and calluses were the most common foot conditions, followed by nail pathologies and toe deformities. Fifteen people were found to require podiatry care but were not receiving it, whilst two-thirds of those who were, were being treated in the private sector. Corns and callus were found to be the most prevalent foot conditions suffered by another cohort of very elderly people in Crawford et al's study [30] and 96% of the sample reported they had problems cutting their own nails.

A similar finding occurred in a survey of 560 people aged over 65 [15]. In this study, 53% were found to suffer from three or more foot problems including toe deformities, corns and calluses, ingrowing toenails and thickened toenails. Though a high number of foot problems were reported, only 33% of those surveyed had received podiatric treatment in the previous year. A more recent study [31] found that 83% of women between the ages of 50-70 years had one or more foot problem; the most common conditions were corns, bunions and lesser toe deformities.

Surveys from other countries

UK surveys share common findings with surveys in countries overseas. An early US study of over 1000 people living in nursing homes [32] found that the most common foot problems were corns, bunions and callus. Women suffered from these conditions more frequently than men. Black and Hale [33] also found corns and callus were more prevalent in women and foot problems affected activities of daily living. A study of older people living independently [34] again found the most commonly reported foot

problems were corns and callus and 74% of people reported they suffered from foot pain.

Many of these surveys specifically targeted older people but an extensive postal survey reported by Levy in 1990 involved 119,631 individuals throughout all sectors of the United States [35]. Though this population included all ages the study still found that foot problems were more prevalent in older people. The most commonly occurring problems were those affecting the toenails, corns/calluses and bunions. Levy concluded that in an ageing society, the prevalence of chronic foot problems would rise significantly. Greenberg [36] compared the findings of this study with another survey conducted two years later and found similar reported conditions though the prevalence was much higher. Levy's study only asked respondents to record foot problems suffered over the preceding twelve months, which may account for the discrepancy. Two smaller studies conducted by the same authors found that between 30-84% of older people had one or more foot problem [37, 38]. The first study found that over half of the cohort had corns/callus; problem nails or bunions and the second found similar conditions were present though in smaller numbers.

Helfand's [39] more recent study presented the results of a thousand people after an extensive podiatric assessment, all of whom lived independently and were aged over 65 years. The sample consisted of existing patients at a podiatry clinic and those who had been referred for an assessment or treatment so the conditions reported may have been higher than those present in a randomly sampled population. Seventy five per cent reported painful feet and 64% had one or more foot deformities. The most commonly occurring foot conditions found were dystrophic nails (94%), hyperkeratosis (77%), bunions (53%) fungal toenails (59%), and thickened nails (47%). Between 2 – 4% of the sample group were found to have an infection or ulceration with 11% presenting with a pre-ulcerative lesion and 36% were wearing inappropriate footwear. A neurovascular assessment was included which identified that a high proportion of the study group had peripheral arterial disease and/or sensory loss whereas the medical assessment identified that 42% had arthritis and 57% had diabetes. This study concluded that older people often have a higher incidence of podiatric conditions in conjunction with a multitude of medical and neurovascular problems, which can affect mobility and quality of life. It was suggested that an integrated team approach to the education, treatment and management of older people's podiatric and medical needs could improve outcomes.

The majority of studies in the US have assessed the foot conditions of people who live independently, in residential care or hospital. One small survey involving homeless people of all ages, found that they too suffered from many of the conditions already mentioned in addition to fungal diseases, neurological problems and foot injuries [40].

An Italian study conducted by Benvenuti and others [41] found older people living independently had a large incidence of corns or calluses (65%) but suffered to a lesser degree with thick toenails and toe deformities. Foot problems were associated with the presence of pain and affected activities of daily living. Foot pain was also reported to be a significant problem in 60% of older people in a Dutch study though specific types of foot problems were not described [42]. A small Australian study involving people over 65 years of age, designed to investigate foot care awareness [43], found that women suffered from significantly more foot problems than men. The most commonly reported problems were hard-thickened nails, skin problems, corns, swollen feet, bunions and arthritis. Over half of the sample group had never visited medical or health

personnel about their feet, though 71% had foot problems. A similar sized survey of people aged between 75-93 years [44] also found women suffered from more foot problems than men but 87% of the entire group had at least one foot problem. Foot deformities were found to be the most frequently occurring conditions but corns and calluses were found to be less prevalent. Three other studies involving older people yielded similar results but it was not clear from the publications which countries they had been conducted in [29, 45, 46].

DISCUSSION

In any attempt to synthesise, compare or draw conclusions from data provided by either self-selected samples or surveys conducted by an expert, all findings about the incidence and types of foot problems in different populations have to be treated with some caution. Self-reported studies may produce a higher incidence of foot disorders, as people with problem feet may be more likely to complete a questionnaire. The populations studied are most commonly older people but their residential status varies from those living independently to people in community or hospital care [47]. The results from the majority of studies are descriptive though some have investigated the statistical significance of pain and daily living activities associated with foot problems. Allowing for these caveats, two issues emerge to guide provision of services: reporting of conditions demanding attention and gender differences.

The main foot conditions reported across all communities are nail problems, corns and calluses and toe deformities. Most of these problems are those, which require core podiatry treatment. Surveys using experts to diagnose foot problems found a higher incidence of all conditions when compared with self-reported findings. This is not an unexpected finding in that experts are given greater knowledge and skills to recognise many different foot problems. Between 20-78% of people are found to suffer from corns/callus and bunions, between 28-56% have toenail problems and 20-49% have lesser toe deformities in studies where an expert examines the feet. The most common foot problems that are self-reported are corns/callus with the incidence between 16-48%, toenail problems are reported in between 7-45% of subjects and bunions between 13-25%. The lower incidence of all foot pathologies in the self reported groups might be due to a lack of knowledge to adequately recognise some more complicated conditions such as deformities. There are also few reports looking at functional foot problems. Whether this is due to podiatric biomechanics being relatively new during the time that some of the earlier studies were conducted is unclear, but the knowledge to diagnose problems of foot function may not have been widely available at the time. It could however, be a result of researcher bias, where only certain (the most common) foot problems were screened for. Some studies used "*difficulty cutting nails*" as a criterion for foot problems, which gives important information about the potential unmet need for podiatry but is more dependent on the mobility of the patient to be able to perform such a task and is not a foot problem.

A number of the surveys have shown a trend for women to have more problems with their feet than men, and some have found an unmet need for podiatry care. The combined results of these reports indicate that many people suffer from common foot problems - corns, callus and deformities that require core podiatry care.

CONCLUSION

Future foot surveys should include screening for the more complex foot problems involving the locomotor and neurovascular system as in Helfand's recent study [39], rather than just concentrating on the foot care problems of older people. This would be

in line with the reported nature of modern NHS podiatry services which are able to treat foot conditions in people of all ages. The development of corns and callus is often associated with functional problems and foot deformities. If these types of conditions could be treated more quickly and effectively with the large armoury of treatments now available to the profession, such as podiatric biomechanics and podiatric surgery, the development of chronic foot problems may be reduced. A number of outcome measures have been produced to assess the effect of particular podiatry interventions on foot health [48-51] but currently these do not appear to be used on a routine basis by the majority of services. If they were, this would be beneficial, as it would add to the evidence in support of core podiatry practice. It is interesting to note that a recent list of research priorities for podiatry puts '*research into treatment effectiveness*' as the most popular of the 14 topics identified which requires further investigation [52]. More research is required to support the benefits of receiving this approach to care as well as alternative approaches based on education and prevention. Such research should cover quantitative aspects of care including outcome measures to assess effectiveness of treatments and qualitative investigations of the needs, views and experiences of those who receive it.

The prevalence of some of the conditions reported in the surveys might be reduced with suitable foot health and footwear education. This emphasis on increasing the more preventable aspects of practice has already been recommended by some [24, 25] [12] and suggests that more self care programmes for simple foot conditions should be introduced into NHS podiatry services. This would also fit in with current health policy which recommends that people should be empowered and educated to help care for their own health needs where possible [53]. With the reduction in social nail care by some podiatry departments [54] support workers including podiatry assistants could carry out much of this educational role. This could also include developing expert patients in foot health through The Expert Patient Programme [55].

Core podiatry care still appears to be an important service provided by NHS podiatry departments but in the changing podiatry arena where the profession is continually developing specialist roles and there is a parallel increase in the scope of practice of podiatry assistants [7], who should now be providing this type of care? Developing assistant practitioners in podiatry and allowing them to provide much of this core work with appropriate delegation and supervision requirements in place and working with pathways and protocols would allow podiatrists to treat people with more complex needs and further develop specialist areas of practice. This adheres to current government recommendations for the allied health professions as developing assistants will improve career progression and fill possible gaps in current staffing levels [56] [57]. Allowing others to use a scalpel to treat corns and callus, a skill that is seen to be unique to podiatrists and that has been fiercely protected in the past [58], may require further thought, debate and consensus before assistant practitioners in podiatry can be developed and fully utilized.

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Figure 1: Summary of Foot Surveys

Authors	Year & Country	Number of patients	Age of patients	Location	Method	Findings	Problems with the study
Merrill, H. E., J. Frankson, et al	1967 US	1011	*	Nursing homes	Expert exam	Women had higher incidence of foot problems than men	
Clarke, M.	1969 UK	1096 285 were examined	All ages	*	Interview/expert exam on sub-group	70-90% of people had trouble with their feet	Only 14% examined were older people
Helfand, A. E	1968 US	1366	Older people	Independently living	Expert exam & follow up interview on a sub-section	74% had foot pain, 56% suffered from corns & callus (interview reporting)	
Hsu, J. D.	1971 US	426	>65 yrs	Foot clinic	Expert exam	36% of foot problems related to skin & nails	
Ebrahim, S. B. J., R. Sainsbury, et al	1981 *	100	≥65 yrs	Hospital in-patients	Expert exam	66% had difficulty cutting their nails, 39% had lesser toe deformities 19% had painful feet Foot deformities do not always cause pain	Nail cutting defined as a foot problem
Kemp, J. T. and J. T. Winkler	1983 UK	3 separate groups Group 1(unmet need = 32) Group 2 (waiting list patients = 394) Group 3 (current patients = 540)	Group 1 = elderly Group 2 = mainly elderly	Podiatry clinic	Expert exam & interview	Group 1 = 59% had foot trouble Group 2 = 32% required urgent care 50% required palliative care & 22% could see an FCA Group 3 = After re-assessment those pts requiring maintenance care fell from 91 to 81%	
Hung, L., Y. Ho, et al	1985 *	166	≥65 yrs	In-patients	Expert exam & interview	50% had at least one foot deformity 20% had bunions &/or digital deformities, 7% reported foot discomfort	Mainly a descriptive study
Vetter, N. J., D. A. Jones, et al	1985 UK	1286	>70 years	Own home	Interview	52% required help with foot care Between 15-23% of patients were unable to cut their own toenails	
Cartwright, A. and G. Henderson	1986 UK	543	≥65 yrs	*	Interview = 543 Sub-section 382 expert exam	52% had foot trouble, 56% had foot pain/discomfort After examination Most common problems were lesser toe deformities, bunions, thick nails & corns/callus	Self-selected sample for interview and follow up so may be biased. Patients and pod's used different definitions for foot problems so unable to compare. Classified cutting nails as a foot problem

Elton, P. J. and S. P. Sanderson	1987 UK	1154	>65 years	*	Expert exam = 999 Interview = 154	There is an unmet need for podiatry services Most common foot problems were thick nails, foot deformities then callus. Nail problems and corns/callus more prevalent in women	Not clear if those requiring treatment were interviewed or examined.
Black, J. R. and W. E. Hale	1987 US	733	≥65 yrs	*	Self completed questionnaire	The total population were limited in daily activities by corns, toe nail problems & bunions. Callus & corns were more prevalent in women	
Brodie, B. S., C. L. Rees, et al	1988 UK	700	All ages	Own homes	Interview then expert exam	More foot problems were reported in older age groups (over 50%). Some foot problems could be prevented with appropriate footwear and better nail care	
White, E. G. and G. P. Mulley	1989 *	96	>80 years	Independently living	Expert exam	70% had trouble looking after their feet 30% had painful feet 68% corns/callus, 56% nail pathologies, 48% lesser toe deformities, 34% had bunions	
Levy, L. A.	1992 US	119,631	All ages	*	Self completed questionnaire	Foot problems were more prevalent in the older age groups. The most commonly occurring were corns/callus followed by foot deformities	Only asked about foot problems in the proceeding 12 months Self reported, respondents not asked if they were receiving treatment for foot problems. Associations with medical problems were not investigated
Greenberg, L. (BrimmCo mm study) This paper compared this study to Levy, 1992)	1994 US	1003	All ages	*	Telephone survey	20% more foot problems were found in this study when compared to the previous one. There was no difference in foot problems in women. 124 per thousand had corns/callus, 77 per thousand had toenail problems, 56 per thousand had bunions	The study asked about foot problems with no time limit which may account for the higher incidence than in the previous paper
Benvenuti, F., L. Ferrucci, et al	1995 Italy	459	≥65 yrs	Independently living	Expert exam	65% had callus or corns, 30% had thick nails, 21% had first toe deformities, 8% had fungal nails & 5% ingrowing nails. 22% had foot pain when standing Foot problems were associated with the presence of pain (stat. sig.) & affected activities of daily living	

Crawford, V. L. S., R. L. Ashford, et al	1995 UK	248 results based on 128 not receiving podiatry	≥75 yrs	Independently living	Questionnaire completed by researcher	96% had problems cutting their toenails 48% had corns, 36% had callus, 7% had ingrown nails	Nail cutting classed as a foot problem. Only a small sample reported ingrowing nails but thickened or deformed nails were not recorded and may have been more common
Heifand, A. E., H. L. Cooke, et al	1996 US	88	Older people	Residential care	Expert exam	30% had at least 2 foot problems. All the group had foot pain/discomfort More than 50% had corns/callus, thick or thin nails or bunions	Small study
Robbins, J. M., L. S. Roth, et al	1996 US	81	1-76 yrs	Homeless	Expert exam	Over 50% had nail problems and corns/callus	Large age range, small study, different problems found in this type of population
Harvey, I., S. Frankel, et al	1997 UK	560	>60 yrs	*	Expert exam	53% had 3 or more foot problems	Did not state actual foot problems in the results
Heifand, A. E., H. L. Cooke, et al	1998 US	417	>60 yrs	Residential care	*	84% had foot problems 45% had painful feet 33% had corns, 23% had callus, 24% had bunions and 28% had painful toenails	It was assumed a podiatrist conducted the examination but this was not made clear.
Munro, B. R. and J. R. Steele	1998 Australia	128	>65 yrs	Own homes	Self administered postal questionnaire	71% had foot problems 44% experienced pain with their feet. 29% had thick nails &/or skin problems, 26% had corns, 25% had swollen feet and/or bunions. Women suffered from more foot problems than men.	Self-selected sample, so more likely to fill in questionnaire if had foot problems
Gorter, K. J., M. M. Kuyvenhov en, et al	2000 Holland	1130	≥65 yrs	Non- institutionalised care	Self administered postal survey	60% had foot pain, 20% had toe nail problems. 8 out of 10 had foot complaints which were musculoskeletal.	Large study but did not specify types of foot problems
Menz, H. B. and S. R. Lord	2001 Australia	135	75-93 yrs	Community dwellings	Expert exam	74% had bunions, 49% had lesser toe deformities, 31% had callus, 14% had digital corns 87% had at least one foot problem. 21% suffered from painful feet. Women had higher incidence of pain, bunions, callus/corns & lesser toe deformities	
Dawson, J. M. Thorogood et al.	2002 UK	96	50-70 yrs	Independently living	Nurse exam after training by podiatrist	62% corns, 38% bunions, 37% lesser toe deformities 83% had one or more foot problem	Found foot problems were associated with low heeled shoes not high heels but without full explanation
Heifand, A. E.	2004 US	1000	>65 yrs	Independently living, attending or referred to podiatric clinic	Expert exam	75% history of foot pain, 94.2% had onychodystrophy, 64.2% had one or more foot deformity 42% had arthritis and 57% had diabetes. A large percentage had chronic diseases and associated neurovascular problems which in association with foot problems can affect mobility and activities of daily living.	Patients attending or referred to podiatry clinic so incidence of foot problems and chronic medical problems may have been higher than in control population

* No information available

APPENDIX II:I - Results of Foot Surveys

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
Merrill, H. E., J. Frankson, et al	1967	US	1011	*	Nursing homes	Expert exam	Women had higher incidence of foot problems than men	25% corns, 23% bunions, 14% calluses	44% were receiving podiatry care	
Clarke, M.	1969	UK	1096 285 were examined	All ages	*	interview/expert exam on sub-group	70-90% of people had trouble with their feet			Only 14% examined were older people
Helfand, A. E	1968	US	1366	Older people	Independently living	Expert examination & follow up interview on a sub-section	74% had foot pain, 56% suffered from corns & callus (interview reporting)	78% callus, 65% dry skin, 56% fungal nails		
Hsu, J. D.	1971	US	426	Over 65 yrs	Foot clinic	Expert exam		36% of foot problems related to skin & nails		
Ebrahim, S. B. J., R. Sainsbury, et al	1981	*	100	65 years and older	Hospital in-patients	Expert examination	19% had painful feet Foot deformities do not always cause pain	66% had difficulty cutting their nails, 39% had lesser toe deformities		Nail cutting defined as a foot problem
Kemp, J. T. and J. T. Winkler	1983	UK	3 separate groups Group 1 (unmet need) = 32 Group 2 (waiting list patients) = 394 Group 3 (current patients) = 540	Group 1 = Elderly Group 2 = majority elderly	Podiatry clinic	Expert examination & Interview	Group 1 = 59% had foot trouble Group 2 = 32% required urgent care 50% required palliative care & 22% could see an FCA Group 3 = After re-assessment those pts requiring maintenance care fell from 91 to 81%	Group 1 = corns, nails, pain & calluses most common problems Group 2 = 61% had difficulty cutting their nails Group 3 = 91% received maintenance podiatry (chronic palliation /nail care /treatment of one lesion)		
Hung, L., Y. Ho, et al	1985	*	166	65 years and older	In-patients	Expert exam & Interview	50% had at least one foot deformity	20% had bunions &/or digital deformities, 7% reported foot discomfort		
Vetter, N. J., D. A. Jones, et al	1985	UK	1286	Over 70 years	Own home	Interview	52% required help with foot care Between 15-23% of patients were unable to cut their own toenails			Mainly a descriptive study

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
Cartwright, A. and G. Henderson	1986	UK	543	65 yrs and older	*	Interview = 543 Sub-section 382 expert exam	52% had foot trouble, 56% had foot pain/discomfort	Self-reported 50% toe nail cutting problems, 47% callus, 45% nail problems & 34% corns. After examination Most common problems were lesser toe deformities, bunions, thick nails & corns/callus	A quarter of examined sample were not receiving podiatry care though they required it and two-fifths would have been suitable for FCA care.	Self-selected sample for interview and follow up so may be biased. Patients and pod's used different definitions for foot problems so unable to compare. Classified cutting nails as a foot problem
Elton, P. J. and S. P. Sanderson	1987	UK	1154	Over 65 years	*	Expert exam = 999 Interview = 154	There is an unmet need for podiatry services	Thick nails, foot deformities then callus. Nail problems and corns/callus more prevalent in women.	41% were receiving podiatry and a further 30% required it	Not clear if those requiring treatment were interviewed or examined.
Black, J. R. and W. E. Hale	1987	US	733	65 years and over	*	Self completed questionnaire	The total population were limited in daily activities by corns, toe nail problems & bunions (stat. Sig). Callus & corns were more prevalent in women	22.5% had nail problems, 20.2% had callus, 16.1% had corns, 13.4% had bunions		
Brodie, B. S., C. L. Rees, et al	1988	UK	700	All ages	Own homes	Interview then expert exam	More foot problems were reported in older age groups (over 50%). Some foot problems could be prevented with appropriate footwear and better nail care	The most common foot problems in people over 64 years were callus, nail problems, corns and toe deformities	Health promotion strategies should be used alongside more curative treatments	

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
White, E. G. and G. P. Mulley	1989	*	96	Over 80 years	Independently living	Expert examination	70% had trouble looking after their feet 30% had painful feet	68% corns/callus, 56% nail pathologies, 48% lesser toe deformities, 34% had bunions		
Lewy, L. A.	1992	US	119,631	All ages	*	Self completed questionnaire	Foot problems were more prevalent in the older age groups. The most commonly occurring were corns/callus followed by foot deformities	50 per thousand had ingrown toenails, 41 per thousand had corns/callus 34.6 per thousand had bunions (in over 65s)		Only asked about foot problems in the proceeding 12 months Self reported, respondents not asked if they were receiving treatment for foot problems. Associations with medical problems were not investigated
Greenberg, L. (BrimmComm study) This paper compared this study and the previous one)	1994	US	1003	All ages	*	Telephone survey	20% more foot problems were found in this study when compared to the previous one. There was no difference in foot problems in women	124 per thousand had corns/callus, 77 per thousand had toenail problems, 56 per thousand had bunions	Most commonly treated problems by podiatrists are those of the toenails, corns/callus and bunions. Foot infections were most commonly treated by a doctor	The study asked about foot problems with no time limit which may account for the higher incidence than in the previous paper

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
Benvenuti, F., L. Ferrucci, et al	1995	Italy	459	65 years and older	Independently living	Expert exam	22% had foot pain when standing Foot problems were associated with the presence of pain (stat. sig.) & affected activities of daily living	65% had callus or corns, 30% had thick nails, 21% had first toe deformities, 8% had fungal nails & 5% ingrowing nails		
Crawford, V. L. S., R. L. Ashford, et al	1995	UK	248 results based on 128 not receiving podiatry	75 years and older	Independently living	Questionnaire completed by researcher	96% had problems cutting their toenails	48% had corns, 36% had callus, 7% had ingrown nails	52% receiving podiatry	Nail cutting classed as a foot problem. Only a small sample reported ingrowing nails but thickened or deformed nails were not recorded and may have been more common
Heifand, A. E., H. L. Cooke, et al	1996	US	88	Older people	Residential care	Expert exam	30% had at least 2 foot problems. All the group had foot pain/discomfort	More than 50% had corns/callus, thick or thin nails or bunions		Small study
Robbins, J. M., L. S. Roth, et al.	1996	US	81	1-76 years	Homeless	Expert exam	Over 50% had nail problems and corns/callus	Most common problems – nail pathologies, corns/callus, fungal diseases, neurological problems, bunions & foot injuries		Large age range, small study, different problems found in this type of population

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
Harvey, I., S. Frankel, et al	1997	UK	560	Over 60 years	*	Expert exam	53% had 3 or more foot problems		Only 33% had received podiatry care in the last year	Did not state actual foot problems in the results
Heifand, A. E., H. L. Cooke, et al	1998	US	417	Over 60 years	Residential care	*	84% had foot problems 45% had painful feet	33% had corns, 23% had callus, 24% had bunions and 28% had painful toenails		It was assumed a podiatrist conducted the examination but this was not made clear.
Munro, B. R. and J. R. Steele	1998	Australia	128	Over 65 years	Own homes	Self administered postal questionnaire	71% had foot problems 44% experienced pain with their feet. Women suffered from more foot problems than men.	29% had thick nails &/or skin problems, 26% had corns, 25% had swollen feet and/or bunions.	Over half the group had never visited health personnel about their feet	Self-selected sample, so more likely to fill in questionnaire if had foot problems
Gorter, K. J., M. M. Kuyvenhoven, et al	2000	Holland	1130	65 years and older	Non-institutionalised care	Self administered postal survey	60% had foot pain. 8 out of 10 had foot complaints which were musculoskeletal.	20% had toe nail problems.		Large study but did not specify types of foot problems
Menz, H. B. and S. R. Lord	2001	Australia	135	75-93 years	Community dwellings	Expert exam	87% had at least one foot problem. 21% suffered from painful feet. Women had higher incidence of pain, bunions, callus/corns & lesser toe deformities	74% had bunions, 49% had lesser toe deformities, 31% had callus, 14% had digital corns	Podiatry intervention can ease foot pain and therefore has the potential to improve mobility for older people	

Authors	Year	Country	Number of patients	Age of patients	Location	Method	Findings	Most common foot problems	Podiatry care	Problems with the study
Helfand, A.E.	2004	US	1000	Over 65 years	Independently living, attending or referred to podiatric clinic	Expert exam	75% history of foot pain, 94.2% had onychodystrophy, 64.2% had one or more foot deformity 42% had arthritis and 57% had diabetes. A large percentage had chronic diseases and associated neurovascular problems which in association with foot problems can affect mobility and activities of daily living.	77% had hyperkeratosis, bunions (53%), fungal toenails (59%), and thickened nails (47%). Between 2 – 4% infection or ulceration, 11% with a preulcerative lesion. 36% were wearing inappropriate footwear. A neurovascular assessment was included which identified a high proportion of the study group had peripheral arterial disease and/or sensory loss whereas the medical assessment identified that	All study group went to receive a podiatric intervention and education	Patients attending or referred to podiatry clinic so incidence of foot problems and chronic medical problems may have been higher than in control population
Crews, C.K. et al.	2004	US	309	All	Psychiatric out-patients	Self reported	People with mental health problems report higher incidence of foot problems than the general population. 80% had at least one foot problem.	48% had foot pain, 35% nail disorders, 28% corns/calluses	Not stated	

* Denotes that no information was found