

Accessibility in lymphoedema practice: digital and practical therapy considerations

Andrea Mangion, Kate Murdoch and Neil Piller

Key words

Lymphoedema, accessibility, disability, digital health, blindness, advocacy

Andrea Mangion is a Cancer and Lymphoedema Physiotherapist, Educator and PhD Candidate in the Lymphoedema Clinical Research Unit, Flinders University, Adelaide, Australia. Kate Murdoch is a Remedial Massage Therapist and Lymphoedema Practitioner at Resolve Penrith. Professor Neil Piller is the Director of the Lymphoedema Clinical Research Unit, Flinders University, Adelaide, Australia.

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Lymphoedema therapy, under the Casley Smith method, is focused on manual lymphatic drainage compression bandaging, and the prescription of compression garments and encompasses various clinical assessment methods and techniques, including limb circumferences and volume measurement (Casley-Smith and Casley-Smith, 1992).

Accessibility

According to the World Health Organization (2023), globally at least 2.2 billion people have a near or distance vision impairment.

Some research has shown that visual dysfunction substantially limits career and occupational options (Hung et al, 2018), while other research has shown that lack of assistive technology is a barrier to employment and that “society needs to support the inclusion of each individual and ensure equal participation” (Basu and Sambath Rani, 2023).

In educational settings, ensuring accessibility for students with disabilities

Abstract

Accessibility is a broad concept that considers the capacity of individuals to autonomously and easily utilise and derive benefit from a physical environment, equipment, technology, and services. Accessibility, in the context of a blind massage practitioner specialising in lymphoedema therapy pertains to the necessary modifications and supports required to deliver clinical services effectively and safely without the sense of sight. This case study explores Kate’s successes and challenges, in the 12 months since becoming an accredited lymphoedema practitioner in the Casley-Smith method, in working as a lymphoedema practitioner.

entails making necessary adjustments to the learning experience, including the content and teaching methods, to provide equitable learning opportunities for all (Zhang et al, 2020). In employment settings, the Australian Human Rights Commission (2024) refers to accessible and inclusive workplaces and considers the following four factors:

- Physical workplace including internal and external accessibility and signage.
- Workplace attitudes, including positive and harmful sentiments.
- Workplace technology to ensure all employees are empowered to effectively undertake their work duties independently.
- Reasonable adjustments, including changes to work processes, practices or environments, to ensure employees with disability can perform their job free from barriers.

A blind lymphoedema practitioner

Kate Murdoch is a blind remedial massage and lymphoedema practitioner and has a strong desire to work independently and help others (Figure 1).

The authors recently explored Kate’s ability to become a qualified accredited lymphoedema practitioner in the Casley-Smith method (Mangion et al, 2024).

The case study demonstrated that although lymphoedema training requires a high level of practical proficiency in tasks, such as compression bandaging, it could be completed by blind health professionals who were proficient in remedial massage prior to attendance at the training course. The case study also demonstrated that accessibility factors should not discourage healthcare professionals from pursuing training in this specialised field.

After completing the training, Kate has offered lymphoedema services through a private practice model, leveraging off the success of her remedial massage therapy business (Resolve Penrith). Since becoming an accredited lymphoedema practitioner, Kate has experienced both successes and challenges in her role.

Successes

Kate’s successes are highlighted in the domains of establishing a safe working space, access to funding, delivering manual lymphatic drainage (MLD) and delivering compression therapy using pneumatic compression pumps and wraps.

Safe working space

Kate successfully established a safe and accessible work environment. The physical layout of the clinic is navigable and safe for a blind practitioner and patients with



Figure 1. Kate is smiling at the camera in this photo which shows Kate's torso. Kate is wearing her Resolve Penrith polo shirt.



Figure 2. Wylie, Kate's guide dog, is a black Labrador. In this photo Kate is smiling while hugging Wylie.

disabilities. This was achieved through selecting suitably accessible premises, organising tools and equipment in consistent places, using tactile floor markings and navigation aids to help orient Kate within the space, and adopting accessible technology systems for scheduling, patient records, and communication. Wylie, Kate's guide dog, is also in attendance at the clinic for the purpose of providing not just mobility assistance but also confidence and companionship (Figure 2).

Other specific resources such as wheelchair-accessible facilities, adjustable examination tables, and auditory diagnostic devices have been considered for anyone with disabilities. These tools not only ensure that medical care is accessible but also that dignity and needs of all patients, regardless of their physical abilities, has been considered.

Access to funding

There are various government programs and non-profit organisations which offer grants for blind or visually impaired people which can be used to purchase specialised equipment for improved accessibility. Kate was successful in acquiring funding through Job Access (Employment Assistance



Figure 3. The case study patient. Left: Front view of the patient's legs below the knee. Right: Side view of the patient's legs below the knee, with the left leg closest to the camera. The patient's trousers are pulled up. Both legs are very swollen up to the knee. The left leg appears slightly more swollen than the right leg. Both legs appear patchy and pink in places, representing chronic inflammation in both legs.

Funding Program, Australian Government) to cover the costs of adaptive technology.

Under the Employment Assistance Funding Program financial assistance allows individuals with disabilities to obtain funded equipment that is considered "necessary to perform a job". For example, an essential aspect of a lymphoedema practitioner's responsibilities is the use of a tape measure for the measurement of limb circumferences and determination of limb volume for choosing appropriate compression garments. Hence, it is crucial for a visually impaired practitioner to recognise substitute tools and processes that can fulfil the same purpose as a tape measure. Allocation of funding is limited to tools that are necessary for professional responsibilities, rather than for items that are merely preferred. Consequently, without appropriate funding, the practitioner is rendered incapable of practicing.

Manual lymphatic drainage

Manual lymphatic drainage (as taught by the Casley-Smith method) is a gentle massage technique that enhances lymph circulation and drainage and helps reduce lymphoedema by manually directing lymph flow towards healthy lymph vessels and nodes (Casley-Smith et al, 1998). A practitioner who is blind or visually impaired must heavily depend on their tactile abilities to palpate swelling and compare between sides, as well as perceive subtle variations in body temperature, skin texture, and tissue fluid. To improve these tactile cues, they can train their sensory skills through the practice of massage

therapy, as can all practitioners.

Kate, with her extensive background as a remedial massage practitioner, finds manual lymphatic drainage (MLD) to be the least difficult lymphatic modality to deliver. Kate's adeptness with MLD stems from her refined tactile sensitivity. This sensitivity enables her to tailor manual techniques based on patient feedback, so reports of swelling and discomfort in a particular area will allow her to focus on this area.

Additionally, Kate adjusts her approach to meet the specific needs of the tissues involved, recognising conditions such as fibrosis that require firmer decongestion strategies before proceeding with effleurage. This nuanced understanding allows Kate to provide highly personalised and effective treatment to suit the unique needs of each patient.

Compression therapy via pneumatic compression

Kate has successfully integrated pneumatic compression pumps into her practice. Pneumatic compression devices automate the process of applying consistent pressure to affected limbs, a method that is crucial for managing lymphoedema but challenging to execute with traditional bandaging techniques for someone who is visually impaired. This technological adaptation enhanced Kate's ability to treat lymphoedema effectively and for Kate's patients, allows them to have an effective strategy for managing lymphoedema on an ongoing basis at home through an affordable rental option (Medi-Rent, 2024).

Case report



Figure 4. Kate and a representative from Medi-Rent are pictured smiling and looking at a patient wearing Bio Compression pants up to the waist. The Bio Compression device operates with a bright blue garment. Kate has her right hand over the top of the pump garment, on the patient's lower leg

Pneumatic compression case study

A 74-year-old woman presented to Kate with bilateral lower limb lymphoedema (Figure 3). The patient had Type 2 diabetes, coronary artery disease and a pacemaker. She reported an 11-year history of hypersensitivity and pain on palpation along the medial aspect of both lower limbs from ankles up to inner thigh. Chronic swelling began approximately 6 years ago and the clinical diagnosis was made by the patient's general practitioner 12 months prior.

Pneumatic compression (Bio Compression Pants, Medi-Rent) was implemented on a daily basis (Figure 4). The pressure settings for the pump were 60 mmHg, cycle time of 75 seconds and a duration of 45 minutes. Other compression that was added to her therapy regimen included knee high Comfiwave garments (Haddenham Healthcare) 3 weeks after the Bio Compression pants were initiated.

The results after 3 months the results are shown in Figure 5. There was a visible reduction in limb volume. The patient also reported a 50% reduction in pain sensitivity on light touch.

Compression therapy via wraps

Compression bandaging is used in lymphoedema care to apply graduated pressure on swollen limbs, helping to move lymph fluid to areas where it can be more effectively drained. Vision aids



Figure 5. A front view photo of the patient's legs below the knee 3 months after the start of treatment with the pneumatic compression device. The patient's lower legs are bare. Both legs are shown as minimally swollen up to the knee. Both legs appear normal colour except for one patch of pink skin on the right anterior ankle area. Residual marks, derived from using Haddenham Healthcare's Comfiwave garments, are present on the patient's legs.

practitioners in this process by allowing them to ensure the bandages are applied smoothly and consistently, to observe any proximal or distal skin changes such as discoloured toes or fingers, and to adjust the pressure accurately. Blind or visually impaired therapists need to develop a highly refined sense of touch to gauge tension and pressure accurately and to rely on verbal feedback from their patient regarding the comfort of the bandages.

Recognising these difficulties, an alternative approach using compression wraps has been adopted by Kate with great success. This option appears to be more advantageous for patients in terms of reduced therapy costs and practicality of use.

In the last 6 months, more than 50 garments have been prescribed and no patients have complained of ill-fitting garments. Kate has found Haddenham Healthcare and Medi to have been particularly helpful in providing customer service and clinical reasoning support.

Kate employs an administrative assistant in her clinic who helps with measuring for garment prescriptions and completing paperwork. While Kate provides the clinical advice and determines the prescription, her fully sighted assistant measures the limb, reads the numbers, and accurately

transfers this information onto the order form. However, employing an additional administrative assistant to compensate for visual impairment, though beneficial for operational efficiency, proves to be cost-prohibitive. The financial burden of hiring extra staff to perform tasks a sighted practitioner would typically manage independently adds significant overhead. This situation highlights broader challenges faced by blind therapists in the healthcare field.

Challenges

A practitioner who is visually impaired encounters distinct obstacles when compared with their full sighted peers. The subsequent sections will address some of the accessibility considerations impacting limb volume assessment, the prescription of compression garments and continuing professional development.

Limb volume assessment and garment prescription

Assessing limb volume and prescribing garments is a crucial component of managing lymphoedema, yet it poses significant challenges for a blind or visually impaired therapist. Initially, Kate trialled an approach using silicone dots to mark specific landmarks on the skin, combined with a braille tape measure. However, this method proved overly cumbersome and time-consuming, complicating rather than streamlining the process.

In search of a more efficient solution, a substantial investment was made in a perometer – a sophisticated piece of equipment designed to measure limb volume electronically (Pero-System, Germany). A stand-up perometer typically consists of a frame that the patient stands in (Figure 6). The frame is equipped with infrared sensors that run along its length. As the patient inserts their limb into the cylindrical frame, the sensors measure the distance across various points of their limb, effectively mapping out its circumference at multiple intervals. The perometer then uses these measurements to calculate the volume of the limb by integrating the circumferential data along its length, often visualised through a software interface that provides a detailed profile of the limb's shape and size.

From an accessibility perspective, the stand-up perometer has the potential to



Figure 6 – A photo of the stand-up perometer. Kate is standing in front of the perometer looking at a woman standing full clothed inside the perometer. The woman is demonstrating how her right leg would be measured.

provide digital output of the circumference measures which is made accessible through screen reading technology. Screen reading technology allows the device's digital outputs, typically displayed on a monitor, to be accessed by a user who is blind or visually impaired.

Unfortunately, this high-tech device also brought its own set of difficulties. The rarity of its use in Australia meant that the manufacturer was unfamiliar with accessibility considerations, leaving the practitioner needing to source additional guidance to utilise the equipment effectively. As a strategy, a scripter familiar with screen reading technology has been engaged to connect the device's electronic output to Kate's text to audio technology.

The lack of the manufacturer's consideration of accessibility highlighted the reality that without readily available technical support from the suppliers, even high-tech technology can be underused or unusable! The practical implementation of such technologies, therefore, does not merely rest on acquiring the latest equipment, but also ensuring that there is a robust and mature framework for training, maintenance, and troubleshooting for contextualised integration. It is contextualised integration which transforms what is theoretically a powerful accessibility tool into a practical

and effective solution for specific clinical settings.

Ideally, Kate would like to use the perometer at the start and end of every treatment session, for measuring the impact of treatment, as well as for garment prescription. At this point in time, the perometer needs to be used with a support person to read the screen and utilise the machine effectively. A scripter is currently working with Kate to test if a screen reader can be integrated.

Continuous improvement

The field of lymphatic therapy is continually evolving, such as through the use of indocyanine green lymphography to map superficial lymphatic flow in real time (Trevethan et al, 2022). Kate would like to keep up to date with the latest research, but it is difficult to access the resources because they are often delivered through diagrams and videos. Such diagrams in research papers are usually represented with little detail to explain the illustration, such as short or no descriptive captions. Videos of the indocyanine green lymphography often lack detailed audio descriptions of what is being presented on the screen.

The workaround for this is that Kate is aiming to build up a local team who can provide mentoring to each other, shared learning and also provide support at lymphology conferences. Kate also experiences difficulties when attending in-person lectures. Attending the 2024 Australasian Lymphology Conference, for example, has meant that Kate needed to fund not only her time, conference fee, flights and accommodation, but also provide the same for a support worker who would attend and translate information received throughout the conference. The decision was made not bring her guide dog to the ALA conference due to difficulties associated with toileting and access to areas for feeding Wylie.

Conclusion

Accessibility in this field is about ensuring that blind or visually impaired practitioners have the means to provide effective and professional care just as their sighted peers

do. It is about creating a level playing field where the focus is on ability and quality of care, transcending physical limitations through training, technology, physical resources and funding.

Working as a lymphoedema therapist does present obstacles for blind or visually impaired practitioners. The provision of digital technologies alone is not enough and there is the need to ensure that digital technologies are contextually integrated with consideration of a robust framework for training, maintenance, and troubleshooting. Further awareness of the obstacles faced by visually impaired or blind practitioners needs to occur with more research conducted in this area.

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