

Review

Relationship of Substance Abuse and Living Situation on Burn Survivors

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Abstract

Burn injuries are associated with high morbidity and fatality. Severe burns are complicated by an inflammatory and immunological response, metabolic abnormalities, and distributive shock that can cause multiple organ failure and be difficult to manage. Burns pose a considerable impact on patient's quality of life, mental and physical health. A burn injury frequently necessitates a lifelong healing procedure. Changes in survivors' mobility, appearance, and capacity to carry out activities of daily living have an influence on them. Burn injury trauma can persist for years, giving survivors anxiety and making daily life more difficult. Evidence points to substance-abuse disorders and psychiatric comorbidities as having an effect on social reintegration postburn, in addition to damage severity and physical comorbidities. Additionally, increased prevalence of substance addiction and psychiatric illnesses are reported among burn patients and survivors. Long-term and frequently complex hospital care as well as prolonged and unsuccessful postburn rehabilitation have been linked to substance misuse and psychiatric illnesses. Psychiatric rehabilitation is impacted by the stigma attached to burns, substance abuse, mental illness, and pain. Burn patients are commonly prescribed opioids in clinical practice for the management of pain. However, long-term opioid use, albeit beneficial, leads to opioid dependence and may also be associated with other mental health problems. Psychological assessments of burn survivors can also help in prevention of substance abuse. The purpose of this research is to review the available information about relationship of substance abuse and living situation of burn survivors.

Keywords: *burn, survivor, substance abuse, quality of life, addiction*

Introduction

Burn injuries are a trauma that is underappreciated and can happen to anyone, at any time, and place. The majority of burn injuries are caused by heat from hot liquids, solids, or fire, while they can also be brought on by friction, cold, heat, radiation, chemical, or electric sources. They are linked to significant morbidity and death risk. Burn injuries, especially severe burns, are complicated by an inflammatory and immunological response, metabolic abnormalities, and distributive shock that can cause multiple organ failure and be difficult to manage. It is crucial to note that the injury has an impact on the patient's quality of life and mental as well as physical health. Accordingly, burn injury patients cannot be regarded as recovered once their wounds have healed since burn injury causes substantial long-term changes that must be addressed in order to maximize quality of life (1). Globally, 8,378,122 cases of burns were reported in 2019; and these occurrences resulted in 111,292 fatalities (2).

Substance abuse is strongly linked to major morbidity and mortality worldwide. Substance use disorders were the second most common cause of disability among mental illnesses in the 2017 as per the Global Burden of Disease study, accounting for 25% years lived with disability. In 2016, the harmful use of alcohol resulted in some 3 million deaths contributing to 5.3% of all deaths globally and 132.6 million disability-adjusted life years (DALYs) which constituted of 5.1% of all DALYs of that same year. Each year, tobacco use kills more than 8 million people globally and is the primary cause of preventable mortality. Leading risk factors for non-communicable diseases such as cancer, and cardiovascular disease include consuming alcohol and smoking. Although the frequency of opioid usage is lower than that of alcohol and cigarette use, it accounts for 76% of all deaths from substance abuse (3). Burn injuries provide challenging biopsychosocial issues for healing and more thorough, enhanced care. Depending on the degree of the burn, the person's resilience, and the developmental stage at the time of the burn, different burns have different physical and emotional effects. The majority of burn victims bounce back and heal, while some are more delicate and experience difficult results. The stigma associated with burns, substance misuse, mental illness, and suffering has an impact on psychiatric rehabilitation. Results are influenced by a person's resilience, social support, and academic or professional accomplishments (4).

Burns continue to be common, traumatic injuries that have a major, and occasionally long-lasting, impact on the physical and mental health of victims. Burn treatment and therapy goals have experienced a number of paradigm shifts since the development of contemporary burn care in the middle of the 20th century, depending on the most recent clinical information, the resources at hand, and the ongoing goal of providing the best care possible for patients. Thus, the target quality of life became added to the basic treatment goal of survival. Burns research has been concentrating more on ways to improve postburn quality of life by minimizing the need for urgent surgery, minimizing unpleasant dressing changes, and improving hydration management in the acute situation since the early 2000s. The importance of long-term outcome criteria, including scar quality, pain and itching, post-traumatic stress disorder, and overall burn rehabilitation, has also increased. Evidence points to substance-abuse disorders and psychiatric comorbidities as having an effect on social reintegration postburn, in addition to damage severity and physical comorbidities. In addition, burn patients have been found to have higher rates of substance abuse and psychiatric illnesses (5). The purpose of this research is to review the available information about the relationship of substance abuse and living situation on burn survivors.

Methodology

This study is based on a comprehensive literature search conducted on November 14, 2022, in the Medline and Cochrane databases, utilizing the medical topic headings (MeSH) and a combination of all available related terms, according to the database. To prevent missing any possible research, a manual search for publications was conducted through Google Scholar, using the reference lists of the previously listed papers as a starting point. We looked for valuable information in papers that discussed the information about the relationship between substance abuse and living situation on burn survivors. There were no restrictions on date, language, participant age, or type of publication.

Discussion

Burn-related death rates have drastically dropped during the previous 40 years. Improvements in resuscitation and ventilation techniques, infection control, including early excision and burn site closure, and increased support for the hypermetabolic response to trauma have all been significant advances in burn care. Given these higher

survival rates, there is now even greater emphasis on assessing and enhancing burn survivors' quality of life (6). Approximately half of all burn injuries in the United States have a history of acute intoxication from alcohol or other drugs; it is difficult to determine whether the intoxication is the cause of the burn injury. Patients who are inebriated at the time of injury have worse outcomes in terms of mortality, duration of stay in hospitals and critical care units, and development of post-traumatic stress disorder. Due to their inability to tend to their wounds on their own and/or the unavailability of a trustworthy caregiver, many patients with co-occurring mental and substance use disorders will stay in the hospital longer. Furthermore, acute intoxication slows both motor coordination and reaction times, which can lead to more serious injuries and/or inhalation injuries. Alcohol consumption, however, has also been linked to an increase in gut bacterial overgrowth and translocation, raising the risk of sepsis and multiple organ failure (7).

Reflection from literature

A crippling injury such as a severe burn produces excruciating agony both immediately after the incident and throughout recovery and rehabilitation. Burns can leave many patients with chronic pain that affects their ability to sleep, go about their everyday lives, and their quality of life. It is not unexpected that opioids constitute the initial course of treatment for burn injuries because effective pain control is essential to rehabilitation. In a survey of 133 burn facilities long-acting opioids were used during hospitalization in 95% of the cases, or almost always. However, it is normal for people to develop an opioid tolerance and dependency, meaning even greater doses may be necessary to control pain. The rate, patterns, and determinants of prescription opioid usage after discharge from hospital are little understood despite the high prevalence of opioid prescriptions for hospitalized burn patients. Additionally, despite a wide range of burn injuries, the prevalence and prescribing patterns of opioids in the general patient population have not been studied elaborately (8).

Results of a database study showed that the analysis included 466 adult burn survivors in total. A positive Cut down, Annoyed, Guilty, and Eye-opener (CAGE) score for pre-injury substance abuse was reported by almost 18% of these survivors, and more than half of them reported positive CAGE scores at a follow-up time point, 8.9% of individuals who had negative pre-injury CAGE scores at a subsequent follow-up post-burn reported positive CAGE scores. According to these statistics, around 1 in 5 burn victims tested positive for a possible

pre-injury substance use disorder. Positive CAGE scores at a later follow-up imply that substance abuse continues in the majority of these people even after treatment for the acute burn injury. Additionally, a sizable portion of those people who did not have substance abuse problems prior to the injury, as determined by the CAGE at acute burn discharge, tested positive for substance abuse at follow-up over the course of the following few years (9). Findings from the retrospective cohort study showed that overall, the prevalence of substance misuse was 34%. After adjusting for patient and injury variables, drug abuse, alcohol abuse, and drug/alcohol abuse, were all linked to a considerably longer length of stay. Abuse of drugs and/or alcohol was linked to notably increased risks of bacteraemia and sepsis. A current analysis of the relationship between substance usage and clinical outcomes in burn-injured people is necessary due to the ongoing rise in the prevalence of substance abuse among burn patients (10).

Govender et al. reported in their study findings that burn sufferers with full thickness and partial thickness burn degrees as well as more than 30% total body surface area were at a notably higher risk of dying from their injuries. Additionally, compared to situations when these were not present, the risk of mortality was ten times higher when concurrent alcohol and drug use was present. The length of the hospital stay reduced mortality risk by 10% or so. The results could be attributed to the skin's function as the body's primary defence against infections and the accompanying rise in infection risk depending on the severity and extent of any damage. When alcohol and drugs are present together, the risk of more serious burns, severely compromised liver function, sepsis, and mortality are all increased (11).

Spronk et al. described in their study findings that in multivariable analyses, it was discovered that burn severity, postburn depression, post-traumatic stress symptoms, avoidance coping, a lack of emotional or social support, greater levels of neuroticism, and unemployment postburn all contributed to a worsening in health-related quality of life. Additionally, the postburn substance use problem, pain, and female gender were poorer indicators. The degree of burn damage and the psychological reaction to the stress have an impact on health-related quality of life following burns. Both structures offer distinctive knowledge and facts that are essential for the most effective recovery. Therefore, months to years following the burn trauma, both physical and psychological issues need to be addressed (12). Findings from a retrospective cohort study showed that

comparing the burn group to the undamaged cohort, the adjusted rate of post-burn mental health admissions was considerably higher in the burn cohort. When compared to the corresponding ages of uninjured children, the post-burn mental health admission rates for children under the age of five at the index burn were twice as high, three times higher for those aged 5 to 9 and 15 to 18, and nearly five times higher for those aged 10 to 14. The burn cohort showed increased admission rates for mental and behavioural disorders associated with drug and alcohol addiction, psychotic disorders and mood and anxiety disorders (13).

Despite current national attempts to reduce opioid prescribing, burn patients still have a significant need for opioids. Long-term opioid use, albeit beneficial, leads to opioid dependence and may also be associated with other mental health problems. Significantly greater odds of future psychiatric diagnoses, behavioural issues, and polysubstance misuse are observed in burn patients who develop opioid use disorder. Although, opioid use disorder development and its effects could be slowed down by a multidisciplinary team strategy that includes early participation of pain and mental health services (14). When compared to the general community, the prevalence of alcohol and illicit drug use is disproportionately high among burn and trauma patient populations. At least one drug of abuse was detected in 55% of the burn patient's investigation. Illicit drug use and problematic alcohol consumption have both been linked to worse patient outcomes and higher healthcare expenses (15).

Results of a prospective study showed that in all, 22% of the burns were caused by alcohol, although during follow-up, this was not connected to risky drinking. At follow-up, 17 (25%) of the former burn patients were found to have risky drinking habits. The Coping With Burns Questionnaire, which is used in acute care, contains one statement that was found to be the sole indicator of an at-risk drinking pattern years after injury which stated that I use alcohol, tobacco, or other substances to be able to address my difficulties. Compared to the overall population, there were more high-risk drinkers in this burn population. The findings suggest that a pattern of avoidant coping, including the use of alcohol to deal with issues, can be seen of as a potentially changeable component (16). Major burns may have a long-lasting effect on a person's quality of life by causing ongoing issues with scarring, contractures, weakening, thermoregulation, itching, discomfort, sleep, body image, and psychological health.

Along with the burn's immediate effects, intensive care treatment may potentially worsen a patient's cognitive, affective, or behavioural problems. Burn victims have consistently reported lower health-related quality of life than the general population averages (17).

Studies have already delved into a few variables affecting health-related quality of life following burn injuries. In addition to the severity of the original burn injury, the patient's own resources, such as social background, prior medical and mental history, or personal coping mechanisms, can also have an impact on health-related quality of life. Employment after a burn injury is crucial for returning to a normal, everyday life since it can give the victim a routine and a sense of purpose. Most studies followed patients for up to two years after a burn injury, and they found that 66% to 79.7% of patients were able to return to work (18). The number of burn survivors has increased as a result of improvements in acute burn care that significantly reduced mortality. The demand for research that focuses on long-term recovery and addresses social recovery following burn injuries is expanding in light of these trends. An essential component of social recovery is having the capacity to engage in social contacts and activities. Changes in appearance can have a substantial impact on a burn survivor's capacity to engage with people, according to numerous studies. Burn survivors who have physical deformities frequently experience stigmatization and invalidation, and many describe instances of people looking at them, avoiding them, making fun of them, and showing sympathy. Up to 40% of burn victims feel self-conscious about their looks, and some burn victims completely avoid social situations. However, the influence of the burn injury on social interactions and activities of burn survivors is still underexamined in the literature. Avoiding social contacts and activities owing to disfigurement can cause social isolation and negatively affect the psychological health of burn survivors (19). Despite the transition of research paradigm towards quality of life of burn survivors the available studies and literature remains quite unlimited advocating for further research for elaborately studying the relationship of substance abuse and quality of life among burn survivors.

Conclusion

The aftermath of a burn injury can have an impact on a survivor's appearance, mobility, daily activities, and emotional health. Even minor burns can have a long-lasting negative effect on a person's quality of life which may lead to substance abuse among burn survivors to

cope with their mental health. Psychological assessments and evaluations at follow-up appointments can be beneficial in improving the living situation and preventing substance abuse among burn survivors.

Disclosure

Conflict of interest

There is no conflict of interest

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Ethical consideration

Non applicable

Data availability

Data that support the findings of this study are embedded within the manuscript.

Author contribution

All authors contributed to conceptualizing, data drafting, collection and final writing of the manuscript.

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