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Steps towards evidence-based foot-care for children: Behaviour and opinions of health professionals

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Abstract
Allied health professionals (AHPs) working with children need the appropriate knowledge, skills and experiences to provide high-quality care. This includes using research to drive improvements in care and ensuring that knowledge and practices are consistent and build upon the best available evidence. The aim of this work was to understand more about the shared behaviours and opinions of health professionals supporting children's foot health care; how they find information that is both relevant to their clinical practice as well as informing the advice they share. A qualitative design using semi-structured, one-to-one, telephone interviews with AHPs was adopted. Thematic analysis was used to generate meaning, identify patterns and develop themes from the data. Eight interviews were conducted with physiotherapists, podiatrists and orthotists. Five themes were identified relating to health professionals: (a) Engaging with research; (b) Power of experience; (c) Influence of children's footwear companies; (d) Dr Google – the new expert and (e) Referral pathways for children's foot care. The findings indicate that the AHPs adopted a number of strategies to develop and inform their own professional knowledge and clinical practice. There could be barriers to accessing information, particularly in areas where there is limited understanding or gaps in research. The availability of online foot health information was inconsistent and could impact on how AHPs were able to engage with parents during consultations.

KEYWORDS
AHP, children, education, foot, health, parent

1 | BACKGROUND

Allied health professionals (AHPs) are a diverse range of autonomous practitioners who are critical to healthcare systems and services, including providing healthcare for children. The AHP workforce is modelled as flexible and responsive to national health trends and the transformative influence of AHPs within health and well-being settings is growing (Chief Allied Health Professions Officer's Team, 2017). Concurrently, recent appraisal of paediatric health service models has reported shifts in the epidemiological trends of children's health and called for a re-appraisal of the design and delivery of these services (Kossarova, Devakumar, & Edwards, 2016). A critical feature of this is ensuring that health professionals who work with children have the

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appropriate knowledge, skills and experience to provide high-quality, advice and care (Kossarova et al., 2016). Crucial to achieving this is enabling AHPs to utilize research in the advancement of their practice, and to drive improvements in patient care (Heiwe et al., 2011). However, empowering clinicians to be evidence informed is a considerable task and clinicians are increasingly challenged by limited resources and time pressures, while ensuring the demands of patient caseloads are met (Harding, Porter, Horne-Thompson, Donley, & Taylor, 2014; McEvoy, Williams, & Olds, 2010; Upton & Upton, 2006). A survey of UK-based occupational therapists reported that therapists were implementing the findings of research into their clinical practice but that additional support was needed to ensure children and families were accessing services based on sound research evidence (Lyons, Brown, Tseng, Casey, & McDonald, 2011).

There remain many elements of clinical practice where evidence is elusive and/or progress in the development of clinical guidelines has been stagnant. This can be confusing for AHPs (Leboeuf-Yde, Lanlo, & Walker, 2013) and introduces barriers to the broader translation of research into practice and shared decision-making with service users. Children’s foot health is a relatively niche but important component of children’s health. Recent work identified that AHPs have an important role in supporting parents with signposting to easily identifiable, trustworthy sources for advice (Hodgson, Growcott, Williams, Nester, & Morrison, 2019). It is evident that parents are increasingly adopting diverse approaches to health information seeking (Cole, Watkins, & Kleine, 2016) and the increased availability of digital health information can impact on health professionals’ practice and relationship with parents (Broom, 2005; McMullan, 2006). With this in mind, there is growing recognition of the role of AHPs in supporting parents to access safe, accurate and reliable health information (Pehora et al., 2015).

It is imperative that the knowledge and practices utilised by AHPs are consistent and founded upon the best available evidence. Despite this, little is known about influences on AHPs attitudes, perceived barriers to applying knowledge, skill level and training needs in relation to children’s foot-care and health. The aim of this work was to understand more about the shared behaviours and opinions of health professionals; how they find and share information that is both relevant to their children's foot health practice as well as informing the advice they share. The study sought to understand health professional's engagement with and understanding of research evidence. Furthermore, it also sought to identify the common methods adopted by health professionals to inform their knowledge about children’s foot health and hence influences on clinical decision-making.

2 | METHODS

2.1 | Study design and participant recruitment

A qualitative approach using semi-structured interviews for data collection was adopted. For this, a purposeful sampling approach was implemented and enabled us to explore views, perceptions, knowledge and practices of AHPs working within children’s foot health services across the UK (Palinkas et al., 2015; Trotter, 2012). AHPs participating in this study were required to have professional and regulatory registration, and experience within children’s services. Participant recruitment was not restricted by geographical location. Recruitment material was disseminated via Twitter™, the project website (Great Foundations – www.greatfoundations.org.uk) and via professional networks. Ethical permission was provided by the School of Health Sciences Research Ethics Panel, University of Brighton.

2.2 | Data collection procedure and management

Earlier phases of work undertaking a content analysis of internet-based foot health information available online and interviews exploring of parent’s health behaviours related to their children’s foot health (Hodgson et al., 2019) provided understanding of how parents search and use foot health information for their children and were used to inform interview schedules used with AHPs. Qualitative semi-structured telephone interview schedule was chosen as the method of data collection. This enabled a flexible and time-efficient approach to fit around AHPs’ clinical schedules and allowed for recruitment of participants from a wider geographical area (Carr & Worth, 2001; Sturges & Hanrahan, 2004). All telephone interviews were carried out between December 2017 and June 2018, lasting between 30 and 60 min. All Interviews were conducted by...
the first author (LH) who has experience with conducting qualitative interviews and analysis. Participants provided written consent prior to the interview. Interviews were audio recorded, transcribed verbatim and participants’ names were replaced with a number to achieve anonymity. All transcripts were checked, verified and content confirmed for accuracy and authenticity of the data (Morse, Barrett, Mayan, Olson, & Spiers, 2002). Following this process, prior to analysis, the interview transcripts were uploaded to NVivo (12.3).

2.3 | Data analysis and process

Two researchers analysed the whole data set using thematic analysis (Braun & Clarke, 2006) and to ensure that research findings and interpretation were credible (Côté & Turgeon, 2005; Cutcliffe & Mckenna, 1999; Lincoln & Guba, 1985). In the first instance, researchers (LH, CG) familiarised themselves with the data by listening to audio recordings and repeatedly reading transcripts before coding. In addition, a reflexive journal was kept throughout the interview and data analysis phases, as well as regularly engaging in wider team discussion (LH, CG, AW, CN and SM) throughout the study and during the thematic analysis (Kock, 1994). This enabled the researchers to deepen their familiarisation with the data, developing an audit trail of impressions, enhancing transparency, credibility and verification of the evolving meaning and understanding from the data (Norwell, Norris, White, & Moules, 2017). Following familiarisation phases, using qualitative software NVivo (12.3), researchers generated initial codes. Methodically and systematically coding each transcript line by line, identifying and documenting common phrasing in the data (Braun & Clarke, 2006; Hilal & Alabri, 2013). NVivo assisted in collating all codes, documenting development of coding and theme frameworks (Hilal & Alabri, 2013). Once initial coding of all data was completed, the researchers discussed the commonalities and unexpected or uncommon codes and agreed the overlapping coded responses. All coding structures were collated into an initial theme and subtheme framework. Once the framework was mapped, the researchers reviewed the theme structure and coding for relevance and validity of emerging findings (Braun & Clarke, 2006). Following this review process the wider research team discussed the theme map to refine theme content, meaning and narrative of analysis to define theme names and reviewing themes against all collated data to finalise the themes presented in this study.

3 | RESULTS

Eight telephone interviews were carried out with four podiatrists, two physiotherapists and two orthotists. Participants were located in London (2), North West England (2), South East England (2), North England (1) and Scotland (1). All participants had experience within a role where they treated infants and young children in either private practice, NHS settings or had dual roles as clinicians and educators. In some cases, participants worked within multidisciplinary and/or frequently engaged in diverse disciplinary networks (e.g. professional forums and special interest groups). The participants reported seeing a broad range of foot conditions relating to developmental delay, typical development (e.g. tip-toe walking, in-toeing, flat foot), foot health concerns relating to obesity and neuromuscular conditions such as cerebral palsy.

There were five themes that emerged from the data analysis process. These provided an understanding of the shared behaviours and opinions on how AHPs find and share information that is relevant to their practice, application and engagement of that knowledge in clinical practice.

3.1 | Engaging with research

Participants reported active engagement with current research and did not struggle with seeking information when they needed it. However, some health professionals acknowledged that research literature could be diverse, out of date, inconsistent and research was often discipline specific:

*mapping foot growth and foot development and the proportions ... different gait patterns at different ages ... it's really those sorts of things as well that they have done thing in let's say the 80's, but the technology perhaps wasn't as accurate as it is now. So, it does kind of need re-doing with that new technology as well. And sometimes rarely the way that they've designed the studies haven't been the best.* (Podiatrist:05)

It appeared that discipline influenced professionals’ view on the availability of research and, in one example, it was noted that there was little foot-specific training taking place beyond early career/professional training or promoted by professional bodies. However, some noted there was enough evidence available but it could be inconclusive. The challenges with the implementation of evidence into practice were also noted. Furthermore, research was often found to be on specific topics, e.g. cerebral palsy, general gait patterns and the typical foot.

... you tend to get people involved in sort of podiatric biomechanics ... wildly complicated things. I don't know, it becomes very complicated and often difficult to practically implement and practise. (Orthotist:02)

It was noted that having different professional messages and approaches to treatment or advice could be confusing. The evidence presented for health professionals could be unclear and inconsistent: *Children that have been born with a problem, like club feet or Talipes. That can be ambiguous, the treatment that's described, should you stretch and if your stretch, what position you're stretching into.* (Podiatrist:03).

It was important that Clinical experience should really translate to research (Podiatrist:05) and lead to progressing baseline research of how feet develop, treating preventable conditions or adopting
wait and see approaches. Developing research into natural progression of deformity and complex conditions would be useful, as well as focusing on shoes and shoe fittings and long-term effects of orthotics.

3.2 | Power of experience

Professional experience was a valuable resource to draw on in clinical practice and an opportunity for clinicians to develop their knowledge, which benefited their professional practice. Many used professional networks to inform their decision-making. AHPs found information and expertise from more experienced colleagues could be more trustworthy, either due to the years of practice or the case-load they had experienced. Many of these experiences appeared to be because they worked in departments that had an existing culture of cross-professional learning/working or the individual health professionals were proactive in developing their professional connections. It appeared that engaging with other professionals provided opportunities for discussion and valuable engagement with other experiences. These encounters appeared to have a positive impact on informing decisions in practice:

> I would seek advice from respected colleagues ... When you go and find information out of your wider network of professionals, I think you do have to trust experience ... .
> (Podiatrist:05)

AHPs believed professional development was a positive way to ensure that knowledge remained up to date. Some health professionals believed that being involved with professional specialist groups enriched knowledge sharing process and/or ensured access to greater expertise. In addition, it was identified that children’s foot care is a specialist area of practice and therefore opportunities to engage with specialist knowledge might be limited: children’s foot health is certainly a niche subject for podiatry. And I’m guessing really we still don’t know enough about children’s feet (Podiatrist:04).

3.3 | Influence of children’s footwear companies

Footwear was a common topic for health professionals. AHPs acknowledged the importance of footwear advice and noted that some parents had concerns about their children’s footwear. Some noted that information from footwear companies could be vague and inconsistent, even though some acknowledged advice could be useful. One clinician noted that some of the information was far-fetched and lacked evidence and also raised concerns about the influence of industry on children’s footwear:

> I think there quite a lot of commercial literature on emphasising why you need a certain shoe to form the child’s foot into a good position. And I certainly don’t think they’ve got the evidence to maybe suggest that’s the case. (Orthotist:01)

AHPs reported that footwear was costly and advice relating to the types of footwear that should be worn was basic. The advice by footwear companies could add additional pressure on parents:

> It is putting an expectation, a pressure on the parents to get those shoes ... I’m not really aware on balance of any convincing argument that children need any specific sort of footwear. So, I, yeh, I feel that’s probably dubious information. (Orthotist:02)

It was noted by health professionals that there should be greater partnership between industry and health professional organisations to ensure transparent and consistent quality of foot health advice for parents.

3.4 | DR. Google – The new expert

Health professionals acknowledged that there was a wealth of health information available to parents via online health forums. It was also noted that health professionals felt parents seeking of health information was increasing before or during the course of a child’s intervention. However, it was acknowledged that this was both useful and detrimental (Physiotherapist:03) as it was a challenge for parents to seek out suitable health professional services. It was viewed that there were limited resources and health information could be inaccurate, misinforming or not relevant to the child’s treatment or condition. Differing professional views on conditions and their treatments could also impact on decision-making:

> [Parents] turns up with a pile of paper. They’ve got folders full of stuff, and they’ll go, I’ve done my research and I go, I know exactly how this consultation going to go, at least to start with ... I know I’m going to have to sort and set a load of time to actually explain this to the parent. Outside of the assessing the child, treating the child or whatever, cos if you don’t get the parents on board, your treatment programme will fail, irrespective of how experienced you are, how good the treatment is if the parents don’t think that what you’re doing is right with the kids! (Podiatrist:06)

Some acknowledged that parents experienced difficulties when faced with different professionals, which meant parents had to decipher information and decide which health professional to trust over others. At times of confusion it appeared that health professionals would, wherever possible, use [foot] health information material produced for parents. In some instances, health professionals believed that there were inconsistencies in the information available to parents, noting some professional bodies and NHS services produced material...
while others did not. Therefore, health professionals had to seek out information from other professional disciplines to provide supplementary information for the parent. It was believed having a range of readily available health resources written for parents on a range of foot health concerns would be beneficial to parents. However, the management of information disparities would be important:

... clearer guidelines would be more useful ... it would help us provide consistent information to parents as a team. So a physio for example might provide certain information, and an orthopaedic surgeon another and podiatrist another, and maybe consistent guidelines or pathways would be more useful. (Orthotist:01)

Even though the presentation of online health information in consultations could be challenging for some, health professionals used a range of skills, observations, knowledge and expertise to assess their patients and to reassure and inform parents. It was viewed that parents’ efforts to inform their knowledge about their children’s foot health could be beneficial and a valuable learning opportunity for the health professional. It was observed that parents’ level of knowledge was often dependent on the type of foot condition their child presented with. Parents of children with long-term or rare conditions often appeared to be well informed about their condition(s) and this could impact on the level of engagement and communication strategies.

3.5 | Referral pathways for children’s foot care

When health professionals were engaged in discussing evidence-based practice and challenges experienced in clinical settings, they often raised concerns over current referral routes. It was acknowledged that some referrals were unnecessary and that referrers might lack understanding of professional disciplines. Education about the diverse roles of health professionals could be improved:

Sometimes GPs will refer into the medical orthopaedic services with things like turned in toes and flat feet ... that’s probably not the best use of their time. And so those referrals will often be directed to me [podiatrist] for an assessment. So, I can then triage it and then if I think there needs to be orthopaedic input I can deal with it more often than not. (Podiatrist:07)

I think better education at primary care level or beyond that into generally population, then we could avoid this referral processes. (Physiotherapist:08)

One health professional believed there was a decrease in referrals to their service, although this could not be attributed to a definitive reason. Most participants indicated that referral pathways could be improved through greater awareness and training about the evidence underpinning children’s foot health, improving knowledge of professional roles and greater awareness and education across all disciplines. Many of the participants believed that improving opportunities for working together and providing joint training events for AHPs could help towards reducing unnecessary referrals and improve access to appropriate foot services.

It was reported that some medical professionals could be harder to engage with. One health professional noted: writing to 45 local GP practices with an invitation to come to a course [regarding baby hips] ... and nobody came (Physiotherapist:08).

Perceptions of what is a typical infant development, timeframe to meet milestones and characterisation of foot health were often influenced by the parent community (including peers and family) and anything deviating from that perceived norm would cause concern, possibly resulting in a visit to a health professional:

sometimes the parents are not concerned and it’s been very much pushed by the nursery or school ... here’s a problem that needs sorting out, which I think is quite detrimental generally. Sometimes shoe shops will have raised concerns with parents. (Physiotherapist:08)

4 | DISCUSSION

The study contributes to greater understanding of the shared behaviours and opinions of health professionals. This work identifies some of the challenges to engaging with evidence in practice, giving advice to parents and delivering foot-care services for children.

Engaging with research is fundamental for AHPs to develop professional knowledge. Recent research exploring how health professionals used research to inform their clinical practice has helped determine how knowledge is used in practice, identified existing gaps in evidence and the barriers preventing clinicians applying evidence (Heiwe et al., 2011; Leboeuf-Yde et al., 2013; Lee, 2008; McEvoy et al., 2010; Upton & Upton, 2006). Understanding the effectiveness of evidence for foot-care interventions could help to improve the parent experience (Brown, Tseng, Casey, McDonald, & Lyons, 2010). This study indicates that access to research was not difficult but there were a number of challenges to successful implementation of learning. For example, the balance of evidence could be focused on one topic or geared towards one professional area and, therefore, for some AHPs there was little profession-specific literature. It is possible that a disconnect exists between knowledge and practice for some professions, or that other professions are further ahead in how they draw evidence into practice. Our data highlighted that health professionals needed to draw on colleagues, professional networks and experience to supplement the information that existed. The AHPs participating in this study reported positive interactions yet challenges still existed when developing formal shared learning opportunities and improving research capacity. It is possible that practical issues such as time commitments and workload are barriers (Golenko, Pager, & Holden, 2012) and why it might be difficult for some health and medical professionals to engage with
continual learning opportunities (Scurlock-Evans, Upton, & Upton, 2014). Children’s foot health is also a niche area and therefore it raises questions about the priority of this within the wider paediatric health agenda. This study indicated engagement with some health and medical professionals was an issue and further research is needed to understand the barriers to engaging with a wider spectrum of health and medical professionals and how this might impact the development of knowledge and referral pathways into foot services.

Shared opportunities and improving collaborations between professions could help to improve knowledge, advance the evidence base and increase effectiveness of interventions for foot health concerns and the application of evidence informed practice. Increasing education could positively impact referral pathways, leading to less unnecessary referrals (Carli, Saran, Krujit, Alam, & Hamdy, 2012). Utilising profession-specific expertise could impact on the experience and efficiency of treating children’s foot conditions, especially for children with more complex needs. The advantages of collaboration, improved education, joint training opportunities and evidence-based services were recognised to be important for all health professionals in improving professional knowledge and foot health services (Brown et al., 2010; Harding et al., 2014; Upton & Upton, 2006).

There has been long-standing concern with the quality of online health information (Broom, 2005; Bylund, Sabee, Imes, & Sanford, 2007; Gerber & Eiser, 2001; Kassirer, 2000; Murray et al., 2003) and this has also been echoed in recent studies exploring children’s foot health (Hodgson et al., 2019). Online health information now plays an important part in informing the wider public and plugs the once traditional knowledge gap between health professional and the wider public. AHPs reported that parents were often prompted to look for health information when there was a need (Bernhardt & Felter, 2004; Hodgson et al., 2019). This study has highlighted that health professionals were seeing more parents presenting with information that they had found online. It is recognised that this can increase the frequency of visits to health professionals (Lee, 2008) and give parents’ a sense of control over their child’s condition (Broom, 2005). However, this study indicated that due to the inconsistent reporting of foot health information this might not always be appropriate.

While efforts were made to try and recruit a diverse sample range of health professionals working in children’s health, there were difficulties with recruiting beyond AHPs. We are mindful that the findings are not representative of all health professionals, and engagement with other disciplines would help to offer a richer perspective on the issues highlighted in this study. It is therefore intended, based on this study, to extend this work to capture a broader view of the experiences of professionals working in children’s health services.

5 | CONCLUSION

The study provides new insight into the practices of health professionals working in children’s foot-care services. The findings depict a range of themes relating to experiences and engagement of AHPs with evidence, knowledge generation and translation into practice. The study brings to light the role and power of clinical experience in decision-making; additionally, highlighting referral pathways into children’s foot health services. It also highlights the views of AHPs about the influence of online foot information sources and their impact on parents. The study indicates that AHPs adopt a number of strategies to develop and inform their own professional knowledge and clinical practice. It also introduces the common barriers.

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CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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