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A cross sectional study of assessed need and multiple service use among a self harm population: informing the development of inter-agency integrated care

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Abstract

Purpose: To examine assessed need and wider health and social care service contact for a total Deliberate Self Harm (DSH) population in the UK.

Methods: The study first recorded assessed needs and referrals for this population, then used a new method of identifying and describing all other agency contacts for this population by combining the total anonymised DSH population data with total mental health, health and social care agency populations for one geographical area.

Results: For a DSH unit population of 427, half (53%) were assessed with mental health and 18% with drug or alcohol problems; two thirds were referred to appropriate services. Wider service contact for a total DSH population (n=2,205 over three years) confirmed that 53% had contacted mental health (compared to 2.9% of the geographical area population (n=646,239) and 7.4% of the total hospital Emergency population (n=91,911). The DSH population was three times more likely to contact social care agencies (21.1%: 7.2%) and ten times more likely to attend drug (7.3%: 0.7%) and alcohol agencies (8.8%: 0.8%)

Conclusions: This new method described the wider service use of one vulnerable shared care population, it is suggested that the method could be used to inform the development of integrated care initiatives in different areas.

Keywords

integrated care, Deliberate Self Harm (DSH), emergency, mental health, drug, alcohol

Introduction

Deliberate Self Harm (DSH) or Intentional Self Harm is defined as, 'Intentional self poisoning or injury, irrespective of the apparent purpose of the act,' it includes poisoning, asphyxiation, cutting, burning and other self inflicted injuries [1]. Self poisoning with large doses of drugs is the most common form of deliberate self harm, followed by cutting. DSH is associated with greatly increased rates of suicide [2,3].

When integrated care populations are studied, high rates of DSH have been found, for example in a study of integrated care populations in eleven European countries, Huyse et al. [4] demonstrated that 17% of integrated care 'consultation-liaison' patients were self harm (DSH) patients.

The need for identification and care of those who self harm, in order to prevent suicide and identify co-morbid disorders (such as mental health problems and substance misuse), is recognised internationally [5,6]. Australia, New Zealand, Canada and the UK, have designed systematic approaches to self-harm in Emergency departments [1,6,8,9].

People who deliberately self harm are treated at hospital Emergency departments internationally [5,6]. In the UK, DSH is one of the most common reasons for emergency hospital admission, and one of the top five causes of acute medical admission, resulting in approximately 150,000 attendances at Accident and Emergency Departments annually [1]. Rates of self-harm in the UK are amongst the highest in Europe and are much higher among younger groups and groups with high levels of poverty [1,3,10]. Whilst there are few permanently financed specialist teams for those who self harm in the UK, groups of specialist practitioners may be based in Emergency departments specifically to work with this group (see study below).

Following an extensive national UK study [1] national guidelines for DSH patients were introduced, recommending integrated care for those who self harm (Self

Harm: The physical and psychological management and secondary prevention of self harm in primary and secondary care [1]). The guidelines emphasise the need for early screening and identification of problems in Accident and Emergency departments and the need for health professionals to work together with a range of mental health, substance misuse and social care professionals [1]. As a consequence, many Accident and Emergency departments have started to revise their procedures for screening, assessment and referral of this group.

Although Deliberate Self Harm (DSH) is one of the most common reasons for emergency hospital admission in a range of different countries and there is evidence of mental health [5] and substance misuse problems [11] among this group, we know little about the assessed needs or service use of this population as a whole [3,5].

There are indications that this group contacts a range of different professionals [7,9] and there have been calls for collaboration between agencies and professionals in order to develop integrated care for those with DSH and other problems [5,12]. However, links between health and social care services, particularly mental health services and Emergency departments are undeveloped in many countries [2,3,13].

Although it is recognised that data from total service populations would constitute a valuable guide for inter-agency service planning [14], so far there is very little information concerning the inter-agency service use of this group [12,15].

This study was designed to fill this gap. Whilst there have been studies examining the characteristics of people who self harm in Accident and Emergency departments, it is unclear how far this patient population is shared with other agencies, as there are no previous studies tracking this population across different agencies. This study provides for the first time a clear overall picture of all those who self harm within an Accident and Emergency population, their needs and use of other health and social care services.

Methods

The study first provides a descriptive account of numbers of deliberate self-harm (DSH) patients, and describes the range of assessed need in this group. It then determines the extent to which DSH patients use other health and social care agencies. It does this by combining anonymised data for the following public service populations with coterminous catchment areas for the same county population:- primary health care, social services, drug and alcohol agencies, housing, criminal justice and night shelters.

The first part of the study involved an assessment of need (including mental health and substance misuse need) of all patients in one specialist DSH unit in the UK, followed by the respective referral recommendations from the unit. The unit comprised a small team of one doctor and two Community Psychiatric Nurses whose role was to focus specifically, for one year, on DSH patients (classified as those with: drug poisoning, asphyxiation, cutting, burning and other self inflicted injuries).

The second part of the study examined the health and social care service utilisation patterns for the DSH unit itself (n = 427) and also the total adult DSH population for hospital (n = 2,205) over a three-year period. These service utilisation patterns were compared with those of the wider Accident and Emergency population (n = 91,911) and the total health authority population for the whole geographical area (n = 106,824).

In order to examine contact with other services, data from DSH and hospital populations were combined with other health and social care agency total population data from agencies with coterminous catchment areas covering the same geographical area (county) including: social care services (n = 33,031), mental health services (including all secondary care, in-patient, out-patient, day care and community care patients, n = 27,480), community health services, (including all non-GP and non-hospital health care. n = 106,824), all five county drug and alcohol agencies (n = 5,182), Housing (n = 14,012), night-shelter (n = 546) and Criminal Justice populations (including county police and probation, n = 30,329) within the total Health Authority population in one county (n = 646,239), as registered in NHS records.

The Case Linkage method was used. This involves combining disaggregated data to link the total population records of different agency populations [16]. This method has previously been limited to health populations in the UK with the exception of the work of Godden and Pollock [17] where health and social care populations were combined for a cross-sectional study of one day. The method is limited in that it does not monitor problems relating to administrative, resource and organisational factors which influence utilisation of services.

Data were anonymised at source using the Public Health Laboratories software SOUNDEX system (PHLS), prior to research access, thereby retaining anonymity of individuals, yet using the same anony-

Table 1. Percentage of each assessed need group in the DSH unit referred to other services

Assessed needs*	Mental health service**	Drug agency	Alcohol agency or De-tox.	Social services counselling or hostel	GP	Follow-up or out-patient	Discharge no further service	Total
Depression only (incl. Bipolar)	79 (52%)	0 (0%)	0 (0%)	17 (11%)	24 (16%)	13 (9%)	19 (12%)	152 (100%)
Mild depression/grief	11 (29%)	0 (0%)	0 (0%)	11 (29%)	6 (16%)	1 (3%)	9 (24%)	38 (100%)
Depression + Drug	2 (40%)	1 (20%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (40%)	5 (100%)
Depression + Alcohol	14 (31%)	0 (0%)	7 (16%)	8 (18%)	5 (11%)	4 (9%)	7 (16%)	45 (100%)
Drug problem only	1 (9%)	7 (64%)	0 (0%)	1 (9%)	0 (0%)	0 (0%)	2 (18%)	11 (100%)
Alcohol problem only	4 (9%)	0 (0%)	15 (35%)	8 (19%)	7 (16%)	4 (9%)	5 (12%)	43 (100%)
Drug and alcohol	3 (13%)	5 (21%)	4 (17%)	1 (4%)	3 (13%)	3 (13%)	5 (21%)	24 (100%)
Personality disorder	15 (45%)	0 (0%)	0 (0%)	2 (6%)	6 (18%)	7 (21%)	3 (9%)	33 (100%)
Personality disorder + Alcohol or drugs	7 (54%)	0 (0%)	1 (8%)	1 (8%)	1 (8%)	0 (0%)	3 (23%)	13 (100%)
Schizophrenia	5 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	5 (100%)
Other (stress, eating disorder, anxiety etc)	10 (71%)	0 (0%)	0 (0%)	1 (7%)	3 (21%)	0 (0%)	0 (0%)	14 (100%)
No assessed need	7 (16%)	0 (0%)	0 (0%)	18 (41%)	7 (16%)	5 (11%)	7 (16%)	44 (100%)
Total	158 (37%)	13 (3%)	27 (6%)	62 (15%)	68 (16%)	62 (15%)	37 (9%)	427

*Almost all were referred to only one type of service. Exceptions occur where patients are referred to their GP and another agency, here the GP referral is not recorded.

**The category of 'mental health service' comprised hospital admission or consultant out-patient appointment (51), Psychologist (36), and CPN (108).

misation codes. Ethical approval was gained from all the relevant ethics committees. The combined database included; date of reception, age and gender. Degree of error was estimated by superimposing the probation dataset onto the police dataset for the same geographical area: error varied between 5 and 10% over each of three years. Whilst it is not possible to generalise from this particular population to any other; age range, Jarman index scores and DoE index of deprivation scores were average for similar UK counties [18]. (For a full account of this method project see Keene et al. [19].)

Results

Assessed need and referrals to health and social care agencies

The first part of the study examined the assessed need and referral recommendations of the total population of an Emergency department DSH unit for a period of one year. Overall 53% of the 427 patients were assessed with mental health problems, 18% as having drug or alcohol problems, 15% with dual diagnosis.

Within this, the number of those with depression as their only assessed need was 152, forming 35.6% of the total group of 427. Those assessed with mild depression or grief accounted for 8.9% (38). Those with depression and a drug or alcohol problem accounted for 1.2% and 10.5%, respectively, and those with other psychological disorders such as eating disorders, anxiety and stress accounted for 3% (14). 10% (44) had no assessed needs.

When referrals were examined for each group; 70% of those assessed with mental health problems were referred to mental health services. 64% of those assessed with a drug problem and 35% of those with an alcohol problem were referred to the relevant services. Table 1 illustrates the proportion of each assessed need group referred to external agencies. Overall 158 patients were referred to mental health services (including those not assessed as having mental health problems), some receiving two types of mental health care.

It can be seen in Table 1 that of a total of 427 clients, 79 were diagnosed with depression only, and of these 52% were referred to a mental health service, whereas only 31% of those diagnosed with both depression and alcohol problems were referred to a mental health service.

Table 2. Percentage of Deliberate Self Harm (DSH) populations and emergency department population attending other agencies

% of 3 year Accident and Emergency and DSH populations	Mental Health 27,480	Comm Health 106,824	Social services 33,031	Drug agency 3,080	Alcohol agency 2,102	Housing 14,012	CJS 30,329	Night shelter 546
1 year DSH unit n=427	226 52.9%	62 14.5%	98 23.0%	26 6.1%	51 11.9%	88 20.6%	115 26.9%	16 3.8%
3 year total DSH n=2,205	1,183 53.1%	460 20.9%	466 21.1%	161 7.3%	194 8.8%	467 21.1%	678 30.1%	71 3.3%
3 year total Accident and Emergency n=91,911	6,755 7.4%	23,549 25.6%	6,597 7.2%	607 0.7%	750 0.8%	4,834 5.3%	6.556 7.1%	183 0.2%
Total HA population 646,239	19,029 2.9%	82,751 12.8%	19,461 3.0%	1,206 0.2%	1,476 0.2%	9,833 1.5%	18,461 2.9%	121 0.02%

Proportion of DSH and emergency department populations attending other health, mental health and social care agencies

Referral figures may reflect Emergency department staff referral patterns rather than actual services provided. The extent of actual service use over a three-year period gives a more comprehensive and accurate picture of the multi-agency service use (this cannot be referred to as 'integrated care' because agencies were often not aware that they shared the care of these patients). In Table 2 it can be seen that Emergency department clients overall used more services than the Health Authority population as a whole, and the DSH populations used many more services than the Emergency population. So, whilst less than 3% of the Health Authority (adult) population and 7.4% of the Emergency population as a whole contacted Mental health services, 53% of the DSH population had done so.

All percentages for DSH and DSH-unit populations were significantly different to those of the general Emergency population at ($p < 0.01\%$), (except for the Night Shelter figures which were non-valid).

These figures indicate that service providers already share a large proportion of DSH patients. *For example 98, (23%) of the DSH unit clients attended social care services.* It can also be seen that the percentage of those utilising drug or alcohol services is about ten times as great in DSH populations as in the Emergency population as a whole.

Discussion

This cross sectional descriptive study provides for the first time, a clear overall picture of a vulnerable population of Emergency DSH patients within a total geographical area in the UK. It describes both their assessed needs and their utilisation of a range of different services.

Although this study is limited to the UK only, it has clearly identified and characterised a small 'care population' of DSH patients. The majority of this group had additional problems, for example at least half had mental health problems. These results concur with similar findings in the US [7], Canada [5], and Australia [8]. Similarly a fifth of this population had substance misuse problems, relating to findings of positive associations in the cross-national work of Borges et al. [11].

This group were much more likely to utilise different agencies than comparative populations. For example, 53% of this DSH population were in contact with mental health services over a three-year period. (This is reflected in the work of Horrocks et al. [12] who found rates of approximately 50%.) There were three times as many contacts with Social Services, Housing and Criminal Justice agencies and ten times as many contacts with substance misuse agencies amongst the DSH group compared to the Accident and Emergency population. (Similarly the Accident and Emergency population itself had much higher rates of contact with nearly all agencies when compared to the total county Health Authority population, as a whole.)

These findings not only indicate greater levels of need but also demonstrate that this group is already very resource intensive for different agencies. By identifying and quantifying the extent of (previously unknown) shared care, this study describes for the first time the extent to which a range of different agencies in the UK are already providing care for this DSH population. Whilst these data cannot be generalised to other countries the study raises questions about the extent of need and service use among this group internationally.

These findings do not, in themselves, provide evidence that integrated care would be an effective

solution for DSH populations. However, previous researchers have argued that inter-agency integrated care services would provide a better service for DSH clients across the UK [1], Europe [4] and other countries [5,13]. If, as Colman et al. [5] and Smart et al. [8] suggest, Emergency departments present the ideal setting internationally for comprehensive assessment and co-ordination of collaborative interventions, the method illustrated here could provide Emergency departments with the information they need to plan integrated care initiatives.

It is hoped that this study has illustrated the potential of this new method of collating shared care-population data, to inform inter-agency integrated care planning.

This method has provided, for the first time, an overall map of the service use patterns of a vulnerable population of self-harm patients, as they move through the full range of health and social care agencies in one geographical area. In contrast, present clinical and epidemiological research methods provide little information about total multiple agency 'shared care' populations, as they do not combine data from different agencies treatment systems.

The example used here is of a particular group of vulnerable DSH patients shared between many different agencies. However, the method could be equally effective for studying multiple service use for other groups shared by different agency providers, such as dual diagnosis patients [20].

Similarly, wherever it is possible to combine anonymised datasets to gain information about shared populations, it would be possible to utilise this method. Although, the method would need to be informed by an understanding of policy and practice within different countries and in different health and social care systems.

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Reviewers

Agnes Hultén, MD, National and Stockholm County Council's Centre for Suicide Research and Prevention of Mental Ill-Health, NASP, Sweden.

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Vitae

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