Title: Living with Psychological Implications of Burn Injuries
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Living with the Psychological Implications of Burn Injuries

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Abstract

Burn injuries are devastating traumatic experiences which place a large amount of strain on a person’s psychological status. Due to the improvement in morbidity rates in relation to burn victims, more and more survivors are forced to make mental alterations to their body image.

Depression, anxiety and post-traumatic stress disorder are the most commonly observed psychological effects. Physical functioning plays a large role in the cause of depression which does not always reduced over time many burn survivors displayed signs of depression over 1 year post injury. Anxiety is often related to body image and grievance over ones new image or avoidance of reflection. Many burn victims display 2 or more signs of PTSD. It is said that those most likely to experience PTSD are those who were found to have had pre-burn psychosocial problems.

Stigmatising behaviour is the most commonly recorded issue when burn patients are returning into society. Many experience social isolation as a result, thus preparation for this reintegration should be carried out as part of a holistic treatment plan.

There are few studies in relation to treatment of psychological issues. This is a large area which should be further developed in hospitals. Holistic care is a major aspect of nursing practice and to find few treatment studies for such issues is surprising.

In conclusion psychological and psychosocial problems are recorded in a significant number of the burn population. Screening for these disorders and treatment should be carried out as part of a holistic routine in all burn centres.

1. Introduction
This literature is a review of the pragmatic data on the psychological effects of burn injuries on the adult population, concentrating on themes such as the psychological implications, social implications and coping strategies, there are also three subheadings under the psychological implications of burn injuries. The physical effects of burns are often discussed and studied in research articles and studies as they are a common risk and have many implications on the patient’s life. However this review is concerned with the psychological effects burn injuries have on patients. It is important that nurses and health care workers are aware of these implications and thus treat the patient in a holistic approach and not only the physical injury. This topic was chosen as it is often an area overlooked in burn centres and is very relative to the care provided by nursing staff. When gathering research studies only English language papers were reviewed, these were accessed from online databases such as CINAHL, PsycINFO, PsycARTICLES, Academic Search Premier, PubMed and Ovid. Few printed text were consulted as most texts in relation to burn injuries focus on the physical aspect of the injury and treatment. The literature reviewed consisted of many different styles of research studies mainly from academic journals. Search words were generated when searching for studies which related to this topic. These search words included; Burns, Burn injuries, body image (dissatisfaction), self perceptions, stigmatization, depression, anxiety, post-traumatic distress (PTSD), coping strategies and social implications. The studies found include a range of qualitative and quantitative. There were over 40 articles accessed, however not all were entirely relevant and as a result; not included in this review. Although there was a wide variety of studies there was no Irish studies found. It was never decided to search within a specific time frame; however the most valuable studies came under a parameter of 1961-2009.

It is widely known that advances in emergency services and burn care in recent years have improved immensely, decreasing the mortality rates substantially, and increasing the number of people living with large scars resulting from burns. (Lawrence et al. 2006, Klein et al. 2007, Ullrich et al. 2009). Burn injury implications include both losses and gains; these include physical functioning, identities, roles, lifestyles and relationships (Williams et al. 2003, Moi & Gjeangedal 2008). These losses and gains put major stress and strain on patients, when you consider coming to terms with ones new bodily appearance, how others react to this appearance, and coping with physical limitation. Many patients experience PTSD following burn injuries, Baur et al.(1998) recorded a prevalence rate of PTSD in adults 1 year follow up post burn injury. Results varied between 31% and 45.2%. In this review the core
themes will focus on the different psychological effects experienced, social integration following injury, coping strategies and relevant studies will be reviewed and critiqued under these themes.

1. Psychological Implications

Burn victims are at increased risk of developing various psychological disorders. It is evident that preburn factors influence the post burn adjustments. Many studies recognise three major disturbances which occur after burn injuries including; depression, anxiety and post-traumatic stress disorder (PTSD) (Tebble et al. 2004, Lawrence et al. 2006, Williams et al. 2008 & Ullrich et al. 2009). Lawrence et al. (2006) states that depression is the most widespread disorder on follow-up, among burn survivors.

2.1 Depression

Depression is a major implication of burns, experienced by the majority of burn patients. Moi et al. (2008) in a qualitative study discuss the findings of their 20 open, in depth interviews with burn survivors. Their aim was to gain an understanding of their experiences. They selected a purposive sample from the national burn centre of Norway; there were 14 participants the majority of which were men. These survivors discussed the implications (mainly physical) which they have to cope with every day. They explained how their bodies now told their story for them, the scarring a permanent tale. Dealing with an ‘unfamiliar body’, many avoided the first mirror image after dressings were removed; some described how months later they still got a surprise when they saw their own reflection. A vulnerable body can be difficult to manage, which all burn survivors must learn to do. This affects the survivor’s life in many ways. Their new skin is fragile; requires a lot of protection. There is a risk of injury without sensing it, unable to sense warmth and cold. Not only do the physical aspects affect the patient, but also the psychological aspects, many survivors discussed how they experienced feelings of isolation, social withdrawal and feelings of stigmatisation. These results from the interviews portray factors which are predisposing factors of depression leaving burn survivors very susceptible.
There are very few studies which explore the frequency of depression symptoms beyond a year of discharge in burn survivors. Thus Lawrence et al. (2006a) carried out a cohort, cross-sectional study across the United States as part of a larger project to develop and examine psychosocial outcome measures for burn survivors. A sample of 2,500 members of a national burn survivor support group was mailed a survey which was also made available online. 380 surveys were returned, 19 were incomplete thus only 361 complete surveys were returned. 311 participants who were at least 3 years post burn were included in the analyses. Many tools were utilised in this research including; the demographic questionnaire, burn scar severity measure and other burn characteristic measures, the short mood and feelings questionnaire (SMFQ), the body-esteem scale for adolescents and adults (BES), importance of appearance scale (IAS), perceived stigmatisation questionnaire, social comfort questionnaire (SCQ), interpersonal support evaluation list (ISEL) and worry about appearance (one direct question to measure anxiety related to appearance). All of the tools used are recognised and valid instruments many of which are recurrent tools in other studies assessing burn survivors’ psychological state. 20% to 30% of the long-term burn victims were found to have encountered considerable symptoms of depression in weeks prior to completing the survey. Demographic and burn characteristic variables were found to have less significance in depression than social support, comfort, perceived stigmatisation and body esteem.

Women are at a greater risk for depression in most epidemiology studies around the world (Andrade et al. 2003), thus it is remarkable that there was no difference in gender in relation to depression. There were only three previous studies exploring the frequency of depression symptoms 1 year after discharge, among burn victims (Ward et al., 1987; Wiechman et al., 2001; Pallua et al., 2003). Wiechman’s (2001) study was the only one to have recorded a significant difference in genders and depression, Pallua et al. (2003) did not distinguish between genders, and Ward et al. found a minor difference in gender. However this study has limitations which may over represent the population. This sample was taken from a burn support group, if it had been the complete population of burn victims, results may have proven differently. The study is also only a small sample size when comparing the number of surveys mailed to the survivors and the number of surveys returned, and also some were returned incomplete.
2.2 Anxiety

As well as depression, anxiety is frequently witnessed in burn survivors. There are two forms of anxiety; state anxiety and trait anxiety. State anxiety is a continuously changing condition, trait anxiety remains more stable (Hulbert-Williams et al. 2008). State anxiety is often experienced with slow recovery and wound healing. Anxiety in burn patients may occur due to psychosocial matters, such as grieving over the loss of their previous appearance or troubled by reactions of others (Partridge & Robinson 1995). Hulbert-Williams et al. (2008) suggests that sufferers of major burns experience higher levels of distress when compared with those who have minor burns. In contrast Tebble et al. (2004) claims that injuries no matter what size may have a psychological impact on a patient according to literature (Shepard et al. 1990; Bisson & Shepard 1997; Padadopolous et al. 1999; Smith 2000).

Tebble et al. (2004) carried out a prospective, longitudinal study to examine the psychological impact of patient factors on self-consciousness and anxiety in those presenting to accident and emergency (A&E) with minor facial injuries. A cohort, longitudinal survey of self-reported questionnaires, using a convenient sample in an A&E unit in a UK hospital was adapted to carry out the study. A total of 63 participants (majority male) aged between 18 and 55 years were incorporated in the study. Enrolment was limited to those with a visible wound and larger than 1.5 cm in length. These restrictions were put in place as staff felt a wound larger than 1.5 cm was more noticeable to observers. The Derriford Appearance Scale (DAS) (Carr et al. 2000) was utilised as it measures the consequences of issues of appearance. The scale was chosen as it applies to various deformities and aesthetic problems including minor facial injuries. Only two of the scales subheadings were included as the other three were only relative to the body. The State-Trait Anxiety Inventory (STAI) (Spielberger 1970) was also included as a definitive measure of anxiety. Scar size, living arrangements (social support) and cause of injury had a significant impact on self-consciousness. These factors were then studied in relation to state anxiety scores, those who lived alone had scars larger than 4 cm and who had been in accidents were found to have had higher State Anxiety scores. Anxiety and social self-consciousness (SSC, a subheading of the Derriford Appearance Scale), did not decrease at 6 months post injury. As there were mixed results in relation to living arrangements this may be an indication that support should be available based on an individuals needs. It was found that scar size did not impact anxiety until 6 months, perhaps due to outlooks of healing. This study is an excellent demonstration of the anxiety experienced by burn victims.
Hulbert-Williams et al. (2008) also carried out a study exploring anxiety in burn victims. This was an experimental study consisting of 60 participants (30 burn survivors and 30 with no burn injuries) from the UK. This study compares burn survivors with those who have not had any burn injuries using experimental stimuli (3 packs containing, burn images, non-injured images and neutral images i.e. houses or gardens.) The STAI (1970) was adapted to measure the results. The results depict higher levels of anxiety in those with burn injuries (see Appendix A for results statistics); however the authors state that there is evidence that regular exposure to somewhat anxiety provoking stimulus can reduce the provoking factor over time (Fava et al. 2001).

2.3 Post-Traumatic Stress Disorder (PTSD)

The American Psychiatric Association (1994) characterise PTSD by three symptoms; re-experiencing (upsetting thoughts of the traumatic event), avoidance (suppression of trauma related stimuli), hyper arousal (continuous symptoms i.e. unable to sleep or anxiety). Acute stress symptoms are different to that of PTSD as they lat for a minimum of 2 days and maximum of 4 weeks and usually occur with 4 weeks of the traumatic experience (American Psychiatric Association 1994). It is said the PTSD is more likely to occur in vulnerable groups who have experienced trauma, such as those who had a preburn history of psychological disorders (Fauerbach et al. 1997). Patients’ perceptions and coping strategies were predictive of PTSD.

Fauerbach et al (1999) completed a study which examined the impact of post trauma distress (PTD) following severe burn injuries. The study was a cohort, longitudinal study of a convenient sample carried out in the Baltimore Regional Burn Centre (BRBC), USA. The study consisted of 86 adult burn victims (67 of which were men). Many instruments were developed in order to evaluate distress related to the traumatic event and impact on quality of life. The tools utilised include; the Davidson Trauma Scale (DTS), the Beck Depression Inventory (BDI; Beck et al. 1961), Satisfaction with Appearance Scale (SWAP; Lawrence et al. 1998), Life Orientation Test (LOT; Scheier and Carver 1985) and the short form-36 Health Survey (SF-36 Health Survey; Ware et al. 1993). All of these tools are recognised valid assessment tools many of which are recurrent instruments used in research studies in relation to burn patients. From the results of this study it is clear those suffering with PTD experience a pessimistic outlook, greater depression symptoms and higher level of body
image dissatisfaction (BID). It is also noted that those with PTD have facial and larger scarring than the non-PTD group. From the domain SF-36 scores it is suggesting that those with PTD had no pre-existing mental health issues and the non-PTD group had a significantly higher mental health score pre-burn. Findings suggest that personality characteristics may be a significant variable that contributes to symptom report of post burn Psychopathology and level of post burn adjustments. This study consists of self-reports which may indicate a possible issue of bias responses.

These three psychological disorders are commonly experienced in burn centres, nurses and staff should be aware of these implications monitor for any signs so that it can possibly be managed before fully developing causing severe stress and trauma.

3. Social Implications

Dehumanising behaviour is experienced every day by those with physical distinction, including burn scars. Social perception and body image of burn survivors is still under developed, it is only in the past two decades there was a body image measure created by Lawrence et al. (1998) ‘Satisfaction with Appearance Scale (SWAP)’. Behaviours experienced by burn survivors include blatant staring, double takes, whispering, bullying or can be more subtle like avoidance, lack of eye contact, ignoring, walking faster when approaching. Stigmatising behaviour has three effects on people including low body esteem (BE), sense of social isolation and violation of privacy (this is the right to remain anonymous among crowds), as theorised by Bull & Rumsey (1988).

Karabeg et al. (2009) carried out a retrospective study with the aim of portraying social rehabilitation and social adaptation of those who suffered burn injuries along side the psychiatric consequences. This was a longitudinal study assessing hospitalised patients over a period of 5 years. There were mixed genders varying from ages 15 to 88, and a total of 58 patients all with various forms of burn injuries were included as part of the study. Socialisation was measured by the number of patients who returned to the workforce and experienced social stigma. Of 26 capable patients only 16 returned to their previous posts, 3 patients changed their career and 7 retired. 13 patients reported public stigma in the form of staring, all which had facial, neck or hand scarring. This study was a small sample and its measurements of social stigmatisation could be questioned. Lawrence et al. (2006) provide a
more reliable study which discusses social stigmatisations experienced by burn survivors. This study was carried out using the same sample participants as previously discussed under depression Lawrence et al (2006a). However in this study the instruments used vary, the Perceived Stigmatization Questionnaire (PSQ) and the Social Comfort Questionnaire (SCQ) were applied. Stigmatizing behaviour as reported by those with appearance distinctions include; staring, teasing, rude behaviour, avoidance, confused behaviour and external pressure to change ones appearance. The PSQ consisted of 38 items were participants were asked to rate how frequently they experienced this kind of behaviour. The SCQ should be used in conjunction with the PSQ. The SCQ measures subjective sense of social isolation and violation of privacy effect. With this the ISEL-12, BES, IAS, and the SMFQ were dispensed. When these questionnaires were returned the PSQ was analysed for askew information or results, consequently 6 items were removed from the PSQ. The results depict significant correlations with both PSQ and SCQ with depression. “The PSQ absence of friendly behaviour subscale had the highest correlation with social support variables” (Lawrence et al. 2006b). Refer to appendix B to review correlations of PSQ and SCQ with burn severity and visibility measures.

It is clear from the studies reviewed that body image plays a large role in social integration. As stated by Macgregor (1990) appearance is a complex social function which when interfered with may cause stereotyping (cited by Newell 2000). Price (1990) developed a model of body image which provides a clear and comprehensive model in relation to psychological experiences, see appendix C for Price’s model of body image. This model should be recognised by health care staff in order to help better prepare burn patients return to the community.

4. Treatment

Many studies have researched the psychological issues present following a burn injury however there are few studies on treatment of psychological issues in burn patients. Bernstein (1976) produced a text discussing psychotherapy care required by those with burn injuries however it is descriptive rather than empirical and evaluative. Assessments and treatment of these issues are not adequately dealt with as a major portion of the treatment regime (Wisely & Tarrier 2001). Freund and Marvin (1990) include both group and individual
 psychotherapies, behaviour modifications and stress inoculation as part of their treatment regime.

Fauerbach et al. (2002) undertook a qualitative research study comparing two emotion-focused coping methods when dealing with body image alterations following burn injuries. The two methods compared are mental disengagement and venting emotions experienced. The study was a prospective, longitudinal design incorporating 78 participants of a broad age range and mixed genders. All participants were required to meet at least one of the American Burn Association (1984) criteria for severe burn injury. It was found that those who used both venting and disengagement were of a younger age. In addition this group also had larger burns than those who used one method or neither method. It proved that those who required both coping strategies had greater levels of body image dissatisfaction 2 months following discharge. In the absence of any coping strategy there is a lack of cognitive, behavioural and social skills required in order to adapt the new body. However there are variables which have not been included such as how ones personality and social support help them to cope with BID. This study portrays the advantages of coping strategies, however further research should be taken and consider how these strategies can be applied to those suffering from depression, anxiety, PTSD or social issues and treated and monitored by nurses and health care staff.

5. Conclusion

The purpose of this literature review was to recognise the psychological implications which burn survivors have to deal with and are often not treated while hospitalised. This study recognises the main psychological disorders such as depression, anxiety and PTSD; these are commonly experienced in the majority of the burn population. These implications then have a knock on effect when trying to reintegrate into the social community, many experience stigmatising or rude behaviour, especially towards those with visible scarring. It is important that nurses are educated and recognise these issues so that a holistic approach may be adapted while treating the patients. This is an important aspect of nursing care and should be implemented in all areas.

There were no Irish studies found on the psychological impact of burn injuries, this may be a future study which should be researched. Without this research it may not be made
aware to staff the importance of these complications, therefore staff education is a vital area which should be looked at in Irish hospitals in relation to burn patient’s psychological state.
Appendix A

Figure 1: A graphical representation of mean state anxiety across groups and conditions.

Appendix B

**Figure 2:** Perceived Stigmatization Questionnaire (PSQ) and Social Comfort Questionnaire (SCQ) Total Scores Correlated with Burn Severity and Visibility Measures.

<table>
<thead>
<tr>
<th>Test</th>
<th>TBSA</th>
<th># of surgeries</th>
<th>Subjective rating of appearance</th>
<th>Subjective rating of visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSQ Total</td>
<td>.16*</td>
<td>.35*</td>
<td>.45*</td>
<td>.24*</td>
</tr>
<tr>
<td>SCQ Total</td>
<td>-.02</td>
<td>-.20*</td>
<td>-.34*</td>
<td>-.08</td>
</tr>
</tbody>
</table>

*Note.* For subjective rating of appearance, participants rated “the degree of burn scarring has changed your overall appearance” on a 6-point scale ranging from *no change* to *very severe change.* For subjective rating of visibility, participants answered the question, “When you are in public, how often are your burn scars visible to others?” Ratings were made on a 5-point scale ranging from *None of the time* to *All of the time.* TBSA = Total Body Surface Area; # of surgeries = number of burn related surgeries.

*p<.01.

Appendix C

Figure 2: Price’s Model of Body Image. (Arrows indicate direction of influence or interaction (Price 1990a)).

Environment

(Real, symbolic, internal, external)

Body Ideal

Coping strategies

Social Support Network

Environment

Body Reality

Self Image

Environment

Body presentation

Reference List


