The Experience of Scar Management for Adults with Burn Injuries: An Interpretative Phenomenological Analysis

Thesis submitted for the degree of
Doctorate in Clinical Psychology
University of Leicester

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April 2015
Declaration

I confirm that this research report is my own work and has not been submitted for any other academic award.

Catherine Martin
21st April 2015
The Experience of Scar Management for Adults with Burn Injuries: An Interpretative Phenomenological Analysis

Catherine Martin

Thesis Abstract

Literature Review
Qualitative research was reviewed to better understand how people cope with burns. Eleven articles were identified for inclusion with a total of 107 participants. A thematic synthesis was undertaken which resulted in two superordinate themes. These provided an account of how patients managed the burn (e.g. by maintaining a positive perspective and utilising pragmatic strategies), and how they distanced themselves from distress and pain (e.g. by using distraction). The findings reinforced the benefits of social support, which facilitated the use of coping strategies. Reviewing support and interventions during the process of recovery from burns is important, as patients’ needs may change over time. More research is needed to understand the use and effectiveness of avoidant coping at different times, and to understand what people need at different stages of recovery.

Research Report
The experiences of using scar management interventions for burns were explored using Interpretative Phenomenological Analysis. Eight participants were recruited and data was collected using semi-structured interviews. Three superordinate themes were identified: ‘identity’, ‘functions of the pressure garment’ and ‘coping’. ‘Identity’ described the role of scar management in the developing identities of burn patients. ‘Functions of the pressure garment’ indicated the various personal and social functions of the garments. ‘Coping’ described the main strategies used to manage associated difficulties. Implications for healthcare professionals were discussed, which included appropriate assessment of trauma, providing information on managing social responses, and the facilitation of containment through their support. Recommendations for further research were to explore prior hospital experiences, and investigate the experiences of different demographic groups.

Critical Appraisal
The process of conducting the research was reflected upon. This focused on developing good quality research in the face of dynamic challenges, formalising processes of reflexivity, and developing skills in utilising qualitative methodology.
Acknowledgements

I would like to thank my supervisors Dr Sheila Bonas and Dr Laura Shepherd for their generous support, encouragement and guidance throughout the research. I appreciate the time given by Emily Hedges and Sue Harvey, who answered my many questions about scar management and assisted with the practicalities for the study. I am grateful for the time given by my eight participants to meet with me and to talk about their experiences. Thank you also to my friends and family, for your support and patience during the completion of the research, and especially to Charlie, for maintaining a sense of normality with the usual love and humour.
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Experiences of Coping with a Burn Injury:  
A Meta-Synthesis  

Catherine Martin

Abstract

Background
Burns can cause substantial psychosocial difficulties for some burn patients. Various strategies are used to cope with burns, but these can have positive or negative effects on outcomes such as mood, body image and interpersonal relationships. Coping with burns may be further influenced by the nature and extent of social resources. A reliance on quantitative measurement in research of coping, however, has neglected the breadth and complexity of strategies.

Objective
To synthesise qualitative research on coping, to further understand how adults cope with burns.

Method
Searches were conducted across six databases. A total of 1958 articles were screened against inclusion and exclusion criteria, and then reference lists of the included studies were examined. A quality appraisal and data extraction of 11 papers was undertaken. Relevant findings of the papers were synthesised using thematic synthesis, which involved coding the text, comparing and organising codes, and developing analytical themes.

Results
The search strategy identified 11 papers for inclusion in the review, with a total of 107 participants. Two superordinate themes were developed: ‘managing the effects of the burn’ and ‘disconnecting from the distress’. These themes illustrated a range of strategies used to manage and tolerate difficulties and, when this was difficult, to create distance from pain and distress.

Conclusion
The findings demonstrated the complexity of coping strategies, and highlighted the dynamic nature of coping across contexts and duration of recovery. Researching specific areas of recovery would be useful to further explore this area. Enhancing social support would also be beneficial to promote psychological adjustment to burns.
1. Introduction

Each year across England and Wales, around 3700 adults are admitted to specialist burn injury services (Stylianou et al., 2015). Recovery from burns is a long and dynamic process (Stavrou et al., 2014) as the burn patient is faced with numerous physical, social and psychological challenges in and beyond hospitalisation. Although the majority cope well with burns (van Loey & van Son, 2003), some patients experience difficulties with depression (Thombs et al., 2006), post-traumatic stress disorder (van Loey & van Son, 2003), body image, sexuality, social activities (Connell et al., 2015) and quality of life (Stavrou et al., 2014). These psychosocial outcomes are influenced by how patients adjust to their burns.

1.1 Adjustment to Burns

Adjustment to burns may be influenced by a wide range of factors, such as patient demographics, burn characteristics and psychosocial variables. To identify specific predictors of post-burn adjustment, a review of the quantitative literature was carried out by Klinge et al. (2009). The findings demonstrated that poor outcomes were more likely with the following risk factors: i) pre-existing psychological morbidity; ii) unemployment and alcohol dependence or substance misuse; iii) being female; iv) a lack of stable, supportive social relationships and v) neuroticism, which was associated with the use of avoidant coping strategies.

Different coping styles may therefore predict psychological difficulties for burn patients. The review also indicated a relationship between coping style and social support, which could further explain variation in how patients managed their burns. For example, women without social support more commonly used the coping strategy ‘denial’; and inadequate family support and poor coping skills both contributed to the development of psychological difficulties in this gender (Klinge et al., 2009). As well as identifying the relevance of social support to coping, the quantity and quality of social support was considered important. For example, better outcomes were found for individuals with multiple social resources and stable relationships, as these could increase confidence and facilitate positive experiences.
The review highlighted the relevance of coping strategies in recovery from burns, and indicated a relationship between coping style and social support. The findings, however, offered limited insight into the breadth and functions of coping strategies.

1.2 Coping

Coping encompasses a wide range of strategies to manage distress and difficulties. Research has indicated that people use a variety of strategies to manage their burns; although some strategies may be more effective than others. In the burns literature, six strategies are often examined: ‘re-evaluation/adjustment’, ‘avoidance’, ‘emotional support’, ‘optimism/problem solving’, ‘self-control’ and ‘instrumental action’ (see Appendix A for descriptions).

Research which has explored the effectiveness of using these strategies for burns was examined. Studies have often indicated that poorer outcomes were associated with the use of ‘avoidance’ and ‘self-control’. For example, use of ‘avoidance’ (e.g. wishing the problems would go away) correlated with depressive symptoms (Andrews et al., 2010; Bras et al., 2007), appearance dissatisfaction (Amoyal et al., 2011) and overall poorer functional and psychosocial outcomes (Kildal et al., 2005; Willebrand et al., 2001; Willebran et al., 2002). People using ‘self-control’ (e.g. keeping feelings to oneself) also had poor mood and body image (Kildal et al., 2005; Willebrand et al., 2001).

In contrast, ‘emotional support seeking’ (e.g. seeking social support) was associated with less severe depression (Andrews et al., 2010), fewer problems with itching (Willebrand et al., 2004), and fewer psychosocial difficulties related to mood, body image, relationships and sexuality (Kildal et al., 2005; Willebrand et al., 2001; Willebrand et al., 2002).

The efficacy of the remaining strategies was less clear. For ‘optimism/problem solving’ (e.g. adopting a positive approach), inconsistent findings were reported for outcomes related to body image and interpersonal relationships (Kildal et al., 2005; Willebrand et al., 2001; Willebrand et al., 2002). The effectiveness of ‘re-evaluation/adjustment’ (e.g. seeing the experience from a different perspective) and ‘instrumental coping’ (such as seeking information about the accident) was moderate
when compared to other strategies. Although both these strategies were associated with functional difficulties (such as using utensils or dressing) (Willebrand et al., 2001), they were associated with comparably better outcomes than when using avoidance (Willebrand et al., 2002).

The literature suggested that a range of strategies are utilised by burn patients, although avoidance is less commonly used compared with other strategies (Andrews et al., 2010; Noble et al., 2006; Ying et al., 2013). Across the studies, however, there was little agreement around which groups of patients use specific strategies. For example, the use of different strategies has been linked to patients’ age (Willebrand et al., 2001; Ying et al., 2013), personality (Andrews et al., 2010; Willebrand et al., 2002), employment status (Kildal et al., 2005; Ying et al., 2013), living alone (Kildal et al., 2005) and burn depth and location (Kildal et al., 2005; Ying et al., 2013). Many of these findings, however, were not well supported across studies, and one study found no such relationships between gender, burn size or location, and coping style (Bras et al., 2007). In order to develop profiles of patients who use particular strategies, further research is required.

Overall, the quantitative research has investigated the efficacy of coping strategies used for burns. Due to the use of pre-defined variables, information on the complexity of coping strategies, and the relationships between them, is lacking. Furthermore, the majority of research is cross-sectional which limits an understanding of coping across time. This may not reflect the benefits of specific coping strategies at different times. For example, as early responses to trauma, avoidance or denial may be protective by relieving anxiety (Bousfield, 2002).

A review of the qualitative literature on burns was conducted by Kornhaber et al., (2014a), which partly addressed these critiques. The review focused on experiences of rehabilitation, and highlighted experiences of coping and social support for people with burns. The findings demonstrated different ways in which people coped, e.g. by developing a specific mind set, comparing oneself to others, and reframing difficulties. Coping was also facilitated by social support, which motivated and empowered individuals, giving them confidence and a sense of perspective. Although this review provided some insight into the experiences of coping, the process of identifying,
analysing and searching for studies on coping was not sufficient to understand this area in depth, due to the broader focus on rehabilitation. There remains a need to understand the complexity of coping, to better support people with burns.

1.3 Rationale & Aim

Burns have the potential to cause significant psychosocial difficulties, but the way individuals cope can affect their overall adjustment. Existing literature reviews offer limited insight into the complexity of coping over the period of recovery from burns. A better understanding of coping may enable clinicians and patients to enhance or modify particular strategies, and normalise typical processes of adjustment. This review aimed to complement current knowledge by providing a synthesis of qualitative data on how people cope with burns.

1.4 Definition of Coping

‘Coping’ is recognised as a multidimensional construct, with occurrence in everyday narratives to explain psychological responses to events. For the purpose of the review, the definition of coping used was: ‘efforts, both action-orientated and intrapsychic, to manage (i.e. master, tolerate, reduce, or minimise) environmental and internal demands and conflicts between them’ (Lazarus & Launier, 1978; p.311). Coping includes proactive strategies (to address the problem) and avoidant strategies (to deny or distract from the problem), and may further be categorised as problem-focused (to change or reduce the effects of a problem) or emotion-focused (to regulate the emotional impact). Due to the complexities around defining and appraising coping strategies (DiMatteo & Martin, 2002), apparent adaptive and maladaptive strategies were considered within the review.
2. Method

2.1 Search Strategy

Between 22nd August and 1st October 2014, searches were conducted across six databases to identify literature from a range of medical, healthcare and social science resources: CINAHL, Cochrane Library, Medline, PsycInfo, Scopus and Web of Science. Boolean logic was used to increase the likelihood of accessing the intended clinical group, focus and methodology. Four search strings were entered into each database, combining ‘burn’ with ‘coping’, ‘adjustment’, ‘resilience’, and ‘qualitative’.

Once duplicates were removed, titles or abstracts were screened against the exclusion criteria. The remaining full texts were then examined to determine their relevance for the review. Reference lists of the included studies were searched to identify any additional studies.

2.2 Inclusion and Exclusion Criteria

For inclusion in the review, participants were required to be at least 18 years old, had experienced a burn injury, and had provided qualitative data on coping with burns. Full details of the inclusion and exclusion criteria are available in Appendix B.

2.3 Data Extraction

Key data regarding the aims, context and findings of the included studies were recorded using a data extraction form (Appendix C). Data on coping was extracted from the results section of each study.

2.4 Quality Appraisal

Whilst recognising the many debates around quality appraisal for qualitative research, an inclusive approach was taken to the current review, meaning studies were only excluded if they were considered to be fatally flawed (Dixon-Woods et al., 2007). As an established tool developed for qualitative research, the Critical Appraisal Skills Programme (2014; Appendix D) was used to guide the process of quality appraisal.
This information then ‘becomes part of the overall analysis’ (Saini & Shlonsky, 2012, p.115), and is reported on in Table 1.

2.5 Data Synthesis

Meta-synthesis is used to amalgamate and synthesise data from studies, which enables the development of abstract, explanatory interpretations for the body of data (Walsh & Downe, 2004; Zimmer, 2004). Thematic synthesis was used to synthesise the data in the current review, and has four main benefits. Firstly, it can be used to identify commonality among studies (Lucas et al., 2007) whilst taking context into account (Barnett-Page & Thomas, 2009). Secondly, it has potential for hypothesis generation (Lucas et al., 2007). Thirdly, it can be used across diverse qualitative methodologies (Thomas & Harden, 2008) and epistemological positions (Braun & Clarke, 2006). Finally, there is scope for interpretation to move beyond the primary data (Barnett-Page & Thomas, 2009).

The process of thematic synthesis involved three key stages, described by Thomas and Harden (2008). The first stage involved coding the meaning of the text, to translate concepts between studies; the second stage developed descriptive themes, by comparing and organising codes; and the third stage generated analytical themes, by extending beyond the meaning of the studies to develop a new interpretation in relation to the aims of the review. As the purpose of the review was to focus on a particular aspect within the data (coping), a deductive approach was justified (Braun & Clarke, 2006), which involved framing the findings within existing constructs.

2.6 Epistemological Position

The current review was undertaken from a constructionist position, viewing coping as a social construct, shaped by cultural and social narratives. The researcher had engaged with wider literature on coping and burns which facilitated the selection of potential papers for the review, by demonstrating ways in which coping is often conceptualised. Potential bias was managed by acknowledging preconceptions, maintaining a reflective diary and discussing analysis with a supervisor.
3. Results

3.1 Results of the Search

A total of 1958 papers were identified from the six databases, with 1276 remaining once duplicates were removed (search results are tabulated in Appendix E). Following the screening of titles and abstracts, potential articles were examined in full to assess their relevance for the review, resulting in 10 studies. Searching reference lists yielded one additional study (Moi et al., 2008), bringing the total to 11. The process is illustrated in Figure 1, based on the PRISMA format (Moher et al., 2009).

Figure 1: Study Selection Process
3.2 Included Studies

The included studies are presented in Table 1 and arranged chronologically by the average time since burn. Studies were assigned a number (#) to reduce repetition of full references. In total, 107 participants were included in the current review (data were derived from one sample for studies 1 and 2, as well as studies 4 and 5). Studies were conducted in Canada [3, 11], America [10], Norway [4, 5], Sweden [1, 2], Germany [6], Greece [9], China [7] and Australia [8]. Sample sizes ranged from six to 21 (mean = 12), with nearly twice as many men (n = 70), as women (n = 37). Participants’ ages ranged 18-82 years; Total Body Surface Area (TBSA) ranged 1-90% [not reported by 3 and 9]; and time since burn ranged from five months to 12 years [not reported by 10 and 11]. The majority of the studies focused broadly on life after a burn injury [1, 4, 7, 8, 9, 11], with two studies focusing primarily on pain [2, 3], one on the body [5] and two on interventions [6, 10]. All studies collected data via individual interviews, which were then analysed using content analysis [1, 2, 6, 10], narrative analysis [3, 11], phenomenological analysis [4, 5, 7, 8] and a mixed phenomenological and grounded theory approach [9].

3.3 Quality Overview

An appraisal of each study was conducted, results of which were included in Table 1. Critiques were identified across the papers, with study 3 raising the most concerns due to insufficient or unclear information. Each study appeared to make a meaningful contribution and, despite various limitations, none were considered to be sufficiently flawed to merit exclusion from the review.
<table>
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<th>#</th>
<th>Author, Year &amp; Country</th>
<th>Focus</th>
<th>Sample (M = Mean)</th>
<th>Method</th>
<th>Key findings</th>
<th>Quality</th>
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| 1  | Dahl et al. 2012, Sweden | Experience of adapting to life after burns | 12 participants  
8 male, 4 female  
Age 19-74 years (M = 50)  
TBSA 2-40% (M = 11%)  
6-12 months post-burn (M = 7 months) | Interviews  
Content analysis (Kvale’s method) | **Fragile body:**  
-Covering burns with clothes  
**Coping:**  
-Managing expectations of pain  
-Importance of relatives  
**Reflections:**  
-New perspectives  
-Focus on something other than pain | Clear aims and appropriate design and recruitment. Purposive sampling used, however ‘strategic selection’ of participants was not explained. Hospital approval obtained and ethical issues considered, but not in relation to researchers contacting participants directly (potential for coercion) in order to ascertain their interest. Data analysis explained in depth, but no consideration of reflexivity. Clear themes, use of quotes, and contrasting experiences described; however, no participant identifiers were used meaning quotes could not be attributed to specific participants. |
| 2  | Tengvall et al. 2010, Sweden | Experience of pain | 12 participants  
8 male, 4 female  
Age 19-74 years (M = 50)  
TBSA 2-40% (M = 11%)  
6-12 months post-burn (M = 7 months) | Interviews  
Content analysis (Kvale’s method) | **Pragmatic coping:**  
-Helping themselves  
-Avoiding or collapsing with pain  
**Carrying the pain:**  
-Facing pain, managing expectations of pain  
-Using distraction  
-Importance of family  
**Perspectives:**  
-Enduring pain | Clear aims, appropriate method. Appropriate inclusion and exclusion criteria, although the recruitment procedure was not described. The study was reviewed by an ethics committee. Participants were recruited up to twelve months post-burn, which was useful to control for distortion of pain memories across time. Authors engaged in critical scrutiny and ‘testing of the analysis’ but there was insufficient information on reflexivity. Participants included those with ‘delusional memories’ but impact on findings was not addressed. |
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<th>Morse &amp; Mitcham, 1998</th>
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<th>Interviews</th>
<th>Disembodiment:</th>
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<td>4 male, 2 female</td>
<td>Narrative analysis</td>
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<td>Age 25-35 years (M = 33)</td>
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<td>TBSA (not reported)</td>
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<td>5-12 months post-burn</td>
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<td></td>
<td>Moi &amp; Gjengedal 2008</td>
<td>Experience of quality of life after burns</td>
<td>14 participants</td>
<td>Interviews</td>
<td>Facing the extreme:</td>
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<td>Norway</td>
<td></td>
<td>11 male, 3 female</td>
<td>Phenomenological (Giorgi’s method)</td>
<td>- Restore order, minimise damage, hand over responsibility for situation - Feeling lucky</td>
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<td>Age 19-74 years (M = 46)</td>
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<td>Accepting the unchangeable:</td>
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<td>TBSA 7-62% (M = 33%)</td>
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<td>- Enduring and interpreting suffering - Hope - Using distractions - Comparing self with others</td>
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<td>5-35 months post-burn (M = 1 year 2 months)</td>
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<td>Changing what is changeable:</td>
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<td></td>
<td>- Finding new ways of overcoming the consequences of the burn - Importance of family and friends</td>
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Aims of the study unclear, although qualitative methodology fit the examples given. Minimal information on recruitment and insufficient explanation of interview process. Reflexivity and ethics not addressed. Findings related to one theme with quotes provided, however, it was unclear how participants were represented (all quotes were anonymous). Negative cases were discussed and the theme was further explored to test hypotheses.

Clear aims, appropriate method, design, and recruitment strategy with exclusions discussed. Reflexivity: preconceptions noted for bracketing (researchers mindful of not reading existing literature; skills and experiences acknowledged); contextual information provided. Study approved by ethics committee. Recruitment strategy minimised bias and was informed by ethics. Clear procedure for analysis and quotes used, however, participant identifiers were lacking.
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<th>14 participants</th>
<th>Interviews</th>
<th>An unfamiliar body:</th>
<th>Clear aims, recruitment strategy addressed bias and ethics. Ranges (e.g. age/TBSA) were lacking among the demographic information (and extracted from Moi &amp; Gjengedal, 2008). Researcher role discussed; preconceptions and knowledge reflected on. Approval obtained from ethics committee. Preconceptions noted to facilitate bracketing, and themes appeared grounded in data.</th>
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<td>11 male, 3 female</td>
<td>Age 19-74 years (M = 46)</td>
<td>Phenomenological (Giorgi’s method)</td>
<td>-Postponing looking in mirror</td>
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<td></td>
<td></td>
<td>TBSA 7-62% (M = 33%)</td>
<td>-Telling stories openly; ignoring reactions from others</td>
<td></td>
<td>-Importance of partners (reassuring)</td>
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<td>5-35 months post-burn (M = 1 year 2 months)</td>
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<td>6</td>
<td>Ripper et al. 2009</td>
<td>Investigate problems and resources when using pressure garments</td>
<td>21 participants</td>
<td>Interviews</td>
<td>Impairment caused by the pressure garment therapy:</td>
<td>Clear aims and appropriate method. Inclusion criteria were limited, however refusals and reasons were acknowledged. Method outlined, however, ethics not addressed (researchers pursued participants). Quotes were used but without reference to the individual participants. Inter-rater reliability considered but procedures for reflexivity lacking. Explicit findings and implications considered, although theoretical exploration of coping resources was lacking.</td>
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<td></td>
<td>Germany</td>
<td>13 male, 8 female</td>
<td>Age (M = 42 years)</td>
<td>Content analysis (Mayring)</td>
<td>-Avoiding going out in public</td>
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<td>TBSA (M = 20%)</td>
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<td></td>
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<td>5 months – 4 years 2 months post-burn (M = 1 year 5 months)</td>
<td></td>
<td></td>
<td>-Expectation of a positive result</td>
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<td>-Social support (practical and emotional)</td>
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<td></td>
<td>-Problem solving</td>
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<td>-Cognitive strategies (e.g. distraction, comparison)</td>
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<td>-Information seeking</td>
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<td>Zhai et al. 2010</td>
<td>China</td>
<td>Experience of post-traumatic growth</td>
<td>10 participants</td>
<td>Interviews</td>
<td>Abreaction:</td>
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<td>7 male, 3 female</td>
<td>Phenomenological (Colaizzi and Van Manen’s methods)</td>
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<td>Age 24-48 years (M = 35)</td>
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<td>-Find an outlet for negative mood</td>
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<td>TBSA 11-90% (M = 69%)</td>
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<td>-Evaluate self with a comparison group</td>
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<td>5 months – 6.5 years post-burn (M = 2.8 years)</td>
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<td><strong>Downward social comparison:</strong></td>
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<td>-Incorporate understanding of burn into one’s global network of meaning</td>
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<p>| 8 | Kornhaber et al. 2014b | Australia | How patients accept burns | 21 participants | Interviews | Reasoning: | Aims, design and method were clear and appropriate. Comprehensive and clear recruitment strategy with focus on reducing bias. Sample was predominantly male but not homogenous, which could have enabled a better understanding of how men acknowledge and accept burns. Thorough checking of transcription process, including member checking. Quotes and identifiers used. Reflexivity: authors acknowledged biases (though not detailed in the paper), and member checking used for analyses. Engagement in bracketing. Ethics addressed and approval sought. Clear results and good links to theory. |
|   |                       |       |                                 | 20 male, 1 female | Phenomenological (Colaizzi method) |
|   |                       |       |                                 | Age 21-65 years (M = 44) |                      | -Reasoning |
|   |                       |       |                                 | TBSA 20-90% (M = 55%) |                      | -Comparing self to others |
|   |                       |       |                                 | 6 months – 8 years post-burn |                      | <strong>Humour:</strong> |
|   |                       |       |                                 |                       |                      | -Using humour to cope and communicate |
|   |                       |       |                                 |                       |                      | <strong>The challenge of acceptance:</strong> |
|   |                       |       |                                 |                       |                      | -Difficulties with acceptance |</p>
<table>
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<th>Study Details</th>
<th>Sample Characteristics</th>
<th>Data Collection</th>
<th>Themes in Findings</th>
<th>Research Design and Methodology</th>
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| 9 | Williams et al. 2003 Athens | Experience of recovery | 7 participants  
4 male, 3 female  
Age 31-51 years (M = 41)  
TBSA [not reported]  
2-29 years post-burn (M = 12.4 years) | Interviews  
Mixed phenomenological and grounded theory approach (Mousstakas; Strauss & Corbin) | **Reaction during crisis:**  
-Taking care of themselves  
**Remembered pain:**  
-Experiences of pain  
**Gains:**  
-Reframing  
**Adapting/coping with pain:**  
-Using spiritual and social support  
**Relationship with others:**  
-Finding comfort in family  
-Attitudes of the emergency services technicians | Clear aims and appropriate use of qualitative methodology. Study limited by opportunity sampling and minimal inclusion criteria (no exclusion criteria). Interview framework outlined. Time since burn ranged 2-29 years, therefore participants may be at different stages of recovery. Ethics and reflexivity not addressed, despite one author’s personal connections to the field. Detailed account of analysis and there was discussion of contrasting experiences. Quotes and identifiers used. |
| 10 | Davis et al. 2014 USA | Experience of burn patients in a support group | 6 participants  
3 male, 3 female  
Age 29-55 years (M = 44)  
TBSA 10-90% (M = 55%)  
Post-burn (not reported) | Interviews  
Content analysis | **Acceptance of self:**  
-Sharing experiences  
**Perspective change:**  
-Internalisation of control  
-Hope  
-Acquisition of new skills | Aims and method were described. Limited detail was available on the recruitment strategy and inclusion criteria. Clear process for analysis, including triangulation of data. Quotes and identifiers used. Reflexivity and rigour acknowledged although not explicit in the paper. Ethics considered. Clear findings related to research question. |
| 11 | Hunter et al. 2013 Canada | Women’s meaning-making regarding burns | 10 participants  
10 female  
Age 18-82 years (M = 45)  
TBSA 1-30% (M = 9%)  
Post-burn (not reported) | Interviews  
Narrative analysis | ‘I don’t find it a problem:’  
- Presenting a positive outlook  
- Having others see the scars  
‘Not a pretty sight:’  
- Concealing scars  
- Using cultural metaphors to describe the body  
- Using negative words and metaphors to describe body | Appropriate design and method, clear recruitment strategy which addressed bias and capacity; ethical approval agreed. Excluded women with >30% burns despite acknowledging that little research links psychosocial difficulties to burn size, however, explicitly reflected on reasons for doing so (the majority of burn patients’ TBSA is <30%), which could be argued improved homogeneity. Interviewer experiences and improving trustworthiness considered. Clear procedure of analysis with quotes and identifiers, and contradictory evidence explored. Strong links to theory. |
3.4 Thematic Synthesis

From synthesis of the included studies, two superordinate themes were identified. Where possible the context was retained, which demonstrated the application of coping strategies in various circumstances. The links made between the sub-themes are indicated in Figure 2.

Figure 2: Diagram of Coping Themes

3.4.1 Managing the Effects of the Burn

Participants demonstrated various coping strategies to manage the effects of the burn. By remaining positive and motivated, even when control was limited, participants were able to endure difficulties, drawing on social support to facilitate their coping.
3.4.1.1 Positive Perspective

Participants often emphasised a positive interpretation of the injury, which minimised problems and losses. Across the papers examples of this reasoning were found [4, 7, 8, 9, 11], where participants focused on what was retained during the burn injury, rather than what was lost. Participants positioned losses within a wider picture, to alter their perspective and minimise the impact. For example, participants often appeared grateful for having retained their life [4, 7] and their physical functioning [7, 9, 11]:

‘I was lucky because I didn’t lose my eyesight’ [9, p.67]

‘My functioning is ok, there is just a little bit of disfigurement, at least I can take care of myself’ [7, p.436]

Some participants felt fortunate that their appearance had been somewhat preserved [1, 8]. Two of the participants minimised their burns by recognising the potential for their faces to have been affected, appraising this as worse. For example:

‘I was trying to accept what my body was like now...but then when I saw some of the other burns victims who had really, really bad disfigurement on their faces and some of the other people in rehab who weren’t necessarily burnt but who had it worse than I did. It made me thank my lucky stars in a way do you know what I mean? Because I think if I’d been badly disfigured in my face I think I’d have been a completely different story’ [8, p.592]

As well as the physical effects, participants took a positive stance towards the impact on their identities [7, 11]. One participant was adamant that her sense of self would remain unchanged, despite the current and potential effects of the burn:

‘It doesn’t matter to me that I burnt myself. It doesn’t matter that I have to wear this. It doesn’t matter that when I don’t wear this, it’s
still going to be a big scar. It doesn’t change how I see myself. It doesn’t change how I feel about myself. It doesn’t change how the people that matter to me, see me’ [11, p.1592]

For another, maintaining a positive perspective appeared to be a more deliberate cognitive effort:

‘We were the same as the people not burned...you have to reverse your thinking regardless of how others look at you’ [7, p.436]

This seemed to help her manage the challenges to her identity as a burn patient.

3.4.1.1 Social Comparison

Maintaining a positive perspective was facilitated by use of social comparison and humour. Other people with burns provided participants a comparable group to evaluate their injuries, allowing them to locate worse injuries in others [1, 4, 6, 7, 8, 10]. By doing so, their own injuries were perceived to be comparatively better:

‘When you see all these people and you know that they’re probably never going to get better...you just think yourself so lucky that you’re not one of them. Even though you know you’re still going through something pretty horrific yourself but they’re just degrees of horrible things aren’t they?’ [8, p.593]

Comparison facilitated a positive perspective, by providing the means in which to reframe burns. This seemed to inspire and motivate participants to make progress with their recovery;

‘I was like “poor me, why did this happen?” That was me. And so its changed because I don’t feel so much that way any more, because I see other injuries, I see other people...and you know, I’m pretty
lucky...you know your life can still go on and that’s the biggest thing I got out of it...my perspective changed’ [10, p.419]

and to positively evaluate their recovery:

‘Compared to others, I’m doing pretty well’ [6, p.661]

As participants always had an example of someone who had worse burns, or who was making less progress, they remained able to minimise their own difficulties. In people with low mood or self-esteem, which may occur after a burn (Connell et al., 2015; Thombs et al., 2006), this ‘downward social comparison’ has been shown to improve mood (Aspinwall & Taylor, 1993; Gibbons & Gerrard, 1989).

3.4.1.1.2 Humour

The use of humour was indicated in three of the papers [8, 9, 11], and contributed to the process of maintaining a positive perspective and minimising difficulties. When initiated by others, this was reassuring and humanised the experience:

‘All the staff in the burns unit have got great sense of humour. That made it a lot easier and having the burns doctor come in and speak to me like a friend rather than a surgeon and have a laugh with me, it made everything a lot more easy to accept’ [8, p.593]

One paper demonstrated the significance of humour early on in recovery, as recalled by one participant ten years on from her burn:

‘These paramedics, I will never forget them, they were joking with me as a human, as my personality is a prankster and a jokester, and they helped me—to be kind of joking with me’ [9, p.71]

This may have been particularly memorable as medical language can sometimes be dehumanising and bodies are often talked about objectively [3], therefore humour
may have improved this experience. When initiated by the participants, humour appeared to release tension and enabled them to communicate the burn more comfortably:

‘Humour helped me in that aspect. Stimulating banter and trying to make light of it’ [8, p.593]

By ‘making light of it’ this example illustrated the minimising function of humour. Drawing on cultural references e.g. Freddy Krueger and Avatar [11] also appeared to ridicule the appearance of the burn; but despite various potential interpretations, the functions of this behaviour were unclear.

Overall, these experiences appeared to support existing literature that humour acts as a form of emotional regulation (Samson & Gross, 2012), and a way of humanising the experience of healthcare (Dean & Major, 2008).

3.4.1.2 Taking Control

Participants used pragmatic coping strategies to manage the physical and social demands of the burn. Examples of behavioural techniques included carrying a napkin for sweating, and having a shower, massaging, or scratching on undamaged skin to alleviate itching. Participants employed a problem-solving approach to manage the issues posed:

‘A bit stubborn and one achieves almost anything. But one must learn to find new ways’ [4, p.1627]

Managing social reactions to their burns appeared somewhat difficult, and participants battled between sharing and hiding their injuries [1, 4, 5, 6, 11]. The findings highlighted the complexity of these behaviours, which could depend on the person and context. By showing their burns, participants took some control over how they would be reacted to. For one participant, her injuries appeared communicative of the process she had endured:
“I never was embarrassed. It was more so like, ‘check it out’, ‘look at this’, ok. ‘Check this out’. Like this one [scar], ‘this is what I had to go through’ [11, p.1593]

Attempting to conceal scars using make-up and clothing appeared prevalent in the studies, including those focusing on relatively smaller burns [11]. Some participants suggested that concealing burns was related to feelings of shame; for others, it was to avoid social reactions:

‘I’m going to try and probably hide it. Just so- just so then I don’t get you know, weird reactions’ [11, p.1593]

For another participant, hiding her burn was a way to protect friends and family from experiencing anxiety:

‘You hide it because you don’t want people to worry about it’ [11, p.1594]

Preventing others from experiencing distress may have preserved relationships. This may have protected the effectiveness of social resources (e.g. enabling others to offer containment and support to the participant by being less adversely affected by the burn).

There was a sense of participants feeling vulnerable and exposed by their injuries, and they often used clothing to conceal burns. One participant further suggested that hiding the burns was symbolic of how he felt about himself:

‘I look different and I’m trying to cover my body with a sweater even when it’s warm outside...I’m not such an open person anymore...I’m hiding more’ [1, p.598]

This example was in contrast with the theme of ‘positive perspective’, which had a consistent focus on what was retained rather than lost.
3.4.1.3 Resilience

When participants appeared to have limited control over difficulties, but appeared able to tolerate them, they used strategies to develop resilience. Participants interpreted difficulties as part of the healing process [1, 2, 4, 5, 6] or even necessary for the healing process [5, 6]. Other cognitive strategies were interspersed within the papers, as participants focused on potential benefits, and tried to maintain realistic expectations:

‘As long as you know it is for the better, it’s amazing what one can take’ [4, p.1626]

‘[Pain is] all about healing the body, there is no easy way out, and you just set your mind to it’ [2, p.323]

‘In any case, this [pressure garment] is better than further operations’ [6, p.661]

A link between sub-themes was indicated, as maintaining a positive perspective appeared to support participants’ resilience. Support from others also helped participants to tolerate difficulties, as described by one participant following his attendance at a peer group:

‘I like it when they [other people with burns] share stories of what was hard for them to get through and what was easy, what they did in certain circumstances. Like the fact that people stare at you, you know, that’s just something you’ve got to get used to’ [10, p.420]

3.4.1.4 Social Support

The use of social support to facilitate coping was demonstrated in the majority of papers [1, 2, 4, 5, 6, 7, 9, 10]. Support came from a range of sources, including family and friends, medical staff, and peers (other people with burns). It served a variety of
functions, incorporating both practical and emotional support. Motivating and encouraging participants to actively engage in their recovery was commonly described:

‘I just feel, she [my wife] had belief in me all the time, always saying: “oh no, you’re so stubborn, you’ll get going again”. From day one she said that; she had belief in me all the time, and she was right’ [5, p.283]

‘It was good for me to exercise and to show my relatives that I was able to walk again’ [2, p.323]

Social support influenced many of the coping strategies used: family members reminded participants of who they were and what they had retained, which facilitated a positive perspective; humorous interactions were beneficial to minimise the impact of the burn; staff members would advise on practical ways to take control of issues; and speaking with peers was informative, to normalise experiences and to learn new ways to adapt and endure.

In this respect, social support drew from existing relationships as well as new relationships, which were developed as a consequence of the injury. Encouragement was particularly helpful, whether this came from peers;

‘We encourage each other and some people always persuade me by talking about their own experience which makes me feel less depressed’ [7, p.436]

staff on the burns unit;

‘Just by the encouragement I coped’ [2, p.323]

or family and friends:
‘Friends tell me it is not that bad after all and that the [pressure] glove I am wearing is really cool’ [6, p.661]

Examples were also given of more subtle methods of offering reassurance. For example, relatives touching the injured skin was perceived to show acceptance, or just the presence of a doctor at the hospital was reportedly relaxing [5]. In contrast, some participants described difficulties accessing social support, with family or friends being dismissive [6], blaming, or they themselves struggled to cope with the impact of the burn [9].

Although social support predominantly interlinked with sub-themes of ‘managing the effects of the burn’, it also linked to ‘disconnecting from the distress’, as talking to others was perceived to be helpful in distracting from pain [2] and from burn issues in general [5].

3.4.2 Disconnecting from the Distress

At times, the pain and suffering caused by the burn appeared intolerable, and, consequently, participants sought to escape from the difficulties. This may be indicative that the stress of the burn exceeded the resources of participants, as examples of distressing and painful situations were provided across papers. This superordinate theme encompassed strategies to disconnect from distress, by externalising the body (or body parts), transferring responsibility to others, and focusing away from the burn.

3.4.2.1 Detachment

Evidenced usually at the most challenging times, e.g. with loss of limb or severe pain, multiple papers indicated externalisation of the burn injury [2, 3, 5, 10, 11]. This was indicated by the use of depersonalising language to refer to the body:

‘And the right leg was burnt quite badly, and the whole outside of the leg was burnt down to the bone—you could see bones and sinews in there’ [3, p.669]
‘This body, this thing with the arm, it is like I am reminded of it a hundred, 200, 300 times a day’ [5, p.282]

Although demonstrated linguistically, this may be indicative of internal processes to cope. By objectifying the body, participants may have created mental distance from the distress and difficulties associated with the burn. This sense of distancing was often exemplified in the early stages of the burn, where participants described abandoning or feeling abandoned by their bodies:

‘The pain was so terrible, I really felt as if I left my body and flew away and I didn't feel anything’ [2, p.322]

‘After having woken up realising that all muscles were on vacation, everything was an effort. I just couldn’t see any light at the end of the tunnel’ [5, p.282]

The pain of a burn was described as excruciating [9], like torture [2], and as the worst pain experienced [3]. Paper 3 explored the context in which depersonalising language occurred, and suggested that it may be a way to remove pain. The authors noticed that once participants moved onto discussing rehabilitation, possessive pronouns were reintroduced, suggesting pain had become more manageable during this stage. The interpretations from this paper are considered cautiously, however, due to the lack of clarity regarding the way this study was conducted.

3.4.2.2 Transferring Control

Participants indicated that at times, the pain and distress of the burn exceeded their ability to manage it, and they consequently handed over responsibility to others. This demonstrated a transition of control between the participants and others, depending on their ability to manage the problem at that time. This strategy was identified in only two of the papers, perhaps due to its occurrence during the early stages of injury which were not always the focus of the interviews.
At the time of the accident, some participants appeared to take a calm and pragmatic approach to reducing damage, feeling unable to rely on others and acting essentially to negotiate their immediate survival [2, 4, 9]. Once in the care of medical professionals, participants appeared keen to transfer control at the earliest opportunity:

‘I just wanted to be helped’ [2, p.322]

‘I tried to be in control as much as possible till the emergency team arrived, then I thought, “now, I can relax, it is not my job anymore”’ [4, p.1625]

‘The pain became more intensive when I came to hospital. Before I held it back and was not allowed to feel the pain. At the hospital I let myself lose control, I felt like a rag’ [2, p.322]

Hospital provided a safe, trusted place in which to be cared for while participants adjusted to their injuries. Just being near to staff was reassuring, whereas a lack of such contact provoked panic and insecurity [5, 7]. One participant attempted to cope with his pain, but when this began to fail he transferred responsibility to others. This appeared to change the nature of his experience from pain to anger:

‘I was in pain and when you spend a long time in hospital and can’t get any pain relief it becomes more and more problematic I really tried to control myself and cope with it but you cannot cope forever...and you are not supposed to suffer endlessly and finally I thought this is hopeless and that’s when I started to get angry and felt damn it it’s your responsibility to sort this out’ [2, p.323]

In context of the other themes, this taking and relinquishing of control over difficulties perhaps reflected the constant demands and unsustainable nature of coping, at times, as participants felt they had to ‘give in’, ‘lose control’ and could not ‘cope forever’. By allowing others to take responsibility for the problem, participants
were possibly able to gain some relief from the efforts of coping with their pain and distress.

3.4.2.3 Distraction

There was evidence of participants using distraction techniques to direct their attention away from the burn [1, 2, 4, 6, 9]. Typically reported during hospitalisation, examples such as watching television, gardening, exercising, socialising and mental refocusing were provided. As highlighted by Moi et al. (2008), the visibility and physiological impact of the burn may present continuous reminders to patients; therefore distraction may be an inevitable consequence to achieve respite. Distraction may have been particularly relevant when focusing on the burn caused distress or impeded participants’ abilities to take care of themselves:

‘The physical therapist had said you have to debride yourself so uh, I again, I focused in on God and the music...and this is the part that makes everyone cringe, but I didn’t know what to really debride with, so I finally took a razor blade and I would just cut the adhesions’ [9, p.64]

Distractions appeared to be reactive, as above, but also preventative of psychological decline during recovery, as indicated by one participant:

‘If it had been impossible for me to go for a stroll, I think I would have deteriorated fast...it stops me from just sitting there and feeling sorry for myself’ [4, p.1626]
4. Discussion

The aim of the current review was to synthesise the qualitative research on coping with burns. Using thematic synthesis, data from 11 studies were organised into two superordinate themes. These themes provided an account of how people managed the effects of burns, and disconnected from the distress caused. The use of various coping strategies was described, and the findings provided insight into the relationship between different aspects of coping and social support. The results further highlighted the way in which strategies interacted and were implemented, and revealed diversity in the underlying functions.

Various strategies were used in ‘managing the effects of the burn’, including taking a positive perspective, using humour, downwards social comparison, pragmatic techniques, and cognitive strategies to manage and endure difficulties. The existing research had thus far been limited to identifying a relationship between social support and coping (Klinge et al., 2009; Kornhaber et al., 2014), and recognising the benefit of multiple social resources (Klinge et al., 2009). The current review expanded on these findings by demonstrating the breadth of coping strategies used for burns, and offered new insight into the type of social support which is considered to be helpful, how it functions and supports coping, and the various positive effects that this can have on patients. Whilst multiple support resources were acknowledged to be useful, the current findings demonstrated which relationships were considered important to burn patients during their recovery. For example, professionals, relatives, friends and peers could all influence how they managed their burns. They often gave patients encouragement and reassurance around their recovery, which could prompt participants to work harder or feel better about their progress. With situations which were more difficult to manage, others could help participants to accept challenges by, for example, sharing their own experiences. The findings therefore indicated the ways in which social support could positively influence recovery, which may help to guide health professionals, families and carers who support patients with burns.

The current findings also demonstrated the mechanisms by which social support influenced the development of other strategies, which had thus far been unclear. For example, other people facilitated a positive perspective by reminding participants of
what they had retained, offered advice to facilitate practical management of the burn, and used humour to alleviate tension. Although coping is recognised to be an individual process, these findings make the role of social support more explicit, so that patients’ families, friends and health professionals can be better informed, and various options for support can be explored.

Overall, the strategies used in this superordinate theme were comparable to ‘emotional support seeking’, ‘optimism/problem solving’ and ‘re-evaluation/adjustment’, but demonstrated wider diversity in the way people cope. The strategies were also consistent with those used more widely by people with other types of disfigurement (Egan et al., 2011; Rumsey et al., 2010).

With the theme of ‘disconnecting from the distress’, the review contextualised the use of avoidant coping strategies. These were demonstrated when participants seemingly struggled to cope, due to the intensity or severity of the impact of the burn. Within this theme, participants demonstrated efforts to transfer responsibility to others, distract from the pain, or detach the burn from their sense of self.

These findings were considered within the framework of the ‘transactional model of stress and coping’ (Lazarus & Folkman, 1984). The model suggests coping responses are determined by a person’s cognitive appraisal of the event (e.g. as stressful or harmful), and an evaluation of their ability to cope. Burn pain may be appraised as both stressful and inescapable (Keay & Bandler, 2002). Distraction techniques, shown by some participants, can be effective in assisting with pain (Fauerbach et al., 2002). Due to the persistent nature of burn pain, however, these techniques may become ineffective (Krohne, 2002) or unsustainable (Fauerbach et al., 2002). This may explain the use of alternative, radical strategies such as mentally segregating the burn from the self. It was also noted that this was the only theme which was not influenced by social support. As well as the persistent nature of burn pain, a lack of social support may also be considered when participants’ appraise both the demands of the burn and their resources to cope. This raises questions about the extent and nature of social support which may be required at this time. This finding may indicate, for example i) a lack of available social support, ii) a lack of appropriate social support, iii) an inability to use social support, or iv) use of social support would not be adaptive at this time. Further research is required to explore coping within the contexts in which this theme
was described. Overall, the findings indicated that at times, participants may have experienced little control over their pain and distress and, due to its enduring nature, disconnected or ‘dissociated’ (Schwerdtfeger et al., 2006) from the experience of it.

In the context of existing literature, which suggested avoidance may be detrimental to patients’ health, the current study offered further insight into the context in which avoidance may arise. Due to the intensity and severity of burn pain, avoidance may actually be an instinctive reaction to defend against early pain and distress for many patients, when other strategies may not be sufficient. These findings therefore offer a new understanding of how people may cope and when avoidance may be more likely. This has clinical implications as attempting to challenge avoidance may be unhelpful if this is indeed the most effective way to cope at this time. Alternatively, health professionals may be able to support the use of other coping strategies in the early stages, if these are found to be more adaptive. Further longitudinal research is required to draw conclusions on the effectiveness and consequences of using avoidance at these times.

It was unclear whether the participants used strategies from across the superordinate themes or were divided in their coping style, as the majority of papers failed to distinguish between their participants. Only one individual could be identified who used both distraction and humour; although the theme of ‘transferring control’ provided evidence of a transition across themes for some participants, who described taking initial pragmatic action before relinquishing control. As discussed, coping may therefore vary across time and contexts, as well as between individuals.

4.1 Limitations

The literature was searched across multiple electronic resources, using a search strategy with good recall (Shaw et al., 2004). The quantity and relevance of results may have been enhanced by the use of additional search methods (e.g. hand searching) and terminology (e.g. ‘visible difference’ and ‘trauma’).

Although quality issues were identified, these were considered when analysing data from the studies. All of the papers were able to make a useful contribution, and none were considered to be fatally flawed. A deductive approach was used, which can arguably reduce the depth of the analysis. This approach, however, enabled a more
detailed exploration of a particular aspect of the dataset (Braun & Clarke, 2006), and allowed comparisons with the quantitative research.

The studies were conducted across multiple countries in which there may be diverse cultural differences around coping as well as healthcare provision, therefore findings are not intended to be generalised. They do, however, offer insight into the functions and application of strategies, enabling a better understanding of possible coping processes.

4.2 Clinical Implications

The current findings expanded on the quantitative literature by offering further insight into the processes and functions of social support. In recognition of its influence on coping, developing the quantity and quality of social support for burn patients would be recommended. As indicated more explicitly in the current findings, this may include giving encouragement, offering or supporting the patient to seek advice about difficulties, focusing on what the participant had retained in terms of their appearance and functioning, and engaging with humour if this seems appropriate.

Existing support networks could be developed by involving relatives and friends in care, and providing relevant literature for burn patients to share with others. Connecting the patient to other burn patients through peer groups or networks could be of additional benefit.

Recognising the potential for coping to vary during different times and contexts, a person-centred approach to care is advocated. This would involve collaborating with the patient around their ability to cope with the burn throughout rehabilitation, in order to plan and review interventions for managing pain and distress. In order to manage significant pain or distress, avoidance may be an instinctive coping mechanism, whether or not it is adaptive. As this presents an interesting and novel contribution to the literature, further research is required to be able to make recommendations to those caring for burn patients in the early stages. In the absence of further research, regularly reviewing support would be useful, and pertinent at transitional points (such as discharge from hospital), as changing demands and resources may result in a reappraisal of coping ability. Although ongoing services are often provided, exploring
additional options for accessing social and healthcare support would be helpful to address anxieties during this time.

4.3 Further Research
The current review highlighted the complexity of coping with burns. Although avoidant strategies have been associated with poorer outcomes (Andrews et al., 2010, Kildal et al., 2005; Willebrand et al., 2002), due to the nature of burns there may be conditions when these strategies are more likely. As it was not possible to determine whether ‘disconnecting from distress’ was a response to the context or a strategy of specific participants, a better understanding of the application and function of avoidance in burns would be useful. In acknowledging the greater number of male participants in this review, it would also be interesting to further compare coping between genders, especially as being female is a risk factor for psychological difficulties (Klinge et al., 2009). The majority of studies focused on burn adjustment in general and, although qualitative research in this area is expanding, exploring other specific foci (e.g. coping with burn or scar treatments) is recommended, in recognition of the non-linear process of adjustment (Hunter et al., 2013).

4.4. Conclusion
The current review presented coping strategies used by burn patients in response to the pain, distress and difficulties associated with burns. Building on the existing literature, the findings offered insight into coping processes and indicated the diverse ways in which people cope with burns. These included efforts to manage and tolerate difficulties (e.g. taking a positive perspective, using pragmatic strategies and developing resilience), as well as efforts to disconnect from distress (e.g. using distraction, transferring control to others, and creating mental distance from the burn). The findings present a new understanding of avoidance strategies by illustrating their application in situations where physical pain and distress are more likely. Although research has struggled to identify which individuals engage in different strategies, a tentative conclusion from these findings may be that strategies are also conditional on the timing, nature and degree of the demands, and whether they exceed individuals’ resources at the time. There was strong evidence for the value of social support to
enhance coping, and this review illustrated they ways in which families, friends and health professionals may offer support. Developing social resources is therefore a worthwhile investment in promoting psychological adjustment to burns.
5. References


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*Studies included in the current review*
The Experience of Scar Management for
Adults with Burn Injuries:
An Interpretative Phenomenological Analysis

Catherine Martin

Abstract

Background
Burns can have extensive physical and psychological effects on individuals. A common consequence of burns is scarring, although treatments such as pressure garments and silicone gels can be prescribed to assist with the aesthetic appearance and functions of the skin. Scar management treatments are typically intensive and long-term, and are associated with various physical, emotional, sexual and social difficulties. There is little research which explores the experiences of patients undergoing these treatments.

Objective
To explore how burn patients experience scar management.

Method
Eight participants (four male; mean age = 53 years) were interviewed about their experiences of scar management using a semi-structured topic guide. The methodology used was Interpretative Phenomenological Analysis, which focuses on making sense of how participants made sense of their experience, and examines individual experiences before comparing results across cases.

Results
Three superordinate themes were identified: ‘identity’, ‘functions of the pressure garment’ and ‘coping’. These themes described how scar management influenced and became integrated into participants’ identities; the diverse personal and social functions of the pressure garments; and the strategies used to cope with difficulties.

Conclusion
The findings offered insight into the different ways that burn patients experience and cope with scar management. By understanding these experiences, healthcare professionals can offer containment and develop their support around associated issues. Further research with different demographic groups as well as for other burn treatments would be useful to develop and contextualise the findings.
1. Introduction

Burn injuries are considered to be one of the most severe and devastating survivable traumas (Hettiaratchy & Dziewulski, 2004; National Burn Care Review Committee, 2001). Patients often endure significant physical trauma (Cook, 2002) and a third will develop substantial psychological or social difficulties (Nitescu et al., 2012). Both physical and psychological recovery can be further influenced by the development of burn scars.

1.1 Impact of Burn Scars

Burn scars can cause various problems for burn patients. Scars may result in cracking or breakdown in the skin, and sensitivity and itching can become significant problems (Hall et al., 2011). The development of contractures can cause further pain (Procter, 2010), deformity (Esselman, 2007), and obstruct the patient’s mobility (Chou et al., 2001). Psychosocial difficulties may arise as a result of physical changes to the skin. Burn patients may feel their bodies are shameful (Bergamasco et al., 2002), distressing (Fauerbach et al., 2002), unfamiliar, vulnerable and restricted (Moi et al., 2008), and may experience staring and pointing by others (Kornhaber et al., 2014). Providing scar management treatments to minimise the aesthetic and functional difficulties of scars is therefore important.

1.2 Scar Management

In the first six months, scars are most metabolically active (Gauglitz et al., 2011; Hall et al., 2011; Procter, 2010), before going through a process of maturation where they flatten and soften. In 32-72% of burn patients, hypertrophic scars will develop (Lawrence et al., 2012), appearing as red, raised and hardened skin. Scars can take up to two years to mature (Edwards, 2003; Ogawa, 2008), therefore it is vital to apply treatments within and often for the duration of this period.

Although there is no universally effective method for preventing or managing abnormal scarring (Atiyeh, 2007), there is evidence for the use of silicone gels (Atiyeh, 2007; Momeni et al., 2009) and some, often anecdotal, evidence for pressure garments (PGs) to soften and flatten scars (Atiyeh et al., 2013). These treatments are
usually prescribed for 23 hours each day for up to two years, to correspond with the time taken for scars to mature. In 8-59% of patients, the effectiveness of scar management is somewhat compromised by low adherence (Johnson et al., 1994; Kealey et al., 1990), which may be influenced by a range of physical and psychosocial issues with the treatment (Johnson et al., 1994; Lo et al., 2010; Ripper et al., 2009; So et al., 2003; Stewart et al., 2000). Poor adherence has clinical implications, as the scar is only malleable during its maturing phase (Atiyeh, 2007).

Despite being commonly prescribed in burns services, there is a dearth of research exploring patients’ experiences of scar management, particularly in the UK. A review of the literature suggested that while some burn patients have positive experiences of scar management, others experience associated physical, emotional, sexual and social problems.

A study by Stewart et al., (2000) focused on skin problems which may be experienced by patients using PGs. Approximately a third of patients reported tenderness, necrosis, rash and blisters, and the majority reported the garments were uncomfortable. The study further demonstrated a disparity between patients and professionals regarding the perceived extent, severity and significance of these difficulties. This has implications for how the experience of scar management is understood, and how patients are supported.

In a study of the broader problems and benefits associated with PGs, patients reported similar issues around sweating, numbness, discomfort and skin irritation (Ripper et al., 2009). This study expanded on the findings of Stewart et al., (2000) by demonstrating psychosocial experiences of wearing PGs. For example, the findings showed patients feared and experienced negative reactions from others as a result of wearing PGs. In contrast, some patients felt the garments were protective, improved mobility, or were considered to be a ‘second skin’ (p.661); however, these concepts were not elaborated upon.

A survey study by Yohannan et al. (2012) found the majority of burn patients believed PGs helped their scars look and feel better. For those wearing face masks, wearing the garments in public was a source of discomfort, although the social experiences of people wearing other garments were not explored. Both studies by Ripper et al. (2009) and Yohannan et al. (2012) provided an overview of the prevalence
of benefits and difficulties; however, insight into the depth and diversity of experiences was limited due to the methodologies used.

In a study on sexual and social activities by Connell et al. (2015), participants indicated PGs had a negative effect on their self-esteem and quality of life. The study provided insight into the way in which PGs inhibited expression of femininity and sexuality, due to the dissatisfying appearance of the garment and the inflexibility with daily outfits. The sample for this study was limited to women under the age of 30; therefore research with broader or alternative demographic groups is required.

Experiences of scar management may be further understood within the wider context of adjustment. Use of scar management coincides with a “psychologically unique” period following a burn, where psychosocial difficulties are common (Patterson, 1993, p.367). Therefore patients may undertake the challenges of scar management whilst also managing the difficulties associated with their burn. Although studies have explored how patients cope with burns (Williams et al., 2003) and pain (Tengvall et al., 2010), how people manage with scar treatments is poorly understood.

Overall, the body of literature in this area has indicated the types and prevalence of difficulties associated with scar management; although there are few studies which contribute to an understanding of these experiences, and these focus on specific, often physical, issues. There remains a need to explore patients’ broader experiences of scar management, to better understand how the treatments may be experienced.

1.3 Rationale & Aim

Recovery from burns is physically and psychologically challenging, particularly in the first year (Klinge et al., 2009; Patterson, 1993), which coincides with the optimal period for scar management. There is potential for physical and psychological difficulties to impact on adherence to treatments, which can have clinical implications for their effectiveness. By further understanding the experience of scar management, burn patients may be better supported during this process. The current study aimed to explore how burn patients experience scar management.
2. Method

2.1 Design

The existing literature quantified some experiences of scar management. This area lends itself to qualitative inquiry to expand on the findings. Due to the focus on experience, Interpretative Phenomenological Analysis (IPA) was the selected methodology due to its three core principles: phenomenology, idiography and hermeneutics. IPA is “particularly useful where the topic under study is dynamic, contextual and subjective, relatively under-studied and where issues relating to identity, the self and sense-making are important” (Smith & Osborn, 2007b; p.520). IPA is concerned with how individuals make sense of their experiences, and the subsequent interpretations of the researcher (Smith & Osborn, 2007a). Purposive sampling enabled a focus on scar management, and the idiographic approach meant the individual lived experience could be understood more in depth. This allows a “detailed and nuanced analysis” (Smith et al., 2009; p.202) that retains space for the diverse ways in which people may experience a common phenomenon as well as considering any similarities across cases.

2.2 Sample

A sample of adults who had undergone scar management was accessed through a UK hospital burns unit. Scar management typically commenced two to six weeks following a burn injury and involved PG(s) and, unless contraindicated, silicone gel.

Participants were over 18 years; had been using at least a PG and a topical treatment for a minimum of one month; and were currently in treatment or within three years of discharge. Patients were not included if they had a cognitive impairment, a severe or enduring mental health problem, or were unable to speak sufficient English to be interviewed (see Appendix F for justifications).

The current study aimed to recruit between four and ten participants. This enables exploration of convergence and divergence among experiences, whilst retaining a sense of each participant (Smith et al., 1999).
2.3 Participants

In total, eight participants were recruited (four male, mean age = 53 years). Data on patient demographics, the burn injury and scar management are presented in Table 1. All participants were from White ethnic backgrounds; seven were British and one South African. Five participants were married, two cohabited, and one was single. Six participants were in employment. The mean total body surface area (TBSA) was 7%, and time in treatment ranged 5-39 months (mean = 18 months). Although the extent and location of burns varied, all participants used PGs and topical creams or gels for scar management.

2.4 Procedure

2.4.1 Ethical Approval

The study design was developed using the British Psychological Society code for research ethics (2010). The proposal was reviewed by a professional panel and a service user reference group at the University of Leicester. Approval was obtained from an ethics committee (Appendices G-H) as well as from the Research and Innovation department which enabled recruitment at the local NHS site.

2.4.2 Recruitment

Occupational therapists (OTs) carried out initial screening of patient files, based on the inclusion and exclusion criteria. Forty research invitations were posted to eligible participants between February and March 2014. A Participant Information Sheet was enclosed which gave details about the study as well as postal, telephone and email options to respond (see Appendices I-J for recruitment documents). Participants were asked to express any interest within two weeks of receiving the letter. Eight participants opted in from the first batch and recruitment ceased.

Participants who opted into the study were contacted by telephone or email to answer any questions they had about the study, and to arrange a mutually convenient time and location for the interview (home, work or at hospital). A lone-worker protocol was established based on guidance from the Suzy Lamplugh Trust (2014).
<table>
<thead>
<tr>
<th>Participant (pseudonym)</th>
<th>Demographics</th>
<th>Burn Injury</th>
<th>Scar Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age (years)</td>
<td>Sex</td>
<td>Cause of burn injury</td>
</tr>
</tbody>
</table>
| Anneka                 | 40-50        | Female      | Scald             | 1%   | Mixed depth  | 23                          | 22                          | PG (glove)  
|                        |              |             |                   |      |             |                             |                             | Gel and gel sheet (hand) |
| Caroline               | 40-50        | Female      | Flash             | 1.4% | Mixed depth  | 6                           | 5                           | PG (long-sleeved vest)  
|                        |              |             |                   |      |             |                             |                             | Gel (neck, chest) |
| Ellie                  | 40-50        | Female      | Flame             | 4%   | Mixed depth  | 12                          | 10                          | PG (sleeve, body strap)  
|                        |              |             |                   |      |             |                             |                             | Bio-oil (upper arm) |
| Graham                 | 60-70        | Male        | Chemical          | 2%   | Full thickness | 25                         | 11                          | PG (sock)  
|                        |              |             |                   |      |             |                             | (ended 11 months ago) | E45 (foot) |
| Ian                    | 40-50        | Male        | Flash and electrical | 2% | Partial thickness | 20                          | 19                          | PG (glove)  
|                        |              |             |                   |      |             |                             |                             | E45 (hand) |
| Jeremy                 | 40-50        | Male        | Friction          | 1.5% | Mixed depth  | 38                          | 30                          | PG (glove, sleeve)  
|                        |              |             |                   |      |             |                             | (ended 4 months ago) | E45 (arm) |
| Keith                  | 60-70        | Male        | Flame             | 29%  | Full thickness | 71                          | 39                          | PG (glove, sleeve)  
|                        |              |             |                   |      |             |                             | (ended 28 months ago) | Gel and gel sheet (multiple areas) |
| Marie                  | 50-60        | Female      | Scald             | 1%   | Partial thickness | 8                           | 6                           | PG (glove)  
|                        |              |             |                   |      |             |                             |                             | Gel sheet and E45 (hand) |
2.4.3 Interview Procedure

At the beginning of the interview, the participant was reminded of the study information and given an opportunity to ask questions. A consent form (Appendix K) was signed and a copy was retained by both the participant and the researcher. Participants were reminded that they could withdraw consent and their data at any time up until the interview had been transcribed.

The interview was guided by a topic guide (Appendix L), which was formulated in consultation with OTs at the burns unit, and informed by the existing literature on burns. Clarifying prompts and questions were asked so as not to assume meaning (Morrow, 2005). Participants were informed that the purpose of the interview was to understand their own experience of scar management.

Interviews were audio-recorded and ranged 35-100 minutes in duration (mean = 58). At the end of the interview, the participant was asked about the emotional impact of discussing their experiences, and was signposted for further support if appropriate. Participants were also offered a copy of the research findings on completion of the study. Information on demographics and the participants’ injury and scar management were noted, and later verified by OTs. Observations and reflections from each interview were recorded by the researcher in a research diary.

2.4.4 Transcription and Analysis

Interview recordings were transcribed verbatim by the researcher with the exclusion of personal data which were changed to protect the participants’ identities. Pauses, emphasis and expressions of emotion were all retained during transcription. This process facilitated the initial stages of analysis by allowing immersion in the raw data.

Analysis was guided by six stages, as described by Smith et al. (2009). The process began with one transcript, before being repeated for each individual transcript prior to exploring themes across cases. This involved (1) reading and re-reading the transcript, to become familiar with the data and to observe patterns or how different sections of the transcript may vary, e.g. in terms of depth or detail. Initial exploratory notes (2) were then written throughout the transcript, offering ideas and questions about the way the account was constructed and potential meanings for the participant. This led to the development of emerging themes (3), by moving attention to interpretation and
thematic grouping of the exploratory comments. Themes were then organised (4) by comparing and contrasting themes to create a coherent structure. This process was repeated for each case (5) before themes across cases were explored (6). Examples of coding and themes are presented in Appendices M-N.

2.5 Epistemological Position

Working within an interpretative phenomenological framework, the researcher adopted a social constructionist position. Knowledge was developed through participants’ interpretations of their experiences, which were contextually situated. A full statement is available in Appendix O.

2.6 Quality Issues

Guidelines for addressing validity and quality of the research were taken from Yardley (2000), and further information was included in the ‘statement of epistemological position’ and the Critical Appraisal.

2.6.1 Sensitivity to Context:

The researcher developed an awareness of the theoretical and medical context of scar management through engagement with relevant literature, as well as liaison with clinicians at the burns unit to understand the process that participants may have undertaken from burn injury to completion of treatment. Collectively, this provided information on current understandings of scar management, giving an indication of the clinical context. The literature was further reviewed during the analysis and discussion stages of the research in order to contextualise the findings. Information on participants’ demographics, burn and scar management were collated to situate the sample (Elliot et al., 1999).

2.6.2 Commitment and Rigour

Immersion in the raw data was facilitated by listening to the recordings, transcribing the interviews and readings the transcripts, which enabled a fuller understanding of the text. The researcher undertook specialised training in IPA methodology prior to collecting data, and engaged in regular supervision and peer meetings to develop skills
and competencies. This provided an opportunity for coding and themes to be discussed, where feedback was obtained on the coherence, structure and level of interpretation of the data to increase critical reflexivity (Morrow, 2005). Maintaining a research diary and writing the Critical Appraisal facilitated a continual process of reflection.

2.6.3 Transparency and Coherence
The expectations and assumptions of the researcher were documented prior to recruitment and during the process of data collection and analysis. The method and analysis were described and exemplified in the report, to show transparency in how the final themes were constructed. All themes were supported with examples from transcripts to show grounding in the data, and presented in a clear structure to demonstrate coherence in how they related.

2.6.4 Impact and Importance
Engaging with clinicians at the burns unit helped to develop the inclusion criteria, which enhanced clinical utility of the results. Clinical and research implications were discussed in the report. Making links with existing literature improved the application of the findings, by building on current understandings and allowing findings to be theoretically situated.
3. Results

Three superordinate themes were identified, relating to participants’ identities, the functions of the PGs, and the coping strategies used to manage associated difficulties. Although participants were asked about scar management more broadly, the PGs dominated the focus of their experiences. A summary of the themes is presented in Table 2. A diagram of relationships between themes was used to support the writing of the results, and is available in Appendix P.

Table 2: Table of Themes

<table>
<thead>
<tr>
<th>Superordinate themes</th>
<th>Sub-themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity</td>
<td>I’m Still Here</td>
</tr>
<tr>
<td></td>
<td>Second Skin</td>
</tr>
<tr>
<td>Functions of the PG</td>
<td>Something Wrong With You</td>
</tr>
<tr>
<td></td>
<td>Hide What Was Underneath</td>
</tr>
<tr>
<td></td>
<td>Straight Jacket</td>
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<tr>
<td></td>
<td>Comfort Blanket</td>
</tr>
<tr>
<td>Coping</td>
<td>In Good Hands</td>
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<tr>
<td></td>
<td>Stop People Asking Questions</td>
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<tr>
<td></td>
<td>Look for the Positives</td>
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<tr>
<td></td>
<td>Golden Hour</td>
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</tbody>
</table>

3.1 Identity

All the participants linked the experience of scar management to their sense of self, and their ability to fulfil their usual roles. Participants described maintaining their sense of identity (‘I’m still here’) whilst acknowledging the impact of the burn and their scar management. The PGs in particular could be both a help (e.g. enabling them to
carry out responsibilities) and a hindrance (e.g. preventing their participation in usual activities). Through developing a relationship with their PG, ‘second skin’ then showed its integration into their identities. These processes are further explained by the superordinate theme ‘functions of the PG’.

3.1.1 I’m Still Here
‘I’m still here’ described the diverse ways that scar management contributed to participants’ different identities; as men, as women, and as individuals who perceived themselves to be strong, vulnerable, normal, independent or sexual beings. This theme gives an overview of the individual context in which scar management was experienced, and is further developed by the other themes.

Caroline and Marie indicated that their scar management was an assault on their identities. Whilst trying to maintain her identity as a woman, a wife and a mother, Caroline indicated feeling submerged by her PG. Her reference to “being an onion” suggested the PG was an additional layer which masked her identity, and this was experienced socially:

People didn’t see me, they just seen the [pressure] suit! They wouldn’t say, “how are you, Caroline?” It was like boobied [quietly] big boobied women, they look at your boobs instead of looking at your face. And that used to really get me cross, I used to say: look I’m here! You know, I might have a suit on but I’m still here. [Caroline]

Due to her restricted mobility and the hygiene requirements for scar management, her role as a mother was markedly affected by her “missing out” on family activities. As a married woman, the appearance and location of the PG adversely affected her femininity and sexuality:

You said “emotional stresses” there, what kind of things were you thinking about? [Interviewer]
[Pause] Just not feeling sexy, not feeling very feminine, you know. Erm, almost sort of sexually cut off as well, because you are wrapped up. And it’s very hard to feel sexy with a non-sexy latex suit on you. Even when you’re going out or anything you know, ‘cause obviously can’t wear bras. So it comes right down to your hips. So it’s about as sexy as big fleecy pyjamas really. [Caroline]

Caroline was the only participant to describe the impact on her sexuality. The PG appeared to inhibit her expression of sexuality by inhibiting her choice of clothing. The link between the monotony of PGs and feeling sexy has also been found in the literature (Connell et al., 2015), and this finding demonstrates how the size and location of the PG may be relevant to such experiences. Expanding on the findings by Connell et al. (2015), this also demonstrated the impact on sexuality at other points in the lifespan.

Marie described how her scar management challenged her role at home, although at times, it was difficult to ascertain whether difficulties were attributed to her burn or her PG. As she struggled to carry out routine activities independently, she was forced to seek help from family and friends. Although she tried to work around the limitations of her PG, she revealed frustration at her loss of independence:

It was horrible because I was having to depend on other people. I mean. I’ve had [another health condition] for a long long time, and there’s certain things I can’t do because of that, but you just get used to it. I mean I went to work for long enough with that. But there’s little things that you can’t do [now] that irritate you. I mean not being able to do the ironing, I do the washing and ironing and it’s out the way. But having to go and ask somebody else if they’d help me. That’s what irritates me more than anything else. [Marie]
Jeremy, Ian and Keith appeared ambivalent about the impact of the PG on their sense of identity. Jeremy worried that having a scar would change his image and, consequently, the type of person he was viewed to be:

People might think I’m a bit of-, you know, what’s this big sort of scar on your arm? [Jeremy]

By concealing his scar, the PG preserved his identity; but it also drew attention to him at times. Jeremy seemed to struggle with the ambiguous meaning of the PG, wondering how it was understood by others and what it was imagined to conceal.

The three remaining men had portrayed themselves as emotionally resilient, ‘thick-skinned’ individuals. Ian, however, also experienced contradictory functions of the PG. He presented with an inner sense of vulnerability, particularly within the context of being burned (describing emotional sensitivity or weakness). The PG appeared to conceal his vulnerability, by concealing the burn, but it also indicated injury or impairment. At times, he seemingly struggled to maintain his strength of character:

I got an odd comment at work, odd comment if you’d gone out to see a football match or something someone would say, what’s up with you with your gloves on? You know. You get that don’t you. Just laugh it off. [Pause] But I imagine if you’re not a strong character, it probably would affect you. [Ian]

For Keith, the trauma of the burn had tested his emotional resilience, as he struggled to comprehend his loss of functioning and he experienced fears about his future. The PG concealed his scar from view, which helped him to avoid difficult reminders of the burn. However, it also triggered feelings for him by itching, which returned his attention to the burn. Keith reiterated his strength of character by denying any emotional impact of his scar management:

Oh I get comments. But I don't take no notice. I'm too thick-skinned to worry about that. They weren't bad, they were taking the mickey a bit,
things like that, but I can take that, doesn’t worry me. I’m afraid I’m one of them people: what you see is what you get. [Keith]

Graham, Ellie and Anneka’s identities were positively supported by scar management. Graham’s PG did not appear to adversely impact on his identity, although his personality informed his approach to treatment:

I’m a very positive person; I’m very er, very optimistic and very positive. If I’ve got to do something, I set my mind to it and do it, accept it. Get on with it. [Graham]

Ellie and Anneka appeared to focus more on their sudden sense of fragility and vulnerability following the burn:

[The psychologist] took me through all of that very very gradually and showed me the pictures [of the scar] a little bit at a time. And that, and I needed that ‘cause I’m quite a squeamish person! So her, helped me through that. And then erm. When I was having physio as well, it really worried me putting my arm up above [pause] and I remember saying I can’t do it I can’t do it...... ‘Cause I can’t stand anything medical! [Laughs]. I just want to faint! And what if it comes apart? [Ellie]

For, a long time, more than a year, I was terrified in the kitchen to use knives and stuff. Because I was so afraid I might just slip the knife and oh! This vein’s so close now, you know. So. That was, it [PG] just gave me confidence to do stuff. [Anneka]

This sense of fragility seemed to impact on their independence and engagement in routine and social activities. The PG helped to address these concerns, by providing support, safety and containment, which is discussed further in other themes. In this way, the PG helped to facilitate a process of regaining identities.
3.1.2 Second Skin

This theme demonstrated the relationships that participants developed with their PGs. Wearing the PG often became habitual, and participants came to rely on the physical and psychological protection and containment provided during a period of change and vulnerability (described in ‘functions of the PG’). Consequently, participants formed an attachment with the PG, which became a significant part of their identities. The process of integration and dependence is described.

Jeremy and Anneka were both conscious of the PG becoming integrated into their body images. They indicated a transition between seeing the PG as a separate entity and it becoming part of their bodies:

It’s like part of me. It’s become sort of part of, part of my hand!
[Anneka]

Jeremy’s strict usage for 23 hours each day meant that even when it was removed, the PG continued to mark its presence on his body:

I got that used to wearing it, like you say, it’s just like strange taking it off for an hour, you know, cause obviously, you have all the, you can see like all the, marks where the pressure garment was, and obviously, I think I suppose, during the summer, you can see like, it was like a sun-sunburn, sunta- sunburn ring: red, white. There was just definitely a, a li- you could see the line, physically, which was which was quite funny.

Yeah. So you found it “quite funny”

Yeah you know you’ve got like the bikini line, yeah that’s it, got my short, there it is. Red. White. And there’s nothing I can physically...

Cause I can’t move it or anything. [Jeremy]

While Jeremy’s attachment was gradual, as he overcame some of the difficulties with the PG, Anneka’s positive relationship with her glove was instantaneous. The
participants then seemed insecure without their PGs, as there was a sense their skin may be threatened or vulnerable:

I did miss it to start off with, well I thought to myself, well just thought, I don’t have to wear it just... But I’m still careful in summer, I know if I go out if it’s hot summer I will just put, put on factor 50 just to be on the safe side. [Jeremy]

They keep on telling me they have to wean me off these gloves and I keep thinking oh [inhales], I’ll still wear them you know, on the train. You do get a little attached [chuckles] to your glove which might be a problem, you know. [Anneka]

Here, Anneka’s non-verbal communication (e.g. laughter) appeared to further illustrate her apprehension and embarrassment about removing the glove.

As the three ‘strong’ men, Graham, Keith and Ian did not explicitly acknowledge a process of integrating the PG into their body image, although this may have been more subtly evidenced within their interviews. For example, Keith’s reference to being “thick-skinned” may have suggested that an additional layer of ‘skin’ provided by the PG was an indication of integration in itself. Similarly, Graham’s use of language suggested a depersonalisation of his body initially, with reference to “the leg” and “the body”. Later, he described the purpose of the PG was “to get my body back to normal”. This may have suggested a role for scar management in reintegrating his burned limb into his body image. Each of the men did, however, acknowledge a dependence on their PG, although this was only realised when the time came to finish the treatment:

Of course when the time came to not wear it at all, it felt quite strange. I missed it. It was part of my life for so long. [Graham]

When it got towards the end, I had trouble getting them off! Felt strange, after, you know... I think you get attached to them. Its just
one of those... like, I don't know, I suppose it’s been a habit in a way. Because you’ve had them so long. It’s sort of natural to get up in the morning and put them back on again. [Keith]

I’ve still got them in there [adjacent room], I keep them in a little box. As I say I don’t wear them much now. I haven’t wore one for about a month. I took one on holiday with me, as I say. I’ll take one on [upcoming event]. [Ian]

For Caroline this integration was also initially implied, as she stumbled when distinguishing herself from the PG:

I hadn’t got used to my upper body, or my upper body suit I should say shouldn’t I.

This later became more explicit, as she described getting used to her PG:

’Cause they’re every three months, by the end of week two, they’re just starting to get comfy. And they’re like your second skin again.

For Ellie, although described at separate points during the interview, the experience of disintegration and reintegration were more transparent within her experience:

When I was having physio as well, it really worried me putting my arm up above [pause] and I remember saying I can’t do it I can’t do it. The psychologist and then the physio, they were just talking me through it, saying what’s going to be, what’s your worst thought of this? And it was that everything was just going to... fall apart.....

There are days when, and it’s part of the healing, is, you know, you feel it itches a bit or it pinches. I think that, I was a bit concerned at first but then, just reassured that no, that’s it all...moulding together again. [Ellie]
Although the role of the PG in this process was not explicit, Ellie described her scar management as ‘food and liquid’, suggesting it nourished and healed her body. This may have facilitated the process of ‘moulding together’.

For Ellie, Caroline and Marie, there was no explicit dependence on their PGs. This may have been due to the relatively early stage the three women were at, as the other participants were nearing the end or had completed their treatment and may have become more attached to their garments over time. Another possible explanation is that the problems outweighed the benefits, as these three particularly struggled with the physical difficulties associated with scar management. This may, again, be related to the stage of scar management, as scars take a number of months to mature (Edwards, 2003; Ogawa, 2008) and therefore benefits may not yet have been observable.

3.2 Functions of the PG

This theme is around the benefits and problems associated with scar management. These were usually at opposite ends of the same spectrum, and affected participants socially (‘something wrong with you’ and ‘hide what was underneath’) and personally (‘comfort blanket’ and ‘straight jacket’). This theme linked to the identity theme as it gave detail of how the PGs can impact on perceptions of the self.

3.2.1 Something Wrong With You

Participants described how the PGs, due to their visibility, signalled to others that there was something wrong. This signalling could be seen as negative if it was interpreted as indicating weakness or disability, or if it invited unwelcome questions. There were also positive aspects of it, such as inviting people to be gentler with any physical contact. Participants shared their ideas about how the PGs were interpreted by others.

Some of the participants indicated feeling anxious and embarrassed by their PGs. They were often vigilant or preoccupied with whether the PG would be noticed by others, and worried about how to manage social reactions. For Jeremy, this caused him uncertainty about how to answer awkward questions:
If someone wanted to ask questions, I mean if people knew me they’d ask questions, little children might ask a really funny question, like “why’s he got that thing on?” but luckily nobody did. [Jeremy]

Ellie and Caroline reported similar concerns about whether their PGs would be noticed and commented on by others. Responding to questions could tap into ongoing issues they themselves were grappling with. For Ellie, it brought to attention her own difficulties in engaging with scar management:

I suppose, going out with friends because they know, they don’t really sort of say anything. They might, when they actually sort of see the pressure garment, they might go oh, how’s it going? Is it healed yet? And well, it’s healing [laughs] and I think when I say you know I might have to wear it for up to two years, they’re quite surprised. Very very surprised. Erm. That it will be on for so long. But then, then I change the subject to be honest with you [laughs] [Ellie]

By having to explain her burn injury, Caroline inevitably received sympathy from others. She could then be emotionally affected by their responses. This directly challenged her efforts to remain strong and positive:

One of the girls says, I’ve got to ask you, I go ask what? She says about your suit, I say oh that’s fine you know. But they’re so awkward, but I don’t tell them until they ask me. Because I think well if they’re uncomfortable with it I don’t want to tell them, and I just say oh well I got really badly burnt [location], I’ve had to have some skin grafts, and I just like… I don’t want their pity. ‘Cause I don’t feel I should be pitied, I feel that I’m the very very lucky one. [Caroline]

Corresponding with his ‘thick-skinned’ identity, Keith did not identify any social difficulties; although later in the interview, he acknowledged he had been conscious of
his PG. Like other participants, he learned ways to manage questions, or became desensitised:

I was conscious of them at the beginning. But the longer it went on I just, it was just part and parcel. You know. I got lots of people ask me why. You know.

**How did you feel about people asking you about it?**

That’s fine. [Keith]

For some participants, anxiety and uncertainty was generated by an absence of questions, which left them to speculate about the perceived meaning of the PG. Anneka struggled with her need for the PG to remain independent, and the potential for the PG to signal impairment. Consequently, she attempted to anticipate possible reactions, and intervened:

I came for the job interview I remember thinking, [whispers] *do I wear this glove or not? What do I do? I’m embarrassed, you know.* They might think I’ve got a disability, and I can’t operate the computer or something, you know, I was very embarrassed. So at the interview I wore it, because I was afraid it was all unfamiliar, so I wasn’t going to not wear the glove. Because I still needed that sense of security from it. So I came to the interview I wore the glove but then I said to the lady who interviewed me, I said: I’m so sorry I’m wearing this glove but it’s not because of a disability or arthritis or anything that will impact my ability to work. It’s purely for scar management. [Anneka]

This quote also revealed Anneka’s perception of the most socially acceptable, or least damaging, reason for wearing the PG. She evaded disclosing her personal need for security and protection, and instead referred to the medically prescribed function of the scar management. This was also demonstrated by Ian, who often referred to the physical, rather than the psychological, functions of the PG. Although he felt awkward about the visibility of his PG, this could be advantageous. Like other
participants, the PG was considered to provoke comparatively fewer questions than would the scar, due to the broader indication of physical injury. Furthermore, this communication of injury was protective in ensuring other people made allowances, and could therefore safely address an underlying sense of vulnerability:

If someone shakes my hand and they really squeeze, you know how some blokes do. And I have to pull back and say whoa oh oh sorry. So if you had your glove on, they wouldn't squeeze your hand, they'd see it wouldn’t they? Whereas if I just went like that [offered hand] they couldn’t see. Folks don’t really look sometimes, do they. But they might feel that you’ve got a glove on. [Pause] They sort of know, don’t they, straight away, ‘cause if you’ve got a glove on, there’s something wrong with you. So they don’t, you know. Whereas if you’ve got a scar, they say how did you get your scar? Some people would. [Ian]

Like many others, Ian demonstrated a lack of choice over whether to talk about his burn, due to the visible nature of the PG. As a result, he experienced repetitive questions, as the PG could be a source of interest in any new social interactions:

I’m with some people [at work] who don’t know what’s happened to you, and they'll say, and you know they’re dying to say what’s the matter with your hand mate? You know! So I just say, oh ignore that, I had a mishap, I had a burn, or something. And they say bloody hell! What happened? And you go urh, same old story comes out, you know, I’ve sort of got it down now to about three sentences. ‘Cause, and my mate who I work with he’s sick of hearing it, I’m sick of telling it. [Ian]

3.2.2 Hide What Was Underneath

In contrast to the last theme, the PG also had a concealing function, by hiding the burn. This appeared to reduce the number of questions and protected the identity of participants, whilst they came to terms with changes to their bodies.
The PG concealed the extent of participants’ injuries and the associated meanings:

It does create you quite a safety barrier. Because you know when you’ve got it on, people can’t see. [Caroline]

I suppose to some degree, it used to hide what was underneath, you know. ‘Cause you could see how red it was, and sore. So imagine walking into the office, and writing and typing, folks would be looking you know. So if I had a glove on, they couldn’t see it really. They’d say how’s your hands? So it does to a certain degree, it does hide things. [Ian]

In this way, hiding the scar protected their feelings, and could also prevent others from experiencing adverse responses to the burn. For example, in acknowledging her own difficulties in looking at, touching and accepting her burns, it seemed Ellie could not bear for others to experience or express this disgust:

I suppose I’m more self-conscious, in what I would wear. So nothing sort of shows through I suppose. [Pause]. Because I don’t look at it fully, so if somebody else saw it I would think mm (grimaces) [Ellie].

This theme also related to concerns about identity. For example, Jeremy felt his scar could misrepresent the type of person he was, but the PG provided some ambiguity about what was concealed:

Am I a freak show? When it’s very hot you sunbathe in the garden, got your shorts on. Luckily my neighbours’ children are old so they wouldn’t have asked me, but if I went into town to go shopping, you know, you sort of have the thought that ‘is that kid pointing at me?’ You know, I mean, even now you can still see the scar, thinking well, is he pointing at me?
......What role do you think your scar management, your pressure garments and things, had to play in that?

At least you can hide it, I suppose, at least, they wouldn’t know- if they don’t know, they wouldn’t know why I’ve got a pressure garment it could be, something completely different I suppose? [Jeremy]

3.2.3 Straight Jacket

On a personal level, scar management was a source of physical discomfort, hindrance and inconvenience, as it restricted participants in their roles and activities. This theme illustrated the diverse demands of scar management.

Five of the participants found the physical discomfort of the PGs impacted on their lives. This could be frequent and difficult to manage. There was also an apparent relationship between physical and psychological discomfort:

You know the annoyance, because it does itch. And that’s, it really gets you cross. You can be sitting here with it being thoroughly uncomfortable, and you feel like going mad with it. I mean got the glove on, the things on you know, I’d like to give it a good scratch but there again that’s going to make it even more uncomfortable, because I don’t want to do too much to it because I don’t want to make it worse. [Marie]

As far as the scar management and pressure garments, well they drove me up the wall they did. They were horrible things. [Keith]

[The PGs] get very very tight, and itch like you can’t imagine. I mean I’ve had, you know, hives and everything from the sun and everything and I thought prickly heat was bad, but by god that’s a piece of cake! And you know, you try not to itch, then you take something to try stop it and that makes you feel crap, and then you think right so you try something else and that makes you feel crap and then you try think
right just go to sleep, and you just can’t switch off. Because its there, 24/7. Erm, so its like anything, sleep deprivation just makes you feel crap, then of course it sort of opens all the other worms up, and you think no I don’t want the other worms, its only itch. [Caroline]

I think the first couple of times I wore it, and it was really tight, used to cut into you, you think oh, head throb. [Ian]

You feel it itches a bit or it pinches. I think that, I was a bit concerned at first. [Ellie]

Even in the absence of physical problems, the anticipation of such difficulties could also dominate participants’ concerns. Following the trauma of Ellie’s injury, the PG had the potential to simulate the physical sensations associated with being burned, as she described anxieties about feeling hot, trapped, and suffocated:

Because of the accident I had, erm. I didn’t want to feel trapped in clothing or anything. Erm. And then because it happened at the beginning of the summer and then summer was hot I was thinking oh, I can’t bear anything on. And it was, am I going to feel suffocated by it [PG]. And I think at first you think gosh that really is quite tight..... And then I was getting a bit panicky I suppose, when it was warmer earlier this year. Erm, thinking is it going to be too much? ’Cause it’s, suppose the first full summer. Erm. But... again no, it was, kind of just got used to it. It’s that, the anticipation is worse [laughs] [Ellie]

Three participants struggled with the inconvenience of scar management, describing an intense and cyclic care regime. For Ian, failure to look after the PGs posed concerns around skin infections, poor appearance of the PGs, and the expense of replacing them. Although he made an effort to adapt to the treatment, this was limited by his capacity to do so within different environments:
They [OTs] tell you to do things, to apply cream everyday, four or five times a day, which you can do as long as you’re keeping your hands clean. At work, I’m in the office half the time and out on the job half the time. I’m frightened to death of getting my glove dirty. [Ian]

Participants’ routines were often adversely affected as they lost spontaneity in being able to do ‘normal’ things:

It’s just a hassle some days having to think, I’m at work, I must take my pad to work, I’ve got to disappear for five minutes, wash myself, and put a fresh pad and fresh cream on, it was just, it was a bit of a faff and sometimes, having to dry them, sometimes you need them, quickly, I suppose they dry reasonably quickly, but it’s just, it’s just a faff, thinking I’m going away at the weekend yep, think I need to take my cream, take my special towel, special flannel, a special everything. [Jeremy]

I’ll be honest with you it was absolutely horrible. I just thought, well if this is what I’ve got to do everyday. You know its like, in the mornings it takes me, “shower, wash and wax” as I call it, shower, wash everything down then I’ve got to oil and do everything. So everything I’ve got an hour now ahead of everybody else, and I used to resent it, thinking oh, you know, I’ve got to do this again, I’ve got to go back, I’ve got to do it again, and I can’t do this ‘cause of this, and I did resent it very much. [Caroline]

This impact on day to day lives further demonstrated the negative relationship that scar management could have with participants’ identities. For example, Jeremy’s “special” routine conflicted with his desire for an inconspicuous, normal identity; Caroline’s mechanical description of her routine showed a loss of humanisation, as the PG began to take a dominant role in her life.
3.2.4 Comfort Blanket

Alongside the experience of discomfort and inconvenience were experiences of physical and emotional comfort. This theme described how the PG soothed, comforted, protected, contained and reassured participants, in diverse ways and to varying degrees.

Anneka and Jeremy had indicated an awareness of threats towards their burned skin. For Anneka, the protection offered by the PG provided her with feelings of confidence and security. This facilitated her independence, which in turn maintained her sense of identity:

“It’s like that thing of giving you confidence, making you smile and happy to go out and do stuff, you know. It’s a funny thing. Yeah. Well I was much more dependent on it than I am now. Erm. But I used to panic if I didn’t have a clean glove or you know, I used to think oh no! You know. I would stop everything and go wash a glove. It was very important. Critically important for me. [Anneka]"

Whereas Anneka was concerned about damage to her skin, Jeremy feared his skin would not heal without the PG:

“I think to myself if it rolls down will it affect it [the arm]? But I thought, but they say no its not- it won’t, it’s not as if. It’s not going to kill it, it won’t hurt it or anything I thought right fine. [Jeremy]"

As a result, the PG was a source of psychological comfort:

“It felt, like something was there, back on, snug again. Everything was, everything was happy again! [Jeremy]"
For Graham, Keith and Ellie, protection from sensory experience of the burned skin was raised. These participants expressed unease when seeing or touching their scars. By providing a barrier to the skin, the PG was a way to avoid such discomfort:

I thought well, there’s no point leaving it off. I didn't get any itching or anything like that. You know. I didn't like touching the leg anyway, it felt strange, where the injury was. Funny sensation. [Graham]

I think there’s definitely still a lot of that actually, of, not being fully comfortable. So actually this [PG] is a bit of a comfort, comfort blanket in a way. Yeah.

Could you say a bit more about that, what it is to be “a comfort blanket?”

I suppose for me it’s ‘cause it does cover up the scar. Erm. And I know that it’s making it better. And that’s why I don’t mind it. [Ellie]

Take the pressure garments off, erm, like, if you put a shirt on, anything like that, you know, you don’t normally actually really feel it. But, when you’d had those on all that time, and then, you suddenly start to wear clothes on that bit [arm], you can urgh, feels un- feels strange. [Keith]

For Keith, the PG appeared to obstruct both physical and emotional feeling. Not only did it prevent him from seeing or touching his scar, but by avoiding the reminder of the burn, it helped him to avoid the memories of his trauma. While he alluded that the burn had been of great distress, in contrast, he attributed “no feelings” to his scar management. By concealing the reminder of his trauma, he may have been better able to maintain his “thick-skinned” identity.

As well as offering emotional support, the functions of the PG extended to offering physical comfort:
When I got it on, I didn't want to take it off. 'Cause it used to ache, if I took my glove off for ten minutes it would start throbbing. So I used to leave it on 24 hours a day. And I think that’s what’s helped in making it smooth. [Ian]

Within the context of Ian’s identity, this physical relief gave him an acceptable reason for continued usage of scar management. He initially identified the benefits for his appearance as a secondary benefit, but later in the interview, admitted it was a primary reason for persevering with treatment. This seemed indicative of his struggle to maintain a masculine identity.

For Caroline, who suffered with periodic itching, the absence of discomfort was then noticeable. Due to the renewal of her PGs every three months, the experience of comfort thus came in cycles. This illustrated one relationship between the themes of ‘comfort blanket’ and ‘straight jacket’:

I hate it when we get the new suits, every three months you get the new suits. It’s like a pair of shoes, the first few days its stiff and hard, and by the end of your three months, your three suits are like an old pair of slippers, you’ve got them bedded in right, and they’re comfortable. And then bless her the OT sends you three more and you think: you bugger! (Both laugh). And it is it really is like a new pair of shoes, so er, yeah. It like er, you’re back to your straight jacket. [Caroline]

Despite being a ‘straight jacket’, for most of the participants, the PG was strongly associated with the healing, protection and concealment of vulnerable skin, which in turn, had psychological benefits.

3.3 Coping

For many of the participants, there was a sense that the intensity and duration of scar management was relevant to how they adapted to the treatment. By having scar
management for 23 hours each day, participants were able to get used to it, and tried various strategies to cope with the social and personal impact of treatment.

3.3.1 In Good Hands
For five of the participants, the use of social support was prominent in how they coped. Each of these participants valued support from staff at the burns unit. For Ellie, the individualised approach was appreciated, and helped her to overcome the initial obstacles to wearing the PGs:

That team were absolutely brilliant. And then the OT coming, it’s just the fact that everybody treated you as you, rather than: ah here we go again. And the fact that people will talk you through why things are happening, why they’re doing that. And they knew my limits on how much information I could take in without feeling woozy! [Laughs] and then, you know, the regular trips to see the OT every 3 months. You know it’s just encouraging and yeah. So I’d say that’s helped in how I’ve been able to get used to it and to cope. [Ellie]

Staff appeared to be emotionally containing, as they provided a supportive presence to her during a stage of feeling particularly fragile. For Ian, the consistency of support was evidenced throughout his period of recovery:

Nothing’s too much for them. They tell you straight and everything, did really really well, top hospital. These people that moan about the NHS and that. Personally I had no problems whatsoever. Bang on service for me, all through the ambulance right through to being discharged. [Ian]

For Anneka, whose PG bolstered her much needed confidence, it was indicated that prior to receiving the glove, it was staff who met this need:

I trusted them. The big thing was, after the local hospital I was so relieved to get to the Burns Unit, and they were so understanding. So
professional and so kind and caring and just amazing. I really felt I was in good hands. I never had any problems with them. They were just exceptional. And I think that also gave me confidence to trust they know what they’re doing. [Anneka]

Four of these participants also valued social support from family and friends, who provided both emotional and practical support:

If I am having a bad day or whatever, or I feel pants about it, or I’ve had a rough night with it, me and [my husband] we’ll sit and we’ll spend hours talking about it, and you know. That’s it then we just put it back on the shelf. If it falls off again we just pick it up and put it back on the shelf. And that’s how we’ve dealt with it. You know, we don’t pretend it hasn’t happened, we don’t ignore it. We just deal when it rises and then put it away again. Because it’s very easy just to sit on it wouldn’t it? And no. We talk about it. [Caroline]

How do you think you’ve managed with all of that?
Well thanks to my husband who has been fabulous. I don’t- and friends. That’s what it’s all about. And that’s you know that’s how, people like my neighbour, she’s been marvellous. [Marie]

With a personal, consistent, confident and trustworthy approach being valued, this theme highlighted the important elements of social support to participants, and furthermore, how this support could offer emotional containment during difficult times.

3.3.2 Stop People Asking Questions
Having identified anxieties and embarrassment about their scar management, participants used strategies to manage or reduce awkward responses. In social settings, participants often tried to manage questions by changing the subject, hiding or explaining their PGs.
In order to manage their anxiety and embarrassment about potential reactions, Anneka and Jeremy took control of the situation by explaining or showing their PG to others:

If I saw them looking at the glove I said oh are you wondering about my glove? And then I’d just tell them, you know, it was scar management. [Anneka]

I disappear for a few minutes and came back and, I think I made a big show of it, you know, “I’ve got a fresh one on now.” [Jeremy]

At other times, participants hid the PG to avoid it being noticed. To address the conspicuous nature of the PG, some participants made efforts to disguise it by choosing neutral colours for their PG, or concealing it beneath clothing:

If I was going to have my picture took, I wouldn't stand there like that [glove visible], I’d probably stand like that [covers hand with other hand] so you would hide it. I have seen certain pictures, and you can see it, think best just to put it behind something you know. It’s easily hid. Which I suppose is the normal... you know. I’m not dead embarrassed about it, but, if you can sort of turn your hand over, then why not? [Ian]

Now I just stick to black so it just becomes [pause] just blends in [Ellie]

I used to get mainly the bronzy ones, because you didn't see it. It’s not as obvious she's wearing a glove, I used to think, the bronze is better so people won’t notice [Anneka]

I’m interested to find a bit more about, at first you were saying a long sleeved shirt, and what that was about.

I was thinking well, stop people asking questions [Jeremy]
The same participant could decide to use strategies to either show or conceal the PG at different times. These efforts allowed participants to have some control over whether their scar management was noticed and responded to, which appeared to alleviate some anxieties about managing associated questions.

### 3.3.3 Look for the Positives

Cognitive strategies were demonstrated by some participants to minimise the difficulties. These strategies appeared to develop during recovery from the burn itself, as experiences at the hospital (e.g. seeing others with worse injuries) informed their coping style.

Four of the participants were explicit about taking a positive stance to their scar management:

- Look for all the positive things. It overcomes the negatives doesn't it?
- Don't dwell on the bad points, dwell on the good points. And then you start to think like that and believe like that. [Ian]

- Everything is about looking to the future [Ellie]

- I just had to get my thinking hat on, and turn it around [Caroline]

- I’m very er, very optimistic and very positive. If I’ve got to do something, I set my mind to it and do it, accept it. Get on with it [Graham]

Using techniques such as comparing themselves to others, or using humour, contributed to an overall positive approach and helped participants to put difficulties into perspective:

- I say, just get on with it, people got worse injuries and things like that than me so I thought oh, ok, just keep going. [Jeremy]
A lot of people much worse off than you. It’s quite an experience. Going to that burns unit, seeing people in there walking around, you think oh my gosh. I was very very lucky. [Anneka]

There’s worse things that have to be done every day, so, get on with it. And if you missed it, if you missed a creaming session, so what, you know. Doesn't matter does it? [Ian]

You’ve got two sort of booby cups [in the pressure suit], and you just think of Marilyn Monroe with her tassels or Madonna with her tassels, and that’s where the term came from. The Marilyn Monroe suit. **Was that your term, do you remember?**

When we opened the first, time I opened up the suits, my husband says “oh, they’re sexy” I says “well, watch yourself it’s my Madonna outfit!” and its, that’s how I think we’ve got over the awkwardness. We just laugh about it really. [Caroline]

### 3.3.4 Golden Hour

Participants removed their PGs for approximately an hour each day, which appeared to alleviate some of the difficulties. Participants experienced a sense of freedom in the respite from the physical discomfort of the PG. By resuming normal activities, their sense of identity was more evident during this time, for example being able to do ‘girly things’ as a woman.

For some participants, having time off from scar management was described positively, particularly during the earlier stages of treatment. Using this time to engage in activities they could not otherwise do appeared to help them cope with the restrictions and discomfort of treatment:

You- have your suit off for an hour you see, so that’s my golden hour. **What’s that like for you?**
Oh I just love it. Its like, feel like you... I suppose you could put it to like somebody running through the fields naked– ‘cause you’ve got nothing on. Got nothing on. I can just go in bath and just do all the girly things I used to do. [Caroline]

First thing, I came in, would wash them, even if it was just soak- just like cold- warm water just to rinse them out, at least I have an hour off them put them back on before I went to bed. [Jeremy]

When you get in you just want to have a shower. And there is that thinking, ah it’s free! [Laughs]. And just, so it does sort of feel nice. [Ellie]

The positive associations with nudity and freedom reiterated a sense of feeling restricted or obscured by the PG. For Marie, who struggled to manage the impact of her scar management, this time was extended so she could better tolerate her treatment:

I’m a bit naughty sometimes I’m supposed to have it on all the time but at night-time I’m afraid I- It irrita- it’s too- its doing its job, but it’s a bit uncomfortable. I don’t think I prob- I wouldn’t be able to have a proper nights sleep with that on to be honest. I mean as good as it is, I seem to, I try and go as long as possible. For it. I mean I take it off, I go through all day with it on except for you know, washing up or if I've got to do something, something like that. Erm. But, as soon as I’m getting ready to go to bed, I’m afraid I had to take it off. [Marie]

Marie’s language implied guilt over her need to frequently remove the PG, as she acknowledged a conflict between her need to wear it and the discomfort in doing so. She had fewer alternative coping strategies, which may have explained her difficulties tolerating the treatment.
4. Discussion

The current study aimed to explore the experience of scar management for people with burns. The experiences of eight adults with burn injuries were analysed using IPA, resulting in three superordinate themes. The findings are discussed in relation to existing literature, and the limitations and clinical implications are considered.

4.1 Identity

Scar management impacted on participants’ identities as men, women, and the characteristics and roles which defined them and their everyday lives prior to the burn. In Partridge’s stages of burn recovery (2005), between six months and two years, individuals may shift between a ‘pre-burn’ self-concept and a ‘temporary scarred’ self, before they integrate the burn into their identities (‘permanently scarred’). This theme encapsulated this struggle for many participants to adjust their identities, with scar management either supporting or challenging patients during this process. With Caroline and Marie at the earliest stage in treatment, Partridge’s model may explain their struggles to hold onto their pre-burn identities, as they appeared to experience more conflict with scar management than others. For the remaining participants, there was a sense of transition towards integrating the burn, and even the PG, into their identities.

The ‘second skin’ theme described how scar management became incorporated into participants’ bodies and identities. Although this term was mentioned by Ripper et al. (2009), the current findings offered an explanation of the process in which this happened, by demonstrating functions of the PG (e.g. containment). In the early stages, scar management was often described as strange or abnormal. Through its continued use, participants indicated the experience of wearing a PG became normal and consequently, to remove it was experienced as abnormal. Its constant and habitual use may therefore have contributed to the participants’ growing attachment.

Within a theoretical context, skin may be considered as a boundary, which protects, unites, distinguishes and contains an individual (Gilboa, 2001; Schmidt, 2012). Ester Bick’s seminal paper on skin as the first containing object for the infant implied skin has both a concrete and metaphorical role as a container for the identity (Bick, 1968).
By breaching the skin, Gilboa (2001) described how a burn can be experienced as an invasion, leading to feelings of disintegration and existential fear. The current findings suggested the PGs act as a skin substitute, to replace not only the physical functions of the skin, but the psychological functions such as containment. This finding offers new insights into how scar management treatments may be of benefit to patients. The current literature had demonstrated a dominant focus on physical experience, whereas the current study offers a more psychological understanding of patient experiences, by acknowledging patients’ vulnerability and challenges following a burn and the protection and reassurance that PGs consequently provide. For health professionals working in burns services, this may considerably enhance their understanding of patients’ adjustment to, and possible reliance on, their garments. Other providers of containment, e.g. social support (Gilboa, 2001) were also evidenced in the data, but these were fluctuating resources, whereas the PG provided constant support through its attachment to the bodies of participants. This constant presence may also have explained participants’ dependence on their PGs.

4.2 Functions of the PG

The PGs were a primary focus in all eight accounts of scar management. This theme gave insight into the positive and negative social and individual functions of PGs. Socially, for example, the PG signalling to others that there had been an injury could be experienced as positive, by encouraging gentle treatment, and could also be experienced as negative if it invited unwelcome questions or implied vulnerability. The findings were consistent with the literature on burns, which suggested unsolicited questions, or even fear of these questions, can cause anxiety and embarrassment (Kornhaber et al., 2014; Ripper et al., 2009).

The findings demonstrated how the social functions of the PG could be beneficial. Participants acknowledged the different meanings of the PG that other people could perceive (e.g. disability, injury or abnormality). These meanings appeared more vague or ambiguous than those associated with scars, which suggest a burn or trauma (Kornhaber et al., 2014; Moi et al., 2008). The scar was therefore considered to generate comparatively more questions, or more difficult questions, than the PG itself. By concealing a participant’s scar, the PG concealed their identity as a burn patient.
This appeared helpful in the context of transition, as they may not yet have accepted changes to their own self-image (Partridge, 2005).

This theme also demonstrated a contrast between the comfort and discomfort of the PGs. Participants experienced psychological difficulties associated with the discomfort and restrictions of the PGs, which were also reported in the burns literature (Moi et al., 2008). The ‘straight jacket’ experiences appeared to be temporary or contextual, whereas the ‘comfort blanket’ experiences appeared relatively more constant. This may offer an explanation of how patients tolerate or value their treatment overall.

The findings supported existing literature that patients can feel their bodies are threatened (Titscher et al., 2010) or vulnerable (Dahl et al., 2012; Moi et al., 2008; Tengvall et al., 2010). It was therefore of interest that the PG offered protection from threats (e.g. damage or sun exposure), as well as from the sensation of their own burned skin. These insights expand on the findings by Ripper et al. (2009).

Although the existing literature has identified some of the practical, physical and social concerns with scar management, this superordinate theme reveals the contrasting positive experiences which have been mostly absent in burns research. Wearing PGs may offer a range of positive functions for burn patients which extend beyond the intended functions of treatment. These may include physical comfort, protection, reassurance, and concealing the scar from self and others, which in turn can enhance confidence, independence and general functioning. The findings demonstrated both positive and negative aspects of treatment, and demonstrated times when these were more prominent (e.g. with the renewal of garments, or at the end of treatment), which may facilitate a better understanding of how patients’ management and experience of the treatment may change over time.

In complex, dynamic and under-studied areas of research such as this, these findings demonstrate the benefits of using an inductive method such as IPA which appreciates the subjectivity of experience. As IPA is interested in processes which occur over time, rather than just outcome (Brocki & Wearden, 2006) valuable insight has been gained into how patients may experience scar management as opposed to the prevalence of difficulties or treatment adherence. By bracketing specific agendas and assumptions (such as problems reported in the extant literature), there was more scope for the meaning of patient experience, in this case the positive aspects, to be explored.
Further research in burns may benefit from using qualitative methodology (such as IPA) to better understand the complexity of patients’ experiences and, in particular, changeable or even contradictory feelings towards their treatments.

### 4.3 Coping

Participants used a variety of coping strategies to manage the negative effects of scar management. These strategies were consistent with those used to manage burns in general (e.g. Dahl et al., 2012; Hunter et al., 2013), but this study showed the use of strategies and resources to manage the more specific demands of scar management treatment. For example, participants drew on various sources of social support and identified the ways in which this could be helpful. Participants recognised the value of talking to family and friends about their treatment, and in particular to OTs, who helped to solve problems and tailored treatments to individuals. By identifying what participants perceived to be the most helpful aspects of support, these findings can enable burn services to develop their support, or to provide feedback to clinicians regarding the importance and value of their role.

Due to the visibility of the PG and the potential social implications, there was evidence of participants taking control of reactions to the PG by concealing or explaining it. Taking a positive stance was noted across many of the experiences. This was often applied to counteract the inconvenience and restrictions of scar management.

Whilst these strategies have been found in previous studies, the current findings provide a detailed and contextualised account of how participants experience and implement them in relation to scar management. The ways in which participants achieved respite through time off from scar management was a novel finding. This finding suggested that the choice of activity during “golden hour” may be relevant to how they cope with treatment, as it often appeared to provide them with a sense of normality and familiarity with their previous routines and identities. For clinicians trying to support adherence to treatment, encouraging people to do “normal” or meaningful activities may help them get the most out of this time. In addition, these findings suggested that this time may be extended in the absence of alternative
strategies (e.g. with Marie). Supporting people to develop various coping resources could therefore facilitate their tolerance of difficulties.

4.4 Limitations

Although recruitment for the study aimed for a homogenous sample with regards to scar management, not all factors could be controlled for. There was variation in the type and size of the PGs which, at times, had relevance for participants’ experience. For example, the size and location of Caroline’s PG was implicated in her experience of sexuality; and it was likely that Graham’s lack of social issues was related to his unique ability to completely conceal the PG. Furthermore, the stage of treatment varied. Three of the participants recalled their experiences retrospectively following discharge, which may have been subject to distortion from memory. Three more of the participants were in the first twelve months following the burn injury, which is a psychologically difficult period (Patterson, 1993). Their experiences may have been influenced by broader psychosocial issues in relation to the burn. As an understudied area of research, the range and depth of data offered insight into the experience of scar management. Future qualitative research may benefit from increasing homogeneity of the sample to better understand the meanings of scar management and the context in which they are understood.

4.5 Clinical Implications

Overall, the current study has offered new insights into the experience of scar management, indicating how it may not simply be a problematic treatment to be tolerated but may also be valued by burn patients. In particular, by offering protection, reassurance and comfort, PGs can feel containing during a time of physical and psychological vulnerability. Contributing to existing research, these findings offer a better understanding of both the experience of treatment, as well as difficulties that some patients have when ending their treatment.

The role of social support was also prominent in how participants coped with the more difficult aspects of these treatments. The findings have relevance for healthcare professionals working in various capacities with burn patients, although OTs in particular play an important role in supporting patients to adapt to and tolerate their
treatment. As well as wearing the PG, this support in itself appeared to offer another form of containment. OTs showed an empathic understanding of patients’ problems, offered reassurance, and provided person-centred care, which can contain patients’ distress and difficulty (Gilboa, 2001) so would be recommended in services. Participants also valued their OTs being available to problem solve difficulties (such as itching) throughout the duration of treatment. For example, having support to adjust the PGs, trial different gels, and gain advice and information was considered particularly useful, and may even facilitate adherence to treatment (So et al., 2003). Health professionals therefore play an important in helping patients to develop coping strategies by remaining a point of contact for communicating, managing and sharing their experiences of treatment.

Due to the frequency of questions in social environments, there is a risk of re-traumatisation through burn patients retelling their experience. Screening for post-traumatic stress disorder would be an important part of assessment for burn patients, as they may be at particular risk. Furthermore, all patients undertaking scar management would benefit from signposting or information on strategies to deal with questions from others.

Understanding the various ways PGs can be experienced by patients can help clinicians to adapt their support. Enabling patients to discuss these topics may reduce some of the embarrassment around changes, vulnerabilities and attachments. In recognition of the tendency to become psychologically dependent on PGs, it is useful for patients to gradually reduce their usage. It would be of further benefit to explore ways to replace the functions, e.g. psychological strategies to increase confidence and to reduce dependence gradually.

4.6 Further Research

The findings were based on data from both men and women with varying degrees of burns; however, it would be useful to explore the experiences of scar management within the context of wider demographical diversity. This may include participants from different ethnic backgrounds, and younger adults, to explore different needs culturally and across the lifespan. In considering the potential categories of identity which emerged, e.g. male and female, or thick- and thin-skinned, quantitative research
may be appropriate to further explore the impact of the PGs, and begin to facilitate generalisation of the findings.

The experiences of scar management were embedded within the wider context of hospitalisation and the experience of the burn itself. It was interesting to note that skin grafts were rarely discussed in the interviews, but were potentially an additional site of scarring, another source of discomfort, and can result in thin and fragile skin (Burnett et al., 2014). There was evidence, however, of ideas around the mobility and fragility of skin, and it is possible that preceding experiences of skin grafts had influenced these concepts. Further qualitative research of burn treatments and hospital experiences would be useful to contextualise the findings.

4.7 Conclusion

The current study offered new insights into the experience of scar management, suggesting it has a range of positive and negative functions for burn patients. These can have psychological effects (increasing feelings of confidence, security or anxiety), physical effects (such as relief, protection or discomfort), and social effects (by concealing or signalling injury). Although adjusting to treatment may be difficult for many patients, completing treatment may be equally challenging, as some patients come to depend on their PGs. Participants used various coping strategies to manage the associated difficulties, e.g. accessing social support, taking a positive perspective, explaining or concealing their scar management, and having time out of treatment. Healthcare professionals working in the area of burns may provide containment through an empathic, supportive and integrated approach, which reflects the needs of individual patients. Further research is needed to identify if the experiences of other groups (e.g. different age, ethnicity etc.) differ from these findings. Overall, the current study demonstrated diversity and complexity in the role and impact of scar management for burns.
5. References


Critical Appraisal

Catherine Martin

1. Overview

The critical appraisal encompasses reflections on the research process and concludes with points of learning. This section was based on my reflections and experiences during the research process, which were recorded in a research diary. Notes and minutes from peer meetings (with trainee clinical psychologists), supervision, participant interviews, and professional contact (e.g. with occupational therapists) were also considered.

2. Developing a Research Question

As a trainee clinical psychologist, I had been afforded opportunities to work within various clinical settings, with a range of patient groups. Working in a medical psychology setting was of particular relevance to the development of this research. I was struck by patients’ efforts to adapt to sudden and unpredictable courses of illness, and to manage their treatments. This setting gave me insight into different perspectives on interventions, as even a walking stick could have diverse meanings for patients.

After attending a lecture on body image, which focused primarily on burns, I was curious as to how people manage the seemingly intense and demanding nature of scar management. During subsequent discussions with the local burns team and supervisors, we reflected on patient engagement with scar management and I wondered about the potential influences on this process, considering debates around compliance, adherence and concordance approaches (e.g. National Co-ordinating Centre for NHS Service Delivery and Organisation, 2005). It was the multifaceted impact of burns which captured my interest, with literature demonstrating the wide-ranging effects on psychological, social and physical functioning. Grappling with this literature, however, was overwhelming at times. There were multiple variables implicated in studies, and medical terminology around burns or even scars alone was complex and alien. I wondered if this paralleled the experiences of burn patients who, whilst going through a
process of psychological recovery, were required to understand and facilitate their own physical healing.

Despite attempts to gain clinical experience in the area of burns, this could not be arranged, which made me feel less confident about undertaking the research. This did, however, enable me to maintain a curious stance during the interviews, as I had few expectations for the findings.

3. Literature Review

Conducting the literature review was an interesting but daunting process. The body of literature on burns was initially overwhelming, and I found it difficult to gauge the point at which my grasp of the relevant literature was sufficient to contextualise the study. Familiarising myself with existing literature reviews helped me to make sense of the literature, and further highlighted different ways of designing and presenting reviews, which helped me to develop my own. This process also highlighted current debates around whether a quality appraisal tool could be applied across studies, taking into account the different methodologies and epistemologies. As a novice researcher, I felt that a tool would be beneficial to guide the quality assessment process by directing attention to key aspects of the studies and to consider different factors.

Choosing an appropriate method for synthesis posed further challenges. A range of methods were described in the literature, but agreement is lacking regarding the most appropriate methods to use (Saini & Shlonsky, 2012). Despite a common aim, methodological variations among meta-synthesis approaches have also been noted (Barnett-Page & Thomas, 2009). Familiarising myself with the different methods, and making a decision based on the collection of studies included in the review seemed appropriate.

During the stages of meta-synthesis, I found it helpful to protect time to complete the literature review by suspending the empirical study (Appendix Q), as attempting to work on both simultaneously made the process of bracketing more difficult, particularly as different qualitative methods were used. For example, the methods varied in how themes were developed across the data-set (with Interpretative Phenomenological Analysis [IPA] maintaining an idiographic focus); as well as the scope to interpret beyond the data (with more focus on non-verbal communication
and the underlying meaning of data in IPA). To maintain fidelity to each approach, it felt important to complete the analyses separately. As the literature review involved engaging with qualitative data on coping with burns, I was also keen to reduce the influence of this on analysing the interviews with my participants.

4. Study Design

My prior experience in research was limited, and I had predominantly used quantitative methodology. In designing the current study, I initially attempted to align the research focus with a quantitative approach, perceiving this to be more familiar and therefore more feasible. I had reservations about embarking on a qualitative study, which required me to develop adequate knowledge and skills within a restricted time period, recognising it could be “difficult to do well” (Larkin et al., 2006; p.53). I was aware, however, of the crucial need to tailor the method to the research, and that a unique opportunity was presented for me to develop skills in this area. I liked the idea of working creatively with participant narratives in order to further understand experience.

I had not used IPA previously, but the availability of a key text (Smith et al., 2009) enabled me to learn more about the method, and subsequently guided the process of analysis. Attending formal training, engaging in research supervision and liaising with peers who were using the method were all helpful for me to better understand the principles and processes within IPA.

5. Ethics Review

Although I had knowledge of ethical principles for clinical practice and research, engaging in a formal review process was a new and, at times, frustrating experience. Despite being a time-consuming and organisational challenge, this process ensured the design and development of the research was thorough. For future research, and in the absence of such rigorous applications or reviews, completing such an extensive protocol would be beneficial, as it meant appropriate preparations were in place to reflect the dynamic nature of research. I also developed skills in adapting my protocol for both lay and professional review, which helped me to think more carefully about the communication of research terminology. I found meeting with the review committee extremely valuable, as it provided an opportunity to reflect on decisions and to explore
In future, I would seek feedback from different sources to critique and develop my proposals for research.

6. Recruitment

The design of the research was guided by numerous conversations with academic and field supervisors, exploring the existing literature and examining clinical issues. Developing inclusion criteria was particularly difficult, due to the need for a homogenous sample but the wide variation in size, depth, location and nature of burns, alongside the many variables associated with their treatment. As there was an absence of similar research to draw upon, being able to ground my decisions as much as possible in empirical and clinical evidence, whilst maintaining sample feasibility, was considered key. This was a lengthy and complex process, but I felt the inclusive nature of the final criteria was appropriate.

It was impossible to predict the response rate for the study, which had implications for developing the recruitment protocols. In the case of a poor response rate, various options were explored (e.g. using additional sites, or recruiting through a burns charity), although these threatened the homogeneity of the sample. Due to the time constraints of the research, a substantial amendment was submitted to authorise use of these options, as I was keen to avoid delays at a later stage.

The actual response rate for this study was 20% which seemed particularly good. My initial relief was soon replaced with apprehension about managing data from eight interviews. With qualitative research, the insight and meaningfulness of the data is more important than the sample size (Patton, 2002) and I was concerned about reflecting the depth and complexity of the interviews within a limited word count. I had discussions with my supervisor about whether to use data from all the participants. I was aware that I had acknowledged an absence of research in this area, yet had eight participants willing to share their experiences. Selecting richer, potentially better articulated interviews would have privileged the accounts of some (perhaps those of higher socioeconomic status), which is not representative of the demographic range of people with burns (Edelman, 2007). A unique opportunity was also presented to explore the experiences of both males and females, as four of each took part. A decision to include all eight was thus based on the following: it appeared inappropriate to exclude participants who had all
opted in during the same period with an expectation to be interviewed and included; I had planned my research adequately and therefore had sufficient time to analyse the interviews; there was little similar research in the area and therefore gaining multiple accounts may be advantageous; and guidelines suggested individual participants could still be represented in a sample of this size (Smith et al., 1999).

With regards to managing participant responses to the research invitation, although a protocol was developed, this did not fit with the unpredictable nature of recruitment. Ideally, interviews would have been conducted evenly over a planned period to enable my interview skills to develop and to reflect on the interviews. This was not compatible with the availability of the participants, and flexibility was required in order to arrange mutually convenient meetings.

It was recognised that although all participants had pressure garments (PGs), these varied in size and location. This may have been relevant to their experiences of scar management, e.g. sexuality may have been a specific issue for Caroline due to the size and location of her garment. Scar management was also preceded by different experiences of burns and treatment, the impact of which is reflected on in the ‘Transcription and Analysis’ section of this report. In future, additional research may benefit from more stringent criteria for homogeneity (e.g. focusing on the type, location and visibility of the pressure garment, or the nature of the burn) to further explore experiences of scar management.

Although necessary protocols and contingency plans have to be considered, I learned the recruitment process itself cannot be overly controlled, and I recognised a need to be flexible due to the trade-off between the needs of the researcher and the needs of participants.

7. Interview Topic Guide

Developing a topic guide was difficult due to i) my inexperience with the clinical area, which made it difficult to anticipate or identify potential areas to explore, and ii) the nature of scar management, which is a lengthy and intensive process which lacks discrete stages to be explored. The development of the topic guide was therefore based on examples from other studies which had used IPA, a familiarity with the research in burns and scar management, and discussions with supervisors and
clinicians at the burns unit. Despite this range of information, the topic guide remained relatively broad to avoid preconceptions of how patients may experience their treatment. The resulting flexibility and scope of the topic was beneficial, as I felt more able to be guided by the participants and to adapt the topic guide to reflect emerging data. This involved, for example, asking about the participants’ personal resources, and becoming mindful of references to gender roles and stereotypes (e.g. the four male participants all implied women would be more conscious about their physical appearance). This was a sensitive and reflective process as I was keen to respond to emerging data, whilst bracketing assumptions and knowledge from previous interviews. Using my research diary during this process was particularly useful, to make such reflections (e.g. around gender) explicit.

8. Interviewing

As a trainee clinical psychologist, I had undertaken extensive training and practice in developing therapeutic relationships, and some of these skills were transferable to the research role. Due to my lack of experience in interviewing within an IPA framework, I was apprehensive about obtaining ‘good’ interviews. I attended advanced IPA training which helped to better prepare me for data collection and analysis. During interviewing, I became curious about the way in which participants described their experiences, and how emotions were communicated or, in noticeable contrast, avoided. At such points, I felt particularly honoured that participants had given their time to discuss seemingly difficult personal experiences. I noticed I used more closed questions with participants who were less forthcoming about the impact of their scar management. For example, interviewing Graham felt difficult at times, due to the apparent ease of his scar management. Feeling stuck, I would attempt to think of a relevant question e.g. “I guess being a male then, trying to think what you were saying...” but when this failed to prompt an elaboration from him, I suggested one: “would you say it was easier to cover it up?” This was a leading question which guided his reply. I reflected firstly, that I could have been more explicit about needing time to think about a question and, if it felt appropriate, to acknowledge the tension that could be generated by conversational silences. Secondly, I could have rectified the situation by returning to his reply and asking him to explain it in his own words. Being
mindful of ways to manage these issues helped me to develop my skills for subsequent interviews.

My inexperience in burns was of benefit, as I felt genuinely curious about participants’ experiences. In clinical practice, professionals are often perceived as the experts, although I strive to address this implicit power imbalance by emphasising the expertise and strengths of patients. The research role provided a novel experience in which the participants retained all expertise, and I was able to focus on their understanding or management of any associated psychological difficulties without a therapeutic agenda, in line with the requirements of IPA interviews. This was an enlightening stance and helped me to reflect further on processes (e.g. assessments) in clinical contexts.

My confidence in interviewing developed relatively quickly, as this role somewhat mirrored my own clinical style. Using open questions, sustaining curiosity, allowing space and silences, and deconstructing meaning sat comfortably with me; although avoiding empathic and reflective statements was in contrast to working within a clinical setting, as such statements can be leading or presumptuous in an IPA interview (Smith et al., 2009). The verbal introduction to the interview evolved to better prepare participants for this, as I learned to anticipate and respond to processes which had arisen during the interviews (such as participants asking whether their experiences were sufficient for my research). Where possible, I drew on participants’ own terms to demonstrate empathy. This was difficult early on in interviews or with participants who were more factual about their scar management and perhaps struggled with the space to reflect. I learned to own this discomfort during the process of the interviews, by acknowledging the frequency of pauses, the seemingly repetitive questions, or my general desire to paraphrase. For example, “I’m trying not to bulldoze you with questions or put words in your mouth” (interview with Graham); “I know I keep asking you similar questions so I’m sorry if that sounds repetitive”; “I’m just thinking... You’ve said a lot of things there I’m just having a second to keep up with you” (interview with Jeremy).

An unexpected experience of the interview was recognising emotional processes which were not verbalised. I had developed a growing interest in psychodynamic approaches during clinical training, and a prominent feature in the post-interview reflections regarded the perceived defences of participants, which contributed to my
understanding of their experiences. This included disengagement from the subject matter through distraction (e.g. Marie attended to her housework and her pets throughout the interview); and avoidance, by changing the tone or direction of conversation (e.g. Ellie laughing when she talked about difficult moments; Keith’s monosyllabic responses to questions about emotions; and Caroline gave herself, in her own words, “a kick up the arse” when becoming emotional). These often seemed relevant to the way in which participants managed or minimised distress, and informed the development of the themes.

9. Transcription and Analysis

The process of transcription was undoubtedly valuable, as I returned to the recordings on numerous occasions in order to complete the transcripts, and was able to familiarise myself with the data and begin to formulate. Through this process, I was able to recognise when closed or leading questions had been used, and to think about alternative ways to enquire about experiences to improve my interview skills. I was also able to recall participants’ tone and expression at subsequent readings, which was helpful during the stages of analysis. For example, difficulties with scar management could be indicated by a change in intonation (e.g. Anneka’s attempt at reducing her dependence on the PG: “well I’m trying”); or difficulties could be implied by non-verbal communication (e.g. Ellie’s nervous laughter: “I had erm a skin graft [laughs] ‘cause I can’t stand anything medical! [Laughs]”). Noting non-verbal communication was therefore helpful to support semantic coding.

The analysis stage was particularly daunting, as I grappled to produce a meaningful interpretation of the data. Ideas around “diving for gems” (p.7) and unearthing “something that lies hidden” (Smith, 2011; p.9.) made me anxious about developing sufficiently interpretative analyses; however such reading helped me to remain reflective during the process. I was initially cautious about straying from the text, and engaged in an ongoing battle to balance ‘grounding in data’ with ‘analytical interpretation,’ ultimately recognising the need to move beyond the text. I shared the experience of Wagstaff (Wagstaff et al., 2014) who described the accordion nature of expanding and reducing themes, which was potentially endless and I felt like I was losing text, codes and interpretations with each edition. Similarly, some transcripts
were particularly rich and I felt that the subsequent analysis was constrained by both time and word counts. Supervision was particularly helpful during this time to reflect on the process, increase my confidence to develop interpretations, and recognise when further refining of the themes would no longer be beneficial. Accessing literature to explore how these issues were managed by others was also helpful, e.g. giving permission to disagree with the surface meaning in order to present a deeper meaning (Wagstaff et al., 2014).

Although the first two to three interviews felt compartmentalised, bracketing became increasingly difficult as seemingly recurrent themes emerged across the interviews. Using my reflective diary and planning breaks between analysing interviews was helpful to manage this. The context of participants’ experiences became particularly evident in the transcripts, as the boundaries between experiences of burns, scars and scar management were often blurred, so I tried to be careful in how data was selected and represented during analysis. Participants appeared to be influenced by the circumstances in which their injuries were acquired, and their subsequent hospital treatment, which highlighted the need to consider their scar management within the context of preceding experiences. For example, three participants acknowledged the trauma of their burn injuries, which appeared to influence feelings of vulnerability (Ian), anxiety (Ellie) and of denying or numbing emotions (Keith). Participants also made reference to their skin grafts, and the associated disconnected and mobile nature of skin e.g. “they put skin there” (Graham); “having a skin graft and thinking well that’s part of my body, now moved” (Jeremy); and “on my skin grafts, ’cause I had to put one layer on then put the skin on top” (Caroline). As this may have influenced their feelings of vulnerability and insecurity, as well as their broader conceptions of skin, this observation led to a recommendation for further research into the experience of skin grafts, in order to contextualise the current findings. At times, the experience of scar management appeared to be enmeshed within the experience of the burn. Where it was difficult to distinguish the experience, the theme was verified using other aspects of the data, and the data used to represent themes was carefully selected.

Overall, these experiences (of burns, scars and treatment) had all posed significant challenges for participants, and further research in the experience of initial hospitalisation, transitional periods and the meaning of burn scarring would be worthwhile. Furthermore,
if scar management could be considered a transitional period within patients’ recovery, further research post-treatment would also be helpful, particularly given the multiple functions of the pressure garments. The current study enabled an in-depth exploration of participants’ experiences, but further research using quantitative or theory-driven methods would be beneficial. This could enable generalisation and expansion of the findings in this area. An example of a related study may be to assess patients’ conflicts in identity, and their relationship with PGs, at different stages during scar management. This may allow the experience of scar management to be positioned within broader models of adjusting to burns (e.g. Partridge, 2005).

10. Writing the Report

My interest in the topic area continued throughout the study, which maintained my motivation to complete various aspects of the research. The writing of the research report was more enjoyable than I had anticipated. From feeling overwhelmed about the amount of literature and data involved, condensing this into a report felt containing, and it was gratifying to finally begin to see the outcome of the work. Working within a restricted word count was helpful to manage my expectations about reporting relevant literature, but when writing the results, made it challenging to adequately represent the experiences of all participants. I found the language and insights used by the participants were particularly useful to illustrate the themes, and was keen to present meaningful quotes from their data to demonstrate the diversity of experiences. Careful consideration was given to how best to present the results, acknowledging the contribution of each participant whilst recognising the limitations of the report. This reinforced the need to be flexible and realistic throughout the course of the research.

At times I found writing the thesis difficult, due to its intended submission for both academic and publication purposes, which may require different writing styles and formatting (Appendix R). Discussing this within supervision was helpful, enabling me to utilise publication standards where possible but to recognise the need to adapt the report for the relevant journal at a later date.
11. Learning Points and Conclusion

Undertaking the research was a challenging and gratifying experience, enabling me to develop skills and confidence in multiple areas. Accepting that research is a dynamic and sometimes unpredictable process was ongoing, although issues could often be managed with appropriate planning, reflexivity and remaining mindful of the clinical relevance and application of the research. Managing the complexity of the data and the research in general was challenging at times. Using supervision and peer support was beneficial to manage this, as well as utilising self-care strategies, such as taking breaks. In light of my reflections, I was also better able to manage my expectations, by accepting the limitations of the research. Developing knowledge and skills with qualitative methodology was a considerable learning outcome, and provided a base from which to expand my research skills across different methodologies in future. Formalising processes of reflexivity, and drawing upon supportive resources, particularly supervision, were also fundamental in being able to develop my skills and autonomy throughout, increasing my confidence to undertake future research.
2. References


**Appendices**

**Appendix A: Coping with Burns Questionnaire (Description and Items)**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Description</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-evaluation/Adjustment</td>
<td>Adjust lifestyle to injury, experience meaning, not think about difficulties</td>
<td>1. I thought of the things that are really important in life</td>
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<td></td>
<td></td>
<td>2. I saw the accident or my difficulties in another perspective to make them seem more bearable</td>
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<td></td>
<td></td>
<td>3. I refused to think too much about my difficulties</td>
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<td></td>
<td></td>
<td>4. I did/changed something by myself to make me feel better</td>
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<tr>
<td></td>
<td></td>
<td>5. I told myself things about the accident and my problems, to make me feel better and more positive</td>
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<td></td>
<td></td>
<td>6. I changed something in my life style so that I could have a satisfactory life after all</td>
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<td></td>
<td></td>
<td>7. I was active and turned to work in order to forget my difficulties for a while</td>
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<tr>
<td></td>
<td></td>
<td>8. I made use of my experiences of the accident and of being burned</td>
</tr>
<tr>
<td>Avoidance</td>
<td>Daydream, use wishful thinking, use substances, avoid people/activities</td>
<td>9. I wished that the problems would go away or somehow be over with</td>
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<td></td>
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<td>10. I daydreamed or had a rest in order to handle my problems</td>
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<td></td>
<td></td>
<td>11. I thought about how I had changed as a person as a result of the accident</td>
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<td></td>
<td></td>
<td>12. I avoided activities in which I took an interest before I was burn injured</td>
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<tr>
<td></td>
<td></td>
<td>13. I used alcohol, tobacco or other drugs to be</td>
</tr>
</tbody>
</table>
| Emotional Support | Seek social contact and support of the emotional kind | able to handle my problems after discharge  
14. I avoided being with others because of my burn injury  
15. I hoped for something unbelievable to happen and resolve my problems  
16. I tried to be with other people  
17. I sought emotional support from others  
18. I told others about the accident, the time in hospital or the problems I faced after discharge |
|---|---|---|
| Optimism/Problem solving | Make efforts to solve problems. Optimistic view of the future | 19. When I was in pain or felt hindered I concentrated on doing something about the situation I was in  
20. I persuaded myself that my pain, my scars or other problems would be relieved in time  
21. When I felt hindered because of my burn injury I doubled my efforts to make it work  
22. I tried to see the brighter side of the situation  
23. I adjusted something in my everyday life because of the burn-related difficulties I had  
24. I did not let the problems due to my injury affect me too much  
25. I told myself I could overcome my difficulties  
26. I thought up a strategy that would help me do what I wanted to do, despite my burn injury |
| Self-control | Restrained emotional expression | 27. I did not give vent to my feelings concerning the accident and the injury  
28. When I ran into problems because of my burn, I kept my feelings to myself  
29. I did not let my feelings about the burn affect other things in life |
<table>
<thead>
<tr>
<th>Instrumental Action</th>
<th>Seek practical help/ advice, instrumental ways of problem solving</th>
</tr>
</thead>
<tbody>
<tr>
<td>30. I was engaged in something that was connected to what I had gone through, for example fire safety, patient related issues and the like</td>
<td></td>
</tr>
<tr>
<td>31. I asked other people for advice and practical help</td>
<td></td>
</tr>
<tr>
<td>32. In order to tackle problems due to the burn I made a plan of action and followed it</td>
<td></td>
</tr>
<tr>
<td>33. I turned to someone in order to get more information about the accident or the burn injury</td>
<td></td>
</tr>
</tbody>
</table>

*(From Willebrand et al., 2001)*
Appendix B: Inclusion and Exclusion Criteria (Literature Review)

<table>
<thead>
<tr>
<th>Inclusion criteria:</th>
<th>Justification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ English Language</td>
<td>-Translation not possible due to budget/time limits</td>
</tr>
<tr>
<td>▪ Adult (18 years+)</td>
<td>-Coping and resources may differ for children</td>
</tr>
<tr>
<td>▪ Burn injury</td>
<td></td>
</tr>
<tr>
<td>▪ Related to coping with burns</td>
<td></td>
</tr>
<tr>
<td>▪ Qualitative design</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exclusion criteria*:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Not available in English Language</td>
<td></td>
</tr>
<tr>
<td>▪ Animal studies</td>
<td></td>
</tr>
<tr>
<td>▪ Burn patients were children/adolescents</td>
<td>-Excluded unless adult data were reported separately</td>
</tr>
<tr>
<td>▪ Focus on family, staff or services</td>
<td>-Excluded unless patient data were reported separately</td>
</tr>
<tr>
<td>▪ Not related to burns</td>
<td>-Excluded studies with minimal data which were less able to contribute meaningfully to the review</td>
</tr>
<tr>
<td>▪ Not related to coping with burns</td>
<td>-This sub-group was understood to have different needs and coping style</td>
</tr>
<tr>
<td>▪ Self-inflicted burns</td>
<td></td>
</tr>
<tr>
<td>▪ Non-primary studies (e.g. books, literature or book reviews)</td>
<td></td>
</tr>
<tr>
<td>▪ Quantitative design</td>
<td></td>
</tr>
<tr>
<td>▪ Not peer-reviewed</td>
<td>-To ensure a minimal threshold for quality</td>
</tr>
</tbody>
</table>

*Where papers met multiple exclusion criteria, only the first criterion was recorded to prevent duplication in Figure 1.*
<table>
<thead>
<tr>
<th>ID Number:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td></td>
</tr>
<tr>
<td>Author:</td>
<td></td>
</tr>
<tr>
<td>Publication Date</td>
<td>Country of Study:</td>
</tr>
<tr>
<td>Journal:</td>
<td></td>
</tr>
<tr>
<td>Aims:</td>
<td></td>
</tr>
</tbody>
</table>

**Participants**

- Sample size:
- Age:
- Gender:

**Burn information**

- TBSA:
- Time since burn:
- Context: (e.g. hospital/ treatment/ community/ discharged)

**Method**

- Sampling:

**Data Collection**

- Analysis:

**Results**

<table>
<thead>
<tr>
<th>Quality (CASP)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

**Additional Comments:**
## Screening Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>Can’t tell</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Was there a clear statement of the aims of the research?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HINT:</strong> Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What was the goal of the research?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Why it was thought important?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Its relevance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2 Is a qualitative methodology appropriate?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HINT:</strong> Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Is qualitative research the right methodology for addressing the research goal?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3 Was the research design appropriate to address the aims of the research?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HINT:</strong> Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researcher has justified the research design (e.g. have they discussed how they decided which method to use)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4 Was the recruitment strategy appropriate to the aims of the research?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HINT:</strong> Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researcher has explained how the participants were selected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If there are any discussions around recruitment (e.g. why some people chose not to take part)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Were the data collected in a way that addressed the research issue?</td>
<td>Yes</td>
<td>Can’t tell</td>
<td>No</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>HINT: Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the setting for data collection was justified</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researcher has justified the methods chosen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted, or did they use a topic guide)?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If methods were modified during the study. If so, has the researcher explained how and why?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the form of data is clear (e.g. tape recordings, video material, notes etc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researcher has discussed saturation of data</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6 Has the relationship between researcher and participants been adequately considered?</th>
<th>Yes</th>
<th>Can’t tell</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>HINT: Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researcher critically examined their own role, potential bias and influence during (a) Formulation of the research questions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Data collection, including sample recruitment and choice of location</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• How the researcher responded to events during the study and whether they considered the implications of any changes in the research design</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7 Have ethical issues been taken into consideration?</th>
<th>Yes</th>
<th>Can’t tell</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>HINT: Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If approval has been sought from the ethics committee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>Can’t tell</td>
<td>No</td>
</tr>
<tr>
<td>---</td>
<td>-----</td>
<td>------------</td>
<td>----</td>
</tr>
<tr>
<td>8 Was the data analysis sufficiently rigorous?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HINT: Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If there is an in-depth description of the analysis process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If sufficient data are presented to support the findings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• To what extent contradictory data are taken into account</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Is there a clear statement of findings?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HINT: Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the findings are explicit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If there is adequate discussion of the evidence both for and against the researchers arguments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the findings are discussed in relation to the original research question</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 How valuable is the research?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HINT: Consider</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researcher discusses the contribution the study makes to existing knowledge or understanding e.g. do they consider the findings in relation to current practice or policy?, or relevant research-based literature?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If they identify new areas where research is necessary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix E: Database Searches

<table>
<thead>
<tr>
<th>Date</th>
<th>Database /Source</th>
<th>Search string</th>
<th>Any additional filters</th>
<th>Number of articles found</th>
</tr>
</thead>
<tbody>
<tr>
<td>August – October 2014</td>
<td>PsycInfo</td>
<td>Burn AND coping (subject)*</td>
<td>Human English Journals</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Burn AND adjustment (subject)*</td>
<td></td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Burn AND resilience (subject)*</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Burn AND qualitative (subject)*</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Medline</td>
<td>Burn AND coping (keyword)*</td>
<td>Human English</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Burn AND adjustment (keyword)*</td>
<td></td>
<td>216</td>
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<tr>
<td></td>
<td></td>
<td>Burn AND resilience (keyword)*</td>
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<td>Burn AND qualitative (keyword)*</td>
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<tr>
<td></td>
<td>Web of Science</td>
<td>‘Burn’ OR ‘burns’ AND ‘cope’ OR coping (topic)*</td>
<td>None</td>
<td>264</td>
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<tr>
<td></td>
<td></td>
<td>‘Burn’ OR ‘burns’ AND ‘adjust’ OR ‘adjusts’ OR ‘adjustment’ (topic)*</td>
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<tr>
<td></td>
<td></td>
<td>‘Burn’ OR ‘burns’ AND ‘resilience’ (topic)*</td>
<td></td>
<td>103</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘Burn’ OR ‘burns’ AND ‘qualitative’ (topic)*</td>
<td></td>
<td>360</td>
</tr>
<tr>
<td></td>
<td>Scopus</td>
<td>Burn AND coping (keyword)*</td>
<td>English</td>
<td>109</td>
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<td></td>
<td></td>
<td>Burn AND adjustment (keyword)*</td>
<td></td>
<td>112</td>
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<tr>
<td></td>
<td></td>
<td>Burn AND resilience (keyword)*</td>
<td></td>
<td>17</td>
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<tr>
<td></td>
<td></td>
<td>Burn AND qualitative (keyword)*</td>
<td></td>
<td>87</td>
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<tr>
<td></td>
<td>CINAHL (with Full Text)</td>
<td>Burn AND coping (subject)*</td>
<td>English Journals</td>
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<tr>
<td></td>
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<td>Burn AND resilience (subject)*</td>
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<td>2</td>
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<tr>
<td>Cochrane Library</td>
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<td></td>
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<td>------------------</td>
<td>---------</td>
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</tr>
<tr>
<td>Burn AND adjustment (subject)*</td>
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<tr>
<td>Burn AND qualitative (subject)*</td>
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<td>7</td>
<td></td>
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<tr>
<td>Burn AND coping (keyword)*</td>
<td>None</td>
<td>3</td>
<td></td>
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</tr>
<tr>
<td>Burn AND adjustment (keyword)*</td>
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<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burn AND resilience (keyword)*</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Burn AND qualitative (keyword)*</td>
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<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

*NOT ‘burning man’ OR ‘burning mouth’ OR child- OR adolesc-
OR teenag- OR paediatr- OR pediatr- (title)*

-Keyword/subject/topic searches were used depending on the facilities provided by the database

**Total:**

<table>
<thead>
<tr>
<th>COPING</th>
<th>ADJUSTMENT</th>
<th>RESILIENCE</th>
<th>QUALITATIVE</th>
<th>ALL SEARCHES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>538</td>
<td>829</td>
<td>136</td>
<td>455</td>
<td>1958</td>
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</table>
## Appendix F: Inclusion and Exclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion criteria:</th>
<th>Justification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Adult (18 years+)</td>
<td>- Experiences for children were likely to be qualitatively different.</td>
</tr>
<tr>
<td>▪ Burn injury</td>
<td></td>
</tr>
<tr>
<td>▪ Pressure garment (PG) and topical treatment e.g. gel</td>
<td>- For homogeneity and recruitment feasibility; PGs and gels were prescribed in combination (although gel substitutes were possible)</td>
</tr>
<tr>
<td>▪ Had used scar management for a minimum of one month</td>
<td>- Minimum experience for depth; considerable experience would be gained in a short time due to intensity of treatment</td>
</tr>
<tr>
<td>▪ Currently in treatment or within three years of discharge</td>
<td>- For closeness to experience; to reduce distortion or difficulties related to recall</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exclusion criteria:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Burn injury was a result of self-harm, attempted suicide or deliberate fire-setting by patient</td>
<td>- Experiences of this group were likely to be qualitatively different</td>
</tr>
<tr>
<td>▪ Cognitive impairment e.g. learning disability or dementia</td>
<td>- Resources were not available to carry out capacity assessments</td>
</tr>
<tr>
<td>▪ Severe or enduring mental health problem that would make interview difficult</td>
<td>- Excluded if mental health problem would make interview difficult; or if interview would pose a higher risk of distress for participant</td>
</tr>
<tr>
<td>▪ Unable to speak sufficient English to be interviewed</td>
<td>- No budget was available for translation</td>
</tr>
</tbody>
</table>
Appendix G: Ethics Committee Approval

Health Research Authority
NRES Committee East Midlands

15 January 2014
Miss Catherine Martin
Trainee Clinical Psychologist

Dear Miss Martin,

<table>
<thead>
<tr>
<th>Study title:</th>
<th>The Experience of Scar Management for Patients with Burn Injuries: An Interpretative Phenomenological Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>REC reference:</td>
<td>13/EM/0461</td>
</tr>
<tr>
<td>Protocol number:</td>
<td>PSYC0652</td>
</tr>
<tr>
<td>IRAS project ID:</td>
<td>137223</td>
</tr>
</tbody>
</table>

Thank you for your letter of 15 January 2014, responding to the Committee’s request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the NRES website, together with your contact details, unless you expressly withhold permission to do so. Publication will be no earlier than three months from the date of this favourable opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to withhold permission to publish, please contact the Co-ordinator Miss Rebecca Morledge, NRESCommittee.EastMidlands-Northampton@nhs.net.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.
Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.research.nhs.uk.

Where a NHS organisation’s role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 8 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact the HRA. However, expect exceptions to be made.

Guidance on where to register is provided within IRAS.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).
Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<table>
<thead>
<tr>
<th>Document</th>
<th>Version</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>REC application</td>
<td>137223/532642/1/959</td>
<td>26 November 2013</td>
</tr>
<tr>
<td>Covering Letter</td>
<td></td>
<td>26 November 2013</td>
</tr>
<tr>
<td>Interview Schedules/Topic Guides</td>
<td>1.0</td>
<td>19 November 2013</td>
</tr>
<tr>
<td>Investigator CV</td>
<td>Miss Catherine Martin</td>
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Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback
You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

Further information is available at National Research Ethics Service website > After Review

13/EM/0461 Please quote this number on all correspondence

We are pleased to welcome researchers and R & D staff at our NRES committee members’ training days — see details at [http://www.hra.nhs.uk/hra-training/](http://www.hra.nhs.uk/hra-training/).

With the Committee’s best wishes for the success of this project.

Yours sincerely

Chair

Email:

Enclosures:  *After ethical review – guidance for researchers*
Appendix H: Ethics Committee Approval (Amendment)

Health Research Authority
NRES Committee East Midlands

05 February 2014
Miss Catherine Martin
Trainee Clinical Psychologist

Dear Miss Martin

Study title: The Experience of Scar Management for Patients with Burn Injuries. An Interpretative Phenomenological Analysis
REC reference: 13/EM/0461
Protocol number: PSYCO852
Amendment number: Amendment 1.6
Amendment date: 29 January 2014
IRAS project ID: 13/7223

The above amendment was reviewed by the Sub-Committee in correspondence.

Ethical opinion
The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents
The documents reviewed and approved at the meeting were:

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Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

R&D approval

All investigators and research collaborators in the NHS should notify the R&D office for the relevant NHS care organisation of this amendment and check whether it affects R&D approval of the research.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our NRES committee members’ training days – see details at http://www.hra.nhs.uk/hra-training/

|
| TS/EM/0461: | Please quote this number on all correspondence |

Yours sincerely

Chair

E-mail:

Enclosures: List of names and professions of members who took part in the review
Appendix I: Research Invitation

Research Invitation

Dear patient,

‘The Experience of Scar Management for Patients with Burn Injuries’

I am writing to tell you about a study you may be interested in being involved in. A Trainee Clinical Psychologist, Catherine Martin, is carrying out research in our service for her studies at the [university]. She is interested in talking to patients with burn injuries about their experience of scar management, such as pressure garments.

Catherine is meeting with patients individually to interview them. She will be asking patients questions about their experiences of scar management. If you decide to take part, she can meet with you at your home, or at the [hospital] if you prefer. If you have an appointment coming up with your Occupational Therapist, you may like to meet with Catherine afterwards.

I enclose a Participant Information Sheet which gives more details. If you are interested in taking part, you can leave your contact details with her using any of the options below.

By leaving your details you are under no obligation to participate. Participation is entirely voluntary – you can choose not to be involved, or change your mind, at any stage without having to give a reason.
If you are interested, please respond in **two weeks** from the date of this letter.

Please contact Catherine Martin using any of these options:

- phone/text: [number]
- email: [email]
- post: Reply slip enclosed

Catherine will then be in touch to answer any questions and arrange to meet with you.

Yours sincerely

**Occupational Therapy**

**Enclosures:**

- Participant Information Sheet
- Reply Slip
- Stamped addressed envelope
Appendix J: Participant Information Sheet

Participation Information Sheet

Study Title: The Experience of Scar Management for Patients with Burn Injuries

The following information is to tell you more about this study to help you decide whether or not you would like to take part. Please take the time to read the information and contact Catherine with any questions you may have. You might also find it helpful to talk to friends and family about it, or to speak to your Occupational Therapist.

Researcher: Catherine Martin (contact details)

What is the purpose of the study?
Experiencing a burn injury can be a difficult time for patients. They may be offered ‘scar management’ for their burn, such as pressure garments. Although we recognise both the benefits and the demands of scar management, there is little research about how scar management is viewed and experienced by patients, how it might affect patients, and how they manage it.

Why have I been invited?
You have been invited to take part in this research because you have received scar management from the [burns service] and the researcher would like to talk to you about your experiences.

Do I have to take part?
Participation in this research is entirely voluntary. Your decision on whether or not to take part will not affect your current or future care.

What are the benefits?
The information collected could help patients, clinicians and researchers to better understand the experience of scar management. It could also enable health care services to develop better support for patients. Although there are no guaranteed benefits, you may also find it helpful to have an opportunity to discuss your experiences.
What are the risks?
You may find it upsetting to talk about your scar management. You will not have to answer questions about any topics you do not wish to discuss. The researcher will be prepared to support you during the interview, and you may stop at any time if you are finding it too difficult. Organisations who can offer further support are also available to you at any time. For information, please contact the researcher or the Patient Advice and Liaison Service (telephone 0800 183 0204; email: PALS@nuh.nhs.uk). You may also find Changing Faces a useful resource (www.changingfaces.org.uk).

What will it involve?
If you decide to get in touch, the researcher will arrange to meet with you to answer any of your questions. If you would like to go ahead with the interview, the researcher will then spend time asking you about your experiences of scar management. The researcher is interested in the important aspects for you. You can choose to have the interview at your home or at the burns service. It is expected to last approximately an hour, but the time taken will depend on how much you have to say. The interview will be audio recorded and written up later. This is to help the researcher remember what you have talked about.

Protecting your data
The audio recording will be securely stored on an encrypted memory stick, for which only the researcher will have the password. The recording will be destroyed once the analysis has been completed (within about six months). Written transcripts of the interviews will be completely anonymous so participants cannot be identified. After the research has been completed, these anonymous transcripts will be securely stored at the university for five years before being destroyed.

Protecting your identity
Your interview will be written up under a false name to protect your identity. Any other people or personal details mentioned will be changed or omitted to protect your anonymity. The completed study will include direct quotes from the interviews, which will also be anonymous. No information which could identify you will be reported in any of the findings.

Confidentiality
Information you give during the interview will not be shared with anyone under your true identity. The only exception would be if the researcher is concerned about the safety of you or
others, for example if you are at risk of harm. In this case the researcher has a duty of care and may need to break confidentiality. This is rare and wherever possible, this would be discussed with you before any information is passed on.

**What happens if I change my mind?**

You have the right to withdraw from this research at any time, without any consequences to your care or otherwise. You do not need to give the researcher a reason. If it has not yet been transcribed, you can also withdraw your interview data.

**How will the findings be used?**

Once all the interviews have been completed, a report of the findings will be written up by the researcher to form part of an educational qualification. Findings will also be made available in academic journals and burns services. You will also be provided with a report if you would like one.

**Who is funding the research?**

This research is funded by the [university] and sponsored by [NHS Trust].

**Who has reviewed this study?**

This study has been reviewed by the [Research Ethics Committee].

**What happens if I want to make a complaint?**

If you wish to make a complaint at any stage, please contact [supervisor details]. Alternatively, you can contact the Patient Advice and Liaison Service (0800 183 0204).

**What happens next?**

If you would like to take part, please leave your name and contact details using any of the options below. The researcher will then be in touch to arrange to meet with you in the near future (it may not be possible to interview every individual and if this is the case for you, the researcher will contact you to let you know). Please contact Catherine:

[contact details]

Thank you very much for your time.
Appendix K: Consent Form

Consent Form

Title of Study: The Experience of Scar Management for Patients with Burn Injuries

Name of Researcher: Catherine Martin

1. I confirm that I have read and understood the Participant Information Sheet [dated 29th January 2014; version 1.4] for the above study. I have had the opportunity to consider the information, ask questions, and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my health care or legal rights being affected.

3. I understand that my interview will be audio recorded and then written up. The audio recording will be destroyed once analysis of the interviews has been completed.

4. I understand that my identity and all direct quotations from my interview will be anonymous.

5. I understand that if the researcher is concerned about my safety or the safety of others I might mention during the interview, that the researcher has a duty to break confidentiality.

6. I understand how the recording and transcript from my interview will be stored and used, and give my permission for this.

7. I understand that my interview will be included as part of an educational qualification, and that results will be made available in the public domain, including academic journals and burns services.

8. I agree to take part in the above study.

Please initial boxes

Appendix K: Consent Form

Consent Form

Title of Study: The Experience of Scar Management for Patients with Burn Injuries

Name of Researcher: Catherine Martin

1. I confirm that I have read and understood the Participant Information Sheet [dated 29th January 2014; version 1.4] for the above study. I have had the opportunity to consider the information, ask questions, and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my health care or legal rights being affected.

3. I understand that my interview will be audio recorded and then written up. The audio recording will be destroyed once analysis of the interviews has been completed.

4. I understand that my identity and all direct quotations from my interview will be anonymous.

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8. I agree to take part in the above study.

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<td>Name of person taking consent</td>
<td>Date</td>
<td>Signature</td>
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</table>

Copy for participant
Copy for researcher

Date 29/01/2014
Version 1.4
Appendix L: Topic Guide

**Topic Guide**

Note: *General topics and questions are listed below and are subject to further development. Questions are not prescriptive and are provided as examples, as the researcher will be guided by the participant.*

**Starting scar management**

*Example questions:*

- e.g. Could you start by telling me about when you were first told about scar management?
  - or can you tell me how you came to have scar management?
- e.g. What did you think of the Occupational Therapist’s expectations for your scar?
- e.g. Could you describe what your scar management involves?
- e.g. What does scar management mean to you?

Possible prompts: What happened? What was your response? What were your thoughts? What were your feelings?

**Experience & impact**

*Example questions:*

- e.g. How do you feel about your scar management?
- e.g. Can you tell me what it has been like for you?

Possible prompts: Can you give me an example; can you tell me about a recent time...

- e.g. How, if at all, does scar management affect you?

Possible prompts: Work, interests, role, relationships, identity, social, body image etc.

- e.g. So tell me about how you manage the treatment.
Possible prompts: What do you do? And how is that for you? How do you cope with that? Are there things that affect how you cope?

* e.g. What has it been like for you living with this treatment over the last [x] months?

Possible prompts: How would you make sense of getting through it? Were there particular times that spring to mind that were important for you? Can you say a bit more about that? What were your thoughts? What were your feelings? How did you make sense of what happened?

*General prompts:*

- What would that look like?  Do you have another example?
- What do you mean by that?  Can you tell me more?
| Dependence | I’ve been thinking I’m too dependent on them, it’s changed my... the whole experience is different because I keep thinking you know, it’s nearly almost totally better now. July- I see my last visit with the plastic surgeon and then he’ll discharge me, I keep thinking oh, I need to wean myself off these gloves now. You know, it’s almost that type of relationship. Sounds stupid! It’s almost a relationship I have with my glove! [Laughs] It’s become part of my life. And even just when I started working here [month] last year I was still wearing the glove everyday, you know. Erm, because you’re sitting, initially you’re sitting in an unfamiliar desk and they move you around and I think oh I might bump my hand, you know. So it was still that, protecting it all the time. And now I’m more familiar more relaxed at work so, during the day I don’t wear it when I’m at work. You know it’s just everything, the circumstances around where I am, if I’m totally at ease and I know exactly where I am, I won’t need to wear it. But it’s just unfamiliar, like you can’t trust people on the train, they do bash into you, and I still think oh! ‘Cause the hand’s still sore at times, especially if it’s bumped. Then I’ll still feel oh no, you know. How do you feel about “weaning off” it? Well I’m trying to; I don’t sleep with it at all anymore |
| Relationship Attachment | -Embarrassed -Integrated into life |
| Part of life | -Conflict between dependence and embarrassment -Moved around - not in control -Anxiety -Current (tense) fear -Constant protection (inconstant conditions) -Familiarity = relaxation -Would risk of bumping hand be dependent on familiarity? |
| Providing security | -“Totally”/ “exactly” = very specific conditions, therefore less likely to be met, so can justify glove? “Won’t” future tense as these conditions haven’t yet been met – hope for future (independence)? -Constant risk. Unpredictable, feels vulnerable, fragile. PG is protective. -“The” hand – depersonalised, whilst “my” glove. More familiar with glove than with own hand? Integration? -Linked with pain -Emphasis – indicates struggle |
Appendix N: Example of Emerging Themes

**Transcript Extract: Anneka**

| Retaining a contained sense of self | Independent  
| Does not wish to bother people; takes care of herself  
| Self-contained  
| Avoids physical or psychological intrusion |
| Developing a relationship with the PG | Following the instructions  
| Had to wear it  
| Trusting the staff |
| Depending on the PG  
| “You do get a little attached”  
| Panic without the glove  
| Ensuring it’s always present  
| Close relationship  
| Difficulty “weaning” off  
| Integration into self  
| Integration into life  
| Becoming habit  
| Routine  
| Used to it |
| ‘Protective garment’ | Scar management  
| Flattening the scar |
| “Confidence to do stuff”  
| Security  
| Protection from damage  
| Stabilised the skin |
| The PG becoming part of self | “Part of me”  
| “Part of my hand”  
| “Part of my life” |
| The PG interacting with the social world (anticipating interpretations of the PG) | “People don’t understand”  
| Meaning of the PG – disability (conflicts independence), ambiguity, exposure  
| Embarrassed, self-conscious |
| Coping with scar management | Talking to “let things out”  
| Concealing the PG (blend in)  
| Explaining the PG  
| Could be worse  
| Personal resources “I’m adaptable”  
| Social resources (Occupational Therapists, family) |
I conducted the study within an interpretative phenomenological framework, developing an understanding of scar management through interpretation of participants’ experiences. A social constructionist position was adopted, meaning the experience of scar management was considered to be socially constructed from the way in which participants made sense of and communicated their treatment (Crotty, 1998; Larkin et al., 2006). The subjective nature of these experiences, and the language used to represent them, leant itself to the idiographic approach of Interpretative Phenomenological Analysis (Larkin & Thompson, 2012).

Discourses around medical treatments, body image and scarring vary across culture and time, and therefore the meaning that participants gave to their experiences was considered to be inherently influenced by their embedding in, and interactions with, the social, political and cultural context (Darlaston-Jones, 2007; Madill et al., 2000). Collating information on participant demographics, and the location and duration of scar management enabled interpretations to be contextually situated. This information enabled me to consider whether the experiences of scar management were influenced by, for example, the age of the participant, or the location and visibility of the garments. For example, Caroline described how her garment replaced her bra, which appeared to prevent her from expressing herself by inhibiting her choice of clothing. By concealing her body it also inhibited physical contact, which interfered with her relationship with her husband. Her feelings around sexuality were therefore considered in the context of her gender, and the size and location of her PG.

Through the double hermeneutic process, meaning was viewed as co-constructed by both the researcher and participant (Guba, 1990). Due to the subjective nature of this process, I recognised the potential influence of bias and experience. I had no experience working with burns patients, however, had undertaken clinical placements as a Trainee Clinical Psychologist. This had facilitated a range of relevant experiences, particularly in a medical psychology setting, where psychosocial difficulties were described by patients who were managing other (non-burns related) physical health problems. During completion of the research, a review of the extant literature in burns was also undertaken that will have informed my knowledge and views on the
topic, and may have primed particular interpretations. To avoid inappropriate bias or distortion of analysis, my developing views and experiences were explored using a research diary as well as within supervision.

From these experiences, I acknowledged my expectation for scar management to be an inherently difficult treatment, particularly due to the seemingly uncomfortable nature of the PGs. Collectively, clinical experiences and the literature had emphasised the adverse psychosocial impact of having medical treatments, e.g. surgical scars, fistulas and indeed, PGs. I therefore expected there may be evidence of psychological difficulties in the data, and developed a curiosity in how participants coped with the demands of such an intensive treatment. By acknowledging my preconceptions, I was able to recognise the potential for influence on the interpretative process. During the stages of analysis, I arranged for sections of the transcripts, codes and themes to be reviewed by peers and a supervisor. I also attempted to bracket my assumptions, by critically reflecting on my interpretations throughout the process of analysis.
References


Appendix P: Diagram of Themes

- I’m Still Here - core sense of identity (breached by the burn and affected by scar management)
- Second Skin – provides containment for the self
- Straight Jacket – the negative effects of scar management on the person
- Comfort Blanket – the positive effects of scar management on the person (which facilitates containment, i.e. the Second Skin)
- Something Wrong With You – the negative effects on social interactions (the PG reveals the person’s difficulties with identity and the impact of scar management)
- Hide What Was Underneath – the positive effects on social interactions (the PG conceals difficulties with identity and scar management)
- Look for the Positives – used to cope with restrictions, discomfort and inconvenience
- Golden Hour - a break from the PG (a break in the containment it provides [Second Skin] and from the adverse impact [Straight Jacket/Something Wrong With You]); and enables time for normal activities (I’m Still Here)
- Stop People Asking Questions – used to manage social problems and responses
- In Good Hands – social support, which provides further containment for the person
Appendix Q: Chronology of the Research Process

January 2013
Submission of research ideas to University of Leicester. Allocation of research supervisor

February – May 2013
Refinement of research question and methodology chosen. Development of research proposal.

May 2013
Peer review of research proposal (internal reviewers - University of Leicester)

June 2013
Panel review of research proposal (internal and external reviewers)

September 2013
Summary of proposal submitted to service user reference group (via University of Leicester)

September – December 2013
Feedback collated and amendments made to proposal. Participant documents and electronic form (Integrated Research Application System) prepared for review by ethics committee

December 2013
Application submitted for approval by ethics committee and local NHS department (Research & Innovation). Meeting attended with ethics committee

January 2014
Approval granted by ethics committee and Research & Innovation department

February 2014
Substantial amendment submitted and approved

February - July 2014
Recruitment, interviews and transcription
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<td>Critical appraisal</td>
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<td>March 2015</td>
<td>First draft empirical paper</td>
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<tr>
<td>April 2015</td>
<td>Completion of empirical paper and submission of research report (literature review, empirical paper and critical appraisal)</td>
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Appendix R: Author Guidelines for Burns

Retrieved 18 March 2015 from www.elsevier.com/journals/burns/0305-4179/guide-for-authors

**Introduction**

Burns aims to foster the exchange of information among all engaged in preventing and treating the effects of burns. The journal focuses on clinical, scientific and social aspects of these injuries and covers the prevention of the injury, the epidemiology of such injuries and all aspects of treatment including development of new techniques and technologies and verification of existing ones. Regular features include clinical and scientific papers, state of the art reviews and descriptions of burn-care in practice.

**Submission of papers**

Authors are requested to submit their original manuscript and figures online via http://ees.elsevier.com/jbur which is the Elsevier web-based submission and peer-review system. Please follow these guidelines to prepare and upload your article. Once the uploading is done, our system automatically generates an electronic pdf proof, which is then used for reviewing. All correspondence, including notification of the Editor’s decision and requests for revisions, will be managed via this system. If any illustrations, diagram or part of the text have been published elsewhere the source must be given in full, permission having been granted by the author and by the publisher.

Submitted manuscripts will be reviewed by selected referees and the author will be informed of editorial decisions based on the referee comments as soon as possible. For
information about the status of your paper, please log on to http://ees.elsevier.com/jbur. On receipt of the first decision letter authors should submit their revised manuscript within three months in order to ensure that the scientific content of their manuscript is timely and up to date.

**Types of paper**

- Original Paper
- Case Report
- Burn-care in practice
- Letter to the Editor
- Review Paper
- Editorial
- Personal Report
- Addendum
- Book Review
- Supplement

**Online only publications**

Due to the large volume of submissions to the journal, Case Reports will be published online-only and will be listed on the contents page of a print issue. Authors will be informed if their submission is selected to appear online only.

**Contact details for submission**

If you have any problems submitting your paper through this system, please contact the Editorial Office on e-mail: burns@elsevier.com; tel: +44 (0)20 7424 4267; or fax: +44 (0)20 7424 4911

**Before You Begin**

Ethics in publishing
For information on Ethics in publishing and Ethical guidelines for journal publication see http://www.elsevier.com/publishingethics and http://www.elsevier.com/journal-authors/ethics.

**Human and animal rights**

If the work involves the use of animal or human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans http://www.wma.net/en/30publications/10policies/b3/index.html; EU Directive 2010/63/EU for animal experiments http://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm; Uniform Requirements for manuscripts submitted to Biomedical journals http://www.icmje.org. Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

**Conflict of interest**

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. If there are no conflicts of interest then please state this: 'Conflicts of interest: none'. See also http://www.elsevier.com/conflictsofinterest. Further information and an example of a Conflict of Interest form can be found at: http://help.elsevier.com/app/answers/detail/a_id/286/p/7923.

**Submission declaration and verification**

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis or as an electronic preprint, see http://www.elsevier.com/sharingpolicy), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if
accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service CrossCheck [http://www.elsevier.com/editors/plagdetect](http://www.elsevier.com/editors/plagdetect).

**Contributors**

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