

An Exploratory Qualitative Study of Health Professional Perspectives on Clinical Outcomes in UK Orthotic Practice

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Research

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Abstract

Background: Despite potential savings to the National Health Service, the collection of data on outcomes of NHS orthotic services is patchy. Indeed, several reports into orthotic services in the UK have reported a lack of data relating to outcomes of care and highlighted the need to routinely record outcomes to demonstrate efficacy of services. This research aimed to explore orthotic service professional perspectives on outcomes in orthotic practice. A secondary aim was to explore potential barriers to the routine use of outcome measure tools in practice.

Methods: Following a review of the literature, an initial advisory group involving experts in the field was conducted. From this, semi-structured questions were developed, and a focus group was undertaken. Data from the focus group was transcribed and analysed using thematic analysis, creating themes and subthemes for discussion.

Results: The participants considered a successful outcome as a 'usable' orthosis, this linked to a preference for evaluation of patient reported outcomes. The setting of realistic joint goals via patient education was seen as a method of improving outcomes. Barriers to collection of data were associated with inadequate technology to manage the 'data burden', lack of clinical time to complete and difficulties selecting outcome measure tools for a varied population. Issues around usability of current outcome measure tools were also highlighted. Participants discussed ways of addressing these barriers, such as the use of 'snapshots' and delegation of data collection.

Conclusions: This research is unique in that it is the first-time orthotic service professional opinions have been analysed specifically relating to outcomes, outcome measure tools and possible barriers to their use.

The participants acknowledged the relevance of outcome measure tools, identified barriers to use but had created novel ways to address barriers. Further, they indicated that to achieve good outcomes it was important to address service user expectations of treatment, discuss and establish joint goals for care at the outset and communicate/ educate on the clinical reasoning process. This research has contributed to current knowledge within the field of orthotics and may provide a theoretical basis for future research in the field.

Background

The number of people in the UK with long term conditions such as diabetes, cardiovascular disease and musculoskeletal disorders is increasing [1] and this is compounded by the fact that by the year 2050, nineteen million people in the UK will be aged over sixty-five and eight million will be aged over eighty [2].

Orthotic services have the potential to improve quality of life of people with long term conditions by assisting independence and keeping people mobile [3]. They also improve quality of life by reducing pain and the need for more invasive and expensive interventions, such as surgery and also social care [4]. It is estimated that for every £1 spent on an orthosis the NHS saves £4 due to the reduced impact on other services [4-5]. Therefore, effective orthotic services are reported to have potential health, quality of life and economic benefits⁶ and help people return to work. However, reports indicate that there is a lack of outcome data to support the perceived benefits [4,6]

An NHS mandate [7] required hospitals to publish outcome data and the use of patient feedback with the purpose of influencing the funding of services. Hence, in order to demonstrate efficacy for the estimated two million orthotic service users and ensure that funding is provided for orthotic services, there is a need to routinely audit and collect relevant data on outcomes of care [4-6].

Despite this need there is little evidence on the outcomes of orthotic care in the UK, with less than thirty per cent of orthotists collecting outcome data for orthotic interventions [8]. It is postulated that this can be a complex task due to the wide range of medical conditions that that would require specific outcome measurement tools within orthotic services [9]. Further, there are differing opinions and confusion as to which outcomes of orthotic care are considered important [10] as well as a lack of clinical time and resources available to administer them [8].

Whilst questionnaires have identified some of the current practice relating to outcomes in orthotic practice what is considered important to practitioners or possible solutions have not. Hence, this qualitative study primarily aimed to explore relevant outcomes in the field of orthotics from the practitioner's perspective. A secondary aim was to explore practitioners' opinions on the suitability of current validated outcomes measure tools and possible barriers to outcome measure collection.

Methods

Following Ethical approval (University of Salford (UoS) (HSR1617-113) and IRAS (17/NW/0379) an overarching qualitative approach was used for data collection and analysis.

The researcher took an interpretivist approach to the research which supports the view that truth and knowledge are established at an individual level and that researchers cannot separate themselves from their own beliefs, in fact these will inevitably influence the whole research process [11-12]. The researcher was familiar with the topic of research because of her professional background as an orthotist. Due to this understanding the researcher entered the research knowing that an important part of the process would be to regularly challenge and question their own beliefs and assumptions in order to demonstrate credibility [13]. Further, to demonstrate confirmability, the researcher maintained field notes on decision making, data collection and analysis and shared this with an advisory group. The advisory group consisted of two orthopaedic consultants, a senior physiotherapist, senior podiatrist and a senior orthotist assisted in defining the focus group questions (together with information from the literature) and confirmed the results.

Purposive sampling was undertaken in order to select those considered representative of the profession. The inclusion criteria were those currently working in a professional role within the field of orthotics and agreeing to attend a focus group. Members of the current NHS Orthotic Managers Group (NOMAG) were invited to participate by email invitation including participant information. Fifteen participants were recruited and provided informed consent to participate.

Data was collected via a focus group to enable practitioners with experience of using orthotic outcome measures to share opinions and debate, allowing the researcher to gather rich and insightful data [14].

The focus group was digitally recorded, and field notes were taken by a member of the research team. The questions were semi structured and aimed to direct the discussion but not to set it. The researcher transcribed the audio recordings verbatim and analysed alongside the observations recorded in the field notes. Each participant was allocated a participant number, to maintain anonymity and confidentiality.

Analysis of the data was undertaken using thematic analysis [15]. The researcher recorded initial notes on potential meanings and patterns, coding the data in tables which formed the basis of themes and subthemes, after repeated analysis and input from the advisory group.

Results

The fifteen participants (Table 1) were from a variety of healthcare backgrounds all currently employed in NHS orthotic services in the UK. The demographic information was collected in the form of a questionnaire just prior to the start of the focus group

Table 1: Professional Focus Group Demographics

Participant Number	Gender (M/F)	Current Role	Years In current Role	Current Use of Outcome Measure tools (Y/N)	OM Tools Used	Relevance of Outcomes to Orthotic Practice
P1	M	Head of service/ Orthotist	15	Y	Blank	Very
P2	F	Head of service/ Clinical Lead Orthotist	3	Blank	Blank	(Blank)
P3	F	Orthotic service manager	7	Y	Blank	Very important as we continually need to demonstrate quality
P4	F	Clinical Lead Orthotist	1	Y	Pain scales, Activity levels	Very but hard in my working environment as management do not allow follow up appointments
P5	M	Clinical service Lead	9	Y	MFPI, VAS	Very relevant but difficult from a time and choosing a correct measure for such a vast variety of patient groups
P6	M	Clinical lead Orthotist	15	Y	GAS, Beighton score, FPI	Yes, very
P7	M	Clinical Lead Orthotist	Blank	blank	Blank	(Blank)
P8	M	Senior Orthotist	Blank	blank	Blank	(Blank)
P9	M	Clinical lead and head of regional orthotic services	1	Y	GAS, TUAG, VAS/NRS, pain, 10MWT	Extremely relevant, validates our impact as a profession
P10	F	Principal orthotist	8	Y	Pain score, Cobb angles	Very relevant to be able to measure what we do and show success
P11	F	Senior Orthotist	3	Y	VAS pain score, Cobb angle	Very relevant to determine the success of intervention

P12	F	Clinical lead Orthotist	21	Y	Blank	Very
P13	F	Senior manager for NHS orthotics and wheelchair services	2	Y	Blank	Very, to understand evidence-based practice
P14	M	Lead clinical Orthotist	1	N	Blank	Yes, relevant
P15	F	Manager of Podiatry and Orthotics	8	N	Blank	Very important to demonstrate good practice

Themes and Subthemes

The researcher identified subthemes which informed the subsequent themes (Table 2).

Table 2: Themes of Professional Focus Group

Themes	Title of Theme	Subthemes
Theme 1	The Role of Goal Setting	<ul style="list-style-type: none"> Conflicting goals Achieving agreement Managing expectations / compromise
Theme 2	Achieving Behavioural Change	<ul style="list-style-type: none"> Users motivation The role of education Acceptance and satisfaction
Theme 3	The Barriers to Outcomes measurement	<ul style="list-style-type: none"> Fluctuating disease and Changing goals Impact of multiple interventions Time constraints Varied case load
Theme 4	Overcoming the Barriers to Outcomes Collection	<ul style="list-style-type: none"> Role of Technology Delegation Snapshots

Theme 1: The Role of Goal Setting

Subtheme: Conflicting goals

Orthotic devices will usually be prescribed with intended goals. Participants talked of the difficulties that arise when other professionals and service users present with their own thoughts and ideas around what an orthosis can achieve:

"What's the outcome from the initial referrer because it could be totally different from what ours is" Participant 6 and

"Because what other clinicians feel an orthosis does and what we are telling them it actually does are sometimes very different... You've got the three different concerns you've got the referrers you've got the patients and then you've got ours" Participant 1

These differing goals between parties were also discussed when considering the challenges of using outcome measures (OM's):

"We have been using the GAS lite system which relies on you getting what the patient wants, what the orthotist wants and combining the two...the problem is when we actually started doing that, the objectives the patient wanted and what the orthotist wanted weren't even vaguely close and the perception coming through with the referral and with the referrer didn't match up with either of them either" Participant 7

Participants attributed these differing goals, particularly for service users, to differing priorities. They felt the important goals for clinicians often were not the important goal for service users:

"we are all guilty about still pursuing to make them safer on their feet...make sure we are reducing the level of risk but actually at the end of the day it's still not the patient's goal" Participant 7

Participants talked of identifying goals at the outset of treatment as an important start towards outcome measurement. However, the different opinions (themselves, the referrer and the patient) on what the intended goal should be and hence what the OM could be was a difficulty.

Subtheme: Achieving agreement

These differing goals meant there was a need for discussion with service users. One participant described the need to establish a joint goal prior to starting orthotic treatment:

"We see the patients...they've got their own ideas, they talk to friends, their families...it's getting the marriage of those two things" Participant 6

The other participants confirmed, describing joint goals with patients as key to successful outcomes:

"well the question is... can you achieve an outcome that the patient understands what's wrong with them...why the clinician is suggesting what their suggesting and you've agreed on what the goal will be" Participant 5 and,

"It has to meet the patients and the healthcare professional's expectations of what it aims to do" Participant 2

Participants described the need for a process of joint decision making for goals that resulted in an agreed treatment plan.

Subtheme: Managing Expectations/compromise

Linked to goal setting, participants described a need to establish and identify patient expectations prior to treatment:

"Is the patient's objective to reduce pain, prevent falls, walk better when you know its managing those expectations" Participant 13,

They indicated the need to compromise and readjust the patient's expectations:

"The whole point of an orthosis is to achieve a successful clinical function, but if we have actually provided them with something and they are happy... is that really the ultimate goal, even though it may not be as functionally or as clinically appropriate?" Participant 1.

and

"You're going to make something that's not going to be fantastic but that will fit in the shoes that they wear and will be usable" Participant 5

In instances where expectations were considered impossible to meet, questions were posed as to whether treatment was appropriate at all:

"Because if you establish at the front end that actually the two [goals] won't ever meet and we're not going to satisfy the patients expectations why order the product and pursue any further" Participant 1,

Participants expressed the need for some level of compromise when addressing patient expectations.

Theme 2: Achieving Behavioural Change

Subtheme: Users motivation

Successful outcomes were described as an orthosis being "usable" with motivation being a huge factor in engagement and hence a successful outcome,

"If you have got someone that's determined enough to get back to sport then they will wear that massive knee brace, because it means they can go play football again" Participant 2 or,

"...if its spinal bracing they can get out of bed" Participant 10

As part of this participants acknowledged the difficulties patients faced in order to change behaviour to use an orthosis:

"I work a lot with neuro patients and I can see they tip or fall or have a foot drop, and I'll say well we'll put an intervention in and that stopped you tripping and you're not going to fall, but to that patient them falling isn't a big enough problem for them to change their footwear" Participant 2

Participants felt that the cosmetic appearance of an orthosis and the health behaviour change often required to utilise the device could have a significant impact on successful outcomes of care.

Subtheme: The role of education

Participants described their role of empowering patients with information to understand the recommendations being made in order to make decisions on their care:

"...the most powerful tool we have is the ability...to educate our patients...help them understand what's going on and what your aims are and therefore why you're going to design something in the way you're going to design it..." Participant 5 and,

"My patients are all very happy but some of them don't achieve the goal they wanted to achieve, but they're still very happy because they understood what we were trying to achieve...they felt a part of the process"
Participant 5

This education was also described as an important step in obtaining informed consent:

"I think it's very much like surgery...I mean the consultants would ...talk through the risks with the patients and say this is a possible outcome you know. We have the same conversations in orthotics and then based on that education, that discussion you come up with a prescription" Participant 9

And preparing patients for potential orthotic treatment and the health behavioural changes this could involve:

"We have an early intervention rehab team...they will refer into my orthotic clinic and part of that is more about advice only...they are educated... they are more likely to have successful outcomes... they know what to expect, they know what their options are" Participant 1

A process of educating patients was viewed as a way of making them feel involved in their care, almost empowered to decide to utilise the intervention being recommended.

Subtheme: Acceptance and Satisfaction

Participants described the importance of the patient's eventual acceptance and use of a device as an important outcome:

“Something that the patient will wear and use, if it goes into a cupboard it’s a useless orthosis no matter how good it is” Participant 7

This focus on patient satisfaction and a “usable” device also appeared to influence the types of OM tools that participants would use in practice:

“Patient satisfaction from start to finish with their journey and that for me...that’s the one I go to because my patients are happy they’ve enjoyed their journey they’ve understood their journey they’ve had a good outcome. I’m happy” Participant 5 and,

“...we looked into outcomes but it’s very much a case of we still use the review or the return of the patient coming back to then think have we achieved it” Participant 1 and

“That’s a happy person and we have achieved what we wanted to” Participant 13

A service user utilising an orthotic device and satisfied with their care was seen as an important outcome of treatment. Because of this, participants agree that the use of patient reported outcome measures (PROM’s) were an appropriate way to measure outcomes.

Theme 3: The Barriers to Outcomes Collection

Subtheme: Fluctuating disease and changing goals

Participants indicated the pattern of different chronic diseases as the most challenging factor:

“What can happen especially with chronic disease is those goals change” Participant 6 and,

“...some of them are chronic, like RA condition...you know on that day might be ok but then after, or an hour after it might not, so it’s really tricky” Participant 13

Participants felt that patients’ needs can change from day to day. and explained how this could make it difficult to establish and maintain goals of care and impact on the outcomes of treatment. Participants also described how patients themselves could change the goals set at initial assessment:

“... a lot of our patients are just long-term chronic patients and their needs change for all sorts of reasons, which can be vocational as well as their disease progression, you know they can change because they decided to take up bowls which is really good for them socially, so we actually need to adapt to that” Participant 2

Participants discussed how chronic disease can often mean changing goals for treatment, posing difficulties for outcome measurement considering those set at the start off treatment may change throughout the course of treatment. They also highlighted how patients themselves change goals, with the introduction of new hobbies or new expectations of care during treatment.

Subtheme: Impact of multiple interventions

A challenge of managing patients with chronic disease was multidisciplinary management which will often involve several different treatment modalities and a variety of different health professionals:

"I think those that are diabetic change things considerably really...there are so many other factors that will determine that outcome it's very hard to, I think, pin down and hard to measure that diabetic success based on other variables that you don't have control over, compliance, diabetic control, vascular supply..." Participant 5 and,

"And on the back of that it's a case of a lot of orthosis, especially for diabetic care are about maintenance and prevention and its quite hard to measure whether it's successful other than they haven't re-ulcerated. But they might not have re-ulcerated for many other factors." Participant 1

It is clear that orthotic management for patients with chronic disease was rarely provided in isolation and so potential benefits could not always be attributed to the orthosis alone. This creates a problem when selecting a tool to measure the specific outcomes delivered by orthotic care.

Subtheme: Time constraints

Participants described their experience of using OM tools in practice as difficult due to the length of time to complete them:

"I use...the Manchester foot pain disability index; don't use it routinely as it takes too long" Participant 5 and,

"I've used this OPUS before...this was the worst outcome measure because of the length of it" Participant 9

Other participants noted the same issues when presented with OM tools the researcher had identified from a review of the literature:

"The only problem with both of these, they are massive to do..." Participant 7 and

"They are too lengthy to feel like they are practical within a 20/30 minutes appointment slot" Participant 1

One participant also described the practical limitations of clinical setting:

"I think there's clinical ones out there, like the timed up and go and 10 metre walk test that could be used, not everywhere as some of us are in cupboards...Who's got a ten-metre walkway?" Participant 9

Participants indicated that they felt current OM tools were not practical for use in their everyday orthotic practice and setting. They indicated the average time slot provided for assessments did not allow for the extra task of OM collection. They felt a number of tools were too lengthy and indicated that they felt even service users would find this an inhibiting factor.

Subtheme: Varied case load

Participants also described difficulties associated with identifying the most appropriate OM from the vast number available for the various pathologies they treated:

“There’s a certain amount of apathy with me in the fact that I’m doing a lot of other things...and so when that patient comes through the door who fits the bill for the outcome measure...I’ve ran out of time” Participant 1 and

“Because within a day, the day starts, and you know you can have your rheumatoid one moment and something else the next, you can’t have all the questionnaires at reception for ‘what type of patient are you?’” Participant 5 and,

“That’s what’s often the problem isn’t it. It’s a different outcome for everybody” Participant 2

The diversity of orthotic service users made it difficult for participants to identify the right tool at the right time and created barriers to the routine use.

Theme 4: Overcoming the Barriers to Outcome Collection

Sub theme – What we need

The participants expressed a preference or need for OM tools that were quick and easy to use:

“We need a scale that allows us to have three questions; GAS lite gives us that straight away” Participant 7 and

“The most effective thing in the vast majority of the population is a really simple text message with three questions” Participant 7

Participants favoured the idea of generic tools, applicable for the majority of service users:

“When we looked at them there was such a huge variety of different outcome measures and we couldn’t find one that gave us a clinical outcome that we could put across the board” Participant 10

This appeared to link to the overall preference of satisfaction questionnaires:

“So that’s why it’s always good to have the service one. How were reception staff? Did you feel like you were listened to? Were you given enough time? Did you feel like all your questions were answered? Did you get something that was usable? Do you find that it helps you? Are you happy with the service?” Participant 5

Participants wanted tools that were manageable to use within the time frames they were given. This appeared to lead to a preference for tools that are simple and quick to complete and could incorporate technology for ease of collection. This is why a number of validated tools were not being used by participants, with a preference towards satisfaction questionnaires completed by patients themselves.

Subtheme: Role of Technology

The traditional paper format OM was seen as a barrier to their use:

“the problem is you’ve got all these outcome measures that are stuck in these cupboards and written on Post-it notes, in files, it’s all just lost” Participant 9

Technology was suggested as a method in aiding OM tool selection:

“It’s all paper again. We’re miles off technology, you could have all this stuff on an iPad, it’s very easy, you could email it to patients” Participant 9

However, participants talked of their frustrations related their current IT systems that did not support this:

“The IT systems make or break a lot of this as far as measuring because...can’t retrieve as a report...our IT system doesn’t do it” Participant 1

IT and technology were seen as a way of addressing not only the data burden but also the selection and administration of appropriate OM tools, but current IT systems did not facilitate this.

Subtheme: Delegation

To tackle issues related to time constraints participants talked of delegation of OM to others:

“We’re using telephone reviews...telephone reviews are being done by our orthotic assistant” Participant 11 and

“I also am exploring whether it has to be an orthotist that makes that phone call, whether someone else can make that phone call to ask some risk based questions which would then either send the patient back through triage and for review or we would say that’s a happy person and we have achieved what we wanted”

Participant 13

Lack of clinical time meant that some participants had been driven to find alternative ways of collecting OM data.

Subtheme: Snapshots

Another way in which these barriers were addressed was via the use of what one participant described as ‘snapshots’:

“I use...the Manchester foot pain disability index... we will do a full week or a snapshot...it’s a bit labour intensive for that week but it’s only that week” Participant 5 and,

“So, what we decided to do is to have 6 months on an area of a group of patients with one outcome measure for that and then to move on to another cohort of patients and probably with a different outcome measure”

Participant 10 also,

“We are recording pain scores just for insole patients at the moment” Participant 12

There was agreement between participants that this was a way of overcoming some of the earlier identified barriers:

“I think taking the (Participant name removed) point earlier though if you did some random sampling maybe in a quota and ran 20, 30, 40, 50 patient, whatever the sample size, a group of your service, you could do a modelling thing” Participant 13

Participants agreed on the importance of OMs (both objective clinical measures and patient reported outcome measures) for orthotic practice and looked at novel ways in which they could include its collection through snapshots, i.e. specific patient groups, pathologies or outcomes over a specific time period meaning that data collection was more manageable.

Discussion

This qualitative study has revealed, for the first time, some health professionals’ opinions on outcome measurement in orthotic practice. It has identified opinion on outcome measurement tools that could be suitable and explored possible barriers to their use.

Health outcomes can be defined as the change in health that resulted directly from an intervention that has been provided. They are important because they provide the ability to understand the benefits and efficacy of services and interventions. An OM tool can then be considered as a device used to quantify the effects of services or interventions [16].

The extensive meaning of health to individuals can often result in different perspectives on the types of outcomes that are important, and thus what should be measured and what should be valued. This can mean that outcomes can be split into different domains, depending on the target audience and purpose of the data [10,17].

OMs could also be defined to reflect the purpose for which they are employed. For example, clinical outcomes can be viewed as those that assess therapeutic results of an intervention, an aspect clinicians are keen to establish. Humanistic outcomes can be considered the effects of treatment on the patient’s QoL and ability or function. These could be looked at as the outcomes important to service users. Finally, economic outcomes can be explored and these are often of interest at a national or managerial level. They aim to analyse direct and indirect costs of care and the impact on the health of populations [17]. Before decisions are made on the types of OMs to employ it is vital to establish the information to be gained, the purpose it will serve and the audience for which it is meant [18,19].

The assessment process is an opportunity to develop a relationship with services users in order to create individualised goals and identify any potential barriers they could have in achieving them [20]. Participants described how they felt successful outcomes in orthotic care hinged on being able to establish joint goals with service users.

The participants in this study indicated that establishing patient expectations at the outset of treatment was a key part of obtaining successful outcomes. From the research it is clear that outcomes could potentially be improved if patient expectations were established prior to treatment and then adjust these expectations if needed so that satisfaction is more achievable. Entwistle et al [21] described how true patient autonomy can often mean a process of establishing new options to meet individual patient needs with shared decision

making, increasing patient satisfaction by providing a sense of ownership and control. It has been demonstrated that patients who feel involved in their care demonstrate better outcomes [22]. However, shared decision making is not an easy task [23], it involves detailed discussions with patients to establish their expectations and goals. Most patients will invariably hold some expectations about the care they will receive²⁴ and it has been demonstrated that user expectations can directly influence the outcomes of care [25-27]. Therefore, healthcare providers are becoming more aware of the importance of managing service user expectations at the outset of treatment, and have highlighted its relevance in improving outcomes [28].

Managing people with chronic disease was seen as a challenge by these participants, particularly in relation to outcomes. They described how goals rarely appeared to remain static during treatment. They discussed the changes that could result from the progression of chronic disease. For example, despite even optimal management of diabetes those with a diagnosis are more likely to develop diabetic peripheral neuropathy (DPN) with an increase in age and duration of diabetes [29] increasing the risk of ulceration and amputation [30]. The difficulty collecting and recording OMs with changing clinical pictures, like diabetes, is also noted by professionals providing care in conditions, such as stroke [31].

The participants also felt chronic disease created further challenges for measurement due to the multi-disciplinary approach required in its management. Participants discussed how this made it difficult to identify the outcomes or benefits associated with the orthotic intervention, again using the example of management of the diabetic foot. Therapeutic footwear and total contact insoles have been advocated as a way of protecting the 'at risk' diabetic foot from ulceration [32]. Whilst well-fitting footwear and insole combinations may be able to reduce pressure that could result in ulceration, other management interventions such as regular podiatry will also contribute to this reduction of risk. These participants highlighted how they felt this made it difficult to identify the clinical benefits of the orthotic input alone and thus accurately measure these benefits. Nancarrow et al [33] expressed how in order to measure outcomes first you have to be able to define the intervention and attribute the changes in health to that specific intervention. In multi-disciplinary care where interventions can work alongside each other these specific changes can be difficult to define and attribute. To provide specificity a targeted clinical measure may be needed, such as the use of dynamic in shoe plantar pressure measurement following therapeutic footwear introduction [34], however this specific assessment may be harder to implement in practice.

It is apparent that a number of individual and social barriers can result in patients finding it difficult to follow recommended long-term medical regimes [35]. Further to this, the complexity of the multifactorial decision-making process described above, could influence a patient's ability to utilise an orthosis as intended. When a patient presents to orthotic services little may be known about the above factors and it would prove difficult to collect such information in the limited clinical time often available. With limited time, the focus is the assessment of the presenting complaint, expectations and goal setting and this requires effective communication.

Effective communication is crucial to goal setting and shared decision-making and is also considered an important part of patient engagement and satisfaction with care [36]. Employing effective communication should be viewed as an important step in orthotic treatment planning process. Participants talked of the need to educate patients on their clinical decision-making processes and appeared to strongly link this provision of

verbal education to improved outcomes of care. Patient education has been long advocated as a way to improve health outcomes, with the idea that if a service user understands why recommendations have been made, they are more likely to follow them [37-38]. Yet this does not mean it is an easy task, Johnson, Newton and Goyder [39] conducted a qualitative study into prescribed footwear and found service users felt health professionals would often make recommendations which they found too difficult to follow in practice and affected compliance.

It was considered by the participants that if a patient did not utilise an orthotic device then inevitably that was an unsuccessful outcome. Ultimately successful outcomes are influenced by the patient's motivation to accept and implement required behavioural change. However, evidence indicates reduced adherence to medical advice when service users have to make changes or administer treatments themselves [40]. As most orthotic service users have to make an active decision to utilise their orthosis this challenge of acceptance can lead to issues around use of an orthosis [41-42].

The participants touched on the impact on the impact of orthoses on clothing choice, hence non-compliance affecting outcome, and this aligns to a report where up to ninety per cent of those prescribed footwear were concerned about the cosmetic appearance and found that they had to change their clothing to accommodate or disguise them [43]. Hence, it is vital to discuss the impact of the orthoses/footwear in relation to cosmesis at the assessment to establish compromise and agreement. This could be key in influencing the eventual utilisation of an orthotic device and thus the eventual outcomes of care.

The participants referred to lack of training in the use of outcome tool use as a barrier to collecting outcomes. Duncan & Murray [16] identify that training, administrative support and adequate resources all contribute to routine use of OMs with Gaunaud et al., [44] finding that education of prosthetists in OM use increased confidence and use of OMs in practice. In support of this Skeat and Perry [45] also recommend that organisations need to ensure that orthotists have time to access the training needed in OM. The routine collection of outcomes in practice requires training [33,46-47] with an onus on organisations to facilitate this training. Jette, Halbert, Iverson, Miceli and Shah [48] highlighted that services have the responsibility to actively help clinicians manage time so that the collection of OM data becomes routine.

An additional and major barrier for these participants was the time to administer them. Literature has demonstrated similar for other health professionals with OMs not routinely used due to a lack of time [18,49]. A qualitative study into the work related experiences of orthotists and prosthetists found they felt that they had insufficient time to complete their general tasks in clinical practice, let alone further added tasks [50]. Jette, Halbert, Iverson, Miceli and Shah [48] also identified challenges of outcome tools in clinical practice were related to the fact they were time consuming, not just to administer, but to also analyse. A further study exploring the use of outcome measures in Prosthetic practice found busier services or those with a large number of patients were less likely to utilise OMs in practice [51].

The challenge to implementation sits within a broader challenge to the provision of orthotic services in the UK where some waiting lists can be lengthy [4]. Inevitably the process of OM collection will take up clinical time and could result in increased waiting times and could then be considered less of a priority as a result. Services need to consider effective ways of reducing the burden of OM collection and the professionals within this study highlighted a need for delegation or the potential use of outcome measurement being carried out in

snapshots of time, or for specific patient groups. Indeed, having a coordinator throughout the OM process seems to be key [46]. It is clear is that 'sufficient time should be allocated to enable outcome measurement to occur'[16 p6] and this concurs with the participants opinions in this study.

All the validated OM questionnaires discussed within this study were found to be time consuming, and difficult to collect and analyse. The participants highlighted how the current IT systems they had access to did not facilitate the collection and management of OM data. An Orthotic Pathfinder Report [3] demonstrated the same issues relating to IT systems over fourteen years earlier and made recommendations for their improvement. It appears that there has been little improvement since then.

Despite IT systems being considered an important instrument in minimising the burden of outcome data by aiding its selection and organisation [48], these participants expressed that they did not have access to effective IT systems, and this meant that data would have to be collated manually, creating significant time burdens.

Any implementation of technology must include factors of usability whilst providing accurate and meaningful data [52]. The advent of the field of health informatics and the recent emphasis on digital health [53] has meant some progress. When services are considering the selection of IT systems, particular focus should be given to those that facilitate or support OM use [54]. Wider technological advances have brought wearable systems into healthcare to allow monitoring of medical conditions [55], alongside a proposed shift toward a digital triage and self-management guided by digital tools [53]. It is thought these technologies can facilitate data collection without creating or adding to clinical burden and this can reduce barriers to their use.

Despite the uniqueness of the study and the insight it has created into practitioners opinions on OM in orthotic practice there are potential limitations that need to be highlighted. That the researcher facilitating the focus group was an orthotist could have influenced the participant's responses during the focus groups [56]. In an attempt to address this the researcher clearly stated their role and the aims and objectives of the research at the outset and that opinions within the transcripts would be anonymised. Also, this study could be challenged as having low numbers and hence the findings cannot be generalisable. However, this was not the purpose from the outset as it aimed to gain insight and opinion from fifteen purposively sampled participants who demonstrated ranging years of experience in practice and a range of roles from purely clinical to those with a mixed or managerial role. Hence the findings are a representation [13].

This study informs future research in relation to developing and evaluating OM tools and processes for measuring outcomes in a wide range of orthotic interventions for a wide range of conditions.

Conclusions

This research is unique in that it is the first-time orthotic service professional opinions have been explored specifically related to outcomes, OM tools and possible barriers to OM use.

The participants acknowledged the importance of the recording of OMs but identified barriers to their use but had created novel ways to address these barriers. Further, they indicated that to achieve good outcomes it was important to address service user expectations of treatment, discuss and establish joint goals for care at the

outset and communicate/ educate patients on the clinical reasoning process. This research has contributed to current knowledge within the field of orthotics and OM and may provide a theoretical basis for future research in the field.

Declarations

Ethics approval and consent to participate

Ethical approval was granted by the University of Salford and IRAS (UoS REF: HSR1617-113; IRAS REF: 17/NW/0379).

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

All authors declare that they have no competing interests.

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Authors' contributions

NH collected the focus group data and preliminary analysis. DP and AW were involved in the secondary analysis. All authors contributed in writing the manuscript and all authors read and approved the final manuscript.

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