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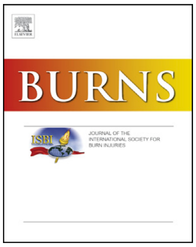

How to improve compression garment wear after burns: Patient and therapist perspectives

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ABSTRACT

Background: Compression garments are a widely used intervention for the management of hypertrophic scar and recent research demonstrates the varied experiences of patients wearing compression garments. However, the patient and therapist perspective on how to improve the experience of wearing compression garments remains unexplored.
Objective: To gain an understanding of the patient and therapist perspective of potential improvements to the provision of compression garments after burns.
Method: A qualitative research design with an interpretive description approach was utilised in this study. Data was collected from patients through semi-structured interviews and a focus group and therapists by a focus group. Thematic analysis was completed to reveal the key themes across the data.
Results: Two main themes were identified: "what patients want" and "access to professional development". The first theme "what patients want" described three suggested improvements including education, peer support, and increased participation in garment prescription.
Conclusions: The reported patient and therapist perspectives highlight the need for further research into service improvement to enhance the patient experience of wearing compression garments after burns.

1. Introduction

When a person sustains a serious burn injury, specialist medical care is required to preserve life. The sequelae of the burn benefits from a rigorous rehabilitation program and a significant commitment from patients to engage in the seemingly never-ending treatment regime. This regime typically involves wearing compression garments that are designed to prevent lifelong impairments including hypertrophic scarring. Prescribed by occupational therapists, compression garments have been the mainstay treatment of after-burn hypertrophic scarring for several decades and are designed to inhibit scar growth [1–3]. Burn experts recommend that garments be worn for 23 h per day until scar maturation, on average 12–18 months after-injury [4–6]. However, such a regime can be burdensome for patients, as the wearing of compression garments requires changes in pre-morbid routines and ongoing commitment and effort from patients [7–9].

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Recent research on patient perspectives has provided insight into the individual experiences associated with wearing compression garments after-burn and why patients may remove them [7,8]. The physical effects of wearing compression garments are well documented and include heat, itch and movement restrictions [7,9–11]. The emotional experience of wearing compression garments has also been described, with patients recounting feelings of anxiety, particularly in relation to the response of others when they wear their garments in public [7–9].

A recent study exploring patient experiences of wearing compression garments found that difficult physical and emotional experiences may, understandably, lead patients to remove their compression garments [12]. Furthermore, the requirements of daily living, such as completing work and household chores, and participating in social events where one's appearance is on show, have also been reported to contribute to compression garment removal [12]. Given that the removal and subsequent decreased wear of compression garments may reduce the impact on scar growth, there is a need to better support patients in adhering to their wearing regime.

Coghlan et al. [12] findings provide health care professionals with information to understand the experiences that may limit their patients ability to adhere to recommended compression wear. There is, however, to the authors knowledge, no literature which has built upon patient experience studies to gather patient and therapist perspectives on the service improvements that could be made to enhance compression garment therapy. The aim of this paper is thus to explore patient and therapist perspectives on the strategies and recommendations that improve the experience of and wear of compression garments after-burn and the feasibility of implementing the suggested recommendations.

2. Method

2.1. *Design*

A qualitative research design was used in this study to gain a deep understanding of both patient and therapist perspectives on strategies and recommendations to improve compression garment wearing. An interpretive description (ID) approach informed the study. This approach was appropriate to the study as it aims to understand the lived experience of participants through the identification of themes and patterns among subjective perspectives to generate clinically relevant findings [13,14].

2.2. *Ethical approval*

This study was granted ethical approval by the relevant hospital and university ethics committees.

2.3. *Participants*

Burn patients and occupational therapists were recruited from a large metropolitan Australian hospital. Burn patients were recruited from two settings including the hospital outpatient clinic and the hospital burns support group. Eleven burn patients were recruited from the clinic and four from hospital's burn patient support group. A purposive sampling technique was used to access patients with a severe burn injury that underwent surgical management followed by the wearing of compression garments. Participants ranged in age, and size and location of burn injury. A detailed description of study participants and recruitment is reported elsewhere [12].

The occupational therapist participants were recruited from the same large metropolitan hospital and were included to provide insight from a health care practitioner perspective. All burn occupational therapists from this hospital who prescribe compression garments were invited to participate in a focus group. One occupational therapist working on the team was unable to attend due to illness. The remaining five occupational therapists participated in the focus group, four of whom were employed by the hospital and the other an accredited private practitioner working at the hospital.

2.4. *Data collection*

Three stages of data collection were used to address the research aim of this study. Stage one involved semi-structured interviews with the clinic burn patients, stage two involved a focus group with the burns patient support group, and stage three involved the focus group with occupational therapists. Stage one and two, involving the interviews and focus group with burn patients, sought to gain patients' perspectives on wearing compression garments, the strategies patients utilised to improve wearing garments and suggestions on how to improve the overall experience of wearing compression garments. The focus group with the support group was conducted after the interviews and sought to confirm the interview findings and gather any further experiences not captured in the initial interviews. A full description of data collection processes for the interviews and focus groups with the burns support group is reported elsewhere [12].

The focus group with occupational therapists was designed to explore occupational therapists' perceptions and opinions related to the suggestions made by the burn patients. The questions to stimulate discussion with the occupational therapists focused on the experiences of being a patient within the burns service and the suggested recommendations for service changes. This focus group session was audio-recorded and later transcribed verbatim.

2.5. *Data analysis*

Thematic analysis was undertaken following Braun and Clarke's [15] six phase process. This process of analysis for the burn patient interview and focus group data is reported in-depth elsewhere [12]. Themes not reported in this earlier paper, but which arose from this analysis, were related to "patient strategies" and "recommendations for service provision".

The occupational therapist focus group data was analysed using the same approach described by Braun and Clarke [15]. Two of the authors reviewed the data to gather initial ideas within the transcript and generate a list of codes to represent significant features of the data. Using a peer checking process, consensus was reached on fifteen codes, which represented therapist perspectives of the patients' recommendations for service provision, as well as their own suggestions for improving service provision.

At this stage, the burn patient themes of "patient strategies" and "recommendations for service provision" were combined with the therapist codes. No similarities were identified between the therapist codes and "patient strategies" theme, hence "patient strategies" represented a stand-alone theme that only included data from the burn patients. "Patient strategies" describes the methods patients use to make wearing compression garments easier.

The patient data related to "recommendation for service provision" combined with the 15 codes from the therapist data was independently reviewed and re-categorised by two authors. Consensus was reached on four categories: access to education, support from peers, increased participation in choosing design features of compression garments and therapist's access to professional development. The first three categories were combined into the theme "what patients want" with the remaining category of "access to professional development" being its own theme.

3. Results

Burn patients reported different strategies they utilised to improve the experience of wearing compression garments and to increase the amount of time wearing garments. Recommendations for service provision were also discussed by burn patients and therapists with recommendations including education, peer support and shared decision making as areas for further consideration. The therapist perspectives on access to appropriate professional development has also been highlighted. Pseudonyms for both patients and therapists have been used in the reporting of these results to ensure anonymity.

3.1. *Patient strategies*

Both physical and psychological strategies were used by burn patients to increase the comfort of wearing their garments and allow continued wear. Physical strategies included cooling, massage, moisturisers and using a specific order to put on garments. A wide variety of cooling strategies were reported from participants: the use of ice, standing in cool breezes, air conditioning, avoiding being outside at hot times of the day, using water vapour from a spray bottle, and sun protection strategies such as standing in shade and wearing sun-smart clothing. Patient participants described that they used these strategies to help reduce their high body temperature, and also to alleviate other negative physical sensations experienced when wearing compression garments such as itch and skin irritation. Lucy described:

> *"I had worked out that an icepack . . . on the hot and itchy spot takes away all the itch"* (interview, age 56)

Another cooling strategy used by patients was water vapour from spray bottles. Doug detailed how he managed to incorporate garment wear into his work life with the use of a spray bottle:

> *"When we have started mustering and I've got to be in the sun, either on the horse or on a four-wheeler, we carry a spray bottle with us now and I just spray myself with water. Spray myself, damp myself all down and with a little breeze, it's really good"* (interview, age 61)

Consistently reported across the participants was the use of moisturiser as a beneficial part of their garment donning routine. Daniel commented:

> *"Get a good moisturiser and put it on, allow it to soak in a little bit. A good moisturiser is gold"* (interview, age 41)

A participant described how wearing the garments with moisturiser assisted with scar management:

> *"When you have got things like moisturiser underneath with the garment on top. I think that it locks in the moisture and that helps to soften the scar as well"* Chloe (interview, age 24)

Participants also described the various aids and methods they used to put on the garments. The use of donning aids was reported by five participants to decrease the time required to put on compression garments. As Tyler explained:

> *"I got a thing called an Easy-Slide and as soon as I got this, it took me like, five minutes to put on my garments which was a lot quicker"* (interview, aged 25)

The specific order and routine for donning the garments with the use of other scar management interventions was reported by three participants to be important in ensuring ease of wearing garments. Dylan described this when explaining how it is important to have the correct order of moisturiser, tape and garments:

> *"We have an exact order of how we do everything. You can't put goop [moisturiser] on yourself before you put these things [finger tapes] on you because it is too slippery."* (focus group)

Along with these physical strategies, participants reported important psychological strategies that made garment wear easier and a desire to provide this advice to others wearing compression garments. They reported that their mindset mattered when it came to continued wear. As Aaron described:

> *"I guess it was just having the right mindset to take on and put a bit of belief into it and, you know, I think it's definitely been worthwhile"* (interview, age 30)

Grace also reported that her attitude towards wearing garments helped her to manage their ongoing wear. She reported:

> *"That's my main thing I remember, the sunshine. Tomorrow is another day and the sun will shine tomorrow you know, so I smile. Be happy and think positive"* (interview, age 50)

Daniel described how his mindset enabled him to acknowledge the physical sensation and also the effectiveness of wearing compression garments, and this helped him to keep wearing the garments:

> *"If it is tight it is working and it is doing good so you can kind of get around it by thinking like that . . . And maybe I could leave it on for an extra hour before I take it off."* (interview, aged 41)

When burn patients were asked what advice they would share with other wearers, they emphasised that wearing garments became easier with time. Lainey summarised this:

> *"It will get easier. That even though you probably don't believe me right now . . . it will get easier"* (interview aged 35)

> *This was re-iterated by Tyler:*

> *"Yeah, really, really like just wait it out because you do get used to it. It does feel comfortable, not comfortable but like, it feels normal after a period of time. So definitely skip through the initial hit and it's all good from there on."* (interview, aged 25)

3.2. *What patients want*

Burn patient participants reported a range of recommendations on how to improve services and what would improve their experience of wearing compression garments. These recommendations included changes to the learning and education provided, more opportunities for peer support and shared decision making. The therapist opinions and perspectives on the feasibility of these strategies are presented alongside these recommendations.

3.2.1. *Learning and education*

Education was a common issue discussed by all burn patient participants with a variety of perspectives reported. Therapists also reported different methods of education that they used with patients, which may account for the varied experiences of the patient participants. An occupational therapist, Caroline, explained her educational style:

> *"We really make an effort. That the education we are providing is verbal and written and ideally someone other than [in addition to] the patient is there as we appreciate that it can be really overwhelming."* (Caroline, therapist)

Vanessa also explained her method of education after hearing the patient perspectives on education they had received:

> *"It is really, really interesting, because just listening, I probably don't use the same multi-modal education approach, I am sorry to say."* (Vanessa, therapist)

Given these varied patient experiences and methods of providing education, patient participants made recommendations to enhance the learning and education process including increasing the amount of information, but also providing access to different methods including online, video and apps. Dylan discussed the value of video resources:

> *"You really need all of this [education] on a video that someone can sit in a room just before they leave hospital saying, "This is going to be some of the things you can expect with these suits when they come down the track". And put that video up online. I've even thought about doing my own videos and putting them up on Youtube because there is nothing there for people to give them all these tips and tricks. Someone needs to make an educational tool."* (Dylan, focus group)

Most occupational therapists were in agreement with patient participants regarding the need for increased access to information and the potential of utilising multimedia options. Caroline detailed the current challenges when providing education to patients:

> *"I think the only mark where we are possibly not hitting now, and it could just be contemporary and particularly young people these days, is the expectation for it to be available electronically or on an app or online and 24/7. I think that availability and access to somebody 24 hours per day on your phone or on your device or iPad [is useful], so they can consume it when they want it."* (Caroline, therapist)

Therapists agreed that further educational options were indicated and that online options would be beneficial; however there were some reservations about potential mis-information and information overload. Some therapists therefore wanted more direct control of the education provided to patients. Kate expressed concern about the accuracy of information currently available to patients online:

> *"I think the internet is so fast and so accessible now that people are now much quicker to go on Dr Google for answers rather than listening to anything we say. I think they sometimes have these moments where they just go on and check, and as we know, that information isn't always correct but unfortunately it is what people access."* (Kate, therapist)

Caroline discussed a concern with patients being able to access large amounts of information:

> *"I think that education is fantastic, the more the better in many ways, but it is also the timing and the pacing; the "what" and "when". So I think that would be the tricky part. If it is readily available on Youtube or on a website link, how would we pace the patients' access to what is relevant to them at that point in time so they don't become overwhelmed?"* (Caroline, therapist)

To avoid being confused by inaccurate information on the Internet, Kate suggested that education could be provided to groups of patients:

> *"I would like to have group education about compression garments. I mean that is a bit idealistic in ambulatory care. And I guess Caroline's suggestions of the App could answer that a little bit. But patients like to talk to other patients as well."* (Kate, therapist)

Both patients and therapists suggested that a review of the amount and method of education provided could lead to improvements in the experience of wearing compression garments for other patients. However, further exploration of education methods such as apps, online resources, groups and peer support would be required.

3.2.2. *Peer support*

The support of peers was advocated as an important recommendation by burn patient participants to benefit their recovery. Six participants reported that they would have valued the contribution of a former burn patient. As Doug said:

> *"Well, talking to other burns victims or patients, not victims, patients, only they know what's going on. They're the only ones that really know what it's like"* Doug (interview, age 61)

Grace concurred:

> *"We've got a whole team looking after us, but the one piece in that team that's missing is someone else in the same situation"* Grace (interview, age 50)

The benefits of peer support and sharing of information among patients was raised by several patient participants. Dylan shared his experience:

> *"I was coming out of physio, and I met a guy who was on his two year mark and he had been burnt all over. Now I just latched on to him and I said, "When can you do this?" "When can you do that?" "When did you get rid of your drugs?" And he just smiled and said, "Mate, it is going to get better", and I just cried."* (Focus group)

Some participants also expressed a desire to return to the burns unit to have an advising or support role within the burns team.

> *"I'd like to go back and be an advisor to the new burns patients, you know."* Grace (interview, aged 50)

In contrast to the patient group, the occupational therapists did not unanimously endorse the recommendation about the inclusion of former patients on the ward as a method of peer support. Two therapists, including Caroline, voiced potential negative experiences of peer support:

> *"And I think there would be some current burns patients who would love that concept of a previous burns patient visiting them, and others that A) it would be really distressing for them or B) they really don't want that or they may not yet identify themselves as a burns patient. I think when they get that input, it goes really badly because it is really confronting."* (Caroline, therapist)

Another concern that was raised regarding peer support was the amount of resourcing required. Vanessa described this concern in view of her knowledge of existing peer support programs:

> *"Because it is an incredibly time consuming resource, it is an incredibly expensive and draining resource. So a lot of them have got a lot of funding and started them up and time and again they keep falling over because they are so resource heavy."* (Vanessa, therapist)

The remaining three therapists had different perceptions regarding peer support and information sharing opportunities. Kate believed that a peer-initiated approach would be preferable to a service driven initiative. She stated:

> *"They find each other in the physio gym, in clinic, upper limb group. And I don't have so much of a problem with [that]. I think the beauty of peer support is that we are not overly involved. I think the idea of therapists being asked who would be a good person, who would be a bad person – I feel a bit uncomfortable about that. I think the idea of peer support is that it should be all very peer driven, patient led and without too much involvement from us."* (Kate, therapist)

However, Anna articulated a different opinion and discussed her knowledge of formalised peer support programs and their important contribution to burn patient experiences:

> *"There is all that training as well as a debriefing with the person, the actual volunteer, afterwards. And it is not about the volunteer's experience, it is about validating that patient. It is just hearing, "I've been through it. I know what you are talking about and yeah the itch is really nasty. PS– the orange juice sucks in this place". It's that kind of thing and that is so valuable. And it was one of the hardest things to do but when it is done correctly it was so invaluable, it was amazing."* (Anna, therapist)

In an effort to reach consensus within the therapist group, Caroline raised the idea of combining peer support and educational material as a hybrid option:

> *"We want to do an education video and yes it would be better received from a patient standing there saying, "Here is my experience" than a therapist preaching."* (Caroline, therapist)

Both burn patients and therapists agreed that the sharing of information among peers would be of benefit, however the most effective method to achieve this aim was unresolved.

3.2.3. *Shared decision making*

Service provision suggestions from patient participants also included input into the process of garment design and having increased access to therapists. Some patient participants raised concerns that they had minimal opportunity to contribute to the design of their garment. All of the patient participants had views on the features of and design of their garments, including the positioning of zips and velcro, additions of joint gussets and the exclusion of tight neck collars.

When therapists were asked, "How do you make your choices related to garment features?" replies included, "*material choice*"; "*patient shape*"; "*injury location*"; "*patient ability to put on and off*"; "*climate*" and "*past medical history*". Their responses reflect limited collaboration with patients in the prescription of garments, with therapists giving minimal consideration to patient choice. Discussions with the occupational therapists regarding some of the patient suggestions lead to their (the occupational therapists') reflection and discussion about the possible considerations they could include when undertaking garment design. Kate suggested that the service needed to create an opportunity for patients to formally report these suggestions:

> *"I think these are all factors that we would consider and we would customise to each patient. But certainly whether there is any value in us having some sort of forum once a year for patients to come in and go, "I really like this, can you keep that in mind?". Because I guess we do take it on board patient by patient."* (Kate, therapist)

Caroline described her ideal approach to garment prescription to prioritise and value patient perspectives and preferences:

> *"I think acknowledging that other aspects of their life are important as well. We'll have to work out a way that you can fit it [compression garments] into your lifestyle and it is not at the expense of your sleep and comfort and activities and your interests and your roles in your family life. That together as a team, we'll try and work together to find a way you can fit it into your schedule and lifestyle."* (Caroline, therapist)

Vanessa endorsed this approach when she commented:

> *"And probably another thing that I have become a lot better at in more recent years, is being more flexible in my prescriptions. So you know, instead of saying I want you to wear these class II garments 23 hours per day, putting [wearing] class I garment and telling them to come out of it for work hours. I think being able to be flexible in the prescription, using the bio-psychosocial approach, is incredibly useful."* (Vanessa, therapist)

The burn patient participants discussed the amount of access to burn therapy services, with some concerns expressed about limited availability. Lucy reported:

> *"I don't think there is enough therapists. Especially when you are [in] an outpatient [clinic] . . . So they don't have long enough [to see you] and are always in a hurry"* (interview, aged 56)

This concern regarding having limited time with patients was echoed by the occupational therapists. All therapists noted constraints in the amount of time that they were able to spend with individual patients. This was summarised by Anna:

> *"I think one of the challenges for me has been the faster pace and the large numbers and the way that practice has changed that we get most of our patients needing a garment. There isn't the time to be sensitive and spend time with them, and watch their face and, stay there in that moment, so that they really get the feel of it. I think in burns [time] is really needed for compliance, for them to feel this person [the therapist] has put more time into me, they have explained why I need it."* (Anna, therapist)

3.3. *Access to professional development*

Another limitation of the services that was raised by the occupational therapists included the limited professional development opportunities and resources available to therapists. Vanessa described the informal professional development that was completed with the team to address these professional educational deficiencies:

> *"Because what I really find in terms of, I think professional development for the therapist is really important. I think we do a lot of it incidentally in clinic. But my wish list is, I love it when we can get together as a group and problem solve. I really love those opportunities to talk and problem solve."* (Vanessa, therapist)

Overall, both patient and therapist participants reported strategies and recommendations which focused on increased information sharing and collaboration between patients and therapists. These included the need for increased access to educational materials, the desire of patients to share information with peers, and the need for collaboration between patients and therapists on the design of garments. Therapists also described a need for increased professional development and opportunities to share information and problem solve with their professional peers.

4. Discussion

This study provides an understanding of the strategies used by burn patients to improve their experience of wearing garments, their suggestions on how to improve garment wear, and the burn services to support this. Suggestions included increased education, peer support and shared decision making and collaboration as areas for further consideration.

This paper described the personal strategies of burn patients for dealing with the demands and uncomfortable side effects of wearing compression garments. To the authors' knowledge, this is the first paper to document strategies to overcome these negative experiences, providing important information to inform practice. Education can now be provided to patients on not only the potential difficulties associated with wear, but also strategies to combat these challenges, such as different cooling techniques, use of moisturiser and adapting a positive mindset. The incorporation of these patient strategies into educational processes may increase patients' ability to wear compression garments and warrant further exploration and evaluation in the future.

A consistent message from burn patients was the desire for increased access to information, with suggestions including access online and multimedia methods of education. The need to enhance patient education was also supported by therapists. Wider health care literature exploring adherence has demonstrated that appropriate patient education can positively influence treatment adherence [16–20]. Therefore burn patients need to have sufficient education and access to information in order to increase their ability to understand the rationale of wearing compression garments and potentially improve the experience of wearing. One method proposed by patients to improve access to information was the use of the

Internet. Therapists within this study expressed concern over incorrect information being accessed online, and at times demonstrated a sense of ownership and need for control over the provision of information. This approach, however, could be interpreted as not valuing or empowering the patient in their management of compression garment wear or their recovery. A collaborative approach, where therapists support and guide patients in accessing online information, and empower them as health information consumers to critically evaluate the information they access online, would be a positive step towards improving burn education.

There was support from the therapists for personalized education, with discussion regarding the concept of tailoring and controlling the access of information to suit patient needs. In other healthcare fields including chronic disease management and oncology, online patient education has been used to provide patients access to evidence based material [21,22]. In one example, Clayman et al. [21] created a website based on suggestions from breast cancer patients plus medical input and recommended combining patient and provider input to ensure the perspectives of the patient and multi-disciplinary team are included. This study demonstrated that a specifically created website can provide clear, accurate and appropriate information for patients. Such results may allay therapist's fears that patients will receive inaccurate information. This approach of purpose-designed websites with patient and therapist input seems a promising method for burn education processes and could be an option in future burn service provision. Future research may include the development and evaluation of a website designed with burn patients and health care practitioners with information related to burn injuries, scar management and compression garments.

Another recommendation was to increase access to education and information was the use of multimedia resources. The use of multimedia education has been explored in two studies within the burns field as a method of improving patient education. Lo et al. [23] analysed the effect of slides and video multimedia learning education program on patient knowledge, anxiety and compliance to compression garment wearing. Results indicated a statistically significant improvement in knowledge, reduced anxiety and enhanced adherence [23]. Similarly, Ardebili et al. [24] evaluated the effects of multimedia self-care programs on quality of life outcomes for burn patients in a randomized control trial. The results of this study found that both participants and therapists suggested that a multimedia (eg video, app) might assist with accessing and providing education. These styles of multi-media programs may provide convenient access to educational information in a format that patient's value. Such resources could include information about strategies to assist with wearing compression garments, information regarding the rationale for and why it is important to wear compression garments after-burn. Further exploration regarding the feasibility of multimedia education resources is an area for future research and would need to involve patients in the design and trial of any new resources.

Patient participants uniformly reported a desire for peer support and the inclusion of a burn survivor within the burn clinical setting or team. In wider healthcare fields such as mental health, and chronic disease management, peer support programs have been utilised with success [25–27]. Two current systems have been described in the literature to provide burns peer support. One system uses a structured program of one-on-one interactions and the second system follows on less structured format for survivor support groups. Despite benefits being reported for both systems, momentum is currently growing for one-on-one structured programs [28]. Recent studies have explored patient perspectives on both peer support methods, finding both positive and negative outcomes [28–30]. Positive findings include the uplifting nature of the experience, providing patients with increased motivation and hope, and improvement in their overall rehabilitation experience [28–30]. Sproul et al. [29] reported negative experiences however, associated with the formalised peer support programme, which included patient feelings of helplessness and undesirable matching or involving patients who are not ready to receive peer support. One occupational therapist in this current study echoed similar concerns of the potential negative aspects of peer support. It has been recognised however, that to avoid negative patient experiences, there needs to be careful matching of participants in peer support partnerships [30].

This study found unequivocal support among burn patient participants for the involvement of other patients in the team, or one on one meetings. Given the strong desire of the burn patients included in this study to include peer support and its reported benefits in the literature, peer support in burn treatment should be supported. Further investigation is required to determine the content and structure of such peer support to ensure it is conducted in a positive and supportive manner including appropriate matching of peers. Concerns regarding matching of peers may be reduced if burn patients and their peers are able to lead the matching process. Further subsequent provision of appropriate training and resources for the peer support and patient would be of benefit to insure that the relationship is beneficial.

Participant suggestions to improve garment wear also included a desire to be included in the garment designing process to ensure that the features they preferred were included. To the authors' knowledge, no other study has explored patient's participation in the design of their compression garment for the management of hypertrophic scar. Given that patients become experts in wearing their own garment, their involvement in design would seem pivotal. Yet as the responses of the occupational therapists in this study indicate, this rarely occurs, with little shared-decision or patient collaboration regarding garment design choice. Patient participation in decision-making or shared decision-making is thought to be the missing ingredient in maximising treatment adherence [31].

Shared decision-making in garment design may therefore provide an opportunity to improve the experience and ongoing wear of compression garments. Further, this should extend beyond garment design to all aspects of compression garment treatment, including when to remove compression garments, for example sporting and other valued activities that make wear difficult, the number of garments provided to patients and potential alternate scar management options when not wearing compression garments. While not raised by participants in this study, another potential aspect to consider in shared decision making with patients would be the level of pressure. Recent research indicates that the pressure exerted by a garment is influenced by the mechanical properties of the garment and the use of antimicrobial treatments. Given the multiple factors that influence the pressure of the garment, and therefore the individualised nature of pressure, it would be important to work with patients to determine the best pressure for them and their burn [32].

Past research in wider healthcare has demonstrated that shared decision-making will likely lead to increased adherence with treatment routines [31]. Available models of shared decision-making, including Elwyn et al. [33] three-step model of choice, option and decision talk, could provide the foundation for burn care therapists and practitioners to incorporate shared decision-making in practice. Step one of this model includes ensuring that patients are aware of available options, step two involves the therapist providing detailed information regarding each option and step three refers to considering preferences and deciding what is best [33]. This model could be incorporated into the garment prescription process, with therapists educating patients on the available garment features and options (step one and two) and jointly deciding on preferences for garment design (step three).

5. Limitations

This study was completed at a single large metropolitan service within Australia and therefore the findings may not be transferable to other burn units. The participants were homogenous with regards to race, with differences in scar formation having been observed across different racial groups. Furthermore, the patient sample did not include younger adults or older individuals, which may limit generalisability of the findings.

6. Conclusion

Patient participants in this current study have described the strategies they used to improve their experience of wearing compression garments after-burn and made suggestions to improve service provision. Such strategies may be valuable to incorporate into future patient care in compression garment therapy after-burn. The participant suggestions highlight education, peer support and shared decision making and collaboration as areas of need and future research for improved patient experiences and ultimately improved scar management outcomes for patients.

Conflict of interest statement

There are no conflicts of interest to report for this manuscript.

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