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The experience of wearing compression garments after burn injury: “On the inside it is still me”

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ABSTRACT

Background: Compression garments are widely used for the management of hypertrophic scars, however, the patient experience of wearing compression garments remains minimally explored.
Objective: To gain an understanding of the patient experience of wearing compression garments post burn injury, including why patients remove their garments.
Method: Interpretive description was the methodological approach used in this study. Semi-structured interviews and a focus group were used to gain in-depth insights into the lived experience of wearing compression garments. Thematic analysis revealed key themes across the data and member checking confirmed data interpretation.
Results: Three main themes related to wearing compression garments were identified: what it feels like to wear compression garments, what it is like to be a patient within a burns service and the impact of garments on patients’ lives and recovery.
Conclusions: The results highlighted a variety of influences that affected the individual experience of garment wear, highlighting the need for a patient centred approach by burn service providers.

1. Introduction

Burn injuries often result from catastrophic events, with individuals sustaining complex and multiple impairments that require extensive medical treatment and rehabilitation [1–4]. During rehabilitation, patients are requested to adhere to lengthy, at times painful, and intensive rehabilitation programmes [5,6]. Hypertrophic scar prevention and management remains a critical component of these programmes and while there is continued research and development of new interventions and technologies, the dominant method for the prevention and management of hypertrophic scar continues to be the use of compression garments [7].

For over 40 years compression garments have been used with the intent of exerting firm pressure over the burn injury to influence scar formation and progression [8,9]. Direct influences of wearing compression garments include reduction in scar growth, reduction in collagen nodule size and decreased scar tension. Compression garments have been reported to reduce hypertrophic scar growth in 60–85% of patients [10–12]. Experts within the burn community of practice recommend that compression garments be worn for 23 h each day [10,13]. This is to ensure that sufficient pressure is applied to inhibit

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scar growth and therefore optimise scar management [10,14,15]. To have a lasting influence on hypertrophic scar tissue, experts recommend garments be worn until scar maturation has occurred [15–17]. This can range from twelve to eighteen months post injury or sometimes longer [15–17].

During these long wearing regimes, it is recognised that patients can experience pain, heat intolerance, and skin breakdown and that these complications may impact upon the patient's ability to adhere to garment wearing schedules [16,18–20]. Given the significant impact of not adhering to compression garment wear, which includes increased scarring, it is important to identify the patient experience of compression garment wear, and understand how this affect ongoing wear or adherence.

Adherence is a phenomenon that involves a complex interaction between the individual, the health care professional, the environment and the community in which the person lives. Both health care providers and patients are required to play a role to achieve appropriate adherence. A framework that provides a conceptual basis for understanding adherence was developed by Ickovics and Meisler [21]. It includes experiences linked to (1) the patient, (2) the treatment, (3) the patient-provider relationship, (4) the clinical setting, and (5) the condition [21,22]. The framework was developed from research into medication adherence in an acquired immune deficiency syndrome (AIDS) population and has since been applied to adherence research in a range of healthcare settings [22].

Patient perspective research is important to ensure that health care providers have an understanding of the experiences that may both limit and enhance a patient's ability to continue with recommended treatments. Thus far, research investigating compression garment experience is limited, with only four studies evaluating the patient's experience of wearing compression garments post burn injury and one systematic review [18–20,23,24]. These studies have explored the patient and treatment experiences, with a focus on the potential side effects of wearing compression garments [18–20,23,24]. However, as indicated in a recent systematic review, limited research is available to understand the specific experience or set of experiences that result in patients removing compression garments [24]. The aim of the current study was to gain an understanding of the patient experiences associated with wearing compression garments post burn injury and to identify reasons that patients remove their garments and discontinue their wearing schedules. This will lead to enhanced understanding of key patient experiences of wearing compression garments and the decisions associated with ongoing wear. With increased health care provider understanding and insight, it may be possible to enhance the experience of wearing compression garments and adherence by modifying compression garment service provision.

2. Method

2.1. Design

To gain in-depth insights into the lived experience of wearing compression garments, a qualitative research design was used to understand burn patients' experiences of wearing compression garments and their motivations around removal of garments [25]. The benefit of open-ended questions as part of a qualitative research design is that they allow participants to fully explain their responses to gain a rich description of their experiences. This study used Interpretive description (ID) as the overall approach to understand the lived experience of wearing compression garments. Developed in the 1990s by Thorne et al. [26], ID is a qualitative methodology that focuses on developing research knowledge that can inform clinical practice [27]. It provides a logical structure and philosophical rationale to form a suitable research design for qualitative inquiries [28], and it assists with the identification of themes and patterns among subjective perspectives and the generation of clinically relevant findings [27].

2.2. Ethical approval

Approval for this study was gained from the Royal Brisbane & Women's Human Research Ethics Committee (RBWH HREC) (EC00172) (approval reference number HREC/15/RBW/152) and The University of Queensland Medical Research Ethics Committee (approval number 2015000877).

2.3. Participants

Purposive sampling techniques were used to recruit participants from an outpatient clinic in one of the largest burn units in Australia. The lead researcher recruited adult patients from the clinic setting in accordance with the inclusion criteria of having sustained a severe burn injury that required the person to wear a compression garment. Severe burn injury was determined by a total body surface area (TBSA) of 20% or higher and requiring surgical wound management including skin grafting. Exclusion criteria included being under the age of 18; unable to read, write or speak English; or having history of a severe mental illness including psychosis. This was designed to exclude participants who may not be able to provide complete and informed consent. In order to collect a diversity of patient experiences, participant selection was designed to ensure a range of participant characteristics including gender, age, and location of burn injury, and size of burn injury as determined by total body surface area (TBSA).

Eleven participants were recruited to the study over a twelve-month period. Participant demographic information and burn injury description is presented in Table 1. The size of burn injury ranged from 10% to 90%, with an average of 41%. At the time of the interviews, the average number of garments being worn daily by each participant was five garments, for example one pair of tights, one vest, two gloves and one facemask. The type of garments that participants were wearing included all 11 participants wearing bilateral gloves, 10 wearing long tights, 10 wearing long sleeved vests and 7 wearing facemasks.

The interviews were conducted, on average, 9.5 months (3–19months range) post-burn injury, in order for participants to have had time wearing compression garments to report on experiences. All participants were still wearing compression garments at the time of interview.

Table 1 – Participant demographics.

Name	Gender	Age	Race	Marital status	Employment status	Injury mechanism	Total body surface area (TBSA)%	Time post injury at time of interview	Time using compression garments at time of interview	Number of compression garments worn
Semi-structured interview participants										
Lucy	Female	56	Caucasian	Single	Unemployed	Flame	42	6.5 months	5 months	5
Chloe	Female	24	Caucasian	DeFacto	Student	Flame	32	15 months	13 months	6
Daniel	Male	41	Caucasian	Married	Trade	Flame	90	6 months	3 months	6
Grace	Female	50	Caucasian	Married	Unemployed	Flame	20	5 months	4 months	5
Lainey	Female	35	Caucasian	DeFacto	Trade	Electrical	20	19 months	17 months	4
Tyler	Male	25	Caucasian	DeFacto	Trade	Flame	54	6.5 months	5.5 months	5
Sarah	Female	43	Caucasian	Married	Professional	Flame	29	4 months	3 months	7
Dale	Male	61	Caucasian	Married	Trade	Flame	35	17 months	14 months	4
Aaron	Male	30	Caucasian	DeFacto	Professional	Flame	54	18 months	16 months	6
Barry	Male	36	Caucasian	DeFacto	Trade	Flame	70	4 months	3 months	4
Courtney	Female	40	Caucasian	Married	Professional	Flame	20	7 months	5 months	4
Average		40					41%	9.5 months	8 months	5
Name	Gender	Age	Race	Marital status	Employment status	Injury mechanism	Total body surface area (TBSA)%	Time post injury at time of focus group	Time using compression garments at time of focus group	Number of compression garments worn
Focus group participants										
Dylan	Male	58	Caucasian	Married	Professional	Flame	33	9	7	5
May	Female	30	Caucasian	Single	Trade	Friction	14	3	1	3
Cameron	Male	29	Caucasian	DeFacto	Trade	Flame	20	14	11	3
Robert	Male	24	Caucasian	Single	Trade	Contact	49	4	1	5

2.4. *Data collection*

Data were collected using a semi-structured interview schedule that included open-ended questions designed to elicit the participant's experiences of wearing compression garments. Each participant interview was conducted by an occupational therapist not involved in the treatment of the patients. The first nine interviews were conducted by an occupational therapist not part of the research team who possessed extensive interview experience and was further trained by the lead researcher to complete the interviews. Partway through the data collection, the lead researcher was no longer a treating burn therapist, and was thus able to complete the final two interviews.

The interview schedule was constructed to reflect the different aspects of the Ickovics and Meisler [21] framework of adherence in order to cover the variety of patient experiences that may have influence garment removal. The main topics discussed included what it feels like to wear compression garments, patients' compression garment understanding and knowledge, burn injury related experiences such as scarring and other skin changes, experiences of the burns service and the health care professionals who treated them. The interview was role-played with a member of the research team for piloting, after which refinements to the questions were made. Further amendments were completed to the interview structure after the initial five interviews were analysed to ensure greater depth was gathered from all interview questions and further exploration of patient experiences was achieved. Each interview was completed at the hospital's Occupational Therapy Department at a time convenient to the participant and were on average 29min (range 17min 19s–51min and 26s). Each interview was audio recorded and later transcribed verbatim.

2.5. *Data analysis*

Utilising the six phases of thematic analysis as described by Braun and Clarke [29], two members of the research team independently reviewed the data noting initial ideas (phase 1) and then generating initial codes (phase 2). At this stage 18 codes were identified such as garment appearance, garments in public and garment sensations. Through regular meetings consensus was reached and some codes were combined to reduce the number of codes to 13 which were collated into four initial theme (phase 3). The four themes were reviewed in relation to the 13 codes from phase 2 and represented within a thematic map (phase 4). Phase five included the re-naming of themes to ensure all data were captured and clear definitions of each theme were presented (phase 5). For example, the first theme of experiences of wearing compression garments and how it has helped became "What it feels like" because the data associated with garment effectiveness was moved to the "impact of wearing theme". The final phase of analysis is presented with the results with compelling extracts of data reported in relation to the aim of this study.

Member checking was attempted with the interview participants; of the 11 participants, four were uncontactable and the remaining seven declined participation in a member checking exercise. The main reasons for declining participation was that participants had “moved on” from the service and no longer had time to participate. As data member-checking with the original interview participants was not possible, a focus group with four patients from a support group facilitated by the hospital’s charitable foundation was conducted as a form of member checking. These participants demographics are presented in Table 1. The focus group was audio-recorded, transcribed and then analysed using the same six phases of analysis as completed with the interview transcripts. Upon reviewing the themes with the original codes (phase 4) it was established that the focus group codes and themes were consistent with the themes from the semi-structured interviews. Excerpts of data from the focus group are included within the findings alongside the interview data.

3. Results

Participants described their experiences of compression garments and the varying impacts of wearing compression garments. Three distinct themes were identified, being: what it feels like to wear a garment, experiences as a patient in the burn service, and the impact of wearing a garment.

3.1. *What it feels like*

Participants spoke about what it feels like to wear the compression garments and explained the physical and emotional reactions to wearing compression garments, including emotions associated with being seen wearing the garments in public.

Physical reactions that were consistently reported by all participants included difficulties wearing the compression garments due to one or many of the following: a feeling of excessive hotness, skin irritation, the presence of itch and increased pain when wearing the compression garments. Chloe raised a common issue when she stated:

> *“So you definitely get hotter with them on, and yeah once you are hot and sweaty there is itching and rubbing and things like that.”* (interview, aged 24)

Another physical sensation that was reported as problematic for participants was the feeling of movement restriction. For example, Sarah stated:

> *“Yeah very restrictive. Especially when they’re new, you walk like the Michelin Man.”* (interview, aged 43)

All participants reported challenges in the initial stages of wearing compression garments, yet despite experiencing some initial negative physical sensations, they were all able to habituate or as Chloe reported, “Get used to” wearing the compression garment over time. Lucy described this feeling when she said:

> *“It is uncomfortable, but wearing* [the garment] *all day every day, most of the time I realised that I don’t notice”*. (interview, aged 56)

Chloe further demonstrated the initial difficulties associated with wearing compression garments, followed by her gradual adjustment to the regime:

> *“I think I am not so bothered now. Like initially I was horrified at the fact that I would have to wear these things and it was awful but I think you just start to work with it”*. (interview, aged 24)

It became apparent that the participants underwent a process of learning to adjust to their pressure garments and that they adapted to the demands of garment wearing. Lainey explained it thus:

> *“The way you get used to them is incredible, I think it is incredible. You just get used to it; it’s amazing what you can get used to.”* (interview, aged 35)

A number of different emotions related to compression garment wear were discussed by participants, with such emotions influencing how and when participants wore their garments. These choices about garment wear, were in relation to the appearance of the garment, attitudes to garment wear, difficulties with face mask garments and opinions on wearing compression garments in public. The first significant emotional response related to participants’ concerns about their appearance when wearing compression garments. Chloe, a young woman, explained her approach to incorporating garment colour and design into her appearance:

> *“Especially for a girl it is quite hard to find clothes that will go with it. Yeah I have gone for darker colours and I have some beige as well. So I can kind of work them in to my outfit and be a bit more confident I guess.”* (interview, aged 24)

In contrast, Lainey and three others participants described making bold decisions when choosing the appearance of their compression garments. Lainey said:

> *“I was making a very conscious decision about that when I choose not to have that* [beige]. *Because I wanted it to be obvious that I was wearing something unusual so that people weren’t going to* [say], *‘What is that?’* [in a quizzical manner]. *I wanted to make sure that it was clear and that people didn’t need to do that.”* (interview, aged 35)

A second emotional response that was identified related to participant’s positive attitude towards wearing the garment. This was described by a number of participants and captured by Grace when she said:

> *“Yeah, and I don't care that I’m wearing black skins and black gloves as long as I’m happy and I feel good.”* (interview, aged 50)

The emotional responses reported by participants did not seem to be garment type dependent, with the exception of facemask garments. Wearing a facemask led to heightened emotional challenges for the five participants who had facial burns. These challenges included, difficulty adapting to the physical sensations of the garment and the emotional responses of others. Chloe described:

> *"And the facemasks– I think that is the worst of them all; it is pretty daunting…Like your head is being compressed and your face is being compressed."* (interview, aged 24)

Mixed views were reported regarding participants wearing their compression garments in public. Some recounted unfavourable experiences they had had and behaviours they used to cope in such situations. Lainey described her struggle and change of behaviour when wearing compression garments in public:

> *"I know that I have changed my behaviour because of it. Rather than not wearing my garment I tend not to look at people in the eyes when I am walking around as much as I used to because I know that they will be looking at me. I have noticed that. Because yeah, you just get sick of people looking at you."* (interview, aged 35)

In contrast, others described adopting a mind-set that was more accepting of themselves, such as Daniel who said:

> *"I don't really mind walking around in public with my facemask or my garments on now, it is just sort of part of my everyday life"*, (interview, aged 45)

Similarly, Grace stated:

> *"I didn't care because on the inside it is still me. And if I'm happy and I don't have a problem with it; why should other people?"* (interview, aged 50)

Three of the participants described wearing garments in public as a chance to educate the community. Dylan explained his attitude to wearing garments in public,

> *"I don't worry about it. It gives me an opportunity to give some advice to people."* (focus group, aged 57)

3.2. Burn service experiences

Participants reflected on what it was like to be a patient in a burns unit and a consumer of the burns service, from acute management on the ward through to outpatient settings. Reported experiences included staff treating participants with respect leading to trusting relationships, participant appreciation of the burn service, availability of therapists, peer support, and education. Tyler reflected on the care given to him by one therapist when she was completing the delicate measuring process for full body compression garments *"Yeah she was great, she was really good but very respectful of my body"* (interview, aged 25). Barry described feeling a sense of appreciation of being a consumer of the burn service:

> *"Yeah you don't want to take the mickey out of the system because it is free. The garments that cost so much, and well you guys take a lot of effort and, like for your clients I guess, to get them back on the road . . . You just try to do the right thing by everybody, by wearing and doing as you are told and wearing the garments, rocking up to your appointments on time."* (interview, aged 36)

Suitable availability of therapists was also discussed by a number of participants. This was captured by Courtney when she reported:

> *"I can just come speak to them whenever I want, pretty much if there is a problem. My questions might have been a little bit left field but they were always answered professionally."* (interview, aged 40)

However, not all experiences recounted by participants reported suitable availability of therapists.

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

Another critical experience reported regarding the burn service related to the availability of peer support. It was identified by six participants that the burns service and team lacked input from previous burn survivors. Doug captured this view when he explained:

> *"I mean we've got the whole team looking after us. But the one piece in that team that's missing is someone else in the same situation."* (interview, aged 61)

Further support and mutual understanding from contact with other peers was described by May:

> *"Yeah because my one, is quite easy to see and then you will have the eye contact with the others* [patients]*, and you understand what it feels like when you are wearing the gloves."* (focus group, aged 32)

Participants reported varied experiences with respect to the education that was provided within the burns services including the style of instruction, timing and amount. The education was reported to be provided in both verbal and written formats. Daniel reported, *"It was verbal and normally just, 'You've got to wear them 23 h a day'* (interview, aged 41). And Barry who laughingly reported that, *"I had a lot of paper work given to me."* (interview, aged 36)

Experiences related to the timing of education was discussed by a number of participants. Courtney provided her thoughts on the timing of education she received, stating:

> *"You don't want to be bamboozled with all that information about compression gear when you are trying to deal with just leaving hospital."* (interview, aged 40)

Differing views on the perceived amount of information received by participants regarding their compression garments was discussed. Approximately half of the participants reported that enough education was provided as illustrated by Sarah's description:

> *"I've been given all the information from day dot. This is what's going to happen, this is where you're going to be in six months time"* (interview, aged 43)

Whereas the other half of participants described wishing they had more information. Dylan's report summarised his experiences of limited education:

> *"You need more information on everything. They don't tell you anything until you need it or maybe you needed it a month ago."* (focus group, aged 57)

3.3. *The impact of garments*

Participants explored the impact of wearing compression garments on their lives and recovery. Topics such as activity restriction, reasons why garments were removed and the impact of wearing compression garments on scarring were discussed.

Activity restrictions were consistently reported by participants, including restrictions performing self-care tasks such as showering, toileting and eating, as well as restrictions in other daily tasks including exercises, home activities and work responsibilities. Participants who wore gloves for hand burns reported the greatest interference to their activities. Courtney, May and Chloe describe this, that wearing compression gloves impacted their ability to do everyday activities and led to them removing the garment,

> *"Yep definitely my gloves, in terms of typing . . . I'm on a computer all day and I am very naughty and I don't wear them at work. Or I go to and when I type, I am just not as fast or as effective with them, the gloves."* Courtney (interview, aged 40)

May described difficulty completing daily eating activities: *"I'm using the gloves for eating. It can be quite slippery with chopsticks."* (Focus group, aged 32)

When Chloe was asked, when do you take off the garments she responded:

> *"Oh I guess things like washing, obviously you can't wear gloves doing that. Eating, going to the toilet, doing the washing. Yeah I guess chores."* (interview, aged 24)

Most participants also reported removing their garments for special occasions, particularly if they needed to dress more formally.

> *"Um so I usually don't put my garments on if I have like a special event to go to . . . Like if I have a special event where I am wearing a dress or something like that. Dressing up a lot then I usually don't wear them."* Chloe (interview, aged 24)

In addition to activity restrictions and special events, participants mentioned a number of reasons for garment removal, both physical and emotional. Physical causes described by individual participants included burn symptoms such as itch and heat. Lainey describes the impact of itch:

> *"There are times when I have just pulled it off because you want to scratch your skin or you want to move or it just feels too tight. Yeah absolutely there can be times like that when you just want to take it off."* (interview, aged 35)

The impact of heat was described by Aaron, *"There are days where, um, you know, the heat is just so extreme, or the humidity . . . During summer it was pretty difficult to try and keep everything on."* (interview, aged 30)

Garment design also contributed to physical symptoms that led participants to stop wearing their garments. For example, Grace stated:

> *"I had the collars removed because it was too sweaty and uncomfortable and then if I got sweaty and uncomfortable I just want to rip it all off."* (interview, aged 50)

There were also emotional reasons that led participants to remove their garments. Anxiety was described by Chloe:

> *"Ahhh. I think for me, sometimes I can get quite anxious, and once I start getting, especially with my facemask again- if I start getting kind of really aware that I am wearing it and really aware that is it super tight, I will start to get a bit anxious and I might take it off then."* (interview, aged 24)

Despite a number of activity restrictions and reasons for removing compression garments, the impact of wearing garments on scarring was consistently reported by all participants to be positive. Positive impacts included flatter scars, less redness in scar, softer scar areas and improvements in aesthetic appearance. These changes were summarised by Daniel,

> *"Well you see a change in texture and stiffness in the actual scar itself. Umm but I am starting to now see a change of colour so starting to get a lot more white skin through the red just sort of breaking through. So you can sort of see that is working and doing it's job."* (interview, aged 41)

He further reported that seeing improvements in his scar assisted him with ongoing wear of his garments:

> *"After that time seeing some results has made it a lot easier to think that I've got to wear my garments as much as possible."* (interview, aged 41)

4. Discussion

The study provides a rich understanding of the experiences associated with wearing compression garments post burn injury. Participants described their own individual experiences of garment wear, their perspectives on the impact of wearing compression garments and the experiences that led to the removal of compression garments.

The theme, "what it feels like" to wear compression garments expanded on the existing literature, particularly in relation to the negative side effects of wearing compression garments. These negative physical experiences have previously been identified as itchiness, heat and skin changes [18–20], which were evidently also relevant to the participants in this study. However, while these physical symptoms in some cases led to difficulties with initial garment wearing, the participants were able to adjust to these negative sensations and, over time, accommodate them to the extent that they were often no longer noticed. This finding of accommodation supports the results of previous burn rehabilitation studies that explored patient perspectives related to recovery and adaptation to life after burn injury [32,33]. Dahl et al. [32] reported that an important part of a patient's coping ability was associated with "getting used to it" and described an adjustment to life after burn injury. A similar finding was one of the main themes reported by Martin et al. [23] who stated that the garments "integrated into their physical selves as a supplementary skin". This sensory accommodation may have clinical implications, being an important message to share with new compression garment wearers. This knowledge that the physical sensations may become less noticeable may assist new wearers to overcome the initial discomfort associated with wearing compression garments and be motivated to continue wear.

With respect to patient experiences of the clinical service, it is oft-times reported that education to improve patient knowledge regarding their treatment could positively influence adherence [21,22,34,35]. Previous burn literature has explored patient knowledge and their perceptions of education and has reported varied findings including differences in amount, timing and delivery style of information [18–20,36,37]. Findings of the current study were consistent with past research [18–20,37] in that there were differences in reported education received by participants, in terms of format (verbal or written), timing and amount of information provided.

An important insight from this study was the strong focus placed upon learning from each other and the idea of peer support to assist in learning about compression garments. Peer support may be able to assist in the educational process as other burn injury patients have an understanding from their own personal experience [38]. Peer support programmes have been utilised with success in a number of different health care fields including mental health, diabetes management and oncology [39–41]. A relatively recent scoping review [42] of peer-to-peer support in burn populations found limited research about the value of such programmes. One of the studies cited in the review, that of Badger and Royse [38], explored the perceived benefit of different peer support with adult burn patients. Support options were attending conferences, society newsletters, and formal and informal peer sessions. The results of the scoping review described the impact of peer support to have "some level of positive impact" for adult burn patients; however both the individual study and the scoping review recommended further research to explore programme design as well as the impact and effectiveness of peer support [38,42].

Participants in this study consistently reported the positive impact of wearing compression garments on scar progression. These impacts included fading scar colour to resemble surrounding skin and flattening of the scar. This focus on the positive impact on scarring associated with wearing compression garments added to the results of Martin et al. [23] qualitative study into the experiences of wearing compression garments. Although their participants reported positive experiences, this was related to the security, protection and concealment that the garments provided, and not the scar management aspect of wearing compression garments [23]. With the effectiveness of compression garments debated within the burn literature, it is important to acknowledge the unique insight gained from patients in the current study regarding the overall positive impact on scarring from wearing compression garments.

Further original insights from the participants in this study included a range of experiences that lead to the removal of wearing compression garments. Participants were able to detail key sensations including heat and itch, special occasion events, activity limitations, garment design flaws and feelings such as anxiety and frustration that led to the cessation of wearing compression garments. This information is useful to the health care practitioner as it may inform garment provision and scar management plans. Health care practitioners may be able to adjust educational processes to inform patients of potential difficulties associated with wear, including that there may be negative sensations and particular activities that they may want to remove their garments for. A personalized discussion around why and when the patient wants to take their garments off could be incorporated into their plan along with strategies on how to overcome negative sensations. In addition, with the knowledge that patients remove their garments in relation to certain experiences and events, clinicians may be able to formulate alternative scar management plans to manage these circumstances.

This study has highlighted that experiences associated with wearing compression garments are unique to individuals and therefore, individual preferences, perceptions and needs must be taken into account. Participants had different views and opinions regarding colour choices, wearing compression garments in public spaces, reasons for removing compression garments and the amount of education that was needed. The participants in a previous study exploring burn patients' adaptation to their trauma and recovery also highlighted individual differences in the adaption process [33]. This was in addition to a shared belief that the burn injury resulted in 'profound life change' [33]. This information further supports personalised tailoring of treatment approaches and working in collaboration with burn patients to develop garment regimes that best meet patient needs. This person focused approach will support their experience of, and ability to adhere to, the wearing of compression garments.

4.1. *Study limitations*

This study was conducted at one of the 12 Australian and New Zealand metropolitan hospital Burns Units. There are possible differences in treatment and service delivery between hospital and burns centres nationally and internationally. Hence the patient experience may differ across settings and the results are therefore not generalizable. Patient demographics including age, race and gender may also influence patient experiences of wearing compression garments. The age range (24–61 years) of participants in this study may have precluded very different perceptions by younger adults who maybe more conscious of body image and peer acceptance and perceptions of the older adult (above 61). Only one racial group was participated within the study and it is possible that genetic and racial factors may influence patient experiences of wearing compression garment. The sample in this study is majority female (55%) which is in contrast to adult burn populations, which are predominantly male, and this may have influenced the reported patient experiences [43]. Future research should aim to include a larger range of patient demographics for better representation of adult burn cohorts.

Patient experiences may also change at different time points throughout recovery. This study collected data from individuals at one single time point. There is thus the possibility that potential changes in personal experiences such as ongoing adaptation to wearing and the experiences associated with end point of ceasing compression garments may have been missed.

5. Conclusion

The results of this study demonstrate the importance of collaboration with burn patients and personalised treatment regimes to enhance patient experiences of wearing compression garments. Future research to should explore patient perspectives related to individual strategies utilised to overcomes difficulties with compression garment wear as well as patient perspectives on potential recommendations to burn care services. These strategies and service recommendations should further be explored in relation to the feasibility of incorporating these recommendations and change service models within burn units with the objective of further improving patient experiences of compression garments.

Participants in this current study reflected on their lived experience of wearing compression garments and provided a nuanced understanding of the physical symptoms they experienced, described how learning to wear their compression garments was a process that became easier over time and discussed the impact of wearing compression garments on their lives and burn recovery. The results highlighted a variety of experiences and influences that affected people differently. New insights into the sensations, activity restrictions and emotions that led patients to remove their compression garments were explored. These patient perspectives related to the experiences of wearing compression garments and the reasons why compression garments were removed, will inform burn therapists and lead to potential service delivery changes including personalisation and detailed education. These service delivery changes may improve patient experiences of wearing compression garments, and therefore improve treatment outcomes for patients post burn injury.

Conflict of interest statement

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

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