UPDATE

- Conference 2022
- Exec roles
- Reports
- Guidelines

BE INSPIRED

- Profiles
- User perspectives
- Innovation & developments

LEARNING

- Reflections & critical thinking
- Roles & services
- Research

BACPAR

BRITISH ASSOCIATION OF CHARTERED PHYSIOTHERAPISTS IN LIMB ABSENCE REHABILITATION

AUTUMN 2022 **ISSUE 58**

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NEW OPPORTUNITIES

Louise Tisdale

BACPAR Chair

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CHAIR'S MESSAGE

Writing this in the days that closely followed the death of our Patron the Queen, I start by paying our respects to Queen Elizabeth II on behalf of the BACPAR Executive Committee.

Welcome to the Autumn Journal, a touch of déjà vu for me, having agreed to take on the Chair position again at the 2022 March Executive Committee meeting. Julia and the BACPAR Exec have done an excellent job in moving BACPAR on in the last 6 years that the actual writing of this is the only thing that gives me that sense.

BACPAR's membership numbers are continuing to grow (308 at the time of writing); new members joining and established members re-joining, new members on the Committee. The new website (apart from a minor blip in the summer – quickly rectified) is working well. BACPAR'S association with the Vascular Society is continuing to strengthen with representation on the Editorial Board **https://jvsgbi.com** and a strong desire for BACPAR to continue be part of the Vascular Societies and their Annual Scientific Meeting (ASM), this year in Brighton. The programme for which will be fully confirmed at the time of this journal's publication and hopefully BACPAR members registered in good number (before 30th September cut off for Early Bird rates) to gain from this national CPD and networking event. Please remember that BACPAR members can apply for a Bursary that would support attendance to the ASM (fees, travel or accommodation).

Members of the BACPAR exec were involved in a CSP funded project to develop an Equality, Diversity and Belonging reflective toolkit , and the committee undertook that assessment at the meeting in September. The outcome is that the BACPAR Committee will strive to be as inclusive as we are able for the membership and functions. We want your feedback if you identify as someone with a protected characteristic and you feel we should and could do better. The BACPAR membership secretary **bacparmembership@gmail.com** will take your feedback and questions on behalf of the Committee.

BACPAR members are fully integrated in research activities, and it is hoped that there will have been representation by BACPAR members on the ISPO UK MS ASM programme in October (delegate fees for BACPAR members agreed at membership rates).

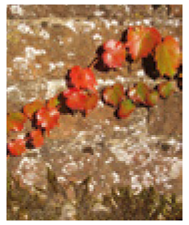
Mary Jane Cole and Kate Sherman led in providing a webinar to support Ukrainian therapists working in the rehabilitation of amputees in July and a further session is planned. BACPAR guidelines are being updated; student education guidelines, pre op/post op as well as involvement in the development of Upper Limb absence rehabilitation guidelines (to include the implication of the recently approved Multi-grip Prosthetic Hand Policy) An update to the resource 'So Your Patient Has had an Amputation' has been completed so a review of the Outcome Measures Toolbox is next.

We will share plans for the next BACPAR year at the AGM (Wed 23rd November at 5.15pm), there are committee positions that need to be voted in and we will ask for your consideration of what the national BACPAR 2023 CPD event should be.

Hopefully see you there, if you cannot be there, let me know your thoughts about any of the above by email.

WELCOME

EDITORIAL



The autumn is naturally a time for reflection. This year perhaps there is all more reason to look back, not only with our professional practice with the interesting challenges it can present, but beyond.

The theme of reflection is common in the BACPAR journals and appears to stand out a little more in this edition. From students experiencing amputee rehabilitation for the first time, clinicians with many years of experience thinking critically about changes in their personal practice or service provision, to users adjusting and adapting to life with limb absence or progressing from one type of prosthesis to another. And there's more.

The journal survey allowed you as members to feedback on this year's Spring edition and we have received constructive ideas, some of which we have already applied. And with your input, will continue to become embedded in future journals. Please take a look at the findings and consider how you and your colleagues can contribute to next year's editions. The deadline for the Spring edition is likely to be around mid to late March 2023; put your thinking hats on now!

There is much to be gained from these insightful reflections, and of course from the many other and varied contributions received (a couple of regions have excelled with this!). All content prompts food for thought and relates to our practice in amputee rehabilitation. We are indebted to you all, thank you.

Best wishes,

Mary Jane and Sue
Joint Journal Officers **bacparjournal@gmail.com**

Personal postscript from Mary Jane
This is my 'last' journal. I've thoroughly enjoyed my four years as joint editor with Sue, thank you Sue. Perhaps above all the role allowed me to be creative and has given me the opportunity to reach out to members and further afield. And I've needed to be organised! As I sometimes say to our contributors, there's nothing like a deadline for focus and action. Also, the skills that are imperative to being a physiotherapist have come to the fore e.g encouragement, and in some cases that extra bit of persuasion or 'push' – I think some of you might relate to this and feel it's been more a case of having your arm twisted a little…(!), but thank you for rising to the challenge and making my role as an editor all the more satisfying.

Mary Jane Cole

Joint Journal Officer

bacparjournal@gmail.com

Sue lein

Joint Journal Officer

bacparjournal@gmail.com

GUIDANCE FOR SUBMITTING CONTENT FOR THE BACPAR JOURNAL

DEADLINES for the biannual journals (Spring and Autumn) will be announced via iCSP and our 'BACPAR Members Only' Facebook page.

CONTACT the Joint Journal Officers via email:
bacparjournal@gmail.com

WORD COUNT The approximate word for major articles is 2000 or 1500 words if you have the addition of figures and/or tables, photos and references.

PICTURES & LOGOS should be supplied as SEPARATE FILES – high resolution (240ppi) jpegs or PDFs as images. They should ALSO be placed in the text to show where they should be located. You may want to include your Trust/Organisation logo.

INCLUDE YOUR NAME (AND ANY CO-AUTHORS), JOB TITLE AND WORK SETTING AT THE TOP OF YOUR ARTICLE (after the feature heading)

USE OF CAPITALS Use capitals for job titles only in the feature heading or within the text if after someone's name e.g. Joe Bloggs, Clinical Specialist Physiotherapist. Otherwise use lower case for job roles within the text e.g., physiotherapist, prosthetist.

TO ACCOMPANY YOUR SUBMISSION you will need to supply the following completed forms:
- BACPAR Journal Article Submission Form
- BACPAR Image Consent Form (if applicable)

JOURNAL SURVEY

THANK YOU…
BUT WHERE WERE THE REST OF YOU?

In July the Journal Officers launched a Survey Monkey on the recent Spring edition and eagerly sent it out to the whole membership by email and Facebook.

We had 27 full and helpful replies: it was obvious from the comments that many who replied are already active contributors to the journal so a slightly skewed population?

So… where were the rest of you??

Based on those replies received, here are the results

- 96.3% of the respondents had read the last journal – one person had been too busy and is not currently active in amputee rehabilitation
- 83% (range 51-100) for relevance to practice
- Respondents gave it an average 88% rating (range 58-100) for interest
- 92% of respondents thought the length was OK – the remaining 2 thought it was too long
- One thing the Journal Officers are passionate about is that the journal should be useful to you in supporting your, and your team's CPD
- 57.7% of respondents said they do use the journal in this way e.g
- Reflective discussions e.g. Kate Lancaster's pain article or Grace Ferguson's UL article
- Used the journal suggestions for a journal club
- We are going to review some of the articles written by the BSc students
- Encouraging them to read certain articles and to produce their own

Does this give you some ideas? Why not write to our 'Letters to the Editors' page and tell us how you use the journal for CPD?

You said…
"Make the Exec email addresses bolder on the directory page"

…We did
We have asked the formatter to adjust this (see pages 58 & 59)

You said…
"Continue journal article suggestions & links to recent publications"

…We did
The 'Article Corner' feature is back! (see page 14)

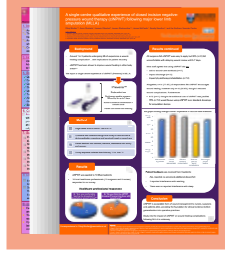
You said…
You like "patient stories and reflections and physio roles (e.g. 'out of the ordinary')"

…We did
There are several patient stories and quite a few reflections on practice and roles in this edition, including MDT and an international physiotherapy colleague

You said…
You like "MSc information"

…We did
There are 2 articles that relate specifically to postgraduate learning (see pages 41 & 42)

You said…
"The posters all together page after page is a bit visually heavy and wordy and made it difficult to know where to begin – could these be spaced out across the journal more?"



…We did
When we have more than one poster submitted, we will aim to space them out

You said…
You like "research and personal stories; variety (of topics) and lots of interesting articles; informative"

…We did
These continue to be included. As editors, we believe there's variety, interest & interest!!

You said…
"Clinically relevant"

…We did
Most of the content is in some way or another – we believe!

You said…
You like "the development of presentations (from Conference)"

…We did
There's at least one example of this!

You said…
"I love the paper of the Spring Journal"

…We did
We will be continuing with the recyclable paper, and like you, we are very pleased with the feel of it too

You said…
"Maybe an 'exercise set' of the issue"

…We would like to do
Please send in examples of exercises for a specific muscle group/ clinical challenge. Why not present an example of a clinical challenge and ask readers to reply on how they would manage it

You said…
"How does research impact vascular developments?"

…We would like to do
Tell us if and how it does

You said…
"Course feedback"

…We would like to do
Tell us about the courses you've attended

NB these ideas all require MEMBERS submitting!

You said…
"More upper limb"

…We would like to do
More physiotherapists are working with this group. Let us know your experience of working with this group of users

You said…
"Tips for engaging in CPD activities would be good, such as a 'be better page' that is a regular item with a whole list of CPD opportunities"

…We would like to do
Share examples of personal and team CPD activities – including how you use journal content

You said…
"Include more early-stage rehab and staffing levels"

…We would like to do
Share your practice of early rehab. How does your team work, staffing wise? For example, what roles and responsibilities do assistants take on? What innovations has your team taken?

You said…
"More calls to action"

…We would like to do
We want to make the journal interactive – send us your comments and feedback on what you read in the journal – and what you see and read about elsewhere. Ask questions and we will publish them – these can be via 'Letters to the editors'

You said…
"More stories of MDT working and collaborations"

…We would like to do
Share your stories

You said…
"Applying treatments to community settings. Especially for those that are not using prosthetics"

…We would like to do
Examples please

You said…
"More research or clinical improvement projects"

…We would like to do
Examples of student, staff and team projects e.g. guideline audits

You said…
"Case studies"

…We would like to do
The scope is considerable here!

You said…
"Best assessment practice"

…We would like to do
What do you think is best assessment practice? Let us know

A strong theme was the hope for more user involvement which the Journal Officers and whole Exec support wholeheartedly. But it is YOU the members who are closest to the users…

So… this is where we need YOU! Yes… all of you have knowledge and skills to contribute to the BACPAR family. The Journal Officers are very happy to support you by reading any drafts, giving suggestions and advice about your publication.

Several respondents to the survey said they could submit a case study… could YOU?

A personal note from Sue Lein
When I was a clinician, I always thought the contributors to the journal were those special, expert, clever people out there. Now I'm on the other side, acting as a Joint Journal Officer, I see that, yes, we do have amazing contributors, but that can be ANYONE. Our membership is crying out for good solid up to date clinical content and user input. Why not get in touch and tell us what you can contribute to the Spring 2023 Journal? **BACPARJournal@gmail.com**

REGIONAL REPORTS

All Wales Region Roundup
Charlie Crocker, Welsh Regional Rep

Cardiff
The centralisation of vascular surgery means that all people needing vascular surgery/amputation will now be carried out in one hospital. Hopefully this will help improve the quality of care to patients needing the vascular surgery service. After amputation, people are being transferred to local hubs/hospitals for their rehabilitation. Our consultant is developing good links with the vascular surgeons, and they are starting to ask for opinions from ALAC service. By visiting the ward our ALAC team can also give advice on pain management and help manage patient expectations: all positive I think.

Jonathan Wood has been successfully appointed to the role of MPK specialist physiotherapist in Cardiff. Jonathan has many years of experience as an amputee rehabilitation physiotherapist in Cardiff and looks forward to developing this new role for South and East Wales patients.

Swansea
Swansea has seen the appointment of a new OT following the retirement of Deborah Perry. Nicola Bobyk joins us from Frimley Health. There has also been an increase in nurse, consultant and admin staff. The physiotherapy service remains understaffed even though patient referral numbers and waiting times are increasing.

Laura Carter has been in post for 12 months as the MPK physiotherapist in Swansea for South and West Wales. Her reflection on this last year makes a good read in this edition of the journal!

Colonel James Phillips has been appointed as Veterans Commissioner for Wales. He has identified Swansea as the Centre of Excellence for Wales which is excellent news.

Wrexham
Jacqui Baines has been employed by the Betsi Cadwalader HB Trust in North Wales in the post of MPK physiotherapist. She will be working alongside Rachel Malcolm (prosthetist) in the setting up and development of this new service. Exciting times ahead!

At Wrexham we are advertising for a part time band 6 post, and the closing date is the start of September. This money should help us improve our communication/connection with the Vascular hub, which is at Glan Clwyd (a different site to us).

All Wales Welsh Prosthetics Meeting at the end of September. Report to follow in the New Year.

Disability Wales (new post): link between Sports Disability Wales and the Welsh Government at end of September report to follow in New Year.

England Regions

West Midlands Region
Lou Tisdale

The WM region (at the time of writing) has 24 members. In August we held a Microsoft Teams afternoon meeting, on the theme of best practice in acute post operative physiotherapy to support improving outpatient outcomes. Using the 2016 Clinical Guidelines for the Pre and Post Operative Physiotherapy Management of Adults with Lower Limb Amputations as our headlines, individuals fed back any learning from papers they had reviewed with content relevant to outcomes of inpatient post op physiotherapy. 10 members participated – 8 papers reviewed and the Guideline document. There was good feedback from the discussion. The group shared documents of interest after the meeting because of discussions that we had had.

A WM member agreed to submit an article to the Autumn Journal, the programme for the BACPAR programme at VS ASM was discussed as well as the plan to carry out a residual limb quality audit within the region.

We plan to meet in Wolverhampton in January 2023, our first face to face meeting as a BACPAR region since February 2020.

Trent Region
Peter Robinson

The current membership sits at 21 and I calculated the Trent region covers approximately 6,400 square miles which includes 6 counties.

Our last meeting was held virtually via Microsoft Teams in August. This was our first meeting since I took over the reins of running the group. The region has had various pressures across the board with staffing, workload and acute demands still prevalent. There has also been a number of staffing changes with two retirements and several other movements in job role/location.

Our next meeting date and topics for discussion are yet to be decided but as a group we aim to develop a focused direction of learning and development as our members settle into various new roles over the coming months.

East Anglia Region
Jess Withpetersen

We continue to meet virtually within the region. It works for the few members we have that are spread over a large geographical area. We have had a full meeting twice a year and two further support meetings. The last full meeting was on 28 March. We discussed PPAM Aid protocol, specifically the debate of compression under the PPAM aid. We also had feedback from projects taking place across the region.

We are currently undertaking Kenevo app training across the region.

Our next meeting is on 26 September, and we will discuss our training plans for the following year. This meeting will be virtual, but we are looking forward to starting to meet face to face with the option to also join virtually.

IRELAND
Carolyn Wilson, Ireland Region Rep

BACPAR members in Ireland have had a busy 6 months. We are pleased to have 2 new members from the South of Ireland added to our small regional group.

At the Regional Amputee Rehabilitation Centre, we have been involved in a quality improvement project for the last 2 years which was completed in May. We were delighted when our presentation, 'Improving Lower Limb Amputee's Confidence Using a Prosthesis in their home' won the award for the best project!

On 12th September we enjoyed an energetic 'teach your amputee to run' session with Rachel Humpherson from Ossur.

For the first time since COVID, we are planning a regional amputee update training day for community staff in November and are already well over subscribed. We look forward to reforging these important links with non-specialist staff throughout all the Trusts in Northern Ireland.

After many happy years on the BACPAR Executive Committee, it is time for me to 'hang up my hat' as the Ireland regional representative. I am handing the reins over to Helen Brannigan who also works in prosthetic rehabilitation in Belfast.

BACPAR COMMITTEE ROLES UP FOR ELECTION AT THIS YEAR'S AGM

The following roles are up for election at the 2022 BACPAR AGM in November. Look out for more information by email about how to make nominations or contact the current post holders.

The Executive committee meets twice a year (March and September) and as a committee member you would be expected to attend at least one of these meetings (expenses paid) which have been held in London andBirmingham for the last few years. Recently we have had to hold hybrid meetings depending on venue size and other circumstances. Shown here is the recent Exec Committee meeting: a group at CSP HQ in London, a group at OSSUR Manchester and others at home and work.

Email Wendy on bacpar.secretary@gmail.com with any nominations and the name of seconder prior to the AGM.

Membership Secretary: Currently this is Lynsey Matthews who has now completed her two terms of office

- To manage all aspects of memberships including;
- Respond to enquiries about membership
- Facilitate Members applications via website
- Keep records of paid up members that meet with CSP on-going governance requirements
- Liaise with the treasurer on financial aspects
- Ensure that the holding and data meets data protection requirements
- Liaise with PRO / SM concerning membership in closed Facebook group

The membership secretary will also undertake the role of **Equity Officer:**

- To ensure that discrimination, harassment or victimisation in relation to any of the protected characteristics covered under the Equality Act does not occur and that equality, diversity and belonging are valued and upheld within the activities of BACPAR
- The equity officer should know or have access to current legislation and CSP guidance, and to keep the executive committee up to date with any emerging

Public Relations Officer: This is currently Hayley Crane who has completed her two terms of office.

The PRO has an important role in promoting the activity of the group to its members, the profession and to the public.

This is mainly to increase awareness and understanding of Physiotherapy in relation to amputee rehabilitation

To work with the CSP media relations officers to help to respond to enquiries from journalists relating to the group's area of expertise.

- To respond to enquiries via the BACPAR website from professionals and members of the public
- To promote the activity of the group e.g. letting the professional press know about meetings, the new executive committee, the work the group is doing; research, conferences and guidelines.
- To promote the role of the group to the public
- To speak to or arrange for someone else to speak to the press on issues relevant to the group. Ideally CSP Media Training should be undertaken at the earliest opportunity.
- To be responsible for any material on display at meetings and other events.
- To manage the BACPAR stand and its content: Maintaining appropriate content, liaising with members requesting use of the stand at events re appropriate type and quantity of material and arranging carriage of the stand to and from events.
- Liaises with external organisations and companies: for donations, stand spaces etc.
- In collaboration with the CSP, liaising with external research organisations for example NICE. Disseminating NICE documents for consultation, which are relevant to amputee rehabilitation, to members and collating responses to feedback.
- BACPAR website is moderated by the PRO and the Chair
- With the Vice Chair represents BACPAR on Vascular Society Council

Journal Officer: Mary Jane Cole is retiring from the committee after over 20 years in various roles. Joint Officer Sue Lein is looking for someone to join the journal team. This role is to plan, organise and collate content for the bi-annual journal and includes liaising with advertisers, the formatter, printer and membership secretary.

We are also looking for volunteers for a new Journal Sub Editorial Board – see page 34 for more information.

EDUCATION REPORT – AUTUMN 2022

Kimberley Fairer and Grace Ferguson, Education Officers bacpar.education@gmail.com

So, it has been a while since the last education report, apologies! There have been several changes in the structure of the education team and obviously the impact of Covid-19 cannot be ignored. This meant that a lot of current and existing projects were put on hold, whilst the education officers, as many of our colleagues, were pulled into clinical support in a range of other areas.

Firstly, we would like to thank Adam El-Sayed and Sarah Bradbury who were in education officers' roles until November 2020. Additionally, a huge thank you to Midhat Adnan, who took on a joint role between November 2020 & 2021. Midhat has also completed a huge amount of work on a project with Humanity and Inclusion; this is still ongoing, and we hope to give a full update in a later report. Currently, we are working on several tasks in the background, with support from members and other executive officers.

The main task is the updating of the Student Education Guidelines, as due to assorted reasons this has not been done since Mary Jane updated them a few years ago. Following the change in the name, the executive team reviewed the document wording at the last meeting, to ensure we are using the correct language and terminology. Following this Grace and I have met with Karen Clark and Peter Ross to discuss updates and changes to the document. Karen works as a specialist physiotherapist at Royal Derby Hospital and has been involved in guideline updates recently. Peter is an experienced clinician and a senior lecturer at University of Hertfordshire; he also previously worked on the previous education guidelines update.

There are still several small tasks to complete to fully update and review the document to bring it up to date. This will require a little more scoping across teams and peers who work with students and supporting placements, so look out for emails or posts requesting information, if you would like to be involved.

The other key role of the education officers is to review applications for bursaries. I have compiled a summary of the bursaries we have provided and what these have been towards. The requirements for applications are included in the guidance on the BACPAR website, please look at these or get in contact if you are interested but unsure if your application would meet criteria.

Summary of bursaries and use
In the past 12 months we have awarded:
3 x postgraduate bursaries – towards MSc Level modules
1 x CPD Bursary to support attendance at BACPAR / VSAGM conference 2022

Other activities that fall under the 'Education" roles include supporting regional reps to provide study days, conferences and engaging the networks in guideline updates. So, there are so many things going on, we cannot list all of them here. However, hopefully by next journal there will be some pieces about the regional study days and lots of content from this year's conference.

I want to say a final huge thank you to all the members who are pushing on with projects, study days and supporting the 'education' of each of us with these opportunities.

BACPAR RESEARCH OFFICERS' UPDATE SEPTEMBER 2022

Lauren Young and Miranda Asher, BACPAR Research Officers

Research Bursary – available to BACPAR members
Are you doing some research, thinking about doing some research, planning for some research? The bursary might be just what you need to help you along.

BACPAR has a research bursary pot of £3000 per annum: members can apply for financial support for research costs, research related costs, costs associated with projects that are relevant to developing physiotherapy practice in the field of amputation or prosthetic rehabilitation. But even if you aren't quite ready to start the research, the bursary might help cover costs while you write your research proposal.

It is open to members who have been with BACPAR for two years or more and can be applied for through a simple form found on BACPAR website, along with all criteria and guidance to complete this. Then send it to the Research Officers, who will review it and let you know if there is any extra information they need, and then take it forward to the Exec meeting in March for approval. If the applicant is successful, you must agree to write/present an update on their project for BACPAR Journal/Conference and keep us updated on your project.

In the past year, we have awarded bursary support to extract and review the data from the SPARG database from the period of 2020-2021: these findings will be published and made available to BACPAR members. Those who have been offered a poster slot at the upcoming Vascular Society's ASM (Annual Science Meeting) with BACPAR are eligible for bursaries to support printing of their posters and we welcome further applications at any time.

Update on Research Supported by BACPAR
Over the last year, there have been a number of requests sent to the BACPAR Research Officers to assist with recruitment for MSc projects and other studies. The reason we support these is that research is the best method of ensuring our services and methods are evolving and improving for us to offer the best services we can for ourselves as well as patients. It's really worth taking part in research whenever you can as recruitment is such a difficult part of a researcher's role.

If you receive an invitation to participate and feel that you need more information or find something that you wish was included in the invitation to make it clearer or more enticing to you then please let one of the research officers or any member of the committee know, or write to the journal. We are keen to get feedback to improve engagement and the experience for everyone.

If you are a researcher or have seen a great piece of research that needs clinicians' input, then point them towards **Bacpar.research@gmail.com** or on social media share through **@BACPAR_official** so we can share. We will ask you for a brief outline of the study or research proposal, participant information sheet, and any deadlines. When we get requests, we consider the research proposal and participant information sheet to ensure that the request is legitimate, of significance to BACPAR members and encouraging discussion within an area that is not already oversaturated. If research requests are comparable, the research officers will work with the applicants and their tutors to try and identify a unique angle of research, thereby reducing the number of participation requests to the membership for similar studies.

In the last 12 months, Chantel Ostler has successfully published a narrative review exploring outcome measurement in prosthetic rehabilitation, the results of which have been shared with the BACPAR membership. This project forms part of Chantel's PhD at the University of Southampton which aims to develop a core outcome set for patients recovering from major lower-limb amputation.

Eleni Tsafantaki (a physiotherapist and MSc student at the University of Brighton) is undertaking a qualitative study to explore how COVID-19 has impacted on Vascular Rehabilitation Services and whether it has changed the way that Allied Health Professionals work. With support from BACPAR to assist with recruitment, Eleni has completed semi-structured interviews with participants and is progressing with data analysis.

Taking a different stance on the impact of COVID-19, Jennifer Fernandes (a physiotherapist and MSc student at the University of Southampton) is exploring the experiences of healthcare professionals working in primary lower-limb prosthetic rehabilitation during the pandemic. This study encompassed both private and NHS settings and involved a variety of multidisciplinary team members, including prosthetists and physiotherapists. Jennifer has fully recruited to her study and is in the process of data analysis.

Jason Robinson (a physiotherapist and MSc student at the University of Southampton) also submitted a request to the research officers for assistance with recruitment from the BACPAR membership for his study. Jason is aiming to explore the attitudes, experiences, and use of strength and conditioning training by specialist physiotherapists with lower-limb prosthetic users. Jason has successfully recruited participants from the membership, conducted semi-structured interviews and is in the process of undertaking data analysis.

Matilda Hanjari (a PhD student at De Montfort University) is undertaking a study exploring how religion and culture shapes perceptions, experiences, and practices of the disposal of amputated limbs in the UK. She is in the initial stages of her project and BACPAR has assisted with recruitment for interviews.

What's happening with other research previously supported by BACPAR and how can members get involved?
The Perceive Study by Dave Banquet et al has published its first paper looking at clinician's accuracy in predicting short term mortality and morbidity, and the second paper looking at longer term prosthetic use success will be out in the near future.

At Hull University Natalie Vanicek et al published the STEPFORWARD feasibility study and Natalie is now applying for funding of a full randomised controlled trial to explore the effectiveness and cost-effectiveness of a self-aligning prosthetic ankle-foot compared to a standard prosthetic ankle-foot. ***She is looking for additional limb centre sites to support the trial.***

The PPAM Aid guidelines have been reviewed and updated by Fiona Davie-smith and Julia Lee whilst Mairi Ross has published updated guidelines on intermittent claudication. ***These are available to BACPAR members on the website.***

The previous research officers at BACPAR, Chantel Ostler and Fiona Davie-Smith, have established the Amputation Rehabilitation Research Network (ARRN), an initiative set up to promote and share research, provide networking opportunities, and provide peer support within the field of amputation rehabilitation research. This network has been key in identifying upcoming projects that may be of interest to BACPAR members, supporting recruitment to studies, and sharing knowledge. Within this network, multiple projects have been identified that will be of relevance to membership following completion. ***If you are looking for support in getting into research or expanding your current activities the monthly meetings are open to all.***

The Vascular Society, which is partnered with BACPAR for their ASM, has launched its own scientific journal. They are keen to support high quality work that may otherwise be excluded from bigger journals as it is considered too niche or from a smaller cohort etc., Scientific articles are peer reviewed but there are also opportunities for editorials, case studies and other forms of articles. ***If you are researching anything related to vascular health, then articles can be submitted directly to the journal.***

The MSc programme in Amputation and Prosthetic Rehabilitation at the University of Southampton continues to develop, and this year Tim Randall and Lauren Young, were part of the first cohort to successfully graduate. ***If you would like more information about the programme, then please do not hesitate to contact the research officers or Maggie Donovan-Hall at the University of Southampton.***

Who are these Research Officers and what do they do?
Lauren and Miranda are two people with a passion for research, so if you have questions, or want to share any exciting new research you have seen, read, heard about, are planning, conducting, or writing then do drop us an email. Research can be daunting if you are new to it and even if we can't help ourselves, we will try and point you in the right direction.

BACPAR ARTICLE CORNER

Welcome to the second series of what we hope will be a regular feature, first seen in Spring 2021!

As before, Rachel Humpherson, our Guidelines Coordinator, has identified some of the most up to date and relevant articles for limb loss rehabilitation including one upper limb article.

We know you are busy so we have done the hard work for you: how can you use them in your, or your team's CPD? Do let us know how you use them, or if you have any comments on them. Go to the e-journal at BACPAR.org for access directly via hyperlinks.

1. **Seth M, Beisheim EH, Pohlig RT, Horne JR, Sarlo FB, Sions JM. Time Since Lower-Limb Amputation: An Important Consideration in Mobility Outcomes. *Am J Phys Med Rehabil*. 2022 Jan 1;101(1):32-39. doi: 10.1097/PHM.0000000000001736. PMID: 34915544; PMCID: PMC8678402.**

   Conclusion: Based on the findings, longer time since amputation (TSAmp) may be associated with better Prosthesis Evaluation Questionnaire–Mobility Subscale score and timed up and go test time, whereas longer TSAmp may be associated with better or worse 10-m walk test speed and 6-min walk test distance depending upon time elapsed since lower-limb amputation. Estimates of postamputation mobility among adults with lower-limb amputation should consider TSAmp.

   To think about: Can you identify in your practice that the value of outcome measures varies throughout the rehabilitation process?

2. **Ostler C, Scott H, Sedki I, Kheng S, Donovan-Hall M, Dickinson A, Metcalf C. From outcome measurement to improving health outcomes after lower limb amputation-A narrative review exploring outcome measurement from a clinical practice perspective. *Prosthet Orthot Int* 2022 Aug 1;46(4):e341-e350. doi: 10.1097/PXR.0000000000000100. Epub 2022 Mar 31. PMID: 35357360.**

   Conclusion: This narrative review takes a broad look at outcome measurement in prosthetic rehabilitation from a clinical perspective and has suggested that successful implementation is complex and multifaceted. Understanding and embedding value at every step may be key to success.

   Measuring the outcome of interventions is important to understand the impact on patients and the performance of services. However, it is more than just selecting an OM. Clinically, there is a need to understand the "why", "what", and "how" of outcome measurement. "Why" measure, that is, to inform at the individual or system level, "what" domains to measure, that is, capturing outcome domains that are meaningful, and "how" to measure them, that is, the best tools for the job used in a systematic way that adds value to clinical practice.

   To think about: How do you address the "why", "what" and "how" when you use OMs in your clinical practice? What future work could be done to further this research?

3. **Strelec, Juliana PT, DPT; Akeju, Oluropo A. BSc, PT; Gras, Laura Z. PT, DPT, DSc, GCS. Rehabilitation Program Using Short Prostheses after Bilateral Transfemoral Amputation: A Case Report. *Journal of Prosthetics and Orthotics*: July 2021 – Volume 33 – Issue 3 – p 234-240**

   Conclusion: This case report describes the physical therapy interventions for a 72 year old male subject in subacute rehabilitation after a bilateral transfemoral amputation secondary to peripheral vascular disease.

   There is little information in the literature on progressing exercise programs in individuals with bilateral transfemoral amputation. Physical therapists may wish to consider the interventions described in this case when designing programs for in individuals with bilateral transfemoral amputation

   To think about: Why not get the whole article and examine the details of the programme? Does it give you some new ideas – or challenge your practice?

4. **MacEachen VB, Davie-Smith F, Carse B. Comparison of patient-reported and functional outcomes after transition from traditional upper limb prosthetics to multiarticulating hands in the user with a unilateral transradial amputation. *Prosthet Orthot Int*. 2022 Jul 8. doi: 10.1097/PXR.0000000000000166. Epub ahead of print. PMID: 35833739**

   Conclusion: The evidence clearly supports continued provision of MAHs to this group of moderate users: the more function the user achieves, the less of a disability they perceive to have.

   To think about: How much do you know about upper limb prosthetics? Are the results as you would have expected? How might this compare in lower limb prosthetics?

5. **Sadowski, Piotr Karol BSc; Battista, Simone MSc; Leuzzi, Gaia MSc; Sansone, Lucia Grazia MSc; Testa, Marco PhD. Low Back Pain in People with Lower Limb Amputation: A Cross-sectional Study. *Spine*: August 3, 2022 – Volume – Issue – 10.1097/BRS.0000000000004422**

   Conclusion: The prevalence of LBP in lower limb amputees appears to be higher than in the general population, with similar levels of pain intensity and frequency. The highest percentage of people with a sedentary lifestyle not practising any kind of sports emphasises the importance of educating this population on the importance of physical activity. New strategies to invest in the education of this population in terms of physical activity are needed.

   To think about: Do you see a lot of LBP among your patients? How could you increase the education you give regarding physical activity? What resources are available locally to support this?

IMPLEMENTING THE 'LIFE THREADS MODEL'

Hayley Freeman, Senior Physiotherapist, Gillingham Disability Services Centre, Kent

University of Southampton

Following our feature in Spring 2022 about the MSc Module 'Amputation Rehabilitation and Prosthetic Use' at the University of Southampton, current student Hayley Freeman has shared an example of a reflective assignment completed as part of her studies. With thanks to Maggie Donovan-Hall (course lead) for her feedback and advice.

Due to my clinical experience in working with limb absence, I am very aware of the importance of treating a patient as a whole person, rather than just addressing the physical aspects of their rehabilitation. However, I struggle to encourage a patient to discuss their true feelings and emotions, especially initiating the conversation. It was during one of my MSc taught sessions that I had an exciting light bulb moment and have decided to reflect on this experience and how I have taken this into clinical practice. I have decided to reflect on this event using the Gibbs Cycle of Reflection (Gibbs, 1988., Mulder, 2018) as I felt this cycle offered a good, structured approach to base my experiences on and gave me the best opportunities to reflect and evaluate my responses at a deeper level. I have discussed the first two stages of the model, 'Description' and 'Feelings', combined and then followed on with the rest of the model consecutively. See Figure 1.

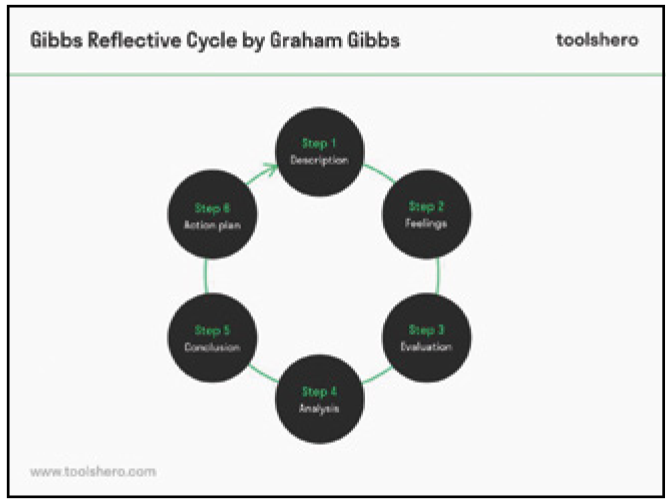


Figure 1: Gibbs Cycle of Reflection

During a taught session discussing Vocational Rehabilitation following limb loss, the lecturer introduced us all to a concept called 'Life Threads Model'. I was not familiar with this concept, however, it really engaged me and I could really relate to the visual metaphor. The 'Life Threads Model' was designed by Ellis-Hill et al (2008) to help identify the sense of past and future life, using visual cues of a rope to discuss their life journey as a transitional one. The model explains that following traumatic experiences, the rope can fray and break e.g. job roles can no longer be fulfilled, or home-life roles change due to a newly acquired disability, both commonly seen in my experience with people following limb loss. See Figure 2.

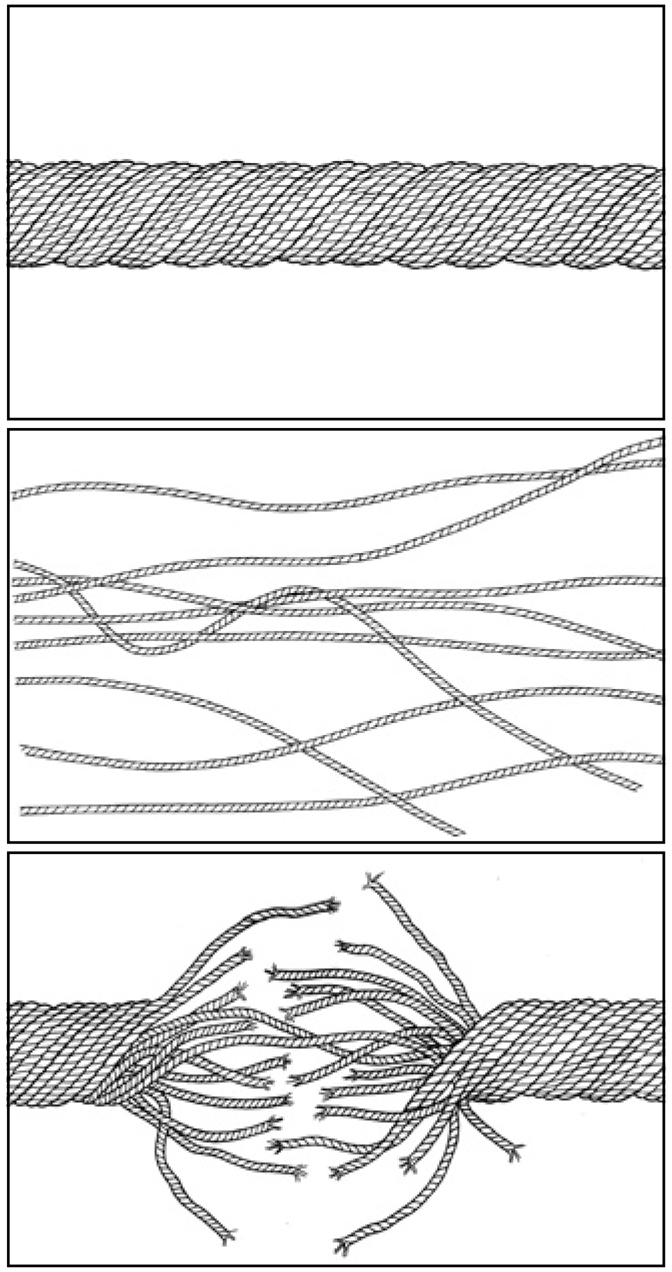


Figure 2: Life thread model metaphor (Ellis-Hill, 2008)

Although I could not find any research related directly to someone following limb loss, I felt this principle is very adaptable to any situation following a change in someone's life and I was excited to utilise this metaphor as an adjunct to therapy. I could imagine myself using this model with patients when trying to discuss their emotional response to their amputation and how this has affected their life journey and psychosocial response along with their physical needs.

After researching this model, I decided to trial it with a patient that I have seen regularly and I feel this lady trusts me. For the benefit of this essay I will refer to this lady as Mrs A. I was apprehensive about trialling this with Mrs A in case she felt it was a waste of her treatment time and not successful when I was so excited about having a potentially new adjunct to use in my physiotherapy tool kit! I chose Mrs A as my first patient to use this model as I felt she could benefit from exploring her sense of loss further and hoped it would help her view her limb loss as a transitional journey rather than the abrupt end to her previous life that she has expressed before and consider previously declined counselling.

The session went as well as I had hoped. I was honest with her that it was my first time using this method, which I actually found quite hard to admit to a patient as I always wanted to come across professional, experienced and an expert in their care; however, Mrs A expressed that she felt "privileged" to have been chosen and was really engaging in the process. This really surprised me as I used to think patients wanted me to be the expert and guide them on their rehabilitation journey but suddenly we were no longer necessarily 'physiotherapist' and 'patient' but perceived more as peers in this moment. This was a very new concept for me but an enlightening one; realising that I do not always have to be the expert and some patients may respond better to feeling equal as opposed to a patient.

During the session I explained to Mrs A the theory behind this new Model and used visual cues of the ropes to discuss her ever changing journey of life. I practised different leading questions before the session to help the discussion flow, once again wanting to be prepared, however during the treatment session she was very forthcoming with information and our conversations were actually guided by her responses to my initial open question. At the end of the discussion, we came up with an action plan for Mrs A to consider. This did not actually involve counselling but seeking and attending support groups alongside suggestions to reintroduce certain home activities that she could share with her husband. She also discussed how she had forgotten how much she enjoyed certain social activities, like going to the cinema with her grandchildren. It was lovely to watch Mrs A remember and talk about her previous enjoyments; her face lit up with her happy memories. I felt really pleased that I had been able to evoke those positive memories and sheer happiness for her.

Encouraging a patient to look back at their past was my only hesitation when considering using this model, as I have always been quite cautious when asking a patient to discuss their past activities of enjoyment in case they found reflecting on their past abilities too difficult to cope with and feared it would be a negative exercise for them. I am a very optimistic and encouraging person and try to express this during my treatment sessions, however I am not as confident at dealing with patients who have a lot of depressive symptoms and try to avoid taking my patients down this route if I can. This Model enabled me to discuss these past activities/ enjoyments with a positive approach; how they can transition along with the patient's rope journey and adapt to their current ability. This is a new skill for me and I have since used this transitional rope journey with other patients who are struggling to adapt or view their limb loss as a transitional journey.

On evaluation of this reflection, I became more aware that I adapted my terminology used in response to Mrs A's non-verbal cues. I initially used the phrase "following your surgery, certain threads have been cut" however, Mrs A grimaced and withdrew (leant back) in response to this. I think the word 'cut' was too harsh and possibly had a negative association with her limb being cut off. Connotations of the word 'cut' are very final and suggest there is no way back. Although some could justify that this mimics amputation, the 'Life Ropes Method' discusses the importance of the 'transitional journey' view, with change and adaptation but a patient's life journey doesn't 'end' because of this change. Mrs A's reaction really did make me consider the terminology I was using, and it actually made me feel sick with regret and remorse that I evoked that emotion in her. I quickly adapted to using the words 'frayed', 'torn' or 'fragmented' when referring to the rope being 'cut', and it has also made me think more about general terminology that I use during treatment sessions and what emotions words/phrases can evoke.

I also found it hard to take notes and keep eye contact at the same time and worried I appeared disengaged throughout the session so I ended up just listening and not writing any notes. This was frustrating when writing up my actual notes as we discussed a lot of information and I feared I missed some key discussion points. I did later consider asking permission to record the session but worried they may feel like it was an invasion in their privacy and wonder if patients would be more elusive if they were being recorded. I have since used this model again and used post-it notes to record different points we were discussing and laid them out in front of the patient for them to be involved in too – this patient was really receptive to this and enjoyed seeing the key discussion points in front of them; they actually took a photo of them for their own reference and reading back over. This act of taking the photo by the patient made me feel really happy and confirmed the session had been a success. This is definitely a method I will use again for the benefit of my patient and my note taking later.

Furthermore, I was surprised about how open Mrs A had become after just a couple of questions. She disclosed some very serious events in her life that I was not aware of, and I felt very fortunate that she felt comfortable to talk about this with me. Interestingly she expressed how she has had similar emotions of loss and losing her role in society due to grief following her amputation as well as when she lost a child during childbirth. Although I was initially quite taken aback by the depth of emotions she was expressing, I felt I was sympathetic and listened to her, discussing how she was able to deal with these emotions in the past and we discussed how she can put the same coping strategies into action again.

On analysis, for me, the most significant learning happened when Mrs A spoke in depth about her previous grief. Previously, I would probably have provided comfort but then distracted quickly with something else, however, I felt comfortable listening to Mrs A and did not feel the need to brush over this topic as I had the model to guide me. Following on from this, I felt I was respectful and using my listening skills was able to use her previous coping strategies and adapt them for now; a new skill that I will definitely be using again. Although her initial goal of introducing counselling was not met, I feel her new confidence and personal goals are more appropriate for her at this point of her transitional journey, and made me realise that this is not a failure on my part but just that her rehabilitation journey is following a different rope path.

In conclusion, having applied this model and reflected on my approach, I now feel confident to use this with other patients to discuss past events and their life journey, and not be hesitant like before. This knowledge will be essential to me as a practitioner to continue to treat patients following limb loss as a whole person, considering their past and present life journey to create more relevant patient led goals.

Following on from this reflection, my action plan involves being more aware of how my chosen words can have a negative effect on patients. I now make a conscious effort to think before I speak more! After reflecting on the success of this model's use I am planning to involve patients' family members in a follow up discussion. Both patients were keen to discuss this with their partners as involving the patient's social support will provide an even deeper, more meaningful response to the topics discussed and inclusion in the goal setting too. Further developing my own communication skills and providing more meaningful treatment sessions for my patients.

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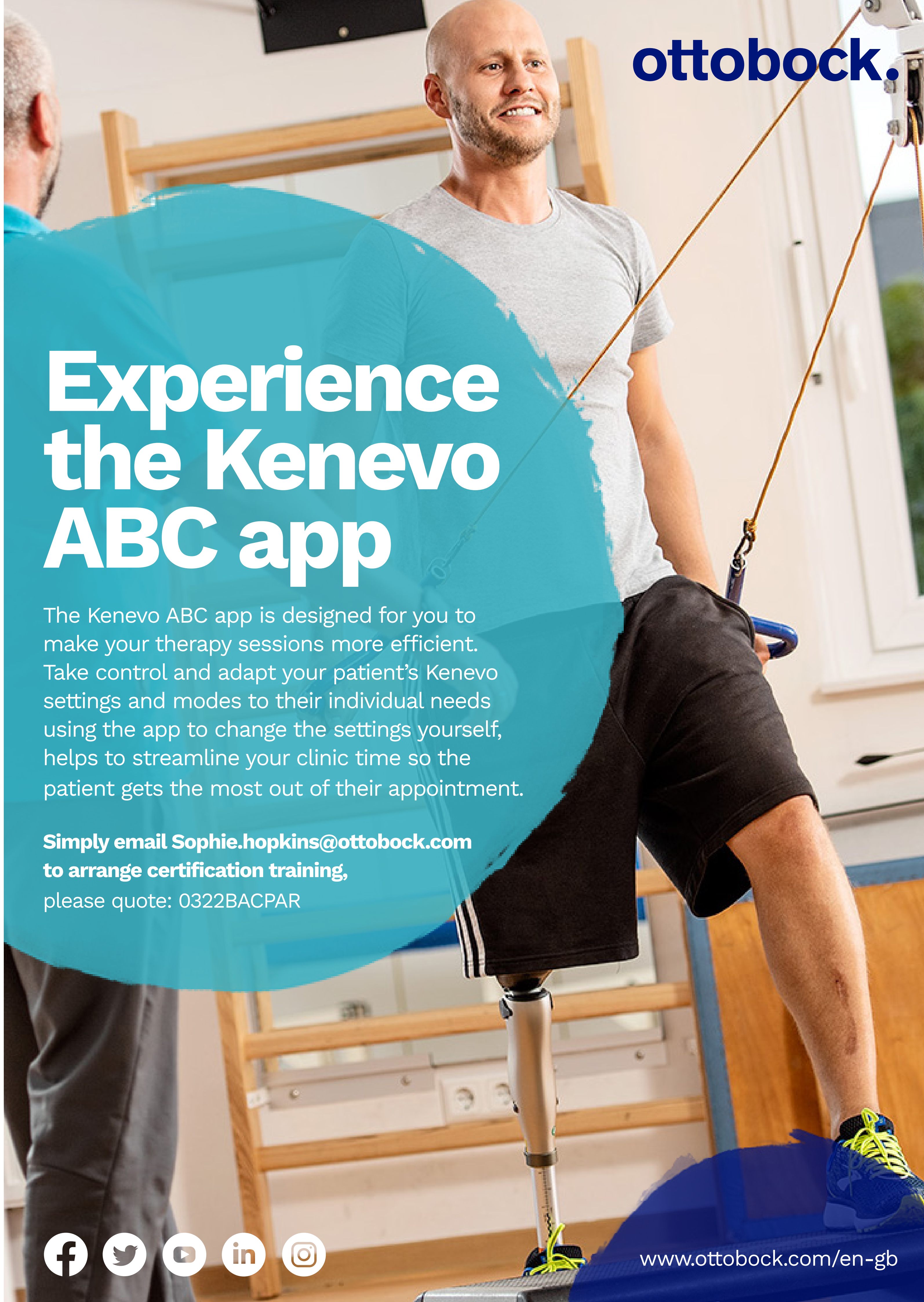

EXPERIENCE OF A PART-TIME STUDENT AT LONDON SOUTHBANK UNIVERSITY COMPLETING THE MODULE 'CARE OF THE VASCULAR PATIENT'

Kimberley Fairer, Physiotherapy Team Lead, Vascular and Emergency Surgery, Oxford University Hospitals NHS Foundation Trust

EST 1892 LSBU

University of Southampton

Introduction

I am a physiotherapist working in the John Radcliffe Hospital, where I have worked for 5 years. Prior to this I worked in Torbay and South Devon. My role includes working across wards covering several acute surgical specialities, mostly urgent and emergency. My main interest is in vascular disease and surgery, looking into acute rehab, long term health promotion and prehabilitation.

I am currently undertaking the MSc in Amputation and Prosthetic Rehabilitation at the University of Southampton (UoS), part-time. I had undertaken the first two modules as CPD and decided to take the plunge and enrol in 2021. I was able to do this with support from my manager, colleagues and obviously the course leads at UoS.

Why?

Following completion of the essential modules at UoS, I was looking into the optional modules that UoS allow you to choose from. I was looking for something more specific to my role and workplace, to develop more knowledge about vascular pathologies to improve my clinical practice and share amongst my team. I am hoping to eventually develop into an ACP (Advanced Clinical Practitioner) style role and felt that I needed more teaching and development on the wider vascular assessments, conditions, and treatments. The course at London South Bank University (LSBU) had been suggested by a nursing colleague and after some investigation and discussions with Maggie Donovan-Hall at UoS (course lead), I decided to complete the module at LSBU, and transfer the credits over as this was better for my own professional and clinical development overall.

What?

Course Title: Care of the Vascular Patient
Level: Can be level 6 or 7, I completed 7 as needed for the credits.
University: London Southbank University
Course Leads: Louise Allen and Siobhan Mclernon
Teaching delivery: Combined in-person and MS Teams Lectures
Submission Details: Portfolio of work-based competencies and a presentation.

Positives

The course is open to all clinicians and so you get to meet, network, and learn from a wide range of roles. As the only vascular specific CPD module available, people from across the country and even as far as Wales and Scotland attended. This meant that there were people from a diverse range of settings and NHS trusts who all have their own experiences and work within their own challenges.

The teaching was delivered both in person and online via teams by a range of clinicians with extensive experience in the care of vascular patients. The delivery also meant that people could attend from home, without extensive travel which obviously can be a barrier to attending courses.

Louise and Siobhan were extremely supportive and would quickly answer questions about anything, especially when it came to the assignments. In addition, they plan a practice day for presentations which I personally found helpful. I felt that it gave us the opportunity to run through the presentation and find the right timing. We also all were able to give peer feedback to each other, which I think really encouraged that supportive comradery.

I was able to use the submission for this module to explore an area I needed to understand better, and it pushed me to do so to a level where I would feel comfortable presenting my learning and findings to others.

The people who kindly supported the teaching were all clearly very focussed on patient care and sharing their knowledge and experience with others. They were also incredibly open to comments and engaged in discussions, empowering the attendees to be more inquisitive and developing more academic questions.

Challenges

This was the first time the course had been delivered in a hybrid format, using both in person and online delivery for teaching. As with any technology there were hiccups along the way, however these were dealt with as best as possible. The main drawback of the hybrid format from my perspective was that a lot of people chose to attend from home. This meant that at times only one or two people were in the lecture theatres. This limits the discussions at times as it can be difficult to engage people on the team's online platform into conversation without some form of chaos with everyone talking over each other.

The only other thing that was lacking, again from my own view, was practical skills such using Dopplers, microfilaments, and practising tests such as Ankle Brachial Pressure Index (ABPI) etc. I know that I learn better from doing, and I am lucky in that I work within an incredibly supportive MDT (Multidisciplinary team) where colleagues allow me to practice these skills. Now, again this may be something affected by the timing and being in the 'Covid-19' unknown period where we are all trying to live with the changes this has brought about. However, it is something I feel would have been beneficial, especially as some attendees may work in less MDT environments and so maybe not have as much access to learning these skills.

Summary

This course is great for anyone who wants to develop their knowledge and understanding of vascular conditions, their treatments and the current guidance or evidence base. It is a good starting point for CPD if you have been out of education for some time, as you could complete this at level 6, or you can look at it to form part of an MSc pathway. The leads are supportive, and the presenters are all very willing to talk further or be contacted if you have questions that are not answered in a teaching session. The submission style is also helpful in terms of professional development, as it's common for career progression to include presenting to others, and this gives that opportunity in a supported environment.

Where to find more details:

Level 6: **https://www.lsbu.ac.uk/study/course-finder/courses?id=114022**
Level 7: **https://www.lsbu.ac.uk/study/course-finder/courses?id=114023**

Funding:

I would not have been able to fund this module without support from the BACPAR postgraduate bursary. See here for the available bursaries: **https://www.bacpar.org/resources/healthcare-professionals-resources/bacpar-bursaries/**
If you would like more information about BACPAR support for funding CPD or post-graduate costs, please contact **bacpar.education@gmail.com**

TOGETHER WE ARE BETTER – A lead prosthetist's view on BACPAR membership

Dawn Crofts, Blatchford's National Clinical Lead for Prosthetics, Maltings Mobility Centre, Wolverhampton

I must start by saying I'm not a physiotherapist, I'm a prosthetist and a new associate member of BACPAR. I work in Wolverhampton as the Clinical Lead Prosthetist and as Blatchford's National Clinical Lead for Prosthetics. I have been aware of BACPAR for many years, having worked alongside many of the members and hearing about the informative conferences over the years.

It was only when I returned to work at Wolverhampton that I met Louise Tisdale who actively promoted BACPAR membership to me. My first question was "Am I allowed to join, I'm not a physiotherapist?" to which she replied "Of course"! I never realised a prosthetist could join; it never crossed my mind to ask.

I have to say I have been impressed with the very reasonable cost of membership, the quality of the journals and the content of the regional meetings. I have been to a few meetings now and I have learned a lot from my physiotherapy colleagues, and they have welcomed my contributions on some of the more technical/product aspects of prosthetics. Reviewing journal articles, enhancing my CPD, it's all good practice and improving MDT working relationships.

Receiving the emails around research and focus groups has been of particular benefit and has introduced me to new colleagues around the country, enabling me to contribute and offer opinions on matters important to me.

I have been singing the praises of BACPAR and have told many of my colleagues about the benefits of joining. It would be great if you could share with your prosthetists and encourage them to join too.

MPK TRIAL AUDIT – A REVIEW OF THE OUTCOME MEASURES USED AT AINTREE

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NHS
Liverpool University Hospitals
NHS Foundation Trust

Introduction

The main advantages of a microprocessor prosthetic knee (MPK) are that it allows a more energy efficient and natural gait. It can adapt to different walking speeds and environments such as uneven terrain and slopes. However, its main benefit is that it has a stumble recovery to prevent the individual from falling and this is the main reason that patients are offered the device through NHS England.

In December 2016 NHS England approved funding for the use of MPKs for patients through the Clinical Commissioning Policy. Patients that meet the criteria set forth by NHS England are allowed to go on a trial once they have a socket that is an optimal fit. (NHS England, 2016)

Method

Based on the above evidence we sought to audit the potential improvements in quality of life in patients following the trial of a Microprocessor Knee (MPK) using outcome measures.

The audit took place between October 2017 and March 2020 and involved 21 patients who were all selected by the MDT as being suitable for the trial as stipulated by NHS England criteria. Patients completed outcome measures on the mechanical knee followed by a 4-week trial on the MPK. Outcome measures were taken again at the end of this period.

Two patients dropped out of the trial: the first patient said that the prosthesis was too heavy, however, they had a very short residual limb; the second patient had worries about their PIP (personal Independence payment) being stopped if their mobility improved due to the MPK. Many patients were fitted with a Plie supplied by Steeper's; however, the C leg and Rheo knees were also used.

We used the mandatory outcome measures as recommended by NHS England:

- 6 MWT (6 Minute Walk Test)
- TUAG (Timed Up and Go)
- RNLI (Reintegration to Normal Living Index)
- PEQ (Prosthetic Evaluation Questionnaire)
- Falls diary

In addition, we used:

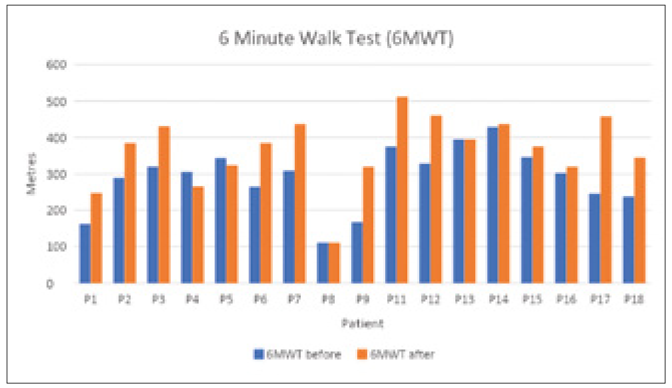
- PCI test (Physiological Cost Index)
- Amp Pro (Amputee Prosthesis)
- ABC (Activities-specific Balance Confidence Scale)
- LCI-5 (Locomotor Capabilities Scale)
- EQ-5D-5L (Euroqual)
- GAS (Goal Attainment Score)
- Video analysis of gait

Results

6 Minute Walk Test

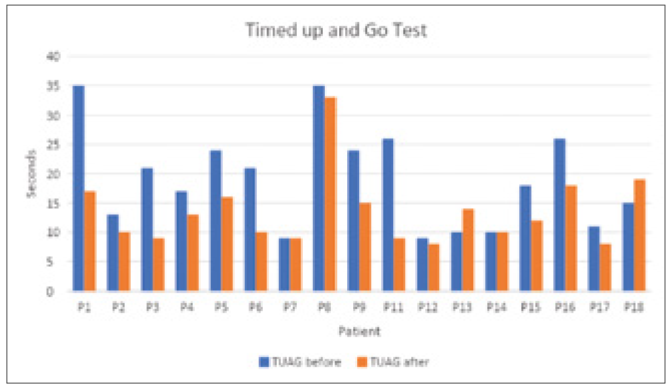
This test is a measure of cadence i.e., the rate at which a person can walk expressed in steps per minute. Average cadence in the general population is 100-115 steps per minute or 1.4m per second. (Healthline.com, 2019) In the audit, 82% of patients showed an improvement on the 6-minute walking test. The average distance walked on the 6-minute walking test with a mechanical knee was 290 metres while the average for microprocessor knees was 365 metres.

One patient with a hip disarticulation, which is known to reduce the efficacy of the MPK (Nowroozi et al, 1983) was removed from the analysis as there was no improvement in distance. Following the 4-week MPK trial, participants were 21% faster than with the standard mechanical prosthesis. Interestingly, the speed achieved was not dissimilar to average normal walking speed in matched populations.



Timed Up and Go

The Timed Up and Go test (TUG) is a test on a patient's ability to stand and walk a 3-metre distance, turn and sit down. Since many patients on the trial are functioning at a high level, the TUG is often not a good outcome measure due to the ceiling effect. The average time for TUG with a mechanical knee was 19 seconds, while the average TUG with microprocessor knees was 13.5 seconds. If the TUG can be done in 12 seconds or less this is an indicator of stability, manoeuvrability and the patient is less likely to fall (Centres for disease control and prevention, 2017). The audit results demonstrate that half of all patients achieved less than 10 seconds indicating patients are more stable, and the risk of falling is less on the MPK .



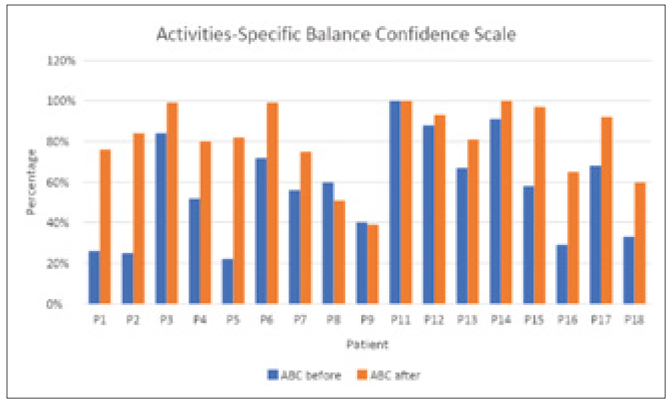
Reintegration to Normal Living Index and Goal Attainment Score

The average score for the Reintegration to Normal Living Index (RNLI) only showed a 10% change over the trial period in the audit. Likewise, the Goal Attainment Score (Gas) showed that most patients achieved a score of 'better than expected' which is only a small improvement. There is an expectation that patients would achieve more of their goals and show improvements in quality of life over a longer period of using the MPK rather than just on a short trial.

Activities-specific Balance Confidence Scale

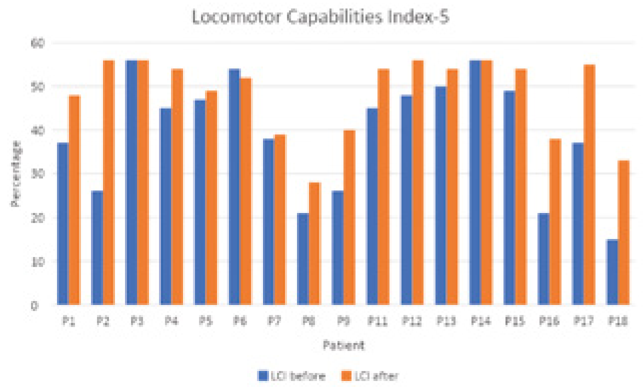
The Activities-specific Balance Confidence (ABC) scale is a self-reported questionnaire developed to assess an individual's balance confidence in performing daily activities. The ABC scale consists of a wide range of challenging daily activities. A score of > 80% indicates high level of functioning; a score of 50%-80% indicates moderate level of functioning and a score of < 50% indicates low levels of functioning. Additionally, a score of < 67% suggests substantial risk of falling (stroke engine, 2020)

On the trial 88% of patients showed an improvement. The average score for ABC with a mechanical knee was 52% while the average for microprocessor knees 80%. On the MPK, four patients rated the balance score between 50-80% which is a moderate level of functioning, and 11 patients rated their level > 80% indicating a higher level of physical functioning.



Locomotor Capabilities Index

The Locomotor Capabilities Index (LCI-5) is a questionnaire used for assessing the ability to do basic and advanced activities of daily living (ADLs) for people with lower-limb amputation. In this test 88% of patients showed an improvement. The LCI-5 test has been shown to have a high ceiling effect and is most useful in low to moderate functioning amputees. The most notable difference in scores in this audit was that patients were able to do things without using elbow crutches or walking sticks; this was noted in 5 patients.



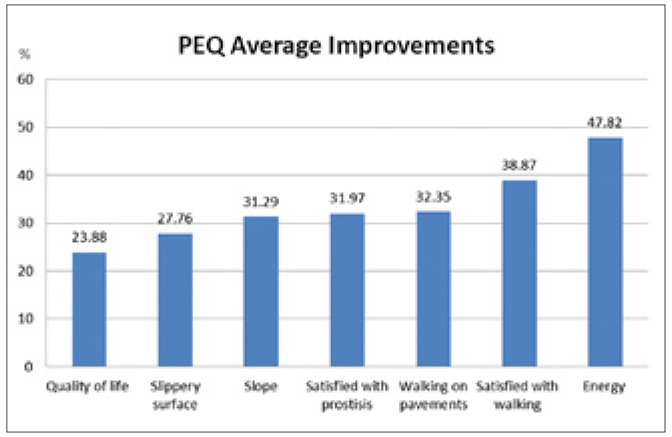
Falls

The reported number of falls dropped significantly during the 4-week trial period on the MPK. The average number of falls with a mechanical knee was 5 while the average for microprocessor knees, 0.33. In this audit there was a 95% reduction in falls on the MPK compared with the mechanical knee.

Prosthetic Evaluation Questionnaire

The Prosthetic Evaluation Questionnaire (PEQ) is a lengthy questionnaire. Therefore, we chose to look at a selection of questions that seemed most relevant, such as how patients felt about walking on slopes and slippery surfaces with an MPK.

This graph demonstrates the patients' self-rated perception of improvement with the MPK measured by percentage. Patients have reported improvements when walking on pavements, slopes and slippery surfaces and using less energy expenditure when using the MPK prosthesis. In general, overall satisfaction with walking ability improved from 52% on the mechanical knee to 91% on the MPK. The Euroqual questionnaire similarly showed improvements in satisfaction with walking.

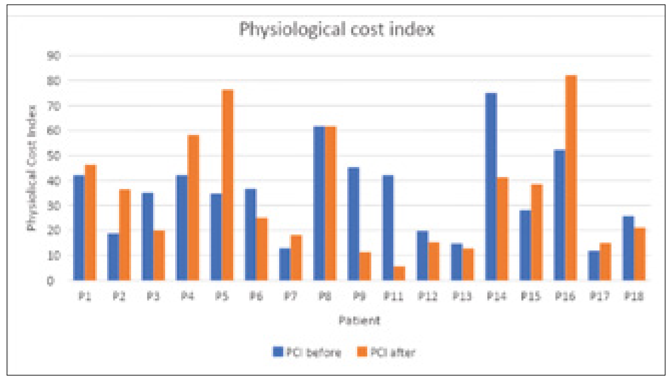


Amputee Prosthesis test

The Amputee Prosthesis test (Amp pro) is a physical test of balance and function. In the trial, very little improvement was noted between the mechanical knee and the microprocessor knee. This is because most patients are already functioning at a high level.

Physiological Cost Index

The physiological cost index (PCI) indicates efficient energy expenditure. There was very little change in the PCI; the average PCI with a mechanical knee was 35 while the average for microprocessor knees, 34. Out of 17 patients, 8 patients showed an improvement, 1 patient showed no improvement, 8 showed an increase in the PCI. There are several possible reasons for this: firstly, some patients put a lot of effort into getting round the circuit faster to aim for a higher score on the 6-minute walk test on the MPK and therefore using considerably more energy than normal. Conversely the second reason is that patients tended to have a more dynamic gait on the MPK.



Summary

In terms of performance, the audit has demonstrated that most patients have increased their walking speed to near normal. Patients reported an improvement in confidence and ability to do more functional activities such as slopes, pavements and slippery surfaces. Perceived energy costs are lower meaning they are using less energy to do activities, but this was not reflected in the PCI scores. Overall satisfaction with their ability to walk and their perceived quality of life has improved. In a telephone follow up patients have reported using less or no walking aids outdoors. In addition, the most benefit from the MPK is safety with much less risk of falls.

Discussion

The 6MWT is an objective measure of cadence and when doing the test I have encouraged patients to walk at their normal pace on both the mechanical knee and the MPK. I know that patients are very aware that they must demonstrate improved speed, and, in some cases, they have really pushed themselves to get around the circuit. This may be why the PCI showed increased effort when on the MPK. It is probably a good idea to have video evidence as a backup as it will demonstrate improved quality of gait.

Patients are often desperate to get the MPK prosthesis and it is sometimes difficult judging how honest patients are when answering questionnaires. Self-reported questionnaires can be difficult to scrutinise as they are subjective and up to the discretion of the patient. As an example, an analysis of the falls diary on the mechanical knee showed that 2 patients reported they each had 16 falls in a 4-week period, which could seem excessive.

One patient who had a hip disarticulation showed minor improvements with the MPK trial. As a result, it was difficult to demonstrate the benefits of the MPK and there is no guidance on cut off criteria. In hindsight, a more thorough investigation on how the MPK was used could have been undertaken. This is possible by analysing the patients step count from the device itself during the time they had it on trial. This may have revealed that the patient was not walking outdoors for any distance and therefore could not make full use of it.

Conclusion and recommendations

The results of the audit have been discussed with the MDT in the limb centre and they have agreed to let me use more meaningful outcome measures. As a result, the Amp Pro will no longer be used as patients are already functioning at a high level and there is little change demonstrated. The Euroqual will no longer be used as it shows similar information to the PEQ but in less detail and the latter is mandatory.

The patients who have taken delivery of the MPK are to be followed up more closely through consultant reviews to see if the benefits of the MPK are long lasting. In addition, it is important that patients are offered the most appropriate MPK and that they are aware that they can trial more than one. Although this has been the case so far, it has been reiterated with the team.

The use of the Kenevo MPK through the NHS MPK policy should be investigated as an alternative for patients at a lower level of function (K2-K3). Currently NHS England stipulates that patients should be at K3 level to fulfil the criteria for the trial.

Patients who are borderline with their objective outcomes such as 6MWT could be investigated further by checking the step count on the MPK device to see if they have made good use of the device whilst on the trial. This could be used as further evidence to support decision making.

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Closed Facebook (BACPAR-Members only) to members is used to promote appropriate content including clinical aspects, research, events, and amputation rehab, encourage active discussions amongst members, and for networking. This page will also utilise questions from the iCSP that are not answered and can encourage discussions directed back to the iCSP network. BACPAR members may join this private page upon confirming membership. Recent posts have included training opportunities, advance notice of Conference, members helping each other out with equipment queries and opportunities to get involved in research.

Official Facebook (BACPAR_Official) is used to promote appropriate content, events and encourage active discussions amongst the public. The BACPAR official Facebook page is public and can be joined by anyone, member or non-member.

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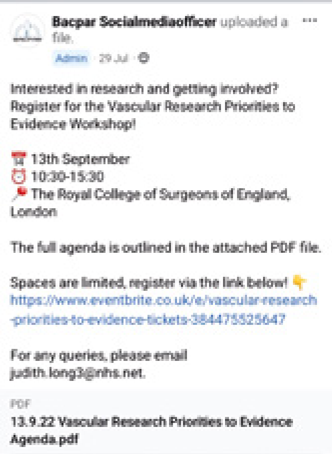
Amputee Rehabilitation iCSP (https://www.csp.org.uk/icsp) is used to promote appropriate content relating to research and clinical amputation rehab. Discussions are also created from other iCSP members, which these will be disseminated within the Facebook 'members only' page to facilitate engagement.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Admin · 29 Jul

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13th September
10:30-15:30
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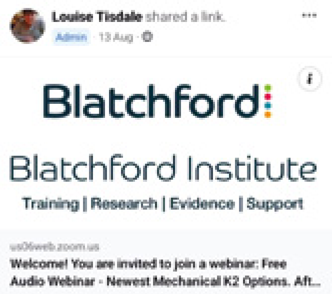
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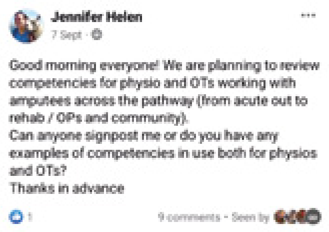
Jennifer Helen
7 Sept

Good morning everyone! We are planning to review competencies for physio and OTs working with amputees across the pathway (from acute out to rehab / OPs and community).
Can anyone signpost me or do you have any examples of competencies in use both for physios and OTs?
Thanks in advance

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INNOVATION IN PRACTICE: THE MOTIVATING STRUCTURED WALKING ACTIVITY IN PEOPLE WITH INTERMITTENT CLAUDICATION (MOSAIC) INTERVENTION

Lindsay M Bearne, Professor of Physiotherapy & Rehabilitation, St George's, University of London

What do we know?

Walking exercise is an effective treatment for people with intermittent claudication caused by Peripheral Arterial Disease (PAD)[1]. International clinical guidance recommends supervised walking exercise at an intensity that induces pain within three–five minutes, for 30–60min/session conducted at least three times per week for three months[2]. Similarly, in the UK, the National Institute for Health and Care Excellence recommends two hours of supervised exercise per week for three months[3].

Unfortunately, provision of supervised exercise therapy is variable and only 48% of UK vascular surgeons have access to supervised exercise therapy[4]. Even when supervised exercise is available, participation tends to be poor[5]. Barriers include transportation difficulties, lack of time, motivation, and costs and this leads to inequity of access to exercise therapy[6, 7].

Home-based exercise interventions are a promising, potentially more accessible, alternative to supervised exercise therapy but evidence for its effectiveness is mixed[8, 9]. Essential intervention components that help people complete walking exercise include their understanding of PAD and their beliefs about walking as a treatment [10, 11]. An individual's confidence and beliefs that they can manage their symptoms, and guidance on appropriate walking dosage and environments are also important [10, 11]. My research team realised that targeting these factors using theory-based, behaviour change principles may be an effective way to help adults with PAD change their walking exercise behaviour.

What we did

First, we interviewed 19 adults with PAD to understand their views and experiences of walking exercise as a treatment. We found that walking was overlooked as a self-management opportunity, regardless of an individual's perception of intermittent claudication as severe or benign. People wanted specific tailored advice about suitable exercise, and how it would affect their symptoms[11]. We identified two psychological models that helped us explain peoples' experiences of PAD and walking exercise called the Common Sense model of Illness Representations and the Theory of Planned Behaviour [12, 13].

The Theory of Planned Behaviour [12] outlines beliefs about treatment as (i) attitudes (i.e. positive or negative evaluations of walking exercise), (ii) subjective norms (i.e. belief that an important person or group of people will approve and support walking exercise) and (iii) perceived behavioural control (i.e. perceived difficulty of completing walking exercise). These factors are associated with an individual's intention, or motivation, to walk.

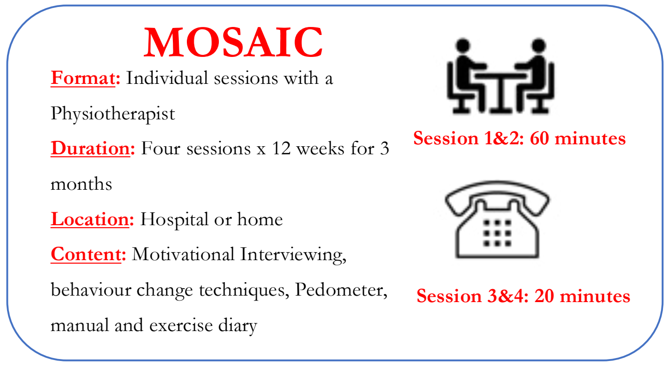
The Common Sense Model of Illness Representations [14] suggests that people try to understand their condition and symptoms, and cope with them in ways that make sense to them. These coping strategies are based on an individual's belief about the illness timeline (i.e. whether it is perceived as an acute or persistent illness, and cyclical condition), consequences (i.e. extent to which the illness is perceived as serious), controllability (i.e. self-efficacy or treatment-efficacy to control or cure the illness) and coherence (i.e. understanding and plausibility of the illness beliefs).

Next, to understand which of these factors influenced walking behaviour in people with PAD, we asked 142 adults to complete the six minute walk test and two psychological questionnaires (Theory of Planned Behaviour[15], Brief Illness Perceptions Questionnaire[16]). We found that people's attitudes to walking, subjective norms and perceived behavioural control (from the Theory of Planned Behaviour) explained almost three quarters (72%) of the variance in peoples' intention/motivation to walk and their intention, treatment control, personal control, coherence and risk factor attributions (from the Common Sense model) explained about one quarter (27%) of people's six minute walk distance[10].

Finally, we conducted a systematic review to identify the relevant behaviour change techniques that could target the factors that influenced walking exercise[17].

We used all this information to develop our new home-based, walking exercise, behaviour change intervention called the MOtivating Structured walking Activity in people with Intermittent Claudication or MOSAIC intervention.

The MOSAIC intervention



MOSAIC

Format: Individual sessions with a Physiotherapist

Duration: Four sessions x 12 weeks for 3 months

Location: Hospital or home

Content: Motivational Interviewing, behaviour change techniques, Pedometer, manual and exercise diary

Session 1&2: 60 minutes

Session 3&4: 20 minutes

Figure 1 The MOtivating Structured walking Activity in people with Intermittent Claudication (MOSAIC) intervention

The MOSAIC intervention comprised two 60-minute, individual, in-person sessions (weeks one and two) and two 20-minute telephone sessions (weeks six and twelve) that were delivered over 3 months[18] (Figure 1). Sessions were delivered by fifteen physiotherapists who were trained to use a motivational interviewing approach guided by behaviour change principles. Each session included mandatory components to help people with PAD develop accurate knowledge about their condition and walking exercise[18]. The content was tailored to each person, and individuals discussed the goals they wanted to achieve by increasing their walking ability, any challenges to walking exercise they may encounter and consider ways to overcome these with their physiotherapist. Walking plans were progressed until individuals could walk for at least 30 minutes per day, at a speed that caused moderate leg symptoms, three times per week[19]. People identified where, when and with whom they would walk[20] and discussed ways to monitor their walking exercise independently (e.g. step count, distance or duration walked). Everyone received a pedometer, and a MOSAIC manual that included an exercise diary. The intervention aimed to motivate participants to start and continue walking exercise independently after the final session.

What we found

We investigated the effect of MOSAIC by conducting a randomised clinical trial in six NHS Trusts in England. 192 participants with PAD and intermittent claudication were enrolled onto the trial and randomised to continue with their usual care or receive MOSAIC in addition to their usual care. At 3 months, we found that the participants who received MOSAIC in addition to usual care had greater 6-Minute Walk Distance (mean group difference: 16.7metres), improved pain-free walking time (30.3 seconds), self-reported walking limitation (assessed by the Walking Estimated Limitation Calculated by History questionnaire), self-reported maximum walking distance and activities of daily living (measured by Nottingham Extended Activities of Daily Living questionnaire) compared to those participants who continued to receive usual care[21].

What do people with Peripheral Arterial Disease think about MOSAIC?

We were keen to understand what people who had completed MOSAIC thought about it and so we interviewed 20 people as part of our trial. They told us that, overall, completing the intervention was a positive experience and that the intervention was acceptable. It helped them learn about walking exercise as a treatment for PAD. They valued working with a knowledgeable physiotherapist whom they considered to be credible and supportive. Interviewees learned self-monitoring skills and their confidence to plan and complete walking exercise independently increased. They found the format and structure of MOSAIC was not burdensome and that they could integrate walking exercise into their everyday life, so it had low opportunity costs. Some interviewees wanted more sessions or feedback to help them maintain their motivation to walk. Most interviewees recognised that MOSAIC and home-based walking exercise had wider benefits beyond increased walking capacity and told us that they were able to do more enjoyable everyday activities and had a better quality of life.

Can MOSAIC be delivered in practice?

It was important to investigate if our new intervention could be delivered well in practice. We looked at whether the physiotherapists delivered MOSAIC as intended (i.e., with fidelity). All MOSAIC sessions delivered by the physiotherapists were audio recorded and we randomly selected 62 tapes to listen to. We evaluated motivational interviewing proficiency using a validated assessment called the Motivational Interviewing Treatment Integrity rating scale (MITI). This scale assessed the interpersonal style of the physiotherapists (relational aspects of motivational interviewing) and the techniques applied (technical aspects of motivational interviewing). We also used a checklist to see if at least 80% of the mandatory components were delivered in each selected session.

We discovered that physiotherapists delivered MOSAIC with fair motivational interviewing technical proficiency in all sessions and fair relational proficiency in the face-to-face sessions but not the telephone sessions. Overall, the physiotherapists delivered most MOSAIC sessions as intended. In fact, in 47 out of the 62 sessions assessed, at least 80% of the mandatory MOSAIC components were delivered (79% fidelity of delivery)[21].

Our MOSAIC physiotherapists told us that they developed new skills from the MOSAIC training and that they enjoyed learning from the training team and from watching and practising skills with their peers. With experience, the physiotherapists gained confidence and proficiency to apply these skills in the MOSAIC sessions. They also used these new skills in their wider clinical practice.

MOSAIC as an innovation in practice
MOSAIC is an effective, home-based, walking exercise behaviour change intervention that can be delivered by physiotherapists in practice. This new intervention could address a gap in service provision for people with PAD. We are thinking about how we can introduce MOSAIC into healthcare facilities in the UK.

If you would like to know more about MOSAIC or want to set up MOSAIC in your hospital – please contact me:

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About the author: Lindsay Bearne is a Professor of Physiotherapy and Rehabilitation at the Population Health Research Institute, St George's, University of London. She is also a Senior Research Fellow in Knowledge Mobilisation at the National Institute for Health and Care Research, United Kingdom.

COMPENSATION CLAIMS AND CATASTROPHIC INJURY – HOW IT AFFECTS PROSTHETIC REHABILITATION DELIVERY

Carolyn Hirons, Clinical Specialist Physiotherapist, Pace Rehabilitation, Bredbury, Cheshire

pace
rehabilitation

My NHS experience 1990 – 2005
Before moving to the private sector, I worked in prosthetic rehabilitation within the NHS for 15 years. This included working in a regional limb centre, on acute vascular wards and outpatients and within the community.

I worked within an extended MDT including a Consultant in Rehabilitation Medicine and a nurse specialist in amputation wounds. Most patients were older with dysvascularity as you would expect. We were a dynamic service, issuing compression socks on day four, starting PPAM Aids on day 6-10 and I was part of the Early Mobilisation Programme (starting prosthetic rehab in the presence of large open wounds), and providing prostheses during an inpatient stay. Patients were seen in group sessions and on a 1:1 basis, and rehabilitation continued into the community. I felt part of a model practice.

Carolyn with Gill Weaver nurse, Manchester Royal Infirmary circa 2003

The funding arrangements between the vascular wards, the regional limb centre and the physiotherapy department seemed woolly and vague, but we were all conscious of using resources wisely, and prescribing components and rehabilitation appropriately.

My first years of private practice
I became employed by Pace Rehabilitation in 2005. It was a very different world. The Prosthetist and I were solely responsible for prescription choices. My caseload was suddenly all trauma related – much younger, more able, more active, of working age, self-funding and more demanding of their prostheses. They were aware of costs and wanted value for money.

All sessions were delivered 1:1 for 60-90 minutes duration. I merrily continued my physiotherapy intervention as in the NHS until my prosthetic boss asked me if I had any funding approved to do that!! That was a big turning point in my understanding of this world. Nothing could be provided without funding agreed.

A further difference which was more immediate clinically was that I had no colleagues for back up so I issued compression socks more cautiously and was more conservative with early socket fitting and wounds. Group sessions were difficult to offer as every person had individual funding, not helped by patients travelling up to three hours for an appointment.

My familiar NHS goalposts changed considerably.

The private practice journey 2005 – 2022
The world of private prosthetic practice 20 years ago was vastly different to how it is now. At this time, no private clinics had therapy provision or a wider MDT; I was the first Physiotherapist in the UK to be directly employed by a private company.

Originally, most patients accessing private prosthetic clinics had a claim that had settled and they were personally approaching a clinic for improved devices that had been described in their expert witness reports. Given the average time for a claim to settle was 5 years, these users were established and motivated, keen to return to work and continue family life. They attended for a few weeks whilst the prosthesis was made and top up physiotherapy was provided.

In 2007, the world of private prosthetic services changed tremendously following the introduction of the Rehabilitation Code.

"The aim of this code is to promote the use of rehabilitation and early intervention in the

compensation process so that the injured person makes the best and quickest possible medical, social, and psychological recovery. This objective applies whatever the severity of the injuries sustained by the claimant. The Code is designed to ensure that the claimant's need for rehabilitation is assessed and addressed as a priority, and that the process of doing so is pursued on a collaborative basis by the claimant's lawyer and the compensator. Therefore, in every case, where rehabilitation is likely to be of benefit, the earliest possible notification to the compensator of the claim and of the need for rehabilitation will be expected".
(**https://www.justice.gov.uk/courts/procedure-rules/civil/contents/form_section_images/pre-action_protocol/injury_claims_pdf_-eps/prot_injury_anx_d.pdf**)

What this meant to private practice is that the patient cohort changed significantly. The caseload remained largely catastrophic injury but referrals now came from lawyers, case managers or insurers. Patients were referred to Pace Rehabilitation at a much earlier stage than before. They needed a full rehabilitation programme and were still in a period of psychological adjustment having been through a very traumatic experience. At this point my caseload became patients at various stages – from one week post amputation to several years. This variance necessitated an MDT approach like the NHS model which is considered best practice. The private business model changed, and our clinics grew.

How does private prosthetic practice work
I gained huge support from Physio First around how to run clinics and fulfil regulatory requirements and I learned that working in the private prosthetic world is nothing like working for Spire or Bupa or having one's own physiotherapy practice. I was now accountable directly to the individual referrers, who came from the world of medical legal compensation claims.

I was no longer consulting with other clinicians but with personal injury lawyers, case managers and insurance claim handlers. They were a different breed to clinicians and had an unfamiliar perspective and rules. Our health service provision fits into their world and not the other way around.

Initially patients are referred for an assessment so that we can provide written recommendations and costs for prosthetic devices and rehabilitation. I learned to plan individual programmes by the hour, including costs of travel to off-site venues and the price of activities, walking aids and compression socks. I then had to stick to that plan. Informing referrers of patient needs, outcomes and costs is a big part of my job as they need individual accountability for every penny spent. Report writing is a key skill to have.

The frustrations
Assessment date to treatment starting can take months whilst funds are negotiated between the referrer and the insurer. Typically, numerous people are involved in this chain, who all must agree and then transfer money between parties. Consequently, it can weeks before funding is received, and clinical activity can commence.

As a clinician our duty of care to patients in the private sector does not change and it is extremely hard knowing someone is in real need of input, but no one will fund it! This can cause delays and interruptions to rehabilitation episodes. I can spend hours justifying what I have recommended when an insurer or defendant solicitor disagrees. It was difficult at first to adjust to solicitors disagreeing with my clinical decisions when it did not suit how they are planning their case. But at the end of the day, they are just doing their job too. Good communication is key.

The patients are the reason we all do our job, and we all modify our sessions to suit the individuals and resources. But I also started to recognise that treatment outcomes were additionally influenced by how far patients travelled, where their head space is post trauma, funding limitations, the control of the legal teams, the length of the claim and the patient's understanding of our role in their health provision and claim process.

Sometimes patients feel 'sent' to us by their legal team rather than coming voluntarily as they did when private practice started. New primary patients need to commit to attending for 12-24 months, not easy if you live a long distance from the clinic. Before their case is settled and they are unaware of costs, there are a fair number of FTA's (fail to attend) which is expensive for the referrers and the business.

Business perspective
It has been a steep learning curve. Pace Rehabilitation is also a business and all clinicians need a commercial awareness. Every clinical decision has an impact on revenue. At the end of the day, we have staff and overheads to pay every month.

Job satisfaction in private practice

Private practice does not work in isolation and I still feel very much part of the whole team; NHS and social teams, patient families and support workers, and local therapists and personal trainers, liaising as required. I like this aspect of amputee rehabilitation.

Day to day, I am able to provide comprehensive rehabilitation. Once we have worked in the clinic setting optimising prosthetic devices and gaining movement control and function, we then play outdoors. You will often find Pace Physios on escalators in shopping centres, on running tracks, on climbing walls, hiking, swimming, horse riding or cycling. It is satisfying and refreshing that patients are funded individually and not compromised by the volume of other people having to share the budget. Being able to spend time with our patients, helping them to understand their role in the rehabilitation process is invaluable.

Another aspect of my job which is hugely rewarding is to work with experienced and enthusiastic colleagues, exploring best practice solutions together and to work jointly in the clinic rooms side by side.

Colleagues during Covid pandemic

Summary
The players in the world of catastrophic injury and clinical negligence have become my new team. They control our rehabilitation services through the funding provision and their time scales but we all work together to optimise the outcome for the injured person.

PACE Locations
7 Bredbury Park Way, Bredbury, Stockport, SK6 2SN
Pace House, Bell Lane Office Village, Little Chalfont,
Amersham, HP6 6FA
603 Helen Street, Glasgow, G51 3AR

JOURNAL SUB-EDITORIAL GROUP

We are looking for 2–3 enthusiastic members to support the work of the Journal officers via a 'sub-editorial board'.

Who is qualified for this? What is entailed?
You! Yes – you! We need hands-on members out there in the real world of practice. Tell us what's happening right now, what particular challenges there are, what new ideas you're hearing about, experiencing etc. Share contacts of people you've heard present at a study day or conference and research/ articles you've read. Is there someone in the world of limb absence rehabilitation you think members would like to hear about?

And we would appreciate some help with proofreading please.

How much time would it involve?
Approximately. 2 one-hour virtual meetings a year as the Spring and Autumn editions are planned and prepared. Plus allow some time for comms between yourselves and the editors, potential contributors and proof-reading.

Who would be there (at this meeting)?
Just the Journal Officer(s) and you, the 'advisory' volunteers.

How would I have to prepare for the meetings?
Jot down any thoughts about possible contributions to the journal and email them to the editors, and bring them to the meetings so we can generate ideas between us.

VASCULAR SOCIETY
The Vascular Society for Great Britain and Ireland

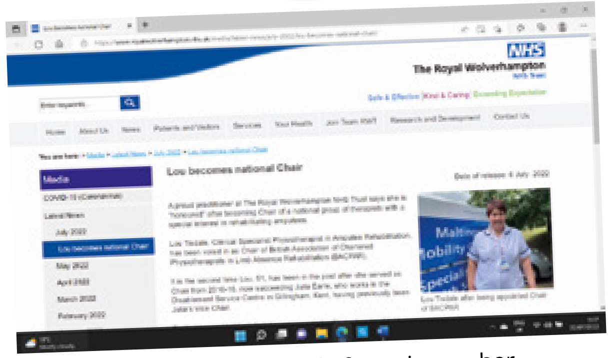
The Vascular Societies of Great Britain and Ireland (VSGBI) have launched an online journal which will be published quarterly (Feb, May, Aug and Nov). This venture is supported by VSGBI's affiliates, including BACPAR with our research officers on the editorial board. The journal is international and peer-reviewed, publishing not only high-quality original research but also case reports, reviews, discussion, and other news to support the vascular community. If you have an article to submit, please visit jvsgbi.com and follow the link for authors to download the submission checklist. For up-to-date information on articles follow them on twitter @ VSjournalGBI.

BACPAR
@BACPAR_official

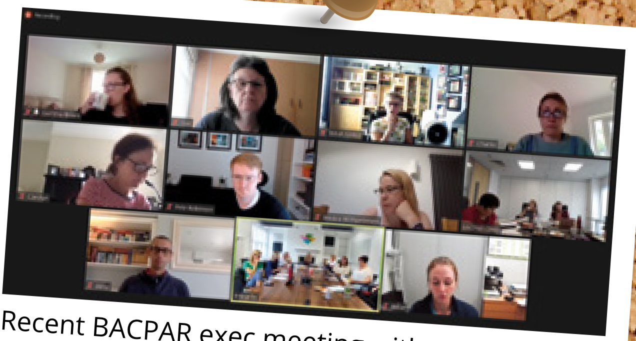
Flippin' Pain are hosting a virtual webinar on phantom limb pain, discussing what it is and ways to manage it.

Thursday 6th October 2022
18:00-19:30

For more information or to register for the event, please visit flippinpain.co.uk/event/phantom-...



It was great to see Lou Tisdale featuring on her Trust's website on her return to the BACPAR Chair role. As usual she flew the flag for BACPAR saying "It's definitely an honour to be Chair of such a highly prestigious organisation within the limb absence rehabilitation community. In terms of the size of our membership – around 240 – we do some pretty special things, despite being relatively small." **https://www.royalwolverhampton.nhs.uk/media/latest-news/july-2022/lou-becomes-national-chair/**



Recent BACPAR exec meeting with committee members joining from CSP headquarters London, Ossur Manchester and home.

NOTICE OF BACPAR AGM 2022

The BACPAR Annual General Meeting will be held on Wednesday 23rd November at 5.00pm as part of our conference programme at the Vascular Societies Annual Scientific Meeting at Hilton Metropole Brighton (Dukes Room, Brighton.

Turn to pages 52 and 53 to see the full BACPAR conference programme, or the full ASM Programme at **https://www.vascularsociety.org.uk/asm/programme_2022.aspx**

As well as Membership Secretary I am also the BACPAR Lead for Equity, Diversity and Belonging.

The CSP produced a new Equity, Diversity and Belonging Strategy in October 2021. With this in mind, we want to be sure that we are representing and supporting all our members. If you need any support, can't access our resources, or have any advice on how we can ensure we are fully inclusive then please get in touch.

Lynsey Matthews
Bacparmembership@gmail.com

(BELATED) CONGRATULATIONS TO 2022 WINTER PARALYMPIC MEDAL WINNER

BACPAR send congratulations to bronze medal winner Ollie Hill for winning Britain's first Paralympic snowboard medal. Ollie has been snowboarding since he was eight and was also a talented motocross rider, but he was involved in a car accident in December 2018 which led to his right leg being amputated below the knee. He joined the GB Snowsport programme in summer 2020. The previous best performance by a GB athlete was in the sport's debut year – 2014 – a fifth place.

The journal is looking for help!

There is an exciting opportunity to join a new Journal Sub-Editorial Group.

See more information on page 34

A REVIEW OF THE 2012 GUIDELINE: EXERCISE INTERVENTION FOR THE TREATMENT OF PATIENTS WITH INTERMITTENT CLAUDICATION

Mairi Ross, Vascular Physiotherapist, Raigmore Hospital, NHS Highland

Intermittent Claudication (IC) is very often one of the first symptoms of peripheral arterial disease (PAD). In 2002 a sub-committee of SPARG (Scottish Physiotherapists Amputee Research Group) was formed to research the role of exercise therapy in patients with IC. This resulted in the original guideline.

This was then reviewed and re-written in 2012. Pre pandemic it was agreed that this guideline should have a further review and update. A small group of three physiotherapists, all with an active role in delivering this service in various formats, agreed to review the guideline. The pandemic then changed the course of all working lives with services suspended, physiotherapists relocated to different teams and in general not a great time for reviewing and rewriting guidelines.

It was evident that face to face meetings were not practical – our group worked in Ayrshire, Lanarkshire and the Highlands and TEAMS meetings were difficult to fit into a busy clinical schedule. Therefore, I made the decision to write the 3rd edition of the guideline myself which was then peer reviewed by my two colleagues.

At the start I was quite overwhelmed with the task and the need to independently critically appraise articles. The Raigmore hospital librarian suggested that rather than looking at the original articles I should initially use a system called Dynamed. This is located within The Knowledge Network which forms part of the NHS Education for Scotland (NES).

Dynamed: a million new research articles are published globally in any given year and hundreds of clinical practice guidelines are also updated. It is impossible for the individual practising clinician to independently keep up with the tides of change. Compounding the challenge is the variable quality of studies, requiring clinicians to not only keep up with what's new and newsworthy, but also to evaluate the trustworthiness of new findings before incorporating them into practice.

Dynamed and a similar system called Up-to-Date were used to research any new evidence for the guideline using PAD, IC and exercise therapy as the search terms.

The 2012 edition was then updated and re-written using the information from the research. The core information has not changed – risk factor modification and lifestyle changes remain an essential part of any treatment programme.

The guideline includes information on the epidemiology of IC, the different areas that claudication can affect and the actual diagnosis. There is a more detailed section on differential diagnoses and risk factor modifications.

From an exercise perspective there remains limited evidence comparing like for like. Most research is based on treadmill walking which is not conducive to treatment within an NHS setting. A treadmill walking program is not cost effective and is heavy on staffing. Supervised exercise classes comprising a variety of exercise stations to work the main muscle groups of the legs, arm exercises to improve the cardiovascular system and walking, are a cost-effective method of treating a group of patients with one staff member.

Within the guideline there is an example of a patient journey with IC at NHS Highland which includes the initial assessment, delivery of the exercise programme and the treadmill outcome measures used.

Included in the appendices of the guideline are outcome measures for IC and the exercise programmes that are used in NHS Highland.

This is a comprehensive up-to-date guideline which will enable physiotherapists to start similar services across the country.

THE EFFECT OF POST-ACUTE INPATIENT REHABILITATION COMPARED WITH TRADITIONAL POST-ACUTE REHABILITATION ON REHABILITATION OUTCOMES FOR UNILATERAL LOWER LIMB AMPUTEES: A SYSTEMATIC REVIEW WITH NARRATIVE SYNTHESIS

BSc (Hons) Physiotherapy research project, St George's, University of London
Antoine Leclere, Sara Nader, Oliver Presman and Nana Nkouanang-Tchouante
Project supervisor Mary Jane Cole, Physiotherapist, Senior Lecturer, St George's, University of London

Introduction

A recent epidemiology study on the prevalence of lower limb amputations (LLAs) found an incidence proportion of 25 amputations per 100,000 persons per year (Ahmad et al, 2016). In the UK, an estimated £60 million is spent on specialist amputee services per annum (National Health Service, 2022). Studies have highlighted improvements in functional outcomes post-rehabilitation (Gailey et al, 2020; Hordacre et al, 2012). Despite this, the number of amputees who survive post-rehab is declining. A recent report by the National Confidential Enquiry into Patient Outcome and Death (NCEPOD, 2014) states the mortality rate for major LLA is high in all health economies, both within 30-days of surgery (12.4-22%) and at 1 year (38-48%).

The British Association of Chartered Physiotherapist in Amputee Rehabilitation (BACPAR)'s guidelines (Smith et al, 2016) present key aspects of postoperative management for adults with LLA; evidence-based and accredited by the National Institute for Health and Care Excellence (NICE). These include: compression therapy, early mobility and walking aid prescription, prevention of complications, prescription of exercise programmes, pain management, a multi-disciplinary team (MDT) approach to care. Also raised are the benefits of immediate postoperative care in an inpatient setting. However, this recommendation is made through consensus opinion of clinical experts due to the limited relevant literature available.

Literature exploring factors influencing the outcomes of LLA rehabilitation has found associations between an inpatient rehabilitation (IR) format and improved outcomes (Pezzin et al, 2000; Cutson et al, 1994). Hebenton et al (2019) found 'key aspects of models of care (MOC) associated with a quicker time to achieve rehabilitation milestones included: use of a postoperative rigid dressing, specialist physiotherapy input in the early postoperative period, daily inpatient gym sessions, and inpatient prosthetic provision.' These findings are in line with BACPAR recommendations (Smith et al, 2016) and interventions highlight the need for an IR setting. In their cohort study Dillingham et al (2008) state 'receiving IR care was associated with reduced mortality, fewer subsequent amputations, greater acquisition of prosthetic devices, and greater medical stability than for patients sent home or to a skilled nursing facility (SNF).' Similarly, Pezzin et al, 2013 find that patients with dysvascular LLA who had received IR were less likely to experience depression, low mental health, low social functioning, and low emotional role functioning than patients sent home or to a SNF.

Spyrou et al (2021) explore clinicians' views about IR as a pathway option for LLA in the UK and find there are three main rehabilitation options: home discharge, non-specialised IR, and specialised IR. The latter is viewed as beneficial for most patients offering immediate access to the specialist MDT, peer support, wound management services, psychological support and a faster progress through rehabilitation – consistent with the finding of Hebenton et al (2019).

Despite individual publications indicating the potential benefits of amputee IR units, there are still issues with their accessibility in England which BACPAR acknowledges in their guidelines (Smith et al, 2016). Spyrou et al's (2021) study uncovers this theme of inequality where the limited number of beds within IR facilities means admissions are rigorously selective depending on motivation, prognosis of successful rehabilitation, and geographical proximity of the patient. Other non-UK centric studies have found variance in the type of rehabilitation received according to geographical location (Dillingham et al, 2008; Stineman et al, 2008) where patients in the Midwest of the United States of America (USA) were less likely to receive IR due to low availability of rehabilitation beds. The cumulative findings of cohort studies indicating specialised IR as beneficial for LLA rehabilitation outcomes, coupled with the issue of limited accessibility to services and declining survival rates, presents an opportunity to develop more specialist IR centres to improve overall health outcomes for LLAs.

Methods

Study design

The researchers undertook a systematic review in line with the preferred reporting items for systematic reviews and meta-analyses PRISMA statement (Moher et al, 2009). This was favoured over a narrative review as employing a robust methodology minimised the risk of bias. A narrative synthesis approach was chosen to analyse selected studies and uncover findings due to variance in methods, design and outcome areas investigated, rendering a statistical meta-analysis unfeasible. This was undertaken in accordance with the economic and social research council (ESRC) guidance on the conduct of narrative synthesis in systematic reviews (Popay et al, 2006).

Search strategy

Utilising the PICO framework (Schardt et al, 2007) the concepts below were identified to be used as keywords.

PICO element	Concepts / Keywords
Population	Unilateral LLA
Intervention	IR program
Comparator	*None included*
Outcomes	Rehabilitation outcomes

Table 1. PICO concepts extracted from research question

Databases searched were CINAHL, MEDLINE, AMED and PUBMED. Limiters applied to the search were as per the inclusion criteria.

Inclusion
■ Human subjects
■ Adults (>18)
■ English Language text
■ Peer reviewed
■ All study designs
■ Studies that compare post-acute IR to other rehabilitation models and effects on rehabilitation outcomes
■ Studies discussing the effect of post-acute IR models on rehabilitation outcomes.
■ Patients with Unilateral Lower limb amputation resulting from any pathology
■ Studies published after the year 2000

Table 2. Inclusion criteria

Data extraction and analysis

Following Popay et al's (2006) guidance, the findings from included studies were tabulated. A critical appraisal was undertaken using the Critical Appraisal Skills Program CASP checklist (CASP, 2022). Researchers performed the critical appraisal independently and then agreed on a final version for each article to minimise bias. (Boutron et al, 20

Results

Study selection

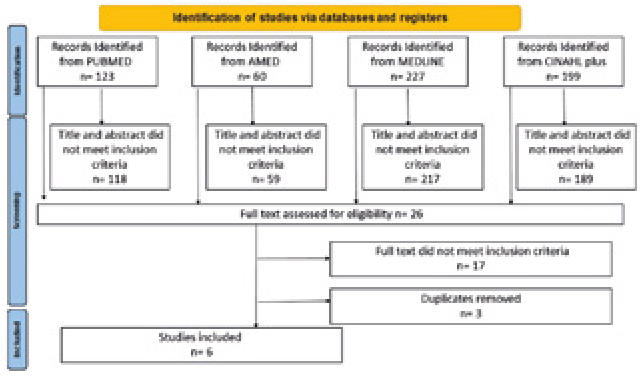


Figure 1. PRISMA flow diagram for study selection (Page et al, 2020)

Study Characteristics

Five out of six studies took place in the USA (1 – Sauter et al, 2013; 2 – Kurichi et al, 2009; 3 – Stineman et al, 2010; 4 – Czerniecki et al, 2012; 5 – Stineman et al, 2008), with the sixth study taking place in Myanmar (6 – Rau et al, 2007) which was the only randomised control trial (RCT). Remaining studies were cohort studies. Studies 2-5's participants were military veteran amputees, with >95% being male with a majority of dysvascular related amputations (85%). Study 6's participants were exclusively male with trauma related amputations. All patients selected for all studies underwent rehabilitation in a postoperative IR setting with corresponding characteristics (e.g. prompt access to the MDT). The main objective of all studies was to compare the effect of postoperative IR with traditional rehabilitation on outcomes. Various outcome measures were used across the studies.

Risk of bias

Kurichi et al (2009), Stinemen et al, (2010; 2008), Rau et al, (2007) have >95% male participants resulting in reduced generalisability of findings toward the wider amputee population. Five out of six studies were cohort studies, where the variance in baseline characteristics of patients could influence treatment selection and therefore results. However, each study used statistical adjustment to remove this bias by identifying and measuring potential confounding factors comprehensively. Nevertheless, there remains unmeasured confounding factors which are adjusted for only to the extent that the unmeasured and measured factors are correlated. Neither the magnitude of this correlation nor the degree to which selection bias is reduced can be completely known (Stineman et al, 2008).

No studies define their specific interventions except from Rau et al (2007) where dosage of interventions remains unspecified. This could introduce bias, making it difficult to discern what components of the intervention are different to traditional rehabilitation, defined by Gailey et al (2020) as trunk and lower limb strengthening, balance and coordination and prosthetic gait training. However, it still provides evidence on the benefits of the IR setting. Lastly, Sauter et al (2013) and Czerniecki et al (2012) both use patients' recall for their premorbid state; this could introduce bias as inaccurate recollection could offset effect size estimation.

Synthesis of results

Findings from each of the included studies in this review indicate that postoperative specialised IR is more effective than traditional rehabilitation.

The five cohort studies (1 – Sauter el al, 2013., 2 – Kurichi et al, 2009., 3 – Stinemen et al, 2010., 4 – Czerniecki et al, 2012., 5 – Stinemen et al, 2008) recommend an RCT be conducted for more accurate and effective assessment of an IR programme. The statistical adjustments they perform allow them to closely emulate RCT conditions and findings suggest the benefits of IR may warrant the undertaking of an RCT to confirm them.

Five out of the six studies had a significant majority of amputations resulting from vascular disease. This being the most common reason for amputation (Finch et al, 1980), makes results generalisable to the wider global amputee population.

Outcome measures used to measure effectiveness of rehabilitation were somewhat inconsistent. Monitoring independence with activities of daily living (ADLs) (studies 1 and 3). Timed up and go (TUG) and 2-minute walk test (study 6 only). Different functional mobility measures were used in studies 1,2,3 and 6. Both studies 2 and 5 look at the same outcome measure when measuring effectiveness of the rehabilitation (home discharge, one-year survival rate and prescription of a prosthetic limb within a year). Had outcome measures been more consistent across those studies a more accurate comparison could have been made and led to potentially more robust findings.

All studies focused on the physical effects of IR and none discussed the effect on quality of life (QoL) of patients which has been found to be an important measure of successful rehabilitation (Zaheer et al, 2021).

Discussion

This review supports the use of IR with all studies finding positive effects on outcomes they measured. However, specific treatments performed remain unclear.

Five out of six studies were cohort studies. This design is robust in terms of the vast samples but has reduced control of confounding variables. As these components define treatment selection, it was difficult to identify specific treatments which would constitute best rehabilitation. This suggests the need to study more homogenous cohorts, where control of confounding variables would enable determination of the best treatments for those specific samples. However, there is a trade-off between greater sample sizes and the homogeneity of samples. To identify best treatments for amputee rehabilitation, RCTs studying the effect of specific treatments would be warranted as these could minimise variance in participant baseline characteristics, therefore producing more robust findings.

Very few studies were found to be in scope, all six had participants which were 95% male. The cohort studies included were conducted through the Veterans Health Administration (VHA) in the USA. This highlights the paucity of evidence in appraising IR as a care pathway and restricts generalisability to male veterans. Veteran-based cohort studies were possible because of the availability of information on participants through a central database. This suggests that further integration of different healthcare systems could allow for such cohort studies to be undertaken for much larger sets of participants with different backgrounds. This could then warrant the undertaking of RCTs with more homogenous cohorts to identify most effective treatments for a set of baseline characteristics. Finally, such RCTs would also allow for psychosocial outcome measures to be recorded, found to be important to patients in assessing the success of their rehabilitation (McDonald et al, 2019; Schaffalitzky et al, 2011).

Limitations

This study is not aimed at a specific pathology or group of amputees. Had this study focused on one pathology, it may have uncovered more focused findings with reference to specific treatments. Similarly, a specific outcome domain in the inclusion criteria may have allowed clearer conclusions, however, as a preliminary search indicated limited available evidence, in an effort to not limit the inclusion of relevant literature these concepts were kept broad.

Conclusion

This investigation suggests that IR is beneficial for unilateral lower limb amputees' rehabilitation outcomes. However, this was achieved through limited available evidence on the topic and the treatments involved remain unclear. The bulk of available research was achieved through the use of VHA databases making generalisability difficult. Greater healthcare provider integration could provide a larger pool of data to conduct cohort studies on more general populations. For this reason, this investigation makes the following recommendations: greater integration of healthcare providers to allow larger cohort studies to be conducted; the pursuit of RCTs with more homogenous samples to ascertain most effective rehabilitation interventions; to include more holistic measures of health outcomes in those RCTs.

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A PERSONAL EXPERIENCE OF SETTING UP AN MPK SERVICE IN WALES

Laura Carter, Specialist MPK Physiotherapist, Artificial Limb and Appliance Centre, Morriston Hospital, Swansea **laura.carter2@wales.nhs.uk**

The NHS Wales MPK funding commenced in April 2021 split across its three Artificial Limb and Appliance Centres (ALACs) in Cardiff, Swansea and Wrexham. First into post as Specialist MPK Physiotherapist, Laura Carter reflects on her first year's experiences leading the physiotherapy input at Swansea's ALAC.

I started my role as Specialist MPK (Microprocessor Controlled Knee) Physiotherapist in July 2021 after having not worked exclusively with amputees for about 3 years and having no previous experience working with MPKs. In that time, I had been rotating through burns, mental health, critical care and surgical roles where I continued to treat amputees in the acute setting and learned many transferable skills. I had previously completed a year's rotation at the ALAC (Artificial Limb and Appliance Centre) working with primary amputees during their assessment, early rehab and prosthetic rehab process and really loved it. Before the interview I had to do extensive research into MPKs, the benefits they provide, training principles involved and logistically how the service could run concurrently to our primary pathway.

It was a daunting task returning to the ALAC to set up a whole new service, but the team was extremely supportive. I felt a lot of pressure and responsibility to ensure the service was set up and running well particularly with the need to provide evidence to the Welsh Health Specialised Services Committee (WHSCC) to ensure further funding for the service. On a personal level I really wanted to get it right to give the best experience for the patients to aid them to achieve the best outcome possible. I felt extremely lucky to have the opportunity to work with the latest technology and was excited to see how this could positively impact amputees' lives.

Initially, I had to refresh my knowledge from my previous role and then massively upskill and learn all about MPKs and how they work. I discovered it was quite a niche area that was actually very different to what I was doing previously. I watched multiple online videos and webinars, spoke to physiotherapists and prosthetists that had fitted and rehabbed patients on MPKs and attended training sessions run by the reps from Ottobock, Ossur, Blatchfords and Steeper.

From the very beginning I have worked closely with the prosthetic team and used their expertise and experience to help shape the service. We make all the decisions related to the service together which reduces the pressure on any one individual. A few months after I started the role, my equivalent in Cardiff was appointed. Since then, we have worked collaboratively which I have found extremely beneficial – it's great to have someone with a physiotherapy background to discuss ideas with, to be able to support each other through the process and share experiences.

From a rehab perspective, one of the biggest differences from my previous role was the higher activity level of the patients I was seeing – all K3/K4. This meant I had to be much more creative with higher level rehab exercises – incorporating gym-based programmes for some patients. Another big difference was that I was now working exclusively with established patients (some of which had never had physiotherapy intervention as primaries). Although they were all very mobile, some had picked up some deeply embedded habits within their gait pattern (vaulting, circumducting, etc) which was hard to train out of them. I also found myself providing a lot of reassurance for patients that had been on mechanical knees with no yielding function – getting them to trust the technology and override the fear of falling that they've been accustomed to for so long.

Seeing patients progress through training to succeed with the MPK, achieve their goals and witnessing some of the transformations has been the most rewarding part of the job. It's been amazing to hear patients report life-changing feedback such as "being able to play football in the garden with grandchildren" or "keep up with friends walking speeds at school" and makes all the hard work worthwhile.

It has been a challenging but enjoyable year, figuring out processes and working through procedures to make the patient journey as smooth and efficient as possible. Despite having less than a financial year, our first cohort of patients have successfully completed the MPK process with all of them feeling and showing the benefits. Personally, I have learnt so much and despite feeling like there is a lot more to learn, the patients' positive outcomes have given me confidence.

With technology constantly developing and improving, it's a very exciting time to be working with MPKs and to experience first-hand the positive effect it can make to an amputee's life.

Two of Laura's patients have told us about the experience from their point of view

My name is **Martin Padfield**, I am a 48-year-old father of two. I work as an electrical engineer in a fast-paced food manufacturing industry. I have been an above-knee amputee for 22 years, losing my limb in a motorbike accident. I have been a patient at Swansea Morriston Hospital ALAC since becoming an amputee. The care and help I have received over the years have been exceptional!

Until fairly recently I have spent many years on good limbs, but I have felt that I was not living my life to its fullest. Having heard and researched MPKs some time ago I was keen to try one out but unfortunately until last year they weren't available on the Welsh NHS.

In November I was fortunate enough to be chosen to trial a MPK: I tried a few different MPKs before deciding on the set up I'm currently using. The advice from Laura and Peter, my physiotherapist and prosthetist, was invaluable.

I spent several weeks practising with the new limb where Laura helped me to adapt to the new MPK.

The overall result is the MPK has significantly changed my life for the better in many ways: I feel much more confident walking now. My gait has improved along with my overall stability. Slips and trips at work are no more and my lower back pain has reduced significantly also.

I can't thank Laura and the team at Swansea ALAC for changing my life for the better.

Put quite simply, the C Leg has been a revelation for me and probably to my wife too, as she now has me doing a lot more chores than I used to get away with!

Previously I was on the 3R80, but I much prefer the C Leg: now don't get me wrong the 3R80 is a great leg and there is one aspect of it that is superior to the C Leg, but I'll come back to that later. I got on well with the 3R80, it was a great leg, it got me back working asap, and enabled me to cycle 'LeJog' over a thousand miles, in 12 days, no support vehicle, and climb Pen y Fan, Snowden, Scafell and Ben Nevis, unlike my KX06, it never broke down once, despite some regular enjoyable abuse hurled at it. It was a waterproof leg and I used to often go swimming wearing it with no problem whatsoever, often, something I dearly miss.

John Jones says: There's nothing that I can do with the C Leg that I couldn't do with the 3R80 but EVERYTHING is easier, with less effort and far more enjoyable. I can cycle and walk further, faster, with less effort, without the worrying concern in the back of my mind, of falling. Life is definitely better, far more enjoyable with the C Leg.

OK, annoying points; nothing is perfect! Charging needs to be completed every evening without fail, when you take it off to go to bed, put it on charge!!! Simple! Being ex-forces and of an inquisitive nature, I needed to find out a) how long it would last without a charge and b) what would it be like to use when it run out of power:
a) It lasted two and a half days before it ran out!!!!! Good effort.
b) For an hour or so before running out the leg swung really freely. This lulled me into a false sense of security as I wrongly thought "Wow this is great, when it runs out it's just going to swing really freely, probably with no stabilisation or other measures, but OK I can handle that, I'm going to save a fortune on electricity, with the estimated rise in electricity prices, I'm not going to charge this thing ever again, but I will miss checking my stats every night, steps taken, distance walked" etc etc. Again, no problem. I always kind of know how far I've walked and who else needs to know anyhow, right?

WRONG so WRONG. When it ran out, the leg became almost rigid, obviously a safety feature, there's no way you are going to fall with this really stiff leg, if you survive the 'kill' as when it goes, it just switches into safety mode immediately, so when you are walking flat out, it feels like the brakes have been jammed on without your knowledge and at full pelt it requires a little dance to get it back under control, probably quite amusing to anyone watching.

I really don't recommend trying this out, it could lead to an embarrassing moment or even worse an injury. KEEP IT CHARGED. Ohhh, and obviously no stats are recorded when it's out of battery. Grrrrrrrr, not good, it was a long way back to the car and I was robbed of these steps.

Great leg. Life is definitely improved with this leg; once again it's worth living, hoping to upgrade to the Genium X3 before old age envelops me.

STUDENT PLACEMENT REFLECTION AT SWANSEA ALAC, MORRISTON HOSPITAL, SWANSEA

By Rhys Jenkins, BSc Physiotherapy, Cardiff University, Placement 1, January 2022

CARDIFF
UNIVERSITY
PRIFYSGOL
CAERDYDD

Prior to starting my journey as a physiotherapy student, working with amputees was always something which had interested me. I had always loved the idea of being part of a patient's journey from a wheelchair back to walking. To me, the idea of helping someone to regain some levels of independence after such a traumatic event seemed one of the greatest things a physiotherapist could be a part of. After commencing my degree, I discovered that ALAC placement opportunities were fewer and farther between, so when I was told my first placement would be in the ALAC department in Morriston Swansea, I was delighted.

Prior to starting the placement, I was warned I may find it difficult due to the specific skill set required for working with amputees. To add to this, with the placement being my first, it would be fair to say I was nervous with a fair amount of anticipation. As a mature student and having worked full time in various jobs for over 10 years, I was nervous about entering a work environment without having the relevant skill set and becoming a burden. Despite this, all my fears were quickly put to bed within the first day as the ALAC team alleviated my fears, allowing me to ease into the rigours of placement life. I was shown around the department on day one and introduced to everyone involved in each patient's journey. It was my first experience of how a M.D.T works and it gave me a real insight of the importance of working as a cohesive unit to offer the patient the best possible standard of care. Despite always having the patient's best interest at heart, this didn't always mean the team initially agreed on what the best course of action would be. However, the team would have regular discussions and use their expertise to discuss and debate what the best course of action would be for each patient. It was great to see a cohesive unit working together, all with varying ideas, but all with the same goal of offering the patient the best standard of care.

When looking back at the physiotherapy input, it was great to see the depth of knowledge Charlie and the team would have in analysing an individual's gait. Whether this was with the Pneumatic Post Amputation Mobility Aid (PPAM Aid), or whether it was with the individual's tailored prosthetic limb, the team would continuously assess each stage of gait, looking to improve small elements to contribute to an overall more efficient gait pattern. These analysis skills proved valuable in my following MSK outpatient placement. Despite not seeing any amputee patients, analysing individuals' movement patterns and gait became a skill I frequently used and having developed these skills in ALAC it allowed me to feel confident in making a clinical decision.

Now currently on placement on a stroke ward I have already seen 3 post amputee patients and it has been so rewarding to have a contributing impact within the team. The ability to explain what causes residual limb pain to the patient and techniques they can use to help alleviate pain has been invaluable in developing a rapport. Overall, I thoroughly enjoyed my time in Morriston with Charlie and the team and feel very fortunate to have had the opportunity to have worked with amputees. The skills developed and experiences gained have already started to shape my future as a healthcare professional.

PERSPECTIVES OF A HYBRID STUDENT PLACEMENT

The clinical educator

Fiona Gillow, Clinical Specialist Vascular Physiotherapist, Kent and Canterbury Hospital

University of Brighton

Fiona Gillow, along with two MSc (pre-reg) Physiotherapy students, have described and reflected critically on a recent hybrid placement involving audit of BACPAR's 2016 guidelines (Clinical guidelines for the pre and post operative physiotherapy management of adults with lower limb amputation, 2nd Edition). To appreciate the challenges and benefits of this experience, all three reflections should be read together.

Introduction

A clinical educators' update training session with the University of Brighton challenged my idea of a clinical placement and introduced the role of hybrid placements. A hybrid placement involves the development of clinical skills combined with a project, the project often requires skills in either education, leadership, or research (Lawton et al., 2021). Hybrid placements have the potential to engage students in placements across the four pillars of advanced practice (clinical, education, leadership, and research) better preparing students for the workplace and providing inspiration to future careers (University of Brighton, no date). Morae and Spink (no date, online access) also advocate hybrid placements, claiming the cross-over of skills and experiences with a hybrid placement can help to consolidate learning, put projects into context and allow students to view the healthcare system from a wider perspective. As well as the benefits for students, hybrid clinical placements can assist clinicians with valuable help to assist with projects or collect data for audits and research (Morae and Spink (no date, online access).

Before the waves of COVID-19 first hit, the vascular team in which I work, had been planning to complete an audit of our service provision compared to the BACPAR (2016) clinical guidelines. With the many pressures upon the team during the pandemic we had been unable to set aside the time required. It was decided that this audit would be the starting point for our first hybrid placement. I met virtually with an experienced clinical educator from another trust who had experience of hybrid placements and Sarah-Jane Ryan (Principal Lecturer at the University of Brighton) for tips on how to prepare for a hybrid student placement.

To reflect upon the experience as an educator of a hybrid student placement a reflective practice template from the Health and Care Professions Council (2021) has been adapted for use with four headings; what experience is being reflected on, would you call this a positive or a challenging experience, what happened, and looking back and future tips.

1) What experience is being reflected on

This is a reflection on my experience of providing supervision and support to students on a hybrid clinical and research placement within the field of vascular rehabilitation. Two Physiotherapy (pre-registration) MSc students studying at the University of Brighton took part in the placement. The clinical part of the placement was led by Tara Drugan, Clinical Specialist Physiotherapist, and involved provision of physiotherapy to a mixture of in-patients on the acute vascular ward and out-patients attending the intermittent claudication rehabilitation programme or prosthetic rehabilitation gym group. The research part of the placement that I led involved completion of data collection for the BACPAR (2016) guidelines audit. **While on placement the students were asked to write a brief reflective piece for the BACPAR journal** on their experience of a hybrid placement (see below) and they were also asked to complete a short presentation to the rest of the team on the audit process that they had completed; time was allocated within the placement for these tasks.

2) Would you call this a positive or a challenging experience?

This was a very positive experience for me as a student educator, our service and hopefully the students as well. Table 1 identifies some of the many positives that I believe arose from the hybrid placement:

To reflect upon the experience as an educator of a hybrid student placement a reflective practice template from the Health and Care Professions Council (2021) has been adapted for use with four headings; what experience is being reflected on, would you call this a positive or a challenging experience, what happened, and looking back and future tips.

However, the experience was also challenging as it was my first-time supervising students on a hybrid placement. It was very difficult to gauge how long it would take for the students to collect the audit data and how much help they would need. We were extremely pressured with staff shortages in the run up to the students arriving which impacted upon the time available to prepare for the placement. It was a challenge to submit the audit proposal, meet with the audit team, and ensure that paper notes and computer access were ready for the students to start data collection within their first week of placement.

Student Benefits	**Service Benefits**	**Clinical Educator Benefits**
Increased understanding of clinical guidelines and their role within practice	Audit data collection completed	Discussions with the students helped me to question and reflect upon service provision
Increased awareness of audit benefits, how to complete an audit and how to implement results into practice	Suggestions for service development and improvement	Greater insight into how documentation is read and understood by others, particularly students
Greater understanding of the importance of documentation	Redesigned proforma for patient notes	The students quickly learnt how to audit the new electronic notes and taught me how to access old notes etc
Experience of working with the ward based multi-disciplinary team and other teams less commonly encountered on placement such as the Audit and Improvement Team	Reflective pieces for publication in BACPAR Journal	I learnt how to develop an audit for someone else to collect the data, previously I had always done most the data collection for audits myself.
From auditing the patient records the students appeared to gain a greater understanding of the rehabilitative journey of vascular patients post amputation	Educational presentation to team on the audit process	The students often worked independently on data collection and their written/presentation tasks which allowed me the opportunity to complete other aspects of my job role

Table 1 – Benefits from the hybrid placement

3) What happened?

In preparation for the placement an audit proposal was submitted, and approval granted. We decided to take the standards from the guidelines that we felt were the most important to our service to give a manageable ten questions to complete; however, we found it impossible to reduce to ten and ended up with eleven questions. We set responses for answers to facilitate analysis of the data with room for free text as well. The questions we chose can be seen in Appendix 1 and were uploaded by the audit team to Snap Surveys, an online data collection tool that enabled data collection to be completed from any location on site. Unfortunately, the period being audited included a transition from paper to electronic notes; this added additional complexity.

Prior to placement, the students were given a timetable to ensure we worked towards a balance of clinical and non-clinical as seen in Appendix 2. The timetable had to change at times due to staffing issues and service needs. The students were also given links to the BACPAR website and the BACPAR (2016) clinical guidelines to familiarise themselves with these.

The students completed all the data collection for the audit, initially with supervision and then they worked together independently. We met regularly to discuss and reflect on issues with documentation and trends that were found. The students worked well together and developed their own system where one input data while one read notes and then they swapped tasks. They finished data collection ahead of schedule allowing extra time for writing their reflective piece and presentation to the team. In addition, the students used their own initiative to create an updated proforma for pre-operative documentation that could be used electronically.

4) Looking back and future tips

The University of Brighton worked closely with us to plan and prepare for the hybrid student placement. As mentioned in the introduction, this included a virtual meeting with an educator experienced in hybrid placements and a Senior Lecturer. In the meeting I was able to discuss my concerns, ideas and what preparation was needed, this was invaluable to the placement and learning experience. The University of Brighton also provided support through later email discussions and the visiting tutor helped with how to apply the placement assessment criteria in a hybrid placement. For future hybrid placements with students from other Universities I would seek to develop a similar working relationship.

I was nervous and apprehensive regarding the placement before it commenced, with concerns such as whether I had allocated enough time for data collection, would the paper notes arrive in time, would the students work well together. However, in the rush to prepare I hadn't considered that the students may also be experiencing the same feelings. In particular, the students were concerned how they would be able to learn and demonstrate their skills in both clinical and non-clinical for a specialist area within the placement time. For future hybrid placements, it may be useful if we provide more information on the placement prior to the students starting, this could be in the form of a virtual meeting to discuss what to expect and answer any questions, as suggested by Batty (2022).

I was advised in the initial virtual meeting for tips on taking students on a hybrid placement that we take at least two students. This view is shared by Batty (2022) in her top tips for research and education placements. It was apparent throughout the placement and through reading the students' reflective pieces that they gained vital support from each, allowing them to complete both clinical and non-clinical tasks easily with teamwork. For future hybrid placements I will always ensure we offer to at least two students at once. It would have added greater depth to the audit and experience if we could have made it a multi-disciplinary audit and involved occupational therapy students as well. Unfortunately, the occupational therapy and physiotherapy student dates did not coincide this time, but we will look to try to co-ordinate offers for future hybrid placements where appropriate.

The placement required additional preparatory work compared to previous clinical placements and this was key to ensuring the students were able to start data collection when they arrived. However, this preparatory and planning work would have been required for anyone to complete the audit data collection. There would not have been time for the students to have planned the audit, submitted the proposal, and then completed the data collection while on their six-week placement so in future I would work to ensure that an audit or project is ready for students to start when they arrive on placement.

Conclusion

In conclusion, I feel the hybrid placement was a very positive experience for myself as an educator, the service and hopefully for the students as well. We are currently writing an action plan from the audit data and will then be planning our next hybrid student placement.

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Appendix 1 – Audit Questions

1) **Is there documented evidence of a pre-operative assessment?**
Yes
No
Documented reason not appropriate (space to input reason)
(Standard 5.3. The physiotherapy assessment should be commenced pre-operatively)

2) **Has the patient been given information regarding rehabilitation process?**
Yes – verbal
Yes – written
Yes – verbal and written
No
Documented reason not appropriate (space to input reason)
(Standard 4.1.1. The physiotherapist should give patients information about the expected stages and location of the rehabilitation programme suited to their individual circumstances)

3) **Has an outcome measure been used to predict potential for limb wearing or guide rehabilitation goals?**
Yes
No
Documented reason not appropriate (space to input reason)
(Standard 4.2.4. The physiotherapist should use appropriate outcome measures for rehabilitation goals)

4) **Has the patient been given information on phantom limb sensations / pain?**
Yes – verbal
Yes – written
Yes – verbal and written
No
Documented reason not appropriate (space to input reason)
(Standard 6.10.2. Information and treatment regarding phantom limb sensations and pain should be given by clinicians with appropriate knowledge and training)

5) **Has the patient been given information on care of the remaining limb?**
Yes – verbal
Yes – written
Yes – verbal and written
No
Documented reason not appropriate (space to input reason)
(Standard 4.3.1. Vascular and diabetic patients and their carers should be made aware of the risks to their remaining foot and educated in how they can reduce them)

6) **Has the patient been given information on residual limb care?**
Yes – verbal
Yes – written
Yes – verbal and written
No
Documented reason not appropriate (space to input reason)
(Standard 4.4.4. The physiotherapist should give on-going advice about residual limb care)

7) **Has the patient been given information on falls risk and how to get up from the floor?**
Yes – verbal
Yes – written
Yes – verbal and written
No
Documented reason not appropriate (space to input reason)
(Standard 6.6.2 Rehabilitation programmes should include education on preventing falls. 6.6.3 Patients and carers should be given instructions on how to get up from the floor in the event of the patient falling. 6.6.4 Advice should be given in the event that the patient is unable to rise from the floor)

8) **Has the patient been provided with a compression sock after day 7 but before hospital discharge?**
Yes
No
Documented reason not appropriate (space to input reason)
(Standard 6.3.1. A compression sock should be used in preference to elastic bandages for reducing limb volume. 6.3.2 The physiotherapist should use compression therapy as appropriate.)

9) **Has the patient started using an early walking aid after day 7 but before hospital discharge?**
Yes
No
Documented reason not appropriate (space to input reason)
(Standard 6.5.1. EWAs should be considered as part of the rehabilitation programme for all lower limb amputation patients as an assessment tool.)

10) **Has the patient been seen by physiotherapy team day 1 after surgery?**
Yes
No
Documented reason not appropriate (space to input reason)
(Standard 6.1.1. Physiotherapy assessment and rehabilitation should ideally start on the first day post-operatively

11) **Has the patient started a lower limb exercise programme?**
Yes – Day 1, Day 2, Day 3, Day 4, Day 5, Day 6
No
Documented reason not appropriate (space to input reason)
Standard 6.9.1 Following on from the initial assessment, an exercise program should be provided to address the problems identified. This should be reviewed and progressed as appropriate.)

Appendix 2 – Student Timetable

Week 1

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Meet Team Working on Vascular Ward	Working on Vascular Ward	Meet Educators for Objective setting and Audit Meeting	Amputee out-patients and gym class	Working on Vascular Ward
PM	13:00 Intermittent claudication class	Working on Vascular Ward	Audit data collection	Observation of Claudication Clinic	Audit data collection

Week 2

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Home study day	Working on Vascular Ward	Working on Vascular Ward	Visit DSC at Medway	Working on Vascular Ward
PM	Home study day	Working on Vascular Ward	Audit data collection	Visit DSC at Medway	Audit data collection

Week 3

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Meet Team Working on Vascular Ward	Working on Vascular Ward	Audit catch up Supervision session	Amputee out-patients and gym class	Working on Vascular Ward
PM	Audit data collection	Working on Vascular Ward	Training 14:00-15:00 Audit data collection	Working on Vascular Ward	Audit data collection

Week 4

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Home study day	Working on Vascular Ward	Audit catch up Supervision session	Amputee out-patients and gym class	Article writing time
PM	Home study day	Working on Vascular Ward	Audit data collection	14:00 Intermittent claudication	Audit data collection

Week 5

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Working on Vascular Ward	Working on Vascular Ward	Audit catch up Supervision session	Amputee out-patients and gym class	Article/presentation writing time
PM	Audit data collection	Working on Vascular Ward	Audit data collection	14:00 Intermittent claudication	Audit data collection

Week 6

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Home study day	Article/presentation writing time	Presentation of audit to team	Amputee out-patients and gym class	Working on Vascular Ward
PM	Home study day	Article/presentation writing time	Working on Vascular Ward	14:00 Intermittent claudication	End of placement review

The students

Reflection of combined placement opportunity involving an audit of BACPAR guidelines (Clinical guidelines for the pre and post operative physiotherapy management of adults with lower limb amputation, 2nd Edition, 2016)

Bobbi Evans, MSc (Pre-reg) Physiotherapy, University of Brighton

Event

My fourth placement for my MSc Physiotherapy (pre-registration) course took place in an acute hospital on the vascular wards. This placement was identified as a mixed placement meaning I carried out part clinical work on the wards as well as completing an audit alongside another fellow student (see Cat's reflection below). The audit was based on a variety of recommendations taken from the BACPAR 2016 guidelines, analysing data of patients who had had a transtibial, transfemoral or knee disarticulation amputation from April 2021-January 2022 within the local trust. The main focus of the audit was to compare the documentation from the trust for new amputees to the BACPAR recommendations in order to see what areas of pre and post operative amputee rehab could be improved on.

Before participating in this placement, I had no clinical experience with the presenting population group and therefore had very limited knowledge. I had also only heard the word 'audit' on a few occasions, meaning I had no idea what this even entailed. Therefore, starting this placement I was both apprehensive and excited as I recognised this would be great learning opportunity to improve not only my clinical skills but also my personal and professional skills for future practice.

What did I learn?

Primarily my first week on the vascular ward broadened my knowledge on a multitude of aspects for this population group including their clinical presentation, risk factors and surgery options available. The ward-based work also helped develop my clinical skills and understanding of the pre and post rehabilitation that takes place. As mentioned previously, this was an area where I lacked knowledge, therefore I carried out further research to help cement my clinical reasoning for the practice I was observing and carrying out. I used a multitude of resources from online journals, to colleagues on the wards and from the multi-disciplinary team to improve my understanding and help inform my clinical based practice. During this experience I learnt how to liaise with the broader multidisciplinary team and also increase my confidence within this area.

Through carrying out my research and completing my audit work, I was guided to the BACPAR guidelines, whereby I began to recognise the importance of a standardised set of procedures. I developed a greater understanding of how these guidelines can promote best practice supported by education and evidence (BACPAR, 2016). By studying the guidelines, I also gained a greater comprehension of the audit process and increased my knowledge on what the BACPR guidelines involve, helping to guide my clinical practice with the amputees I have since seen. The audit process was eye opening as it enhanced my awareness of how clear clinical notes need to be and the importance of accurate documentation.

I feel, participating in a mixed placement involving the completion of an audit, has been invaluable for my clinical practice. It has not only increased my confidence when treating these patients but also my clinical reasoning for carrying out specific treatment / assessing specific areas. Similarly, Mann (2010) states, through involvement in projects such as audits, a development in professional identity can be established. This statement resonates highly with myself as I feel through the opportunity of being able to participate in an audit, I have not only recognised the huge value the audit teams add to improving clinical governance but I have also been able to learn skills from this professional group as well as share some of mine. I have therefore gained a greater awareness of the values and work styles that underpin the success of audit work to aid the improvement of care systematically.

What went well?

I feel the completion of the audit went well as we were able to analyse all the data in a faster timeframe than anticipated. I feel this could have been due to the fact we approached the task in a very organised manner ensuring we maintained an effective and efficient work rate. Furthermore, through doing the audit it sparked conversations between myself, my audit partner and other colleagues which were productively interacting, informative and educational. Finally, I was able to provide a contribution not only to the audit completion but also to data analysis and future proposals.

What could I have done better?

Before commencing the placement, I feel it would have been beneficial to carry out some research on the population group I was about to be treating. I feel this would have given me more confidence when I first started the placement and also reduced some apprehension which I felt originally.

Implications for future practice

In future practice, before I am placed on a ward with a new patient population, I will ensure I firstly carry out some research to improve my understanding and knowledge on what to expect. I will also create a learning diary to help detail the sections I have already addressed prior to starting and the gaps in knowledge I feel need to be addressed. I plan for this to develop as an ongoing, evidence-based learning development tool to help facilitate improved clinical reasoning.

Due to completing the audit, I will be more enthusiastic to participate in this kind of non-clinical work as I have witnessed the huge value it can bring to my clinical practice. Furthermore, I will ensure that I make my documentation clear and informative as I have witnessed the importance of this through completing the audit and analysing the findings.

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Reflection on audit of BACPAR guidelines (2016)

Cat McIntyre, MSc (Pre-reg) Physiotherapy, University of Brighton

What?
As a final year MSc student from the University of Brighton, I had the opportunity to have a placement with the vascular therapies team at Kent and Canterbury Hospital. This was a unique placement that was split between clinical and non-clinical aspects, and I was lucky enough to have another student on this placement with me. The clinical aspect consisted of working on the vascular and urology wards, with an amputee outpatients' class and an intermittent claudication exercise class. The rest of my placement time was spent doing an audit of notes from patients at the trust from the past year in comparison to the BACPAR guidelines for pre and post operative management of amputees. After collecting data from this audit, we then had to present these findings back to the therapies team in order to identify any ways to improve the service. The audit tool consisted of 11 questions taken from the BACPAR guidelines to answer for each set of patient notes. The audit was carried out two afternoons a week which was plenty of time to complete it over the six-week placement.

So what?
Before this, I had had no previous experience doing an audit, but from the start of this placement, I could see the benefits of being part of it, especially as a student. This was a unique learning experience where I was able to learn about the service provision and pre and post operative management of amputees through reading notes for the audit and then being able to directly apply this to my clinical practice.

Through the audit I began to really understand the importance of accurate note keeping, even including details about what was discussed with the patient. This is particularly important in specialties that work against clinical guidelines, such as vascular or orthopaedics. Reading through former patient notes to collect data increased my knowledge about the population group, the rehabilitation process and recurring problems that were experienced by therapists and patients. This included the impact of the pandemic on service provision, which I understood more through discussion with my educators when reviewing the audit results. An example of this was the infrequent use of the PPAM Aid within the acute setting during the pandemic. This was due to staffing pressures and redeployment of therapists with the skills in the use of the PPAM Aid. There were also restrictions on patients leaving the ward. This has further helped me to understand the pressures and impacts that Covid-19 has had upon therapy services and how this has impacted our results from the audit.

I found that this placement experience worked especially well as I was working with another student. This meant that we were continuously discussing our thoughts, learning points and ideas for both clinical and non-clinical aspects of the placement. Alpine, Caldas and Barrett (2019) investigated physiotherapy placements with two students and found similar positive themes such as peer support, learning from one another, and sharing ideas and knowledge.

Now what?
I think the audit has helped me become critical and reflective of my own practice. As my placement time was split, I felt I had less time to demonstrate my knowledge in each area. However, I think this encouraged me to step up and push myself to do well in the different areas and aspects of the placement. Overall, I would recommend a mixed placement such as this as it provides a unique and variety learning experience for both students and educators.

References

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THE 'WORLD-FIRST' SOFT PROSTHETICS AIDING REHABILITATION AND INDEPENDENCE

Nathan Macabuag, Founder, Koalaa; Bryan Roberts, Chief Operating Officer; Koalaa, Alex Lewis, Founder, Alex Lewis Trust

Koalaa™

According to the World Health Organisation (WHO), globally 90%* of individuals with limb differences lack access to prostheses due to prohibitive costs and the services to get them being fragmented, difficult to navigate and expensive. Of those with access, a third end up abandoning their prosthetic due to poor comfort and functionality. But working alongside clinicians and building on the good work that's already being done, one London start-up is hoping to change that.

Koalaa is on a mission to make prosthetics comfortable, accessible and affordable for anyone on the planet. To do so, the team has reinvented prosthetic design and is reimagining the accompanying support services – with the feedback and ideas of end users being at their core.

What is a soft prosthetic?
Unlike traditional prosthetic arms, which are rigidly moulded and can be uncomfortable, Koalaa soft prosthetics are made from lightweight fabric material, meaning they are suitable for all ages, including very young babies and toddlers. Their unique design is more like clothing, being light, comfy and modular to user needs. All of which also makes them far more affordable than traditional prosthetics.

The design of Koalaa's prosthetics sees a user wearing a snug, main body sleeve that can then be fitted with a range of different tool attachments, depending on the activity they would like to do. Writing, painting, yoga, skipping, playing an instrument, bike riding, kayaking and surfing being just a few of the most popular activities.

Holistic support is also a big part of what Koalaa provides. Each user becomes part of the Koalaa Community and has a dedicated 'Limb Buddy' assigned to them, who has personal experience of limb difference and is always there to listen and provide advice and support.

Through the online Koalaa Community group, users have access to peer-to-peer support and a safe space in which to share ideas and ask questions.

Alongside this, Koalaa is working with key partners to create a bank of resources that will further support individuals as they navigate life with a limb difference.

Virtual service model
Due to the way the prosthetics are made, Koalaa operates as a virtual service, with the prosthetics able to be produced remotely, using just a few simple measurements. The sleeves are then sent out to users, or their clinicians, through the post within a matter of weeks – typically arriving in under 14 days for UK-based users.

This virtual model has the potential to aid accessibility for amputees across the world. For example, the team recently carried out a successful pilot project in Sierra Leone, where there is a huge need for prosthetics, coupled with a major lack of access.

Designed by users, for users
The company was founded by Nate Macabuag, who first came up with the idea for making a new kind of prosthetic while doing his Masters' degree at Imperial College London. With the insight, inspiration and ongoing support of designer and quadruple amputee Alex Lewis – as well as various clinicians, charities and support organisations – Nate went on to found Koalaa in March 2020.

What began as a team of just five, grew to a team of 12 within a year and is now a team of 16. In February 2021, the Limb Buddies were introduced – Sarah, an adventurer and cyclist who was born without her left lower arm and Amy the mother of one of Koalaa's youngest ever users, Hero. They act as a constant point of contact and support for users, not just in relation to Koalaa's products but more broadly in signposting support and advice.

Nate explains: "I never intended to start a business straight out of university, that had never been part of my game plan, but I saw a major problem and I wanted to be part of the solution".

"Koalaa isn't about devices, it's about people and our users sit at the heart of everything we do. We are passionate about our users and about providing them with solutions that will help them live their life to the full, aiding independence and offering a tool that's there when it's needed".

"We are determined to make a positive impact in the assistive tech space, for children and adults with limb differences across the world, by making prosthetics that are designed by users for users. We even name our tools after the individuals who inspired them and who worked with us on their design. For example, two of our newest tools are the Sarah, which is perfect for riding a bike or scooter, and the Nicole, which is great for the pushing up motion needed for surfing and yoga".

Nate continued: "We very much see our Koalaa prosthetics as a useful tool that is there when it's needed. And we continue to create and develop new attachments, based on the ideas and feedback of our wearers, who sit at the heart of everything we do".

"By making devices approachable and enjoyable to use, we're also hope to encourage users who might otherwise simply stop using their prosthetic, to engage more fully with their physio and rehab teams to get the most from the tools available to them and which might aid their independence".

He added: "One thing we are often asked is where the name Koalaa came from. Many companies in this field are either named after the founder or have an engineering feel to their name. We wanted something that felt approachable, friendly and warm. Then it was pointed out to me that our prosthetics are soft, grey and hug on to you… so the name Koalaa stuck and now it feels perfect".

Current range
The current Koalaa range includes devices for individuals with a variety of upper limb differences:

- The Joeyy – suitable for babies and toddlers 0-3 years of age
- The Paww – suitable for children and adults with partials hands and fingers
- The ALX – suitable for children and adults with below elbow limb difference
- Day 1 ALX – suitable for use as early as 48 hours after upper limb amputation

Excluding the Joeyy, which has an inbuilt tool, each sleeve can be fitted with different tool attachments. This includes the 'Sarah' tool which is ideal for gripping on a bar, such as to push a shopping trolley or pushchair, or to use a bike or scooter. And the 'Nicole', which can help users push up and balance, such as for yoga, surfing or doing handstands.

The range is continually growing and includes a sleeve designed for above elbow limb differences, which is currently in the final stages of development.

Post-op sleeve
In March 2022, Koalaa piloted a first-of-its-kind soft prosthetic, designed to be used by amputees just a few hours post-surgery, named the 'Day 1 ALX'.

The pioneering technology was again developed by the team in collaboration with Alex Lewis, who had recently undergone surgery. He was able to use the prosthetic straightaway, supporting his independence – something the team sees as being a huge potential benefit for amputees.

Nate Macabuag explains: "Our business is about people, so when we realised there was an urgent need for a post-op prosthetic our design team worked tirelessly to create something that could give people their independence back straight away. We hope we can make a real difference for amputees across the world".

Project Limitless
Having access to a prosthetic can be life-changing for children with limb difference, empowering them to live life to the full and inspiring them to pursue their passions and interests. Prosthetics can aid inclusion and independence, while supporting play, fun, exploration and everything else a growing child may wish to do.

Through an initiative called Project Limitless, young people aged 18 years and below can access a fully funded Koalaa prosthetic. The project was launched by charity The Douglas Bader Foundation in association with Alex Lewis and has already provided more than 400 children with a free Koalaa arm, with funding secured to support many, many more.

Find out more
Koalaa is actively seeking innovative clinicians and clinics to help develop a service to support patients from day one. For more information, visit **www.yourkoalaa.com** or email **hi@yourkoalaa.com**

**World Health Organisation: 'Standards for prosthetics and orthotics' pg xxviii*

BACPAR ANNUAL SCIENTIFIC MEETING PROGRAMME 2022

Wednesday 23rd November

Time	Topic	Speaker/s
9:00–9:10	Welcome	BACPAR Chair
9:10–9:30	**Talk** – Prosthetic engineering for children with lower limb loss in low and middle income countries	Caitlin Edgar
9:30–10:30	**Workshop** – The Starworks Network:eExploring opportunities for sharing innovation in prosthetics for children and young people	Dr Gemma Wheeler
10:30–11:00	Coffee break	
11:00–11:15	**Talk** – An intro to Soft Prosthetics by Koalaa	Nate Macabuag-Koalaa
11:15–11:45	**Talk** – Tricky Transition – Patient experience moving from peadiatric to adult services from a teenager and parent's POV	Ollie (Teen) & Carly (Mother) Bauer
11:45–12:00	Paeds questions / discussion	NA
12:00–13:00	Lunch	
13:00–13:30	**Demo** – Innovations in upper limb prosthetics and the implications for physio!	Ruth Nicholson & Lauren Newcomb
13:30–13:45	**Abstract** – Quantifying prosthetic utilisation and functional mobility in new prosthetic users, and exploring their barriers following inpatient rehabilitation	Dr Heather Batten
13:45–14:00	**Abstract** – The effect of the Motivating Structured walking Activity for Intermittent Claudication training for Physiotherapists on therapeutic empathy and psychologically informed behaviour-change approaches	Dr Lindsay Bearne
14:00–15:00	**Abstract** – Sharing stories of lower limb amputation in practice: An exploration into the relatability, usability, and implementation of an animation video package across UK rehabilitation services	Fiona Leggat & Emily Taylor
15:00–15:30	Coffee	
15:30–17:05	**Table 1** – Factors which may influence the implementation of narrative videos	Dr Fiona Leggat
	Table 2 – Role of exercise in vascular disease	Dr Lindsay Bearne
	Table 3 – Supporting clinical practice through research	Dr Siobhan Strike
	Table 4 – How the wider family is affected by amputation	Dr Ross Wadey
	Table 5 – Reflections on the narrative videos	Emily Taylor
	Table 6 – "Clinicians and experts national forum	Dr Miranda Asher
17:05–17:15	Wrap up World Café	Dr Lindsay Bearne
17:15–18:00	BACPAR AGM	NA
18:00–19:00	Drinks reception	NA
19:00+	Evening symposium – See other societies programme	NA

Wednesday 23rd November

Time	Topic	Speaker/s
08:55–09:00	Welcome	
09:00–09:15	**Talk** – Understanding the experience of preparation of patients for amputation surgery	Lucina Wilde & Maria Gonzalez Aguado
09:15–09:30	**Talk** – Should TMR be performed routinely?	Hayley Freeman
09:30–09:45	**Abstract** – Managing prosthetic device related pressure ulcers in inpatient and outpatient prosthetic clinics – our experience	Amy Jones
09:45–10:00	**Abstract** – Our experience of the short term effects of MPKs at Swansea ALAC	Laura Carter
10:00–10:15	**Abstract** – Don't let them take my knee	Damien McGovern
10:15–10:30	Time for questions	NA
10:30–11:00	Coffee	
11:00–11:15	**Pre recorded Talk** – Exercise Intervention in the Treatment of Patients with Intermittent Claudication – Update of the SPARG Guideline	Mairi Ross
11:15–11:45	**Talk** – Developing behaviour change interventions to enhance physical activity in people with PAD and IC	Dr Chris Seenan
11:45–12:00	**Talk** – Moving medicine and how to use this resource	Kiera Roche
12:00–12:15	**Talk** – Balance and falls in prosthesis users: What do we know and where should we go?	Dr Cleveland Barnett
12:15–12:45	**Talk** – MPKs for primary patients –experience from West Midlands	Dr Ramamurthy Poornashree
12:45–13:00	**Talk** – Exploring an integrated therapy approach in meeting standards pre and during covid	Carolyn Wilson
13:00–14:00	Lunch	**Posters review by panel**
14:00–14:15	**Abstract** – Exploring outcome measurement following lower limb amputation from a clinical practice perspective: a narrative review	Chantel Ostler
14:15–14:30	**Abstract** – Exploring meaningful outcomes of recovery following lower limb amputation and prosthetic rehabilitation: The patient's perspective	Chantel Ostler
14:30–15:30	**Debate** – This house believes.	Lead by Lauren Newcomb & Miranda Asher
15:30–17:00	Invited to join SVN (see nurses programme)	

MY JOURNEY TO INDEPENDENCE

Julie McCullough

In September 2019, at the age of 49, I became a right sided transfemoral amputee.

My journey began in 2016 with a diagnosis of Acute Myeloid Leukaemia, subsequent treatment in Belfast, and six months later, a stem cell transplant in St James's Hospital, Dublin. I experienced complications after the transplant with graft versus host disease and immunosuppressant medication. Having worked as a staff nurse for 16 years in oncology, in the Belfast Trust, I fully understood the processes involved in a hospital environment as well as the hospital and community referral systems. I have found this very beneficial within my new role as a service user. I also fully understood the implications of my blood results, infection, and its impact within my body.

Septic arthritis developed in my right knee during August 2017, caused by the immunosuppressant medication I was required to take to control the graft vs host disease post-transplant. Despite having the knee washed out surgically many times over the next couple of years, I developed sepsis and further infection in my right tibia and additionally left tibia. Finally, in September 2019 I required a transfemoral amputation and debridement surgery on the left tibia. Debridement was repeated twice in the summer of 2020, along with muscle flap reconstruction and skin graft, plus intravenous antibiotics for a prolonged period via a PICC line.

My main aim following amputation was to get back to full mobility and independence. This process started in January 2020 in Lurgan Community Hospital with a physiotherapist using a PPAM Aid. Standing up again and walking between two parallel bars felt amazing! I was excited to then commence prosthetic rehabilitation in the Amputee Rehabilitation Centre (ARC) at Musgrave Park Hospital, Belfast. My prosthetic leg was fitted and adjusted as the next few weeks of physiotherapy progressed. The encouragement, advice and adjustments to my gait and walking techniques were invaluable, and the day eventually arrived when I could walk out to my adapted car to drive myself home wearing my new leg.

Further exercises were demonstrated and practised to enable strengthening of my leg and hip muscles, and the importance of this was explained fully. How to get up from the ground following inevitable falls was also covered and along with the reassurance that I could access further physiotherapy at ARC whenever I needed it, I went home with my prosthetic leg and mechanical (free) knee.

Additional physiotherapy was needed following debridement surgery later in 2020 as I wasn't allowed to weight bear eight months and then was only permitted to progressively weight bear on the left leg over a further four-month period. The anti-gravity machine assisted me with progressive weight loading, and I looked forward to my weekly sessions with the physiotherapist in Musgrave Park. As the weeks progressed, I felt stronger and more confident walking, as it was in a supportive structure. Progress was made and regular x-rays were performed under the direction of the orthopaedic consultant who carried out the procedure. He was happy with the stability of my left tibia, and I was finally permitted to walk independently outside the gym environment with two crutches. This progressed over time, with further physiotherapy sessions to two sticks and then eventually one stick. I continue to attend physiotherapy sessions to help me identify weaknesses in my muscles and the appropriate exercises I need to practice strengthening these muscle groups, as my aim is to walk without any additional aids at all.

The journey from my previous full physical health and fitness, where I ran regularly and trained weekly at a gym, to walking slowly and now being constantly aware of different walking surfaces and obstacles ahead, has been a long seven years. From the early days in St James in Dublin, where getting up and down from a chair after major muscle wastage was a huge achievement, to walking post amputation and additional leg surgery, throughout it all I have been able to harness the knowledge and skill of a physiotherapist.

Perhaps it is only in the event of a major health event that a person, on reflection, can truly appreciate the significant positive impact of having a physiotherapist to help, advise and enable you to achieve life goals as well as living your life as fully and as independently as possible. My own involvement with a physiotherapist will continue as my physical needs change and evolve, and I know that I will always have a source of help and information that is invaluable for my own quality of life.

A single-centre qualitative experience of closed incision negative-pressure wound therapy (ciNPWT) following major lower limb amputation (MLLA)

Dilraj Bhullar[1,2], Amro Shehata[1], Hussein Elkashef[1], Lauren Shelmerdine[1,3], James McCaslin[1], Sandip Nandhra[1,4] and the Northern Vascular Centre

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Background

- Around 1 in 3 patients undergoing MLLA experience a wound-healing complication[1]…with implications for patient recovery
- ciNPWT has been shown to improve wound healing in other body areas[2,3]

We report a single centre experience of ciNPWT (Prevena) in MLLA.

Prevena™

Single-patient use

Continuous negative pressure - 125mmHg, for up to 7 days

Barrier to external contamination + contains silver

Patient can shower with dressing

Method

- Single-centre audit of ciNPWT use in MLLA
- Qualitative data collection through local survey of vascular staff re. device application, experience and perceived impact on wound care
- Patient feedback also obtained; tolerance, interference with activity and recovery
- Survey responses collected from February '21 to June '21

Results

- ciNPWT was applied to 13 MLLA patients
- 18 local healthcare professionals (10 surgeons and 8 nurses) responded to our survey

Healthcare professional responses

Q: "Are you comfortable leaving the dressing 5-7 days before wound review?"

No 17%
Yes 83%

Q: "Do you think the ciNPWT dressing (Prevena) interferes with wound care?"

Yes 6%
No 94%

Results continued

All surgeons felt ciNPWT was easy to apply but 30% (n=3) felt uncomfortable with delaying wound review until 5-7 days.

Most staff agreed that using ciNPWT did not:
- add to wound-care workload (n=17)
- impact discharge (n=15)
- Impact physiotherapy/rehabilitation (n=14)

Altogether, n=14 (77.8%) of respondents felt ciNPWT encourages wound healing, however only n=10 (55.6%) thought it reduced wound complications. Furthermore:
- 61% (n=11) thought the additional cost of ciNPWT was justified
- 78% (n=14) would favour using ciNPWT over standard dressings for amputation stumps

Bar graph showing average ciNPWT experience of vascular team members:

	Well tolerated by patients	Covers wound appropriately	Effective barrier to contamination	Reduces post-op stump complications	Encourages wound healing
Average	4.4	4.9	4.7	4.0	4.4

Strongly agree 5
Agree 4
Neutral 3
Disagree 2
Strongly disagree 1

Patient feedback was received from 6 patients:
- ALL reported no perceived additional discomfort
- 2 reported interference with washing
- There was no reported interference with sleep

Conclusion

ciNPWT is acceptable form of wound management to nurses, surgeons and patients alike, providing the foundation for clinical evidence before generalisation into operative practices.

Study into the impact of ciNPWT on wound healing complications following MLLA is underway.

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PROFILE PAGE

TIME TO SUM-UP 40 YEARS OF AMPUTEE REHAB AND RESEARCH – A SWEDISH PERSPECTIVE

Kerstin Hagberg, Senior Physiotherapist and Associate Professor,
Sahlgrenska University Hospital, Gothenburg, Sweden

My name is Kerstin and this is the story of how I became deeply involved in amputee rehabilitation and research and happened to be the first physiotherapist in the world to see patients with bone-anchored lower limb prostheses.

As a young physiotherapist during the early 80's I worked in a clinic for infectious diseases and met patients undergoing lower limb amputations due to complications from infection. I became part of the team around these patients and was introduced into discussions regarding prosthetic rehabilitation. My interest was born, although patients left the ward before the true prosthetic training was initiated.

In Sweden, prosthetic rehab units are often closely connected to a hospital and named "Gåskolan", which translated to English is "the Walking-school". This is quite a stupid name since we all know the rehab includes so much more than walking skills. However, in 1983 I managed to get a part-time position at the Walking-school in Gothenburg. This small unit was an integrated part of the department for Prosthetics and Orthotics, and although small, it was one of the largest rehab units for amputees in Sweden. From the start I loved being involved in the long-term contact with patients and the teamwork around it. As in the UK, most patients were elderly and had diabetes and vascular diseases, but I also met patients of all ages and with different reasons for amputation. I found work highly meaningful. Meanwhile, I was also interested in research and started to take university courses in the subject. Luckily, combining clinical work, studies and family life was manageable. The ISPO (International Society of Prosthetics and Orthotics) World Conference in Japan 1989 was my entrance into the scientific world and the debut for me to make an oral presentation in English. I was more than nervous and had to pronounce prosthesis (very difficult for a Swedish tongue) 16 times during the short presentation. I survived! This was before power-point and computers were part of work. This was also the first time I saw a flexfoot and a silicone liner. Furthermore, I met other physios with a deep interest in amputee rehab. Attending my first ISPO World Conference was overwhelming and led to a taste for more. Once back in Sweden the idea came up to organise a national meeting for Swedish physiotherapists involved in amputee rehab. A meeting that thereafter continued to be organised the next 25 years.

This was my background when Per-Ingvar Brånemark, Professor at the Gothenburg University and the father of Osseointegration, made contact in 1991. He had a patient, a young woman with bilateral short transfemoral amputations (TFAs) due to an accident, that recently had got a kind of screw into one femur for the attachment of an artificial limb and by now she might need some rehab...WHAT!? Never heard about him or osseointegration before, what to do? No one to ask!

This proved to be the very first patient in the world treated for a bone-anchored transfemoral prosthetic with the use of a titanium implant. Later this implant was named OPRA (Osseointegrated Prosthesis for the Rehabilitation of Amputees). The surgical treatment part was similar to osseointegrated implants for tooth loss but with a larger sized implant. Prosthetic rehabilitation with such an implant in the case of limb loss was however a totally unknown area in every sense you can think of. There was no regime or protocol to follow. Enabling this young lady to stand up and balance on one sole full length-prosthesis was obviously not a good idea. Thus, to enhance her control and balance when she started to load the implant in an upright position, a short training prosthesis like a "stubby" was introduced with the load being taken through a stool. During the rehab of this very first patient my third child was born and I was on maternity leave for a while. Once back, a few more patients with unilateral TFA had undergone the same kind of surgery and the short training prosthesis (with load taken through a stool) seemed to be a good idea for their start of rehab. At this stage we also started to try to control how much loading was taken on the implant by introducing a simple bathroom scale on top of the stool during the loading exercise. Through trial and error we learnt that the rehab and prosthetic mobility for these patients had to be gradually increased and that bothersome pain while loading the implant was to be avoided. And by now a multidisciplinary osseointegration team had formed and I became involved also in the preoperative assessments. Meanwhile, international patients from different parts of Europe started to show up for this treatment. Suddenly I had patients living very far away and communication could be a challenge. Nevertheless, work was thrilling and demanding! There was a need to create rehabilitation routines that were easy to understand and to follow, including for those from abroad. And we needed routines for follow-ups. And how were we to evaluate the outcome of this new way of prosthetic attachment? At that time, there was a lack of publications reporting outcomes separately for patients with TFA and I found no amputee specific PROM (Patient Recorded Outcome Measure) that was suitable for this growing group of patients; I started to figure out my own.

The number of patients coming from different parts of Sweden or Europe increased and dealing with osseointegration rehab and research took up more and more of my daily hours. Finally, I realised the data and ideas I had were enough for a PhD project and I applied to be a PhD student alongside my work – a decision never regretted.

A Swedish medical PhD requires 4-5 peer-reviewed scientific publications and the publication of a book on the topic. It should be finished in 8 years if done in combination with clinical work. My topic was Transfemoral Amputation, Quality of Life and Prosthetic Function with focus on individuals with amputation due to reasons other than peripheral vascular disease, with socket and osseointegrated prostheses. One important part of this work was a survey describing the consequences of TFA. Another was the development and validation of Q-TFA – a questionnaire to be used for people with TFA. Scientific publications are most often written with the help of co-authors. One of my co-authors was Maggie Uden (now Walker). We had met already in 1995 when Roehampton in London started their osseointegration program using the Swedish OPRA implant. Maggie is one of many other international contacts I have appreciated over years.

I finished the PhD in 2006 and at this point I started to engage in other projects while continuing a mixture of clinical work and research. I became involved in the ISPO-Sweden National Board and in the development of a national quality register for lower limb amputations, SwedeAmp. Right now, I actually put my last hand on the yearly SwedeAmp report containing data for over 9500 patients.

Over the years most of my research has focused on mobility and quality of life after lower limb amputation, especially after osseointegration. Since the late 90's I have continued to prospectively follow patients treated with an OPRA TFA implant at the Sahlgrenska University Hospital and today this material is unique with some patients followed for over 20 years. To my knowledge, there are no such long-term follow-up series available for individuals supplied with socket-suspended prostheses. This is a pity!

This fall I turn 65 and I have started to slow down a little bit. My current role is more to advise than provide hands-on treatment and I have left the Dept for Prosthetic and Orthotics and the Walking-school for the Orthopaedic clinic at the same university hospital. My working life has been amazing, and I realise I have had quite a bit of luck. On the other hand, I have dared to take the chances given to me and I have not given up despite setbacks. Setbacks are part of all research. Looking back, I can see some cornerstones being of extra importance leading to a huge network of colleagues and friends which provided me with new experiences for clinical work and research. Hopefully also to benefit our group of patients.

Maybe the following tips can motivate anyone of you to make future moves forward:

- Engage in associations and activities focusing on amputee rehab outside of your clinical work. ISPO is one such non-profit organisation, WHO (World Health Organisation) another, and for sure BACPAR.
- Give lectures in the subject e.g. to patient organisations, other health professionals or students – giving lectures is actually a way to raise your own level of knowledge and experience.
- Take opportunities to actively engage in research projects and seek further professional and personal developments through higher academic studies such as a Masters or PhD.
- Participate in international meetings. From my experience the best way to get funding is to present something yourself. For that you need to plan well ahead. Why not start now to plan for the ISPO World Congress in Stockholm, Sweden in 2025. Stockholm is a beautiful city, and I would love to see you there!

All the best!
Kerstin

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PROFILE PAGE

A DAY IN THE LIFE OF SIONED STEVENTON

Sioned Steventon, Assistant Clinical Lead Prosthetist, Queen Mary's Hospital, Roehampton, London

I work at Queen Mary's Hospital in Roehampton as the Assistant Clinical Lead Prosthetist. Through this 'day in a life' article I would like to share with you what my role is and how I work with the wider multidisciplinary team (MDT).

Queen Mary's Hospital was originally set up as a response to the wounded war veterans of the First World War, offering amputations and prosthetic/amputee rehabilitation all in one place. This innovative new hospital, spearheaded by Gwynne Holford in 1915, was originally a temporary facility but later became permanent because of the important work that was done. The site that I work on today was built in 2006 to continue the legacy of amputee rehabilitation. We no longer do amputations on site, but we offer inpatient and outpatient rehabilitation for amputees and still manufacture the prosthetic limbs on site.

Prosthetic services throughout the UK are generally run by a contractor, with very few being fully NHS. Roehampton is contracted to Opcare, so they are my employer, but I am providing an NHS service. Working for a contractor within an NHS setting could be like working for two different teams but the goals of the two are aligned to give the very best patient care.
As Assistant Clinical Lead Prosthetist my time is split between management and clinical aspects. As part of my managerial role, I must incorporate business objectives into the clinical setting. I need to ensure the smooth running of the service by encouraging service improvements and innovations, mapping NHSE KPIs and organising patient care. I help to directly manage our team of clinicians and support them in any challenges they may have. As a team we have devised and adhere to our prosthetic prescription protocols so that we can offer the fairest prescriptions possible within our budget.

The clinical side of my role is the fun bit! My main clinical role is looking after the inpatients that spend their time here for their prosthetic rehabilitation. We have ten inpatient beds, and I am on hand to see each of them daily as and when needed. Our average length of stay for prosthetic rehabilitation is 7 weeks, but this can obviously vary from one patient to another depending on complexities and comorbidities. On top of the inpatients, I also have a reduced outpatient clinic. Generally, the other seven prosthetists see four to five outpatients a day, whereas I only see two to three so that I can split my time between the inpatients and the outpatients with timed appointments.

Before any patient starts their rehabilitation, they come for a Primary Rehab Assessment (PRA) where they are seen by the MDT to assess if they are suitable for prosthetic rehabilitation and whether they are suited to the in or outpatient pathway. At this appointment a falls risk assessment is done and often something we will do for the transtibial patients is make them a Rigid Removable Dressing (RRD) to give their residuum some protection, especially during transfers and whilst on transport. An RRD not only aids the healing of wounds by protecting the residuum but also aids with volume control by adding a little compression to the limb. I give an RRD demonstration on our Band 5 & 6 Physio Study days and have recently created a PDF showing the process so that this can be followed in other centres. I am happy to share this.

A Custom RRD

An average day for me would be to see an 8am outpatient before the ward patients start in the rehab gym at 9am. I would often see another one during the morning or in my afternoon slot. Prosthetic appointments vary wildly, I may be taking a cast, doing a fitting of a new socket, delivering a new limb, or doing a review. In terms of casting, we have many options. For transtibial patients I tend to do a hand cast, because I can really feel all the bony prominences that I need to build relief areas for within my socket, but it also allows me to put pressure on the areas I want to load, for example the patella tendon and the paratibials. I really love this part of my job, it's very hands-on. It is also possible to take a 3D scan of the residual limb, this enables a really good volume match. Both processes are very similar, I would take circumferential and some medial/lateral measures and I would mark the bony prominences; with a hand cast I use an indelible pencil, with a scan I use reflective dots that the scanner picks up. For transfemoral patients, again I can do a hand cast or instead of taking a scan I can take measures and create a brim shape on the computer. This method is much like the old metal sockets that would have been made back in the days of Gwynne Holford, but this time it is me creating the shape, not the technicians. It's funny how technology has evolved but it's a very similar process and outcome.

Once I have done my shape capture, I then need to rectify the model. If I have taken a hand cast, I need to fill my negative mould with plaster to create a positive model, if I have taken a scan, I already have the positive on the computer. For transtibials, the next part is similar whether I'm doing it with plaster or on the computer. I need to reduce my model to the measures I took during the shape capture, by taking away material from the pressure tolerant/fleshy areas. I then need to build up or add to those areas that are pressure sensitive, such as the distal end of the tibia or the fibula head. This stage is really important to get right; a very common problem with transtibial patients is pain at the cut end of the tibia, this can be a result of the socket not having enough relief in that area or not having enough pressure on the paratibials which stop distal movement within the socket and also prevent them sinking too far into the socket. With all rectifications, once they are done and I have raised an order with my manufacturing instructions, our very skilled technicians start making the new socket.

During fitting appointments, I do just that! I fit the new socket that has been made by our technicians from the cast that I created. During this type of appointment, I need to make sure that the socket fits well and that the patient is comfortable. I also need to make sure that the alignment is correct and that they are walking well with minimal gait deviations. I ask for a socket comfort score (SCS) pre and post fitting to quantify the fit, but I also spend a lot of time listening to what the patient has to say. It's also really important to look at body language, a subtle grimace can tell you something they may not say with words. In terms of gait deviations, one of the most common for transtibial patients is lateral thrust of the knee, this is seen in the coronal plane at midstance and can be caused by several reasons. The socket may not have enough adduction or inadequate medial shift of the socket, both will affect the weight line through the knee. It could also be if the socket is loose proximally and therefore not providing enough medial/lateral support. With transfemoral patients a common gait deviation may be circumduction, where the patient swings their prosthetic limb around rather than hitching from their hip. There are a few different prosthetic causes for this, perhaps if the limb is too long or they have pain in the groin. If the limb is too long, this may not be because it is the wrong length, but because the socket is too tight, and they are plugging out of the socket or if the socket is too loose and the socket isn't suspending well during swing.

Adjust alignment of a transtibial prosthesis

The final type of appointment is review and this can be patient or service led. Either way, there is always something that can be improved, whether it's fit or alignment. I can make many different socket adjustments during a review, depending on the patent's comfort. For example, if a transfemoral patient is finding the medial brim of their socket painful, this is most likely because they have reduced in volume and are now sinking in too far. It may be as simple as adding an additional sock or I can make an anterior pad to take up space and push the residuum back onto the ischial seat, preventing them from sinking in once more.

With the ward patients, each of them will be at different stages so my time will be spent with each of them differently whilst they are with us. I really enjoy working with the inpatients because I get to work so closely with the MDT, especially the physiotherapists. It is really beneficial problem solving together and resolving issues that patients may have. As an MDT we meet once a week to discuss each of the inpatients; what stage they are at, whether they have any medical or rehabilitation issues and how they will transition to home life once discharged.

My afternoons are often spent raising orders or doing cast rectifications, or general management or clinical admin. I am also on the Committee for ISPO UK which can be very busy at times. Recently I have been helping to organise the ASM (Annual Scientific Meeting) which is being held in October in Watford, perhaps I will meet some of you there! I am presenting a poster there with Maggie Walker, a Senior Physiotherapist from Queen Mary's Hospital. We have spent many years rehabilitating multiple limb amputees and so have devised a guide detailing the holistic management of this patient group. It displays aspects to consider including early rehab, timescales, therapy progression and prosthetic considerations as well as transitioning to home and follow-up.

Another extracurricular entity I am involved in is IRPAG+ (Inter Regional Prosthetic Audit Group Plus). I am the Secretary for this unique prosthetic audit group which meets three times a year. We are a group of nine centres, with the majority of the members being prosthetists but we also have a range of other professions, including rehabilitation consultants, physiotherapists, occupational therapists, rehabilitation engineers and clinical nurse specialists. As a group we audit a range of topics new and old and also present ideas and case studies. Pre Covid it was also a nice time to network and socialise outside of a work setting, hopefully the days of Zoom will soon be behind us!

So, in a nutshell, that is a day in my life as a prosthetist. It is very varied, with no two days or two patients looking the same. It is always challenging whether it is time management, a complex fitting or all the ward patients needing something at once, but I go home smiling everyday knowing that I have made a difference to someone's life and that's enough for me; I almost feel guilty how much I love my job!

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