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The enemy within: An econometric analysis of injuries caused by self-harm☆

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ABSTRACT

Using data on injuries presenting at the Emergency Departments of participating hospitals in the Australian state of Queensland, we examine the nature of injuries resulting from self-harm and compare them to injuries from external causes. We ask: who are the persons most vulnerable to self-harm? Are self-harm injuries more (or less) severe than injuries from external causes?

1. Introduction

Self-harm (hereafter, SH) refers to self-inflicted harm where the intention may or may not have been to die. Thus the concept of SH includes instances of attempted suicide and self-mutilation. SH has been a major health problem in the UK for nearly three decades (Hawton et al., 1997). In a study of 6,000 school children aged 15 and 16, researchers at the universities of Bath and Oxford found that 7% had harmed themselves in the previous year: more than half cut their skin, with girls being more likely to harm themselves.[1] In Australia, there were 22,530 cases of hospitalized self-harm in Australia in 2001–02, which equated to 116.0 cases per 100,000 people in Australia: again, compared to males, more females were likely to be admitted to hospital for SH and most cases of SH involved self-poisoning (Heuvel, 2006).

In addition to the gender dimension to SH, about which, as the above discussion indicates, much is known, there is also the issue of race and ethnicity in SH about which less is known. In particular, within an ethnically heterogeneous population, are some ethnic groups more likely to SH than others? A similar question arises with respect to labour markets: do people in different labour market states (students, unemployed, employed) have differing risks of SH? Lastly, there is the question of the severity of injuries caused by SH: are SH injuries comparable in terms of severity to injuries caused by external agents like parents, spouses, and strangers?

Against this background, we use a new set of data to examine the issue of SH. These are data from The Queensland Injuries Surveillance Unit (QISU), which records details of injuries presenting at the Emergency Departments of participating

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[1] The *Economist*, 26 October 2006.

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hospitals in the Australian state of Queensland[2] (hereafter simply "injuries"): The data are obtained from participating hospital emergency departments in the Australian state of Queensland using procedures based upon those developed by the US National Electronic Injury Surveillance System (NEISS)[3] and used by similar to that used by the Victorian Injury Surveillance Unit at Monash University[4] Data items currently collected are;

- Age, sex, postcode
- Country of birth, language
- Time and date of injury event
- Injury text description
- Cause of injury
- Intent of incident (unintentional, assault, etc.)
- Place of injury (e.g. bedroom in boarding house)
- Activity (e.g. playing cricket)
- Nature of injury and body location or ICD-10 code
- Mechanism and major injury factor (e.g. grinder)
- Triage category (indication of severity)
- Admission status.

The QISU recorded 84,583 injuries between 1 January 2003 and 31 December 2005 of which 48% (40,656 injuries), occurred in the home and only 9% (7,951 injuries) occurred in the workplace.[5]

Yet, the vast bulk of the literature which analyses personal injuries is concerned with injuries which occur in the workplace (or in the course of performing one's work). There is very little analysis of injuries which occur in the home even though, as noted above, such injuries comprise a large proportion of the total. The purpose of this paper is to provide a partial remedy for this neglect by analysing, using the injuries recorded on the QISU data base between 1 January 2003 and 31 December 2005, injuries which were the result of SH and which occurred mainly – though not exclusively – in the home.

We examine the nature of injuries resulting from SH and compare them to injuries from external causes by asking: who are the persons most vulnerable to SH and is there a gender or ethnic or employment state risk to SH? If so, what is the size of the risks emanating from these sources? Are SH injuries more (or less) severe than injuries from external forms of assault? In answering these questions, our study differs from other studies of SH – which have appeared mainly in medical journals – in three important respects.[6] First, we have a larger sample of SH injuries than most studies. Second, we are able to identify groups who are most at risk from SH and most importantly, to *quantify* the size of this risk. Third, we are able to compare SH injuries with injuries from other forms of assault, both in terms of the type of persons who are likely to SH and in terms of the gravity of their injuries.

2. The nature of injuries due to self-harm

The QISU reports the *intention* underlying an injury: 93% of the total number of injuries was accidental; 4% was the result of assault; 2% was due to "other intentions"; and 1% was the result of SH. In total, over the three year period 2003–05, the QISU identified 784 cases where the injury was due to SH. Table 1 sets out the salient features of injuries due to three intentions: SH; assault; and accidents.

Injuries resulting from SH are mainly – though not exclusively – to women. As Table 1 shows, nearly two out of three injuries from self-harm were to women. By contrast, 68% of injuries resulting from assault, and 62% of accidental injuries, were to men. The average age of the injured parties in cases of self-harm 25 years, compared to 28 years for assault injuries and 18 years for accidental injuries.

Table 1 also shows that while 50% of assault injuries, and 23% of accidental injuries, were to the "head" (head, face (excluding eyes), or neck) only 3% of self-harm injuries were so located: the vast bulk of self-harm injuries were to systemic locations (66%) and to the upper limbs (26%). Indeed, the main modes for inflicting injuries on oneself were drugs and medicinal substances (56%) and cutting and piercing (31%). There was a marked difference between men and women in their modes of SH injury: 61% of women who harmed themselves, compared to 48% of men, did so through drugs and medicinal substances; 11% of men harming themselves, compared to only 2% of women, did so through collision with an object (usually, a wall or floor).

The overwhelming number of SH injuries were sustained in the home (69%: 70% for women and 67% for men) compared to 34% of assault injuries and 49% of accidental injuries. Only 4% of SH injuries resulted in a superficial wound (compared

2 For details of the QISU data see http://www.qisu.qld.gov.au.

3 http://www.cpsc.gov/en/Research–Statistics/NEISS-Injury-Data/.

4 Participating hospitals include; Mater Adult Private, Nanango, Princess Alexandra, Redland, St. Vincent's Toowoomba, Tully, Atherton, Robina, QE11, Bundaberg, Innisfail, Mackay, Maryborough, Mater Children's, Mount Isa, Townsville, Royal Children's Brisbane, Yeppoon, Cherbourg, Claremont, Collinsville, Dysart, Moranbah, Proserpine, Sarina, Hughenden (paper records only) Mater Mackay (paper records only).

5 10% of all injuries occurred at school or other public institutions; 13% occurred in recreation or sports areas; 8% occurred in the street; and 12% occurred at "other places".

6 See *inter alia* Fortune (2006), Whitlock et al. (2006), Hawton and James (2005), Sinclair and Green (2005).