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Mental health liaison in a regional burns unit—Past, present and future

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ABSTRACT

Objective: To describe the epidemiology of patients assessed by a Psychiatric Liaison Team (PLT) on a Regional Burns Unit in London, UK.

Method: A case note review of all patients assessed by the PLT over a 4-year period was carried out. Data were extracted regarding whether the burn was sustained intentionally or non-intentionally, ICD-10 psychiatric diagnosis, alcohol use at the time of injury and mechanism of injury. The independent t-test and chi-squared test were used for data analysis.

Results: The PLT assessed 81 patients in total, 45 (55.6%) of burns were non-intentional, 32 (39.5%) were deliberate, and 4 patients (4.9%) were victims of an assault. The overall ratio of males to females was approximately equal. The mean age of patients with deliberate burns was younger, as compared to non-intentional burns, this difference was statistically significant ($p < 0.01$). Of the patients in the sample, 95% had a psychiatric diagnosis. We identified a difference in type of psychiatric diagnosis in the non-intentional and intentional burns groups. Alcohol use was linked to 38 (48%) of all patients assessed. Flame injuries were the most common mechanism of injury. Chemical burns, were significantly associated with a diagnosis of personality disorder ($p < 0.05$, chi-square test).

Conclusion: Well-resourced psychiatric liaison teams working collaboratively with burns units are essential to meet the needs of this diverse and complex group of patients.

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1. Introduction

Patients on burns units often present with a variety of psychiatric issues that are linked to the cause or consequence of the injury. Better understanding of the epidemiology of this population will help provide better services for patients, improve relationships with medical and surgical colleagues and enhance education for all staff.

2. Aims

The aims of this study were to profile clinical characteristics of consecutive referrals from a regional burns unit, specifically: (1) was the burn intentional (including deliberate self-harm and suicide-attempts), non-intentional, or the result of an assault. (2) Does the patient have a psychiatric ICD-10 diagnosis. (3) Was there evidence of alcohol involvement at the time of the injury,

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including acute alcohol intoxication, or a history of alcohol dependence. (4) What was the mechanism of the burn injury; thermal (flame, liquid or contact burns), chemical, or electrical.

3. Methods

3.1. Setting

Chelsea and Westminster Hospital is an inner-London teaching hospital that is home to a large regional burns unit. The burns unit has 2 Intensive care beds, 2 High Dependency beds and 9 ward beds and treats around 400 adult inpatients per year. The burns unit staff includes dedicated burns consultants, intensivists, anaesthetists, specialist nurses, occupational and physical therapists, psychologists, a pharmacist, dietitian, and social support team. They also have access to an alcohol liaison nurse, provided by the acute trust. The Psychiatric Liaison Team (PLT) provides mental health care to patients between the ages of 18 and 65 throughout the hospital. In addition to assessment of patients, the PLT provides short-term psychological interventions and advice on psychotropic prescribing and arranges on-going mental health support on discharge from hospital where indicated. The PLT also provides support and training to the burns unit staff.

3.2. Sample

We retrospectively reviewed all cases assessed by the PLT from the burns unit over a 4-year period between May 2013 and May 2017. Referrals were identified using our patient dashboard. This dashboard records basic case information, including referral date, psychiatric diagnosis, and whether the patient is known to have drug or alcohol addiction. This information was combined, and cross-checked with each patient's electronic mental health record, which typically included detailed documentation of each patient's presentation, psychiatric assessments, diagnoses and collateral information from friends, family, and professionals. The PLT routinely contact the GP and mental health services local to the patient to ascertain psychiatric history and diagnoses. Mechanism of injury and how the injury was sustained (non-intentionally deliberately or inflicted by others), including whether the history given by the patient is consistent with the burn injury, is discussed in the weekly burns unit team meeting.

Individuals referred more than once during the same admission were consolidated into one 'case'. Patients under the age of 18, and over the age of 65 were excluded from the sample.

3.3. Analysis

Data from both sources were extracted and combined. The independent t-test was used to compare the mean ages of each group. The Chi-squared test was used to assess the relationship between alcohol and burn cause, and the relationship between psychiatric diagnosis and mechanism of burn.

If data were unclear or incomplete for measures (1) or (3), it was assumed that the burn was non-intentional, and there was no alcohol involvement, respectively.

4. Results

The PLT assessed 81 patients over the period of the study. 45 (55.6%) of burns were non-intentional, 32 (39.5%) were deliberate, and 4 patients (4.9%) were victims of an assault (Table 1).

4.1. Demographics

The overall ratio of males to females was approximately equal in both non-intentional and deliberate burns groups. The age range of patients assessed was 20–63 years old (Table 2). The mean age of patients with non-intentional burns was 46, while the mean age of patients with deliberate burns was 37. This difference was statistically significant ($p < 0.01$) (Table 3).

In our sample of 81 referrals, 77 (95%) patients had a psychiatric diagnosis. The most frequently reported psychiatric diagnoses in patients with non-intentional burns were mood disorder, personality disorders, and schizophrenia respectively. The composition differed in the self-inflicted burns group, with the most frequent psychiatric diagnosis being personality disorder followed by mood disorder, and then substance misuse. See Graph 1 and Table 4.

Table 1 – Sex vs cause of burn.

	Non-Intentional	Deliberate	Victim	Total
Male	24	16	3	43
Female	21	16	1	38
Total	45	32	4	81

Table 2 – Age vs sex.

	Mean age
Male	42
Female	42

Table 3 – Age vs cause of burn.

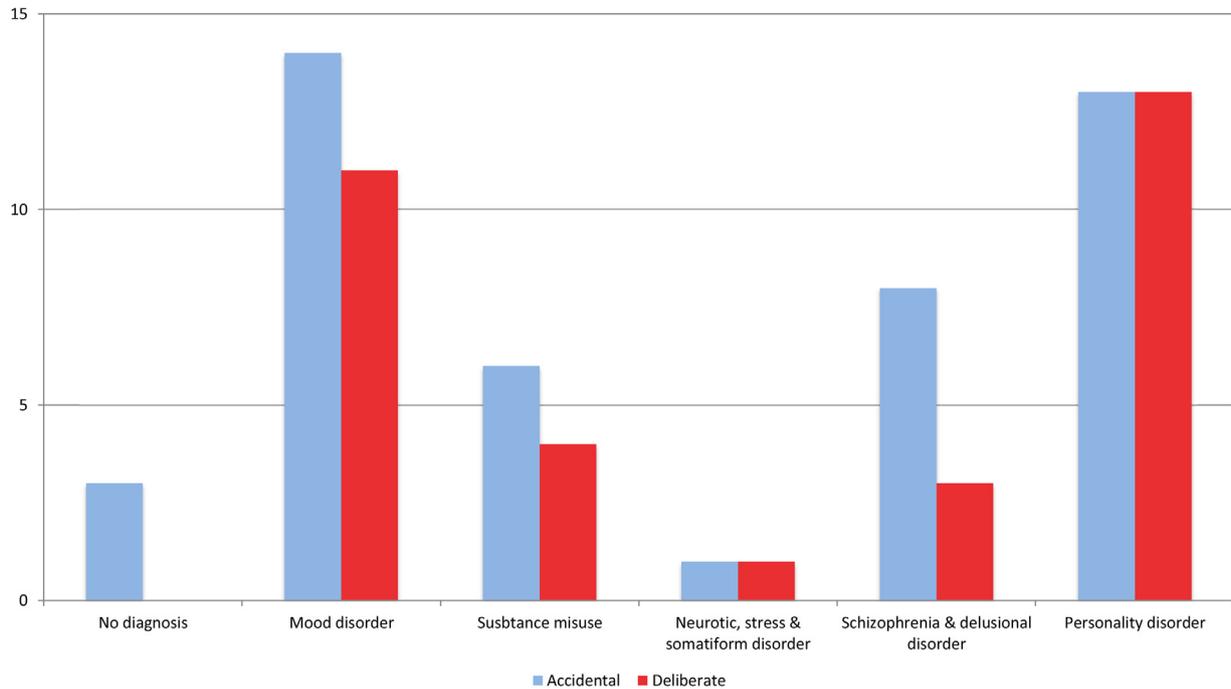
	Mean age
Non-Intentional	46*
Deliberate	37*
Victim	38

* Difference in mean age between non-intentional and deliberate groups was statistically significant ($p < 0.01$).

Table 4 – Primary psychiatric diagnosis.

Diagnosis	Number
None	4
Mood (affective disorders)	25
Mental and behavioural disorders due to psychoactive substance use	12
Neurotic, stress related and somatoform disorders	2
Schizophrenia, schizotypal disorder and delusional disorders	12
Disorders of adult personality and behaviour	26

Graph 1 - Primary psychiatric diagnosis vs cause of burn



Graph 1 - Mental health diagnosis vs cause of burn.

Table 5 – Mechanism of burn injury.

	Chemical	Electrical	Thermal contact	Thermal flame	Thermal liquid
Non-Intentional number, (% non-intentional)	2 (4.4)	1 (2.2)	4 (8.8)	27 (60)	11 (24.4)
Deliberate number, (% Deliberate)	9 (28.1)	2 (6.3)	1 (3.1)	17 (53.1)	3 (9.4)

4.2. Alcohol use

Alcohol use was linked to 38 (48%) of all patients assessed. Alcohol use was identified at the time of injury in 24 (53%) of the non-intentional burns and 13 (40%) of the deliberate burns. This difference was not statistically significant (p=0.27).

Flame injuries were the most common injury in all groups irrespective of psychiatric diagnosis, involvement of alcohol, or whether the burn was non-intentional or deliberate, the exception being assault burns. The next commonest causes of burns in the non-intentional group were due to liquids and then contact injuries, e.g. caused by hot water bottles or

radiators. This differed slightly in the self-inflicted burns group where chemical burns were next most common and then liquid burns were seen (Table 5). Chemical burns, were significantly associated with a diagnosis of personality disorder (p < 0.05, chi-square test) (Table 6).

5. Discussion

The existing literature on burns and mental illness deals primarily with self-inflicted injuries. This group is known to have highly complex needs that pose challenges to care [1].

Table 6 – Diagnosis and burn type.

	Chemical	Electrical	Thermal contact	Thermal flame	Thermal liquid
None	1	0	1	0	2
Mood (affective disorders)	1	1	0	17	6
Mental and behavioural disorders due to psychoactive substance use	1	1	0	9	1
Neurotic, stress related and somatoform disorders	1	0	0	1	0
Schizophrenia, schizotypal disorder and delusional disorders	1	0	0	7	4
Disorders of adult personality and behaviour	7	1	4	11	3

Our data demonstrate that there were large numbers of patients with non-intentional burns who also have complex mental health needs benefiting from multiagency management. Understanding the characteristics and profiles of all patients referred to psychiatric liaison services will help guide teaching, training, and service provision for teams working in these specialist areas. This is particularly important given there is a national drive in the UK to expand Liaison Psychiatry Services, and deliver more integrated care within acute hospitals.

Previous studies have shown that patients with self-inflicted burns have more psychological and social comorbidities, suffer more severe burns, and experience longer hospital admissions with poorer outcomes, likely due to their psychopathology [2-4]. Other studies have found that mental disorders, irrespective of the relationship to an injury, complicate the acute treatment of burns and rehabilitation [5-7]. Such complications are therefore also likely to be seen in patients with non-intentional injuries, who share similar psychiatric diagnoses. This clearly places greater demands on local resources and has financial implications on services.

When exploring the demographics of patients referred to our service, we found an equal sex ratio in the self-inflicted burns group. This has been seen in previous studies [3,8-12], but conflicts recent data from another UK regional burns unit, which found that patients with self-inflicted burns were significantly more likely to be female [2]. In line with recent data, we also found that those in the group with self-inflicted injuries were younger [2].

The presence of a psychiatric diagnosis is strongly associated with self-inflicted burns [1,2,5,8-11,13,14]. In our sample, 95% of patients referred to psychiatric liaison services had a psychiatric diagnosis, but of this group over half had non-intentional burns. One caveat is that it is not always possible to identify accurately whether a burn is non-intentional or self-inflicted. However we believe our data generally reflects the true cause of the burn. Therefore, screening for psychiatric history is also an important consideration in those with non-intentional burns. Self-inflicted burns were most likely to have a diagnosis of personality disorder. This is in contrast to previous data, and the non-intentional burns sample in our population that has pointed to mood disorders consistently being a more common diagnosis than personality disorder [2,3,5,8,17,18].

Past studies have shown that patients with self-inflicted burns have increased rates of alcohol consumption [1,2,5], our findings were in keeping with this, but showed an even greater association with non-intentional burns. Given the overlap, it is worth considering whether there is a case for substance workers to be embedded within the PLT.

Our data corroborate previous studies which have shown burning by flame is the most common mechanism of burn injury in patients who deliberately self-harm [2,3,8]. The finding that self-inflicted chemical burns were significantly associated with personality disorder is pertinent at a time where there has been greater media reporting on acid attacks and much pressure on the government to place

stricter restrictions on being able to buy corrosive substances.

6. Conclusion

Well-resourced psychiatric liaison teams working collaboratively with Burns unit is essential to meet the needs of this diverse and complex group of patients.

7. Declaration of interest

None.

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