

Psychosocial factors that influence the outcome of burn treatment

In the developing world few patients with burns of more than 40% of their body area survive, but those who do are faced with major challenges.

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Traditionally mortality has been the most important outcome measure in burn care. This is fitting, as the overriding concern in medical care is the preservation of life. In developed countries the LD50 (body surface area burned that kills 50% of people) in children and young adults is over 90% of total body surface area (TBSA) full-thickness burns, and in the elderly it is more than 40%. However, in developing countries survival of patients with burns over 40% TBSA is minimal.¹ Because of the advancement in medical care, many patients survive burn injuries. Therefore the focus of outcome measurement has shifted to the quality of life of these patients. Useful measuring instruments in burn care are the Burn Specific Health Scale² and the Short Form Health Survey.³

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Burn injury survivors are faced with extraordinary challenges. Adult patients may present with clinical syndromes such as delirium, post-traumatic stress disorder, suicidal thoughts, depression and adjustment disorders. In children burn injuries can lead to a delay in developmental milestones, sleep disturbances, regression, delayed educational development, depression and anxiety. Anxiety and depression are two of the most prominent psychiatric complications associated with paediatric burn injuries. Anxiety is often observed as a response to scary or painful procedures.

The immediate response and long-term adaptation to a burn injury vary and depend on a variety of factors, e.g. social support, pain, TBSA burned, location of the injury, pre-morbid personality and social functioning. The psychosocial factors that influence the outcome of burn care for both adult and paediatric patients, as well as the management of these factors, are discussed below.

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Social support

The quality of social support that patients receive may affect their chances of survival. Muangman *et al.*⁴ found a correlation between family support and survival for patients with TBSA burns of more than 60%. However, the study sample was small and further research is necessary. Nevertheless, the authors conclude that social support may affect burn survival. According to them the role of social support has also been described in human immunodeficiency virus and breast cancer research. It has been reported that stress affects the immune system and social support serves as a moderator between these variables. Stress also has an influence on wound healing because stress leads to lowered levels of interleukin-1 alpha and interleukin-8, which are critical in the patient's response to injury.⁴ Patterson *et al.*⁵ found that being married (or living with a significant other) was associated with better adjustment after a burn injury.

A child's post-burn adjustment (development of self-esteem and psychosocial adjustment) is largely dependent on the level of social support he/she receives in hospital, but also on that which he/she receives after discharge. According to Zeitlin,⁶ the burned child's later response to his/her injuries is often based on the quality of family support, particularly that of the mother. Of equal importance is the level of peer support and acceptance. The quality of peer support is directly related to the post-burn development of the child's confidence, level of self-acceptance, social growth and willingness to take social risks (e.g. visiting public places, going back to school, and making new friends). For children a child-friendly environment in the burn unit is vital for the reduction of post-traumatic stress.

Hupcey⁷ describes three levels or sources of support, namely (i) family; (ii) friends and relatives; and (iii) hospital staff.

The first level of support is provided by the family and is especially important for patients admitted to an intensive care unit. Results from Hupcey's study indicated that the presence of a close family member was preferred to that of other visitors because it required little effort from the patient. The sense of belonging and connectedness was found to be an important variable in the mediation of stress. However, it is important that the quality of family support should be monitored.

The second level of support entails friends and relatives who can provide emotional, informational and instrumental support. Instrumental support refers to practical help, e.g. with child care.

Hospital staff, in providing emotional encouragement and information, contributed to the third level of support. This level of support often relates to the way in which staff communicate with the patient and the manner in which care is provided (emotional support and removing of stress factors) when family members are absent.

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Social support is not only important during the critical stage, but also in the acute stage where the emphasis is on recuperation and rehabilitation. During recuperation and rehabilitation the patient develops a greater awareness of the physical impact of the burn injury and subsequent scarring. In the rehabilitation phase after discharge social support (e.g. financial assistance and practical help) acts as a buffer against the many difficulties burn patients experience as they re-enter society.

Pain

Pain management is the collective responsibility of all the members of the burn team. Pain (untreated, chronic or recurrent) can lead to a lack of trust in the medical staff, the onset of depression, withdrawal, anxiety and sleep disturbances. In addition, it can also have negative physiological consequences (e.g. increased burn hypermetabolism, immunological impairment and sensitivity to infection), lead to psychiatric disorders (delirium, maladaptive behaviours, depressive

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syndrome and post-traumatic stress disorder) and result in longer hospital stay. A more serious consequence of untreated pain is noted in the statement by Latarjet and Choniere:⁸ 'Although this has not been clearly demonstrated, one may justifiably ask the question whether inadequate pain management could be associated with increased morbidity and even mortality in burned patients.'

Unfortunately pain is often undertreated in burn centres, for which there are various reasons. The majority of these are unfounded, e.g. opioid phobia – fear of administering opioids, fear of later addiction, inability to assess and measure pain and drug efficacy correctly, and lack of uniform pain management protocols.⁸ Analgesics and anxiolytic agents are most effective when given on a regular basis, as the continuous administration of drugs assures an optimal level of pain control.⁹ Psychological intervention (distraction, reappraisal techniques and relaxation) is supplementary to pharmacological management. It is particularly useful in reducing anxiety, which, if left untreated, can contribute to increased pain levels.

Total body surface area (TBSA) burned and location of the injury

Noronha and Faust¹⁰ found a relationship between TBSA burned and post-burn psychological adjustment. According to them children with TBSA burned of 30% or more will have significantly more psychological and adjustment problems. However, this is in contrast to Byrne *et al.*,¹¹ who found no significant correlation between the percentage TBSA burned and psychological adjustment. It is therefore sufficient to conclude that more research on the correlation between TBSA burned and psychological adjustment needs to be done.

The location of the burn injury or area burned was found to have some impact on the psychological adjustment of the patient. Visible scarring and disfigurement can lead to changes in body image, development of emotional problems and psychological/psychiatric disorders, e.g. depression and anxiety.¹⁰ Children and adults with visible scars are often reluctant to appear in public for fear of being stared at or being ridiculed. This can contribute to the onset

of social phobias, which in turn will have an enormous impact on returning to work for the adult, and on returning to school and on social reintegration for the child.

Pre-morbid personality and social functioning

The pre-morbid or pre-burn personality of the child, adolescent or adult is directly related to the post-burn psychosocial adjustment. Personality weaknesses, avoidance coping, mental illness, alcohol abuse, poverty, unemployment and family instability are predictive of poor adjustment.^{4,12} It is estimated that one-third of burn patients suffer from physical or psychiatric disorders or alcohol addiction before the injury.¹³ In developing countries this number may be higher. Burn injuries are often caused by social problems, e.g. violence in the family, overcrowding, and use of cheap, unsafe cooking devices. Alcoholism is a major contributing factor to the aetiology of burn injuries.

Intervention guidelines

Burn injuries are traumatic and patients are often in a state of crisis after such an event. In most burn centres the services of social workers, psychologists, psychiatrists or psychiatric nurses are available. Psychological and emotional support starts at the time of admission and must continue throughout rehabilitation and, if necessary, even longer.

The psychosocial intervention in a burn centre follows the stages of medical treatment. In the critical stage intervention is focused around the support of the family, as the patient is often in a struggle for survival. However, the patient and family need truthful information and support. Patients may experience confusion, disorientation and delirium as a result of infection, alcohol withdrawal or medication.⁴ In the acute stage the patient becomes aware of the losses suffered and the adaptations that need to be made. It is a time of grieving and the patient needs legitimisation and support. Empathic listening and feedback are very important. Depression, acute stress disorder (in the first month) and post-traumatic stress disorder (after 1 month) are common.¹³ It is vital to recognise the need to grieve and to provide the burn survivor with 'space'. Burn patients may experience

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a 'bereavement period' during which they mourn the loss of function, an acceptable appearance and ability. The best approach to this 'grief response' is to provide the patient with hope for the immediate and long-term future. The patient must receive help to work through the crisis. Crisis intervention entails intensive short-term treatment rendered in a crisis situation. It provides the opportunity for growth and development. According to crisis theory, people are more susceptible to intervention while they are in a crisis. Their defence mechanisms are lowered and they are emotionally accessible. The therapist uses this situation to teach new ways of problem solving, to correct faulty perceptions and to suggest lifestyle changes.

Patients (children and adults) must also be prepared for their reintegration into the community. Children and adolescents *per se* will have pre-burn, well-defined self-concepts and body image. Post-burn support and assistance must be provided in the development and restructuring of a new self-image. This is vital for the development of social skills and self-worth. According to Pruzinsky¹⁴ the most fundamental challenge for those with a disfigurement is the social response to it. Patients have difficulty in making new friends, meeting new people, having intimate relationships and obtaining jobs. They feel rejected by the public. According to Robinson *et al.*¹⁵ the behaviour of disfigured people is in part responsible for the problems they encounter during social interaction. These authors proposed that if scarred people could improve the quality of their self-talk and social skills, they would be better able to manage the reactions of others. If they could forget their

scarring, other people would forget it too and social interaction would become more natural. Social skills training has become the intervention of choice for people with disfigurement. Treatment strategies should focus on the development of the burn patient's strengths, abilities and skills, particularly in the case of a child, and the taking of social risks.

On discharge practical assistance is rendered to facilitate transfer from the hospital environment to the community. This includes help with finances, social grant applications, work rehabilitation and referral to resources in the community. During the rehabilitation phase the patient has usually returned to the community. It is a difficult phase, as the patient is confronted with reality and the reaction of the community. Patients return on an outpatient basis for social support and help.

Conclusion

The outcome of burn treatment is measured not only by mortality and morbidity, but also by post-burn psychosocial functioning. Psychosocial interventions can contribute towards successful outcomes and social reintegration. Most burn survivors achieve social adjustment that is within normal limits. Many patients can even do better and show improvement in social functioning after a burn injury. This requires the involvement of the entire burn team, the family and the patient. Mostly, successful recovery requires resilience on the part of the burn survivor.

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In a nutshell

- Social factors have an influence on morbidity and mortality in cases of burn care.
- The most important social factors are support, pain management, TBSA burned, location of the injury and pre-morbid social functioning.
- The quality of social support may influence the patient's chances of survival.
- Pain is often undertreated in a burn unit.
- Pre-burn social functioning is directly related to post-burn psychosocial functioning. In the developing world this compromises the outcome of burn treatment.
- Psychosocial intervention follows the stages of medical treatment.
- Psychiatric, psychological and social work interventions are necessary.
- A team approach is of the utmost importance in burn care.