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Psychology in Practice

Applied Research: a current example

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Bridging the Gap

Meeting needs and making a difference: a psychological perspective

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www.uwtsd.ac.uk



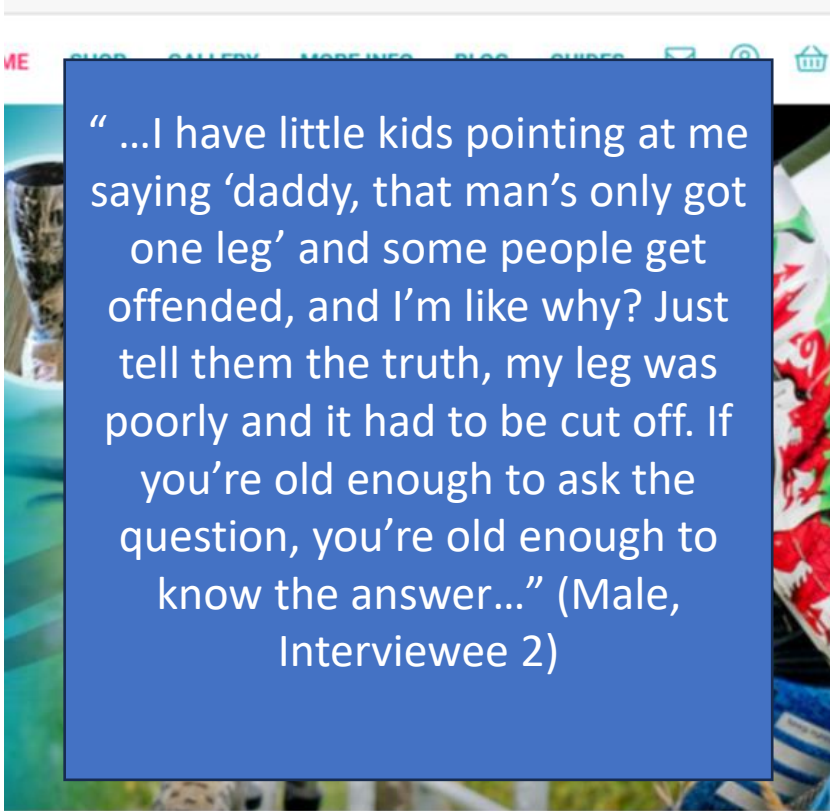
Hopes for this session

- ☐ encourage consideration and debate around how best to address unmet psychosocial support needs amongst individuals living with limb loss
- ☐ consider the challenges of social interaction, self identity and stigma from a social psychological perspective
- ☐ demonstrate the importance of a collaborative approach to identifying solutions to help address gaps in current psychosocial provision.



Background

- Major limb amputations are carried out upon thousands of people within the UK annually (Day, Wadey, & Strike, S, 2019).
- High rates of anxiety and depression in the first two years post-amputation, with improving mental health outcomes beyond this time (Horgan, & MacLahlan, 2004; Singh, et al. (2009).
- Both short and longer term distress associated with self-reported social discomfort, perceived social stigma, and body image concerns. (Horgan, & MacLahlan, 2004).

The image shows a mobile application interface. At the top, there is a navigation bar with icons for 'ME', 'SHOP', 'GALLERY', 'MORE INFO', 'BLOG', 'GUIDES', and a shopping cart. Below the navigation bar is a large blue rectangular text box containing a quote. The background of the app is a collage of images, including a close-up of a person's leg and a person's face.

“ ...I have little kids pointing at me saying ‘daddy, that man’s only got one leg’ and some people get offended, and I’m like why? Just tell them the truth, my leg was poorly and it had to be cut off. If you’re old enough to ask the question, you’re old enough to know the answer...” (Male, Interviewee 2)

Background

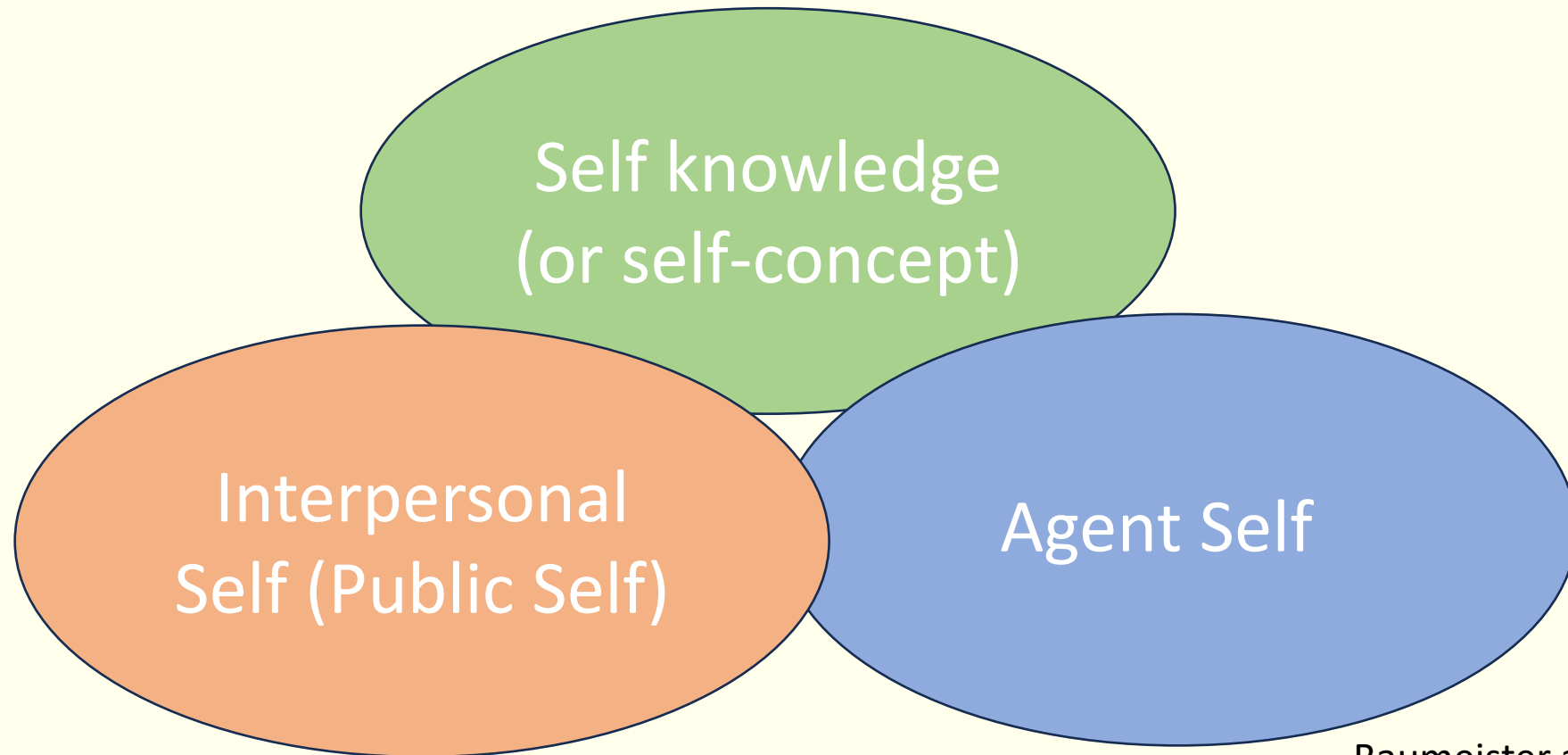
- **“Prosthesis Embodiment”** – the ongoing adjustment to perceived changes in areas such as personality, daily and occupational functioning, and relationships
- **A re-defined identity** - higher levels of satisfaction with prosthesis linked to more positive adjustment
- **Expressive prosthesis** – designed to highlight users identity- found to increase self-confidence (Vlachaki et al., 2020)
- Few studies exploring impact on social interaction or attitudes



Self Identity



The Psychology of the Self



Baumeister and Bushman, 2014

Public Self: Human beings as social animals

- Innate need to connect to other socially

- Survival and Cooperation
- Communication and Connection
- Emotional Support
- Cultural and Identity Formation



☐ Evolutionary Theory

☐ Social Identity Theory

☐ Need to Belong

☐ Social Exchange Theory



Public Self: Our identities and our social worlds

- We work hard to present a certain self image to others
- May or may not match our inner self-concept!



“you have to keep making yourself not mind... like walking around with clothes you don’t really like but you have to wear them anyway”
-P1(F)

Understanding Stigma

- **Public stigma** involves the negative or discriminatory attitudes that others may have about people with visible differences





Understanding Stigma

- **Self-stigma** refers to the negative attitudes, including internalized shame, that people with visible differences may have about their own condition.





Agency: Our need for control and agency

- ability to make choices and exert control
- control over self
- control over others

Self-efficacy is our confidence in the ability to control one's motivation, behaviour, performance and social environment.

“Cause all amputees will fight a battle when they become amputees, to accept they can’t do what they did before....”P5(M)

It was all about trying to get back to where I was before....getting back to those [sporting/family] activities was really emotionally important to me” P2(F)



Supporting our emotional health: coping strategies

The impact of stress and anxiety

Feeling irritable
with family,
friends and/or
colleagues

Finding it hard to
concentrate on
tasks/forgetting
things

Lack of
motivation

Feeling tired,
anxious or
depressed

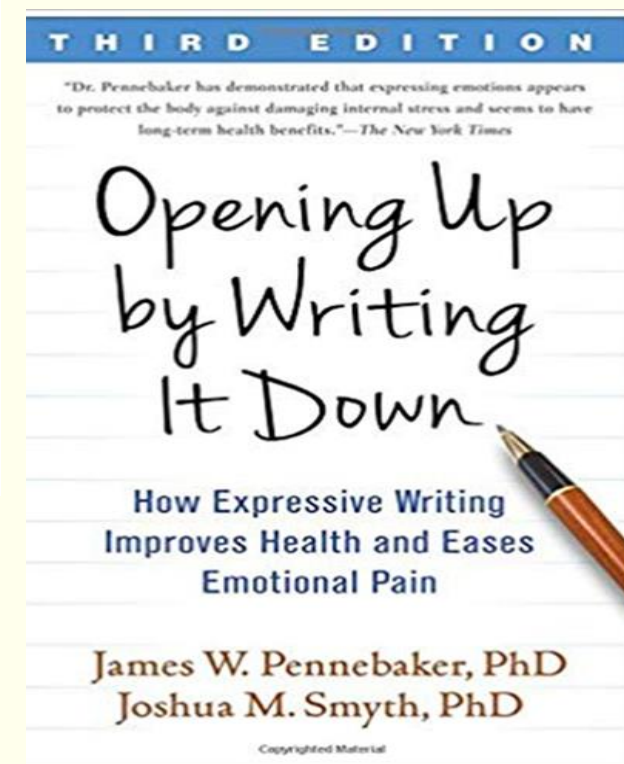
Experiencing
headaches,
nausea or bad
stomaches

Poor eating
habits

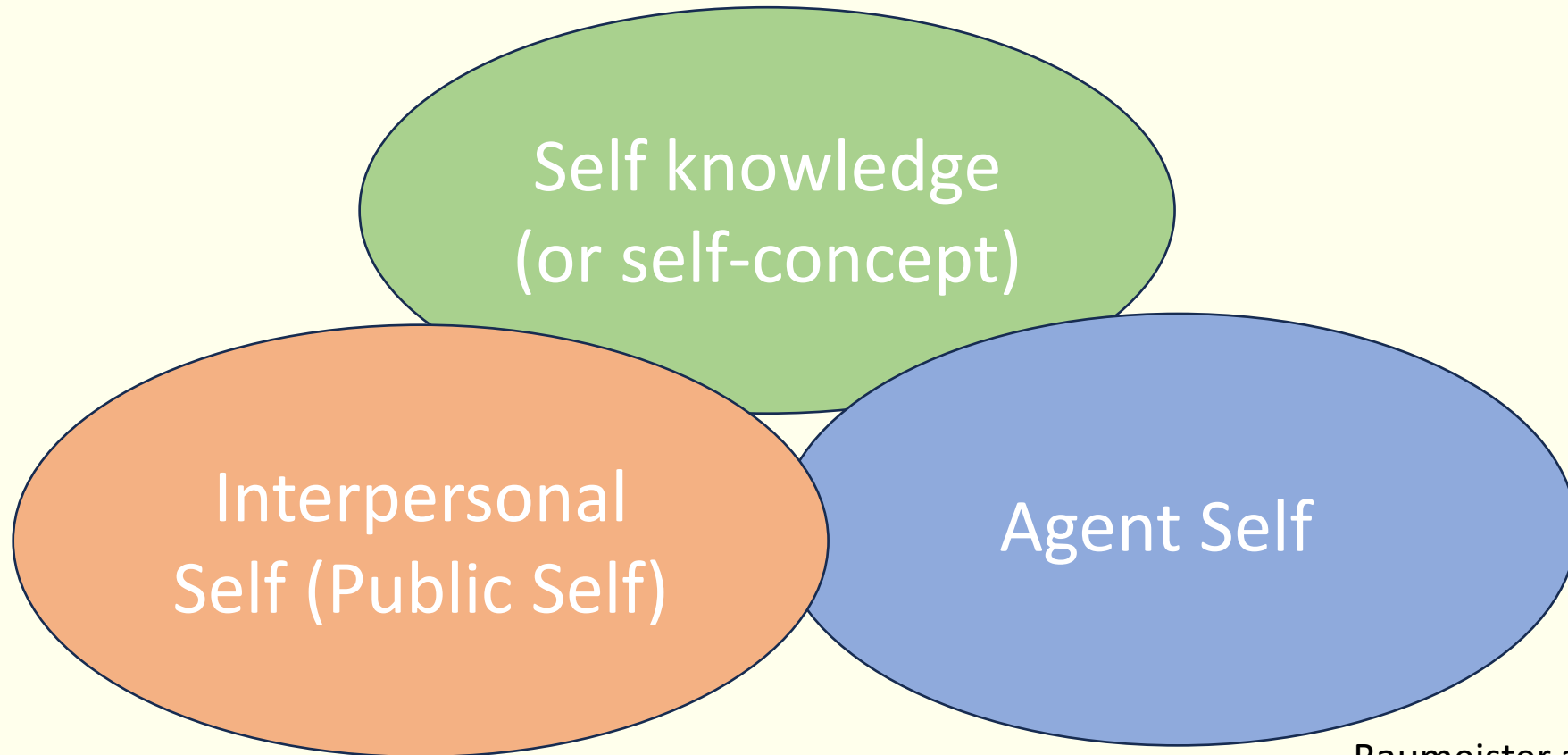
Difficulty
sleeping

Alcohol misuse

Controlling worries: developing your coping toolkit



The Psychology of the Self and Limb Loss: enhancing agency and meeting unmet needs



Baumeister and Bushman, 2014



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1822 - 2022



Exploring the impact of prosthetic leg covers on the mental health and well-being of amputees and the public's attitudes towards them

Phelps, C; Hutchings, P.B; Stokes, T; Cooke, Z; Williams, M; Jenkins S



#standoutstandproud

about us »

Research Questions

- What are the attitudes of the amputee and general population towards the use of a bespoke artistically designed prosthetic limb cover?
- What are the potential psychosocial benefits and harms of wearing the product?

Research Objectives

To gain insights into the prosthetic leg cover wearers' personal perspective on their circumstances, perceptions of stigma, quality of life, psychological wellbeing and design factors.

A large, light gray downward-pointing arrow connects the first objective to the second.

To collect quantitative data around public perception of amputees with and without expressive prostheses.

A large, reddish-brown downward-pointing arrow connects the second objective to the third.

To explore the wider potential impact of expressive prostheses upon visual and social interaction cues.

Multi Phase Mixed Methods Study

Online interview study with amputees (N=6)

Online exptl study: manipulation of images (N= 188)

Exptl behavioural observation study (N= 31)



Phase One: Online Interview Study

- Exploring impact of wearing the limb cover on quality of life and psychological wellbeing
- Six semi-structured interviews
- Thematic Analysis (Braun & Clarke, 2006).

Are you 18+ and have a custom leg-cover for your prosthesis?

We would like to talk to you!

We would like to know whether your custom leg-cover has had an impact on your wellbeing and quality of life.

If you would be willing to take part in a short online interview, please email Zoe (zoe.cooke@uwtsd.ac.uk) for more information.



Participants:

4 males aged 50-65 years

2 females between aged 40-50 years

Themes	Subthemes
Identity/prosthesis embodiment	Agency
	Individuality & Personalisation
	Returning to pre-amputation identity
Journey of acceptance	Internal/External validation
	Empowerment
	Pride/excitement
Responsibility to others	Education and awareness (public/children)
	Representation of Amputees
Cover vs No Cover	Change in conversation dynamic (medical/intrusive vs surface level and design focused)
	Feminine vs Masculine
	Safety and functionality

Identity/ Prosthesis embodiment

- “I just feel a bit, you know, cooler doing it, I feel more like me...think that’s a massive part of it, to feel confident in how you look” – P1(F)
- “It was all about trying to get back to where I was before....getting back to those [sporting/family] activities was really emotionally important to me” – P2(F)
- “I think it takes a long time, after trauma, to re-piece, to get your life back together again” – P2 (F)

Identity/ Prosthesis embodiment

- “I would never wear shorts with my prosthesis when I was younger... so, um, yeah with my cover on...totally different attitude” P4(M)
- “This is it, yeah, this is me” - P4(M)
- “Proud...in a way, proud...definitely. I was like so what? I’ve had the leg cut off, I’m gonna make the best of it” -P5(M)
- “It’s about self-esteem....putting on a leg cover makes you feel good” -P5(M)

Journey of Acceptance

- “[without leg cover] you have to keep making yourself not mind... like walking around with clothes you don’t really like but you have to wear them anyway” -P1(F)
- “I’m quite proud of my life since the accident, proud of what I have managed to achieve... that’s what’s given me the confidence to be okay with it” - P2(F)

Journey of Acceptance

- “It improved my mindset... I think it would improve everybody's mindset because you get a bit of pride about it....I’m gonna embrace this” -P5(M)
- “Cause all amputees will fight a battle when they become amputees, to accept they can’t do what they did before....but getting it, it makes you want to do more, want to get out and show it off” -P5(M)

Responsibility to Others

- “I feel a sense of responsibility to show my leg more...so that people, particularly kids, are more aware and familiar with it” -P2(F)
- “It’s actually a bit unfair, to suddenly sort of launch this grenade at them ‘*oh I’m an amputee!*’, I would rather people know”- P2(F)

Responsibility to Others

- “When I lost my leg, there was no information... so I’m happy to help if someone unfortunately has that happen to them now” -P4(F)
- “I feel it's better to portray a positive image about it, even though it’s a negative thing to happen. You have to make the best of it” - P4(M)

Cover vs No Cover

- “[interactions] If I’ve got my cover on, I haven’t got a problem at all” P4(F)
- “People are more comfortable asking, there is more to talk about, it breaks the ice” P5(M)

Cover vs No Cover

- “[Talking about a friend] I think you need to be out and proud with this kind of stuff, she’s always had the foam covers and worn clothes to cover it up and just basically pretending it wasn’t a thing” – P1 (F)
- [No cover/stem] “I don’t much like wearing that, I don’t think that’s attractive...the blokes are always in their shoers, and their always looking kind of, hard guys you know?” P2(F)

Phase Two: Online Experimental Study

- Recruited from UWTSD and via social media
- Exploring people's attitudes towards prosthetic limbs
- Between groups design (3 conditions)

Can you spare 5 minutes to help us understand how society views people who use a prosthesis?



WPO2: Experimental Study

Condition A:
Stem
Prosthesis



Condition B:
Expressive
cover



Condition C:
Digital leg



Big Five Inventory-10 (BFI-10)

I see this person as someone who....'
[Disagree strongly – Agree Strongly]

- E.g., Is reserved
- Is generally trusting
- tends to be lazy
- is relaxed, handles stress well
- has few artistic interests
- Is outgoing, sociable

Adapted version of the WHOQOL Attitudes Towards Disability Scale (Power et al., 2010)

WPO2: Experimental Study: Findings

	BFI facet	Limb Art Cover (1)	Stem (2)	Leg (3)	Sig diffs (LSD)
	Extroversion	7.32 (1.43)	7.08 (1.43)	6.45 (1.28)	1>3; 2>3
	Agreeableness	7.34 (1.29)	6.79 (1.37)	6.23 (0.91)	1>2; 1>3; 2>3
	Conscientiousness	7.69 (1.47)	7.89 (1.59)	6.47 (1.02)	1>3; 2>3
	Neuroticism	5.40 (1.48)	5.43 (1.15)	5.60 (1.09)	None
	Openness	6.31 (1.22)	6.30 (0.84)	5.95 (1.03)	None

Note: Mean scores with SD in parentheses. Score range 2-10 with higher scores equating to higher levels of perceived BFI facet. ANOVA scores for E, A, and C all $p \leq .002$, all significant LSD post-hocs $p < .02$.

WPO2: Experimental Study: Findings

Analysis of Attitude sub-scales by experimental condition shows **no significant differences**

ADS Subtype	Mean score (SD) (scale range 4-20)
Inclusion	7.81 (2.32)
Discrimination	10.84 (3.14)
Gains	14.34 (2.51)
Prospects	5.78 (2.19)

Attitudes towards Disability Sub-Scales

Inclusion e.g. “people with a prosthetic limb find it harder than others to make friends”

Discrimination e.g. “people often make fun of people with prosthetic limbs”

Gains e.g. “ Having a prosthetic limb can make someone a better person”

Prospects e.g. “People with a prosthetic limb have less to look forward to than others”

Lower scores on Inclusion and Prospects = more positive perceptions,
Higher scores on Gains = more positive perceptions,
Higher scores on Discrimination = greater perceived discrimination.

WPO3: Behavioural Observation Study



3 Film Clip Topics:
(Dogs, Cars, Olympics)

3 'Leg Types' per Film Topic:
(Digital Leg, Stem, Limb Cover)

9 Films Overall

Example of one of three films, where the subject is talking about 'dogs'

WPO3: Behavioural Observation Study

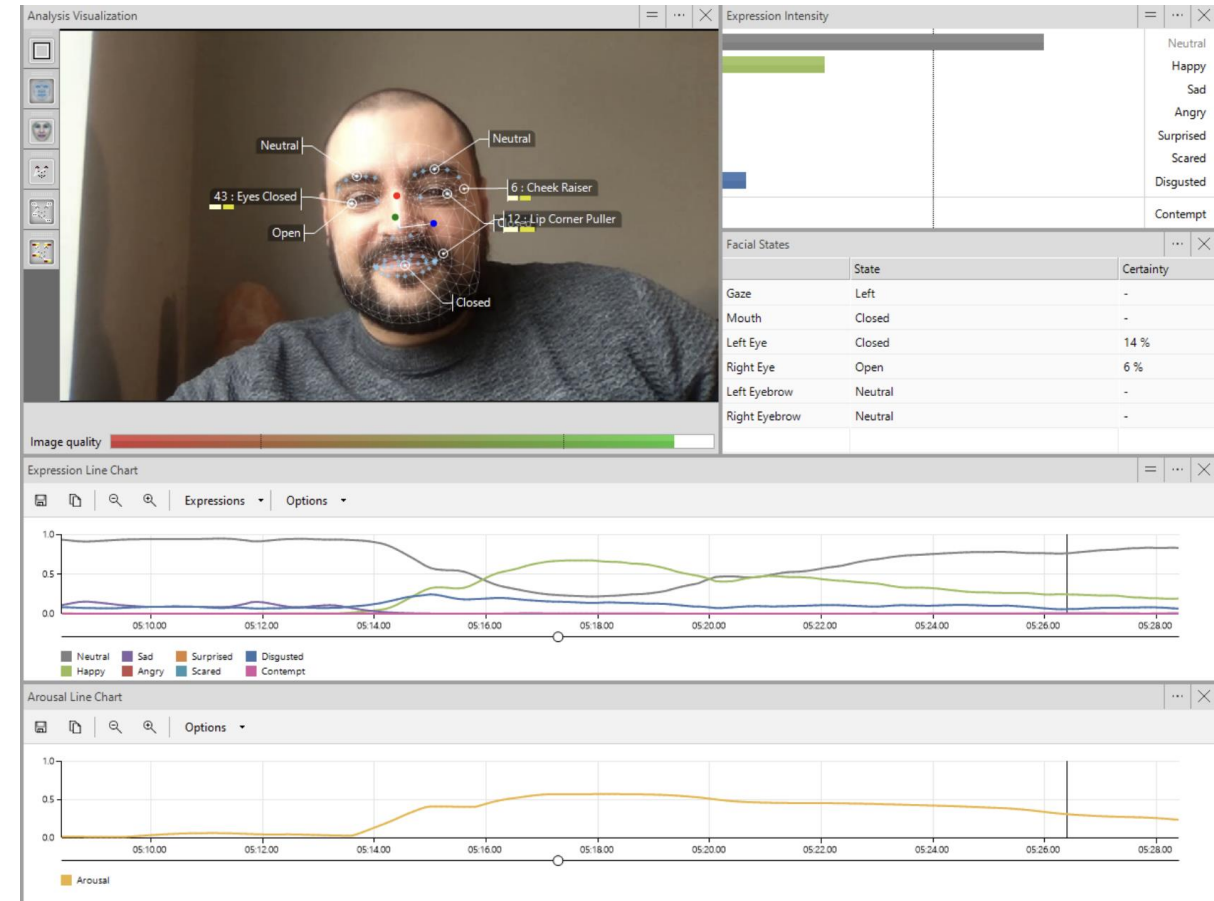
Aim: to explore the effect of expressive limb covers on:

➤ the attention and direction of eye gaze

➤ facial expressions

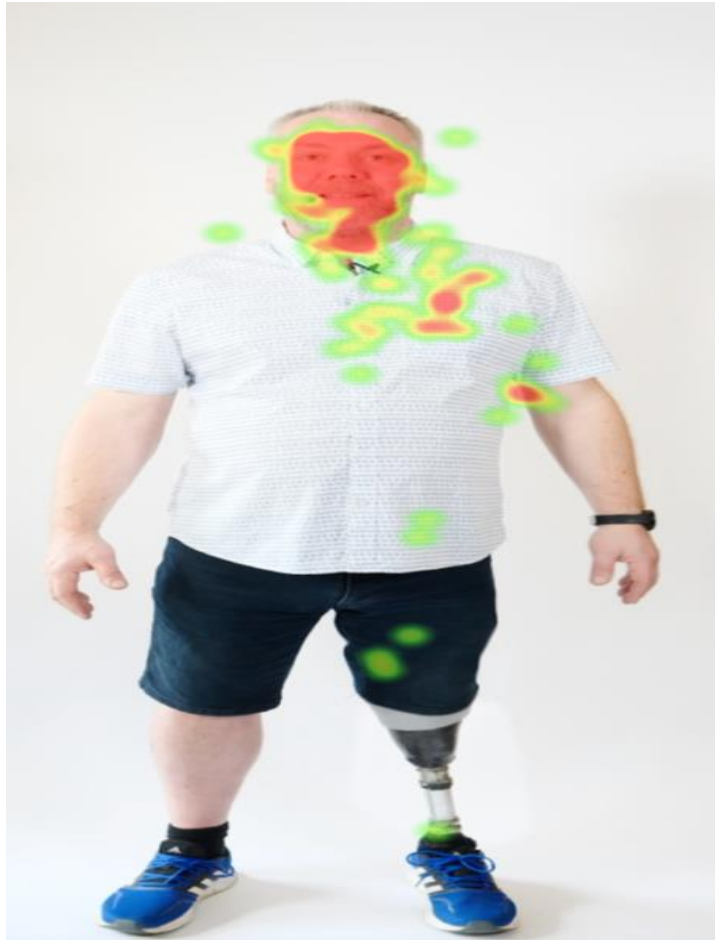


Tobii Eye-tracking
(screen-based)



Noldus Facereader

WPO3: Behavioural Observation Study: Findings

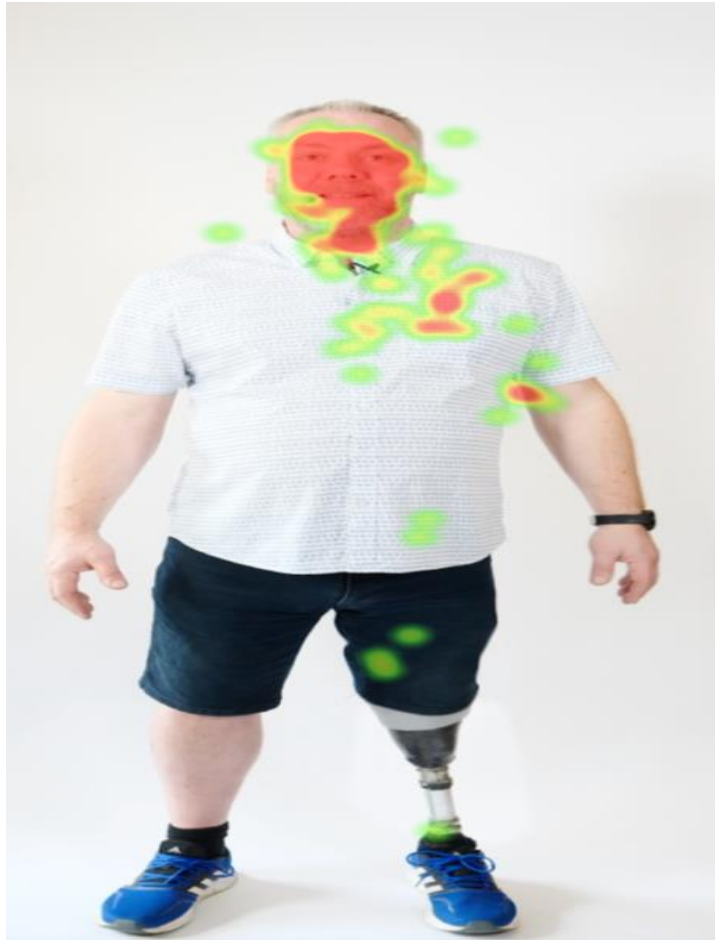


- N= 31 participants
- Eye tracking and noldus face-reader
- It assigns an arousal score based on the intensity and frequency of these expressions and enabled us to examine if participants presented any observable expressions of positive or negative valence to the presented stimuli.
- Facial expressions that are typically associated with arousal include widened eyes, raised eyebrows, and increased muscle tension in the face.

EXPRESSIVE LIMB COVER



WPO3: Behavioural Observation Study: Findings



- N= 31 participants

Average Participant **Valence** Score for each film/limb type:

	Olympics	Dogs	Cars
Stem	-0.1066347	-0.0298456	-0.0676537
Cover	-0.1054279	-0.0756122	-0.1021777
Leg	-0.1160867	-0.0401058	-0.026566

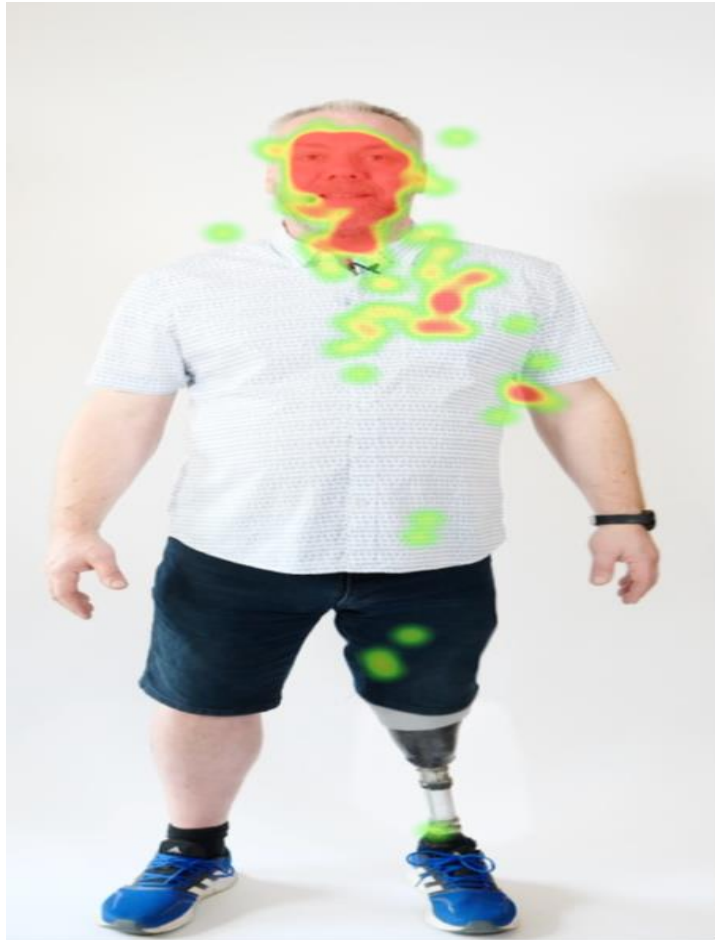
Average Participant **Arousal** Score for each film/limb type:

	Olympics	Dogs	Cars
Stem	0.280074118	0.292280116	0.272614331
Cover	0.315489615	0.269956197	0.399515332
Leg	0.281574157	0.299414501	0.314410479

Average Participant **Fixations** per film/limb type:

	Olympics	Dogs	Cars
Stem	3.74	0.21	3.91
Cover	6.15	1.86	6.09
Leg	2.64	1.55	0

WPO3: Behavioural Observation Study: Methods



- Despite wearing a bright prosthetic limb cover, participants still focused mainly on the face of the individual in the video.
- Potentially important implications for the nature of social interaction given the recognised importance of facial communication in everyday settings (Barratt, 2019).

Next steps... “walking in our shoes”



COLLABORATIVE RESEARCH GRANT
IN PARTNERSHIP WITH LIMBLESS
ASSOCIATION



FOCUS GROUPS/INTERVIEWS WITH
AMPUTEES AND KEY STAKEHOLDERS



INTERVENTION TO IMPROVE
PSYCHOSOCIAL
OUTCOMES/ADJUSTMENT

Next steps... “walking in our shoes”

VR simulation

What are YOUR priorities?

Training

At what stage?

Awareness raising

Clinical V Psychological?



Lived Experience in Innovation Design:

The Walking in Our Shoes Project

Ceri Phelps & Barrie Evans





Limbless Association
#LifeBeyondLimbLoss

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No Amputee Need Cope Alone



The Limbless Association



What are we trying to achieve?

Project Aim

To design and evaluate the acceptability and feasibility of a co-produced psychoeducational intervention designed to support better psychosocial adjustment to living with limb loss.

Co-production and the Person-based approach

- **sharing of power** – the research is jointly owned and people work together to achieve a joint understanding
- **including all perspectives and skills** – make sure the research team includes all those who can make a contribution
- **respecting and valuing the knowledge of all those working together on the research** – everyone is of equal importance
- **reciprocity** – everybody benefits from working together
- **building and maintaining relationships** – an emphasis on relationships is key to sharing power

[NIHR Guidance on co-producing a research project](#)

The Team

Academic Research Team

- Dr Ceri Phelps
- Associate Professor Paul Hutchings
- Dr Fatma Layas
- Nathan Morgan
- Mark Huntly
- Garry Bartlett
- Dr Tim Bashford
- Dr Kate Williams

Lived Experience Experts

- Barrie Evans
- Dr Mark Williams
- Lianne Forest
- & our co-production group

Stakeholders

- Deborah Bent CEO LA
- David Bosanquet, Surgeon
- All Wales Psychoprosthetics Group
- Dr Pippa Tollow, CAR, UWE

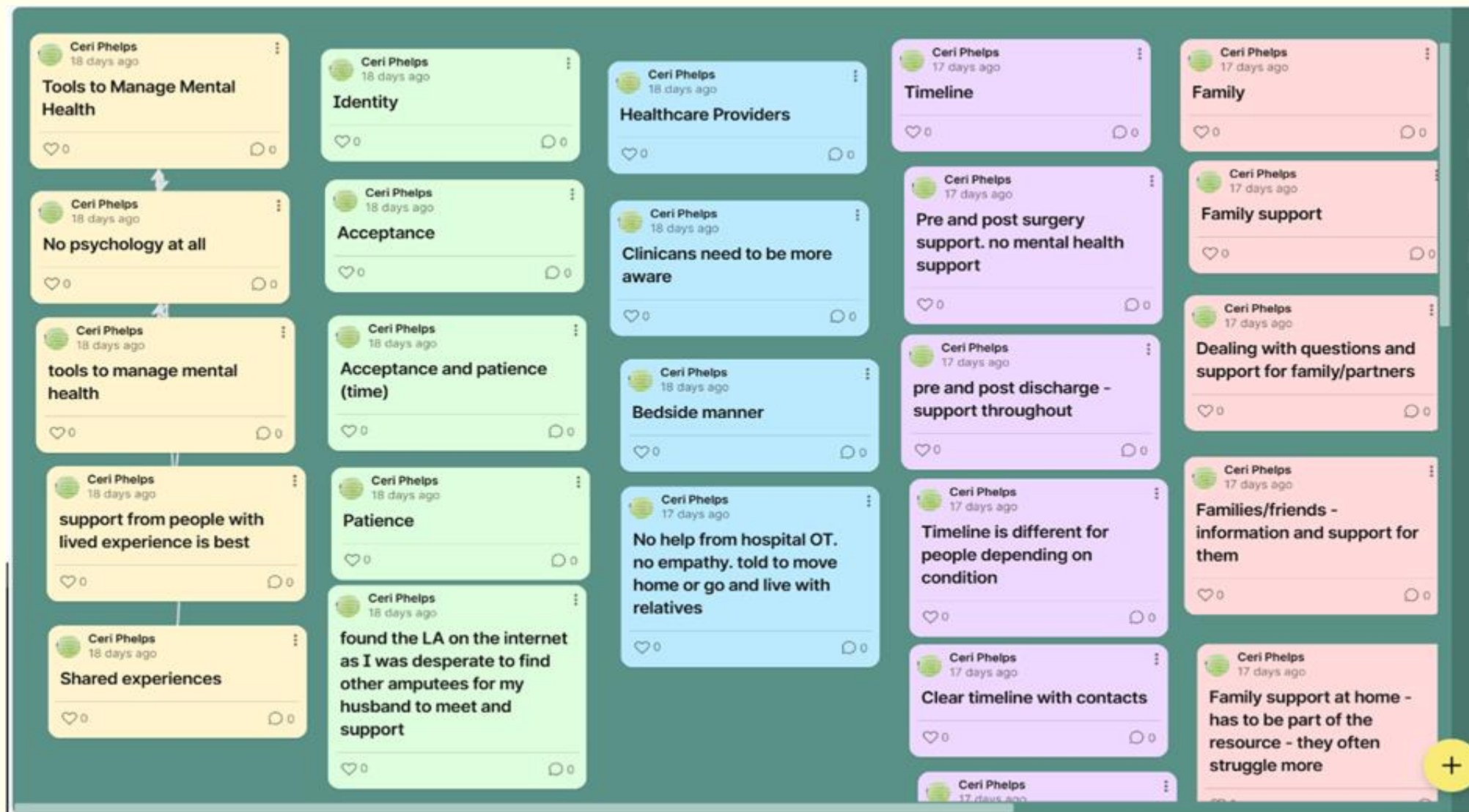


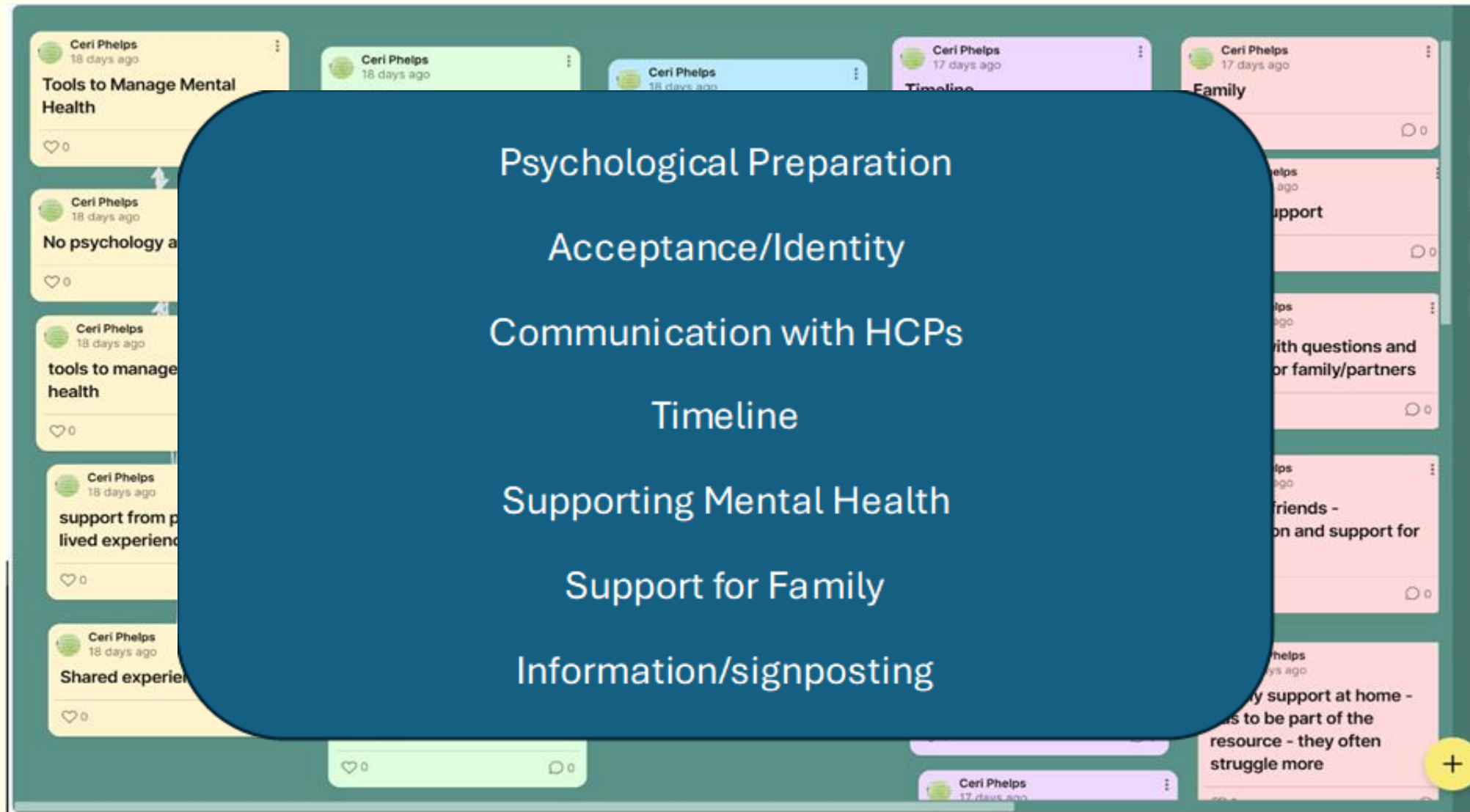
Limbless Association
#LifeBeyondLimbLoss



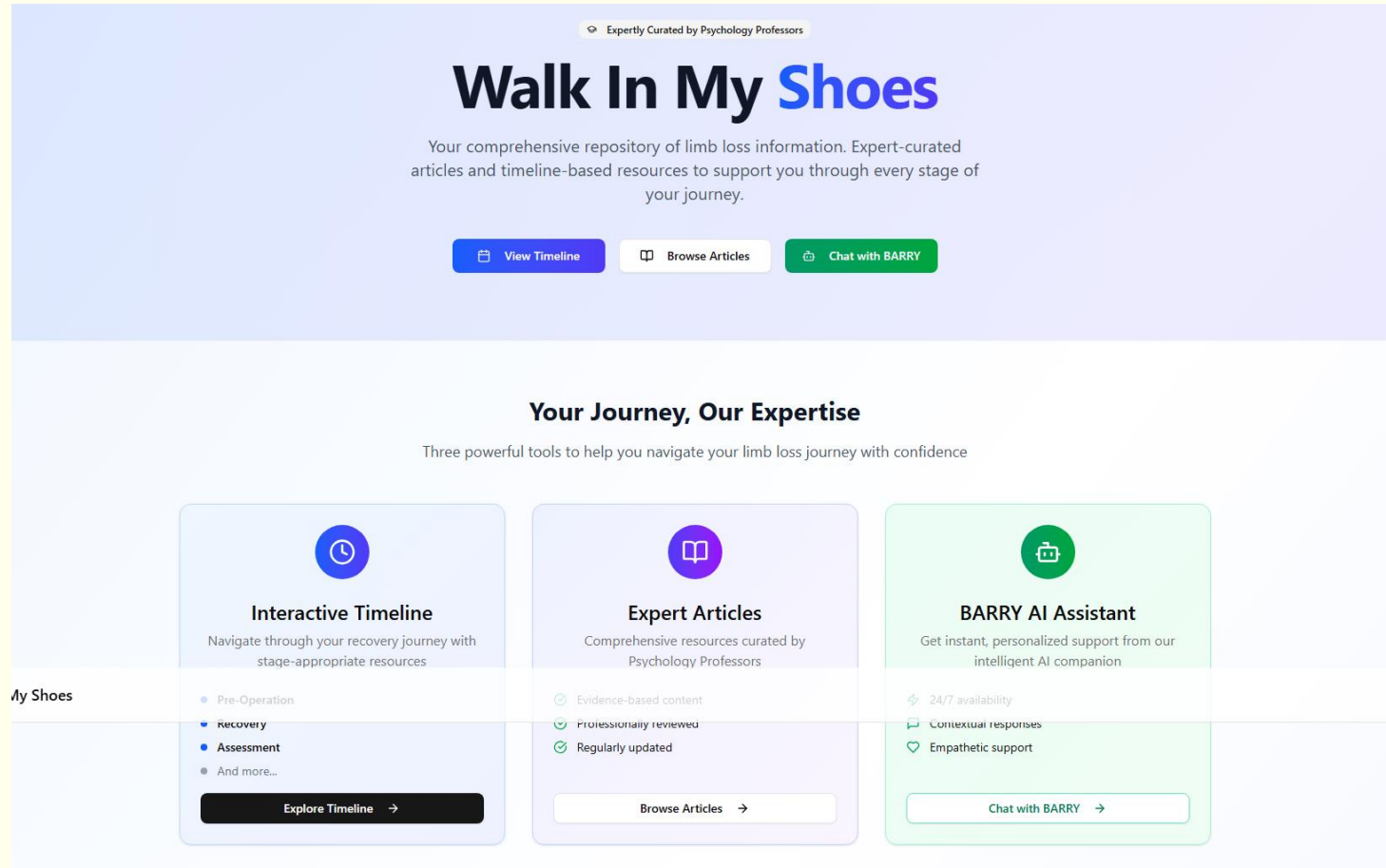
Co-production workshops: Heath Community Centre, Cardiff







WalkInMyShoes: Iteration 1



Immersive Technology? Capturing Daily Challenges

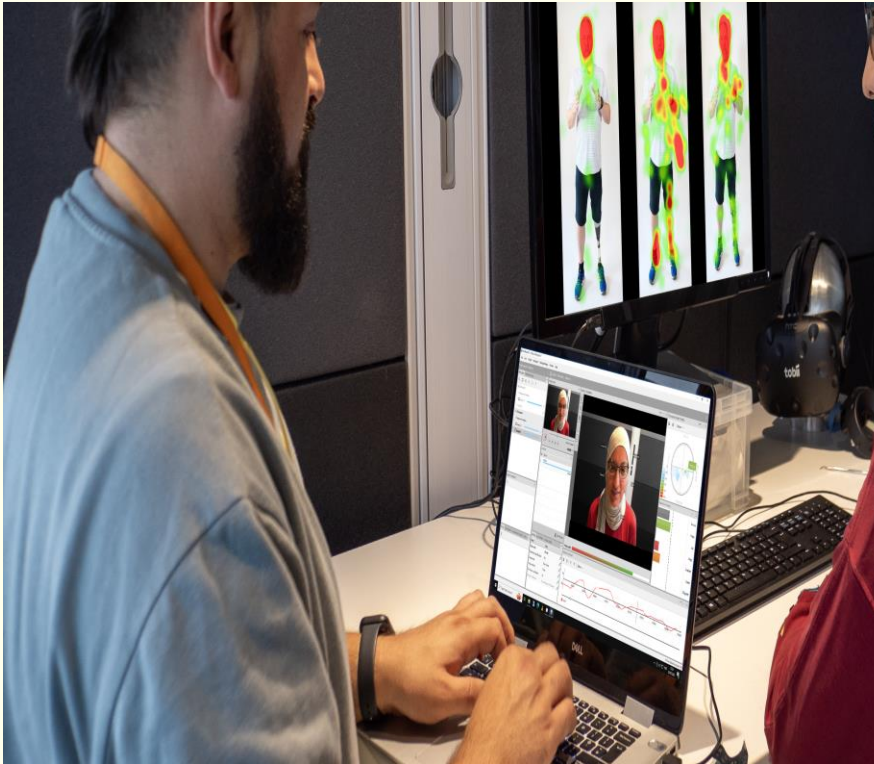


Immersive Technology? Capturing Social Stigma



Next Steps: Experimental Testing of Intervention and UX Testing

Wales Institute of Digital Information



Category	Items
Good	Delight, Excellent, Celebrate, Enjoy, Love, Fabulous, Appealing, Glad
Bad	Angry, Bothersome, Gross, Dirty, Tragic, Awful, Selfish, Sick
Physically Disabled People	     
Physically Abled People	     

Benefit to project

Authenticity and Relevance

Enhanced Empathy and Understanding

Tailored Support and Empowerment

Increased Engagement

Credibility and Trust

Lived Experience Impact

- Empowerment and Validation

- Opportunity to Make a Difference
- Personal Growth and Reflection
- Skill Development
- Recognition and Respect
- Sense of Community and Belonging
- Improved Self-Esteem
- Therapeutic Value of Sharing Experiences





Thank you for
listening....

Now over to
you...

