Self harm and attempted suicide in psychiatric inpatient care: a literature review

Report from the Conflict and Containment Reduction Research Programme

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1 Introduction

Self harm is a common, and important clinical problem, in 2000-2001 around 220,000 people presented to accident and emergency departments across England requiring treatment following self harm (Hawton et al, 2007), and people who self harm are 66 times more likely to die by suicide compared to the general population (Hawton, Zahl & Weatherall, 2003). The term ‘self harm’ describes an act through which a person intentionally harms themselves. It encompasses a wide range of behaviours including cutting, burning, hanging or self poisoning, which can have a variety of functions such as self punishment, the relief of tension, an expression of psychological pain, or attempted suicide. Self harm is closely linked to poor mental health, and it is estimated that over 90% of people who self harm meet the criteria for diagnosis of a psychiatric disorder (Haw et al., 2001). Admission to a psychiatric ward occurs for around 10% of people treated by accident and emergency staff following self harm (Gunnel et al., 2004), and this is often to prevent further self harm or attempted suicide (Ziegenbein et al. 2006). Additionally, inpatient care may also provide a therapeutic environment which can help to promote recovery (Cutcliffe et al. 2007). This review will address all published, peer reviewed research into the characteristics and care of people who self harm or attempt suicide during an admission to psychiatric inpatient services.

1.1 The definition of ‘self harm’

There has been much debate about the precise definition of the term ‘self harm’, particularly around whether it should include acts of attempted suicide. The UK’s National Institute for Clinical Excellence (NICE) guidance for the treatment of self harm defines ‘self harm’ as ‘self-poisoning or self-injury, irrespective of the apparent purpose of the act’ (National Institute for Clinical Excellence 2004), and consequently does not differentiate between self harm and attempted suicide. NICE has been criticised by some, who argue that although attempted suicide and self harm are related there is evidence to suggest that these acts are not representative of the same psychological processes, and so consequently require different clinical interventions (Simpson 2006). Current research however does not make this distinction. A recent paper by Bergen et al, investigating the epidemiology of self harming behaviour in the UK included all self harm ‘irrespective of motivation’ (Bergen et al. 2010), and 78% (n=69) of papers included in this review followed this
definition. Consequently, this review has adopted the definition of self harm outlined in the NICE guidance (National Institute for Clinical Excellence 2004), although papers which specifically looked at attempted suicides (n= 10) will be addressed separately throughout. This issue is discussed further in section 17.9.

2 Method

2.1 Literature search

Electronic searches of the main databases were conducted to identify all empirical studies of inpatient self harm and attempted suicide published in English. The databases searched were: PsycInfo, Cochrane, Medline, EMBASE Psychiatry, CINAHL and the British Nursing Index. The search terms used were: Self harm/self-harm, Factitious Wounds, Self Mutilation, Attempted suicide, Injuries, Self-Inflicted, Self-Injurious Behaviour, Self Destructive Behaviour, Self Inflicted Wounds, Parasuicide and Automutilation. Following this initial search, the numbers of identified references were reduced by searching within the findings for any of the following terms: Inpatient*, hospital*, ward*, psychiatr* or mental*. Resulting titles and abstracts were then inspected for relevance. Where there was any ambiguity, the original was obtained and inspected. Only studies including people who had self harmed or attempted suicide whilst in psychiatric inpatient care were included. As the literature accumulated, further references were obtained by following up citations. Two papers reporting the findings of studies conducted by the research group (not yet published) were highly relevant to this review, and so were also included. The final number of identified empirical studies was 90 (See Appendix 1 for a full list of studies included).

2.2 Analytic procedure

The aim of the literature review was to establish existing evidence for and against the ‘City model’ of the relationship between staff behaviour and rates of conflict and containment within psychiatric nursing care (Bowers et al. 2006). ‘Conflict’ is defined as those things that threaten patient and staff safety, such as aggression, rule breaking, drug/alcohol use, absconding, medication refusal, self-harm-suicide etc. ‘Containment’ is defined as those things the staff do to prevent these things occurring, or reduce the amount of harm that occurs, such as giving extra
medication, intermittent observation, constant observation, show of force, manual restraint, coerced injections of medication, seclusion, locking of the ward door etc. This review also aimed to assess commonality and links between self harm, containment and other types of conflict, as well as factors such as service user characteristics, service user experiences, staffing factors and interventions used. A structured data extraction tool was created with various headings including sample, methodology, admission status, age, gender, ethnicity, ward type, service setting, risk status, time spent on ward, rates of restraint, antecedents/causes, service users’ views, staff views, etc. Where published papers provided empirical evidence, this was entered on the tool. The headings of the resultant matrix have then been summarised for the purposes of this review.

3 Methodologies of the studies reviewed

The vast majority of studies included in this review were quantitative (n=72), ten studies collected and analysed qualitative data and eight studies used mixed methods (see Appendix 1).

3.1 Quantitative research studies

3.1.1 Quantitative study design

Thirty five studies used a case-control/comparison approach, where the characteristics of different groups of service users were compared. The majority of these studies compared people who self harmed with those who did not (n=23), or people who attempted suicide with those who did not (n=3). These papers provided robust information about the characteristics associated with self harm and attempted suicide. Other case-control studies made comparisons between people who self harmed and those who were violent (n=3), who used different methods of self harm (n=2), who had different symptoms (n=1), who were admitted to different types of ward (n=1), or those who were in different countries (n=1).

Eight studies evaluated the impact of an intervention on the rates of self harm in inpatient psychiatric services; two used a control group, and six did not.

Some studies investigated the incidence, or type of self harming behaviour and the profile of service users who self harm (n= 15) or attempt suicide (n= 2). A number of
papers were primarily interested in aggressive service users, and included aggression against self in their analysis (n=8). Other studies investigated the impact of containment measures on self harm and attempted suicide (n=9), explored staff perceptions of self harm (n=1), or conducted a cost analysis (n=1). One study used a natural before and after design to investigate the impact of a change in ward management on self harm, and another tested the validity of a clinical tool to predict aggression and self harm.

3.1.2 Quantitative data collection

A large number of quantitative studies collected data retrospectively from service user notes or incident reports (n=40), or used some kind of scale or questionnaire to capture information about self harm (n=30). Some examined incidents of self harm prospectively (n=6), two studies collected data by interviewing service users and staff, and two studies collected quantitative data through clinical observations of service users.

3.2 Qualitative research studies

The majority of qualitative and mixed method papers presented case studies which were mainly based on clinical observations of service users (n=6), or interviews with nursing staff (n=4). A small number of studies included a retrospective analysis of service user notes (n=3) or interviews with service users (n=4). In one study interviews were conducted with both service users and staff.

3.3 Setting

Studies were conducted across 13 different countries, however the majority of research took place in the UK and the USA, with smaller numbers of projects in other Western countries (Table 1).
Table 1: Countries where studies were completed (one study was conducted across three countries)

<table>
<thead>
<tr>
<th>Country</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>43</td>
</tr>
<tr>
<td>USA</td>
<td>24</td>
</tr>
<tr>
<td>Australia</td>
<td>5</td>
</tr>
<tr>
<td>Republic of Ireland</td>
<td>3</td>
</tr>
<tr>
<td>Canada</td>
<td>3</td>
</tr>
<tr>
<td>Germany</td>
<td>3</td>
</tr>
<tr>
<td>Greece</td>
<td>3</td>
</tr>
<tr>
<td>Norway</td>
<td>2</td>
</tr>
<tr>
<td>Sweden</td>
<td>2</td>
</tr>
<tr>
<td>Italy</td>
<td>1</td>
</tr>
<tr>
<td>Mexico</td>
<td>1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1</td>
</tr>
</tbody>
</table>

3.4 Quality

This review includes studies of varying quality, with sample sizes from just a few service users to over 20,000. Throughout this review the methodology and sample size are noted where relevant, to give an indication of the quality and scale of the study. It is also important to note that this review includes all relevant papers published from 1960-2010, and so features a number of studies conducted some years ago (20 papers published before 1990). It may be that findings reported in older papers are not as relevant to current practise in inpatient psychiatry, particularly with regards to the characteristics of service users and the types of containment measures used to manage self harm and attempted suicide. This should be considered when reading the review.

4 Incidence

There were 51 papers that provided enough information to calculate rates for self harm and attempted suicide in inpatient care. Rates are reported below, and were expressed using either patient, or incident based calculations. Patient based percentages (n=26) reflect the percentage of service users who self harmed during the study period, whilst event based percentages (n=30) express incidents of self harm as a percentage of the total number of people admitted during the study period. A smaller number of rates could be calculated for the number of incidents per 100
admissions per month (n=19), and the number of people who self harmed or attempted suicide per 100 admissions per month (n=20).

There was a wide range in the numbers of service users who self harmed during each study period (Table 1), with patient based percentages ranging from 0.67 to 68.75% (mean 17.10%; s.d 19.87), and the number of service users involved in an incident per 100 admissions ranging from 0.67 to 68.75 (mean 19.39; s.d 23.80). There was an even wider range in event based rates, with event based percentages ranging from 0.35 to 4823.75% (mean 338.36; s.d 947.69), and the number of incidents per 100 admissions per month ranging from 0.35 to 1868.60 (mean 264.79; s.d 567.17).

There were 7 papers that looked specifically at rates of attempted suicides, which were far lower than rates of self harm (Table 1). The means for event based rates, particularly rates per 100 admissions, were higher than patient based rates for both self harm and attempted suicides. There were on average 19 service users who self harmed, and 265 incidents of self harm per 100 admissions per month. This suggests that in the majority of studies there were a number of service users who self harmed on more than one occasion, with each service user self harming an average of 14 times a month. Although the rates are much lower than self harm, the mean patient and event based rates also indicate that service users who attempt suicide are likely to do so more than once, with an average of 2 attempts per patient per month.

<table>
<thead>
<tr>
<th>Rate</th>
<th>SELF HARM</th>
<th>ATT SUICIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>Event percent</td>
<td>30 0.35</td>
<td>4823.75</td>
</tr>
<tr>
<td>Patient percent</td>
<td>26 0.67</td>
<td>68.75</td>
</tr>
<tr>
<td>Patient: rate/100 admission/month</td>
<td>15 0.67</td>
<td>68.75</td>
</tr>
<tr>
<td>Event: rate/100 admission/month</td>
<td>16 0.35</td>
<td>1868.60</td>
</tr>
</tbody>
</table>

### 4.1 Repetitive self harm

A number of studies provided specific information about service users who self harmed on more than one occasion during each study period. Five studies reported the proportions of these service users, which was on average 32% of all service users who self harmed, and ranged from 9% (Beasley 1999) to 49% (Stewart et al, in press). The number of incidents per service user ranged from 2 (Gardner & Gardner
1975) to over 100 per year (Swinton, Hopkins, & Swinton 1998), and one paper reported that 45% of service users who self harmed did so more than 10 times in a year (Swinton, Hopkins, & Swinton 1998). One paper looked at the timing of repetitive self harm during the first two weeks of admission and reported that the mean interval between repeated self harm incidents was 2.2 days (Stewart et al, in press). Two papers looked at the diagnosis of service users who repeatedly self harmed, one found that 77% had a diagnosis of personality disorder, and that 92% were female (Beasley 1999), and another that service users with a diagnosis of a psychopathic disorder were significantly more likely to have higher rates of self harm (Swinton, Hopkins, & Swinton 1998).

Only one paper reported information about people who repeatedly attempted suicide, this study looked at rates of conflict and containment amongst 522 service users during the first two weeks of their admission. The study found that 30% (n=7) of people who attempted suicide did so more than once, with a maximum number of seven attempts, and a mean of 1.7 attempts per service user. The mean interval between repeated attempted suicides was 2.1 days (Stewart et al, in press).

4.2 Rates of self harm within different services

Studies providing information about the rates of self harm were conducted within acute (n=16), forensic (n=11), psychiatric intensive care (n=3) and mixed (n=3) wards, allowing for comparisons to be made across different types of wards. On average, forensic wards had the highest rates of self harm, and acute wards the lowest (Table 2).

This comparison could not be made for rates of attempted suicide as all of these studies were conducted within acute psychiatric wards only, however one study compared the numbers of attempted suicides reported across different services during 2009 and found that the vast majority of reports of attempted suicide came from acute psychiatric wards (85%, n=208). With smaller numbers reported by forensic wards (11%, n=27) and very few by older adult mental health (3%, n=8) and mental health rehabilitation (0.4%, n=1) services. After taking into account the numbers of beds within each service nationally, this study found that there were significantly more reports of attempted suicide on acute wards compared to other types of services, and that the odds of an acute ward reporting an attempted suicide were over 7 times greater than for other wards (Bowers et al, in press).
### Table 2: Rates of self harm for different types of ward

<table>
<thead>
<tr>
<th>Type of ward</th>
<th>Rate</th>
<th>Number of studies</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient percent</td>
<td>17</td>
<td>0.67</td>
<td>20.51</td>
<td>7.19</td>
<td>5.47</td>
<td></td>
</tr>
<tr>
<td>Event percent</td>
<td>15</td>
<td>0.35</td>
<td>251.28</td>
<td>35.31</td>
<td>71.47</td>
<td></td>
</tr>
<tr>
<td>Patient: rate/100 admission/month</td>
<td>8</td>
<td>0.67</td>
<td>10.54</td>
<td>4.72</td>
<td>3.29</td>
<td></td>
</tr>
<tr>
<td>Event: rate/100 admission/month</td>
<td>6</td>
<td>0.35</td>
<td>23.95</td>
<td>6.13</td>
<td>9.00</td>
<td></td>
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<tr>
<td><strong>Forensic</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient percent</td>
<td>7</td>
<td>17.26</td>
<td>68.75</td>
<td>42.85</td>
<td>22.39</td>
<td></td>
</tr>
<tr>
<td>Event percent</td>
<td>11</td>
<td>18.23</td>
<td>4823.75</td>
<td>871.51</td>
<td>1450.33</td>
<td></td>
</tr>
<tr>
<td>Patient: rate/100 admission/month</td>
<td>5</td>
<td>17.26</td>
<td>68.75</td>
<td>46.16</td>
<td>24.55</td>
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<tr>
<td>Event: rate/100 admission/month</td>
<td>8</td>
<td>18.23</td>
<td>1868.6</td>
<td>522.61</td>
<td>733.01</td>
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<tr>
<td><strong>Mixed</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Patient percent</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Event percent</td>
<td>3</td>
<td>2.83</td>
<td>8.89</td>
<td>6.18</td>
<td>3.08</td>
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</tr>
<tr>
<td>Patient: rate/100 admission/month</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Event: rate/100 admission/month</td>
<td>1</td>
<td>2.83</td>
<td>2.83</td>
<td>2.83</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>PICU</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient percent</td>
<td>2</td>
<td>10.75</td>
<td>11.52</td>
<td>11.14</td>
<td>0.54</td>
<td></td>
</tr>
<tr>
<td>Event percent</td>
<td>1</td>
<td>16.13</td>
<td>16.13</td>
<td>16.13</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Patient: rate/100 admission/month</td>
<td>2</td>
<td>10.75</td>
<td>11.52</td>
<td>11.14</td>
<td>0.54</td>
<td></td>
</tr>
<tr>
<td>Event: rate/100 admission/month</td>
<td>1</td>
<td>16.13</td>
<td>16.13</td>
<td>16.13</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

### 5. Characteristics of service users who self harm

#### 5.1 Age

##### 5.1.1 Age and self harm

The mean age of people who self harmed during an admission was reported in 14 studies and ranged from 20 (Bowers, Simpson, & Alexander 2003) to 37 years old (Chengappa et al. 1999). A number of studies reported people’s age in groups, and generally found that self harm was more common among the younger age groups. One study reported that 42% (n=8) of service users were under 26 (Myers & Dunner 1984), and another that over 69% (n=11) were under 35 (Beer et al. 2010). One study examining 19 cases of self harm where there was suspected negligence of staff reported that 79% of service users were under 31 years old (Gournay K. & Bowers 2000).

Nine case control studies used statistical tests to compare the ages of people who self harmed with those who did not, these studies provide the most reliable data regarding the associations between age and self harm. Four found no significant differences in age (Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Karson &
Bigelow 1987; McKerracher, Loughnane, & Watson 1968a; Modestin & Kamm 1990), however five, including a large study of 2,486 admissions found that people who self harmed were significantly younger than those who did not (Bowers, Simpson, & Alexander 2003; Callias & Carpenter 1994; Jackson 2000; Low et al. 1997). One study found that only people with a history of self harm, who also self harmed during their admission (n=53) were significantly younger than control groups (Hillbrand 1995). It was possible to conduct a meta analysis of three case control studies included in this review (Hillbrand et al. 1994; Hillbrand 1995; Jackson 2000). Figure 1 shows the difference in mean age between service users who self harmed, and those who did not during their inpatient stay. The heterogeneity between these studies was low (Q = 0.69, p < 0.71, I^2 = 0.0%) suggesting that they could be reliably combined for this analysis. The meta analysis found that the mean age of service users who self harmed was 0.69 years younger than the mean age of those who did not (95% confidence intervals [CI], -0.95 to -0.43, z = 5.15, p < 0.01). This result suggests that although service users who self harm are likely to be younger than those who do not, they are not a great deal younger. However, these results are in agreement with the data reported in five case control studies (including one very large study), providing some robust evidence that service users who self harm are likely to be younger than those who do not.

**Figure 1: Forest plot showing the association between age and self harm**

<table>
<thead>
<tr>
<th>Study</th>
<th>SMD (95% CI)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hillbrand (1994)</td>
<td>-0.57 (-0.96, -0.18)</td>
<td>44.17</td>
</tr>
<tr>
<td>Jackson (2000)</td>
<td>-0.74 (-1.20, -0.29)</td>
<td>33.36</td>
</tr>
<tr>
<td>Hillbrand (1995)</td>
<td>-0.84 (-1.39, -0.29)</td>
<td>22.47</td>
</tr>
<tr>
<td>Overall (I-squared = 0.0%, p = 0.710)</td>
<td>-0.69 (-0.95, -0.43)</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Difference in mean age (SH- noSH)
5.1.2 Age and attempted suicide

Four studies included information about the ages of people who attempted suicide during an admission. One very large study of over 20,500 admissions found that the mean age of people attempting suicide was 37 (Neuner et al. 2008), one study of 244 attempted suicides found that the average age was 34 years old, and ranged from 17-77 (Bowers et al, in press). A smaller study of 15 attempts reported that 79% were by people between the ages of 36 and 55 (Lee et al. 1989). One case control study of 522 service users found that attempted suicide was significantly associated with younger age (Stewart et al, in press). There is therefore preliminary evidence to suggest that people of a younger age are at an increased risk of attempted suicide.

5.2 Gender

5.2.1 Gender and self harm

In general, studies that gave a descriptive account of the gender of people who self harmed during an admission reported more women than men, however case control studies which conducted a statistical analysis of this data found no significant associations between gender and self harm. The results of descriptive studies are as follows: In total eight papers reported higher numbers of women self harming during their admission (Ballinger 1971;Beasley 1999;Burrow 1992;Modestin & Kamm 1990;Pao 1969;Phillips & Alkan 1961), including one study of 66 service users who self harmed found that 85% were female (Burrow 1992), and another of 2,816 admissions that reported that women were three times as likely to self harm than men (Phillips & Alkan 1961). Three papers reported that higher numbers of male service users self harmed (Callias & Carpenter 1994;Gournay K. & Bowers 2000;Myers & Dunner 1984;Sweeny & Zamecnik 1981) including a study of 2,486 admissions, that found that 60% of service users who self harmed were male. This study also found that significantly more women than men injured themselves by scratching and cutting (Callias & Carpenter 1994). Additionally a paper examining cases of self harm where there was suspected negligence of staff reported that 68% of service users were male (Gournay K. & Bowers 2000). Finally, a study of 14 service users, and another of just 4, reported equal numbers of men and women (Beer, Muthukumaraswamy, Khan, & Musabbir 2010;Oulis et al. 1996).
Although most studies that reported the gender of service users who self harmed found higher numbers of women than men, case-control studies provided a more robust assessment of the relationship between gender and self harm and found that there was no significant association between gender and self harm (Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Bowers, Simpson, & Alexander 2003; Callias & Carpenter 1994; Karson & Bigelow 1987; Myers & Dunner 1984). It was possible to conduct a meta analysis of seven case control studies included in this review (Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Brown & Bass 2004; Burrow 1992; Callias & Carpenter 1994; Modestin & Kamm 1990; Oulis, Lykouras, Dascalopoulou, & Psarros 1996; Phillips & Alkan 1961), however the amount of variability due to heterogeneity between studies was high ($I^2 = 89.40\%$, $Q = 56.65$, $p > 0.001$), and so the results were invalid. Based on the data reported in case control studies, the findings of this review suggest that there is no association between gender and self harm within psychiatric inpatient care.

### 5.2.2 Gender and attempted suicide

All studies that included data regarding gender differences in people who attempted suicide reported higher numbers of women than men. One study did not conduct a statistical analysis of this data (Pirkis, Burgess, & Jolley 1999), whilst two case control studies, including one study of over 20,500 admissions reported significantly higher numbers of women attempting suicide than men (Lee, Villar, Juthani, & Bluestone 1989; Neuner, Schmid, Wolfersdorf, & Spiebl 2008). One study of 40 attempted suicides found that the odds of women attempting suicide were over five times greater than for men (Stewart et al, in press), and another study of 244 reports of attempted suicide found that over two thirds (70% vs 21%) were by women. This study also found that there were significant differences in the proportions of men and women using different methods of strangulation, with a higher proportion of women using self ligatures (55% vs 33%), and a higher proportion of men attaching ligatures to ligature points (29% vs 51%) (Bowers et al, in press).

### 5.3 Ethnicity

Findings regarding the ethnicity of service users who self harmed were inconsistent; Two studies reported higher numbers of people from white ethnic background (Beasley 1999; Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Chengappa, Ebeling, Kang, Levine, & Parepally 1999), however there were mixed results from the
three case control studies that included data on ethnicity; One found significantly more people were of white ethnic origin (Beer, Muthukumaraswamy, Khan, & Musabbir 2010), and two found no significant differences in ethnicity (Hillbrand, Young, & Krystal 1996; Myers & Dunner 1984). One international study found that in Greece, people from an ethnic minority background were significantly more likely to self harm, however in Italy and the UK there was no association between self harm and ethnicity (Bowers et al. 2005b).

It was possible to conduct a meta analysis of six case control studies reporting data on ethnicity (Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Brown & Bass 2004; Burrow 1992; Callias & Carpenter 1994; Modestin & Kamm 1990; Oulis, Lykouras, Dascalopoulou, & Psarros 1996; Phillips & Alkan 1961), however the amount of variability due to heterogeneity between studies was high ($I^2 = 89.40\%$, $Q = 56.65$, $p > 0.001$), and so the results were not valid.

None of the studies which looked specifically at attempted suicide included any data on ethnicity.

### 5.4 Diagnosis

It is difficult to reliably compare studies examining the diagnoses of people who self harm as a wide variety of different diagnostic categories were used by the studies included in this review, perhaps reflecting changes in diagnostic systems over time. Case control studies provided the most reliable data regarding associations between diagnosis and self harm. In general, most studies found that people with a diagnosis of a personality disorder were significantly more likely to self harm during their admission, whilst the relationship between diagnosis and self harm for other psychiatric disorders remains unclear. Findings from studies of attempted suicide suggest that people with a diagnosis of a personality disorder, depression or schizophrenia are more likely to attempt suicide during their admission.

#### 5.4.1 Diagnosis and self harm

A number of studies featured the diagnoses of ‘psychopathic’ or ‘psychotic’ disorder, and these had inconsistent results. One found that more service users without a psychopathic disorder self harmed during their admission (36% vs 0%) (Hill, Rogers,
& Bickford 1996a), whilst two reported that higher numbers of service users with a psychotic disorder self harmed (Jackson 2000; Pao 1969)

Four papers reported information about people with a diagnosis of schizophrenia. One study found that 55% of people who self harmed had this diagnosis (Ballinger 1971), however case control studies had mixed results; One found that service users with a diagnosis of schizophrenia were significantly less likely to self harm (Hillbrand, Krystal, Sharpe, & Foster 1994), another found that people with this diagnosis were significantly more likely to self harm, whilst those with a diagnosis of schizoaffective disorder were less likely to self harm (Beer, Muthukumaraswamy, Khan, & Musabbir 2010), and one study found no significant association between schizophrenia and self harm (Karson & Bigelow 1987)

Studies looking at affective disorders also had inconsistent results. One case control study found that 55% of people with a diagnosis of depression self harmed, compared to 31% of controls, however this difference was not significant (Modestin & Kamm 1990). Another such study found that people who self harmed were significantly more likely to have a diagnosis of depression (Myers & Dunner 1984), while two other case control studies found no significant association between self harm and diagnoses of depression, bipolar disorder (Beer, Muthukumaraswamy, Khan, & Musabbir 2010) or affective disorders (Callias & Carpenter 1994)

A number of studies reported that the most common diagnosis amongst people who self harmed during an admission was borderline personality disorder (Beasley 1999; Burrow 1992; Nijman, Joost, & Campo 2002). Four case control studies, including one large study of over 2,000 service users (Myers & Dunner 1984) found that people who self harmed were significantly more likely to have this diagnosis (Drew 2001a; Hillbrand, Krystal, Sharpe, & Foster 1994; Low, Terry, Duggan, MacLeod, & Power 1997), while one study found they were significantly less likely to have this diagnosis (Callias & Carpenter 1994), and two found no associations between this diagnosis and self harm (Gardner & Gardner 1975; Mannion 2009)

A small number of studies examined the relationship between substance misuse and self harm. One study found that 71% of those who self harmed had a history of alcohol abuse, and 54% a history of substance abuse (Beasley 1999), and a case control study found that people who self harmed were significantly more likely to have a history of drug and alcohol abuse (Myers & Dunner 1984). One paper,
however reported that those who self harmed were less likely to have experienced these problems (Hillbrand, Krystal, Sharpe, & Foster 1994)

Finally, five studies found that there were no significant relationships between self harm and any psychiatric diagnosis (Bowers, Simpson, & Alexander 2003; Fresan et al. 2005; Hillbrand 1995; McKerracher, Loughnane, & Watson 1968a; McKerracher, Loughnane, & Watson 1968b; Modestin & Kamm 1990)

**Meta analysis**

It was possible to conduct a meta analysis of three case control studies included in this review (Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Gardner & Gardner 1975; Modestin & Kamm 1990), however the amount of variability due to heterogeneity between studies was high; Affective disorders vs other diagnoses ($I^2 = 71.40\%, Q = 6.99, p > 0.05$); Schizophrenia vs other diagnoses ($I^2 = 95.70\%, Q = 23.25, p > 0.001$), and so the results were invalid.

Based on the data reported in case control studies, the findings of this review suggest people with a diagnosis of a personality disorder are at an increased risk of self harm during their admission, however the relationship between diagnosis and self harm for other psychiatric disorders remains unclear.

**5.4.2 Psychiatric symptoms and self harm**

A number of studies looked at some of the symptoms experienced by service users who self harm. One such study found that people who self harmed experienced significantly higher levels of neuroticism (McKerracher, Loughnane, & Watson 1968a), whilst another found that those who self harmed were more likely to experience command hallucinations, and less likely to experience paranoid delusions (Rogers et al. 2002).

**5.4.3 Diagnosis and attempted suicide**

One study found that the most common diagnosis amongst service users who attempted suicide was personality disorder, and two large case control studies, each including over 20,000 service users found that people who attempted suicide were significantly more likely to have a diagnosis of personality disorder, schizophrenia.
and either an affective disorder (Spiebl, Hubner-Liebermann, & Cording 2002), or depression (Neuner, Schmid, Wolfersdorf, & Spiebl 2008). One study found that there was a significant association between diagnosis and risk of a suicide attempt, and that service users with a diagnosis of personality disorder had the highest incidence density (Pirkis, Burgess, & Jolley 1999). Two studies found no significant association between diagnosis and suicide attempt during hospitalisation (Lee, Villar, Juthani, & Bluestone 1989). There is consequently some evidence to suggest that people with a diagnosis of a personality disorder, depression or schizophrenia are more likely to attempt suicide during their admission.

5.5 History

5.5.1 History of abuse

A number of studies noted that a large proportion of service users who self harmed had experienced childhood sexual or physical abuse. One study of 66 people who self harmed during an admission reported that 57% had experienced childhood sexual abuse, and 32% childhood physical abuse (Beasley 1999). A smaller study of seven service users found that five had experienced severe and prolonged sexual and/or physical abuse during childhood (Chengappa, Ebeling, Kang, Levine, & Parepally 1999), and the only study which conducted a statistical analysis of this data found that service users who self harmed were significantly more likely to have a history of physical and sexual abuse (Beer, Muthukumaraswamy, Khan, & Musabbir 2010). No studies of people who attempted suicide during an admission included any information about their experience of abuse.

5.5.2 Other factors relating to history

One study found that people who self harmed whilst in inpatient care were significantly more likely to have experienced childhood conduct problems. This paper also reported that 50% had a history of alcohol misuse and 56% a history of substance misuse, however this was not significantly different from the control group (Beer, Muthukumaraswamy, Khan, & Musabbir 2010). Another study reported that 71% (n=47) of service users who self harmed had experienced a disintegrated family life (separation from one or both biological parents prior to age 16), and 4% (n=3) menstrual difficulties (Beasley 1999). No studies of people who attempted suicide during an admission included information about their histories.
5.6 Personality traits

Two studies looked at the relationship between specific personality traits and self harm. One study used the Middlesex Hospital Questionnaire to examine neurotic traits in 21 service users and found that people who self harmed were significantly more likely to be obsessive compulsive, phobic and somatic (McKerracher, Loughnane, & Watson 1968a). Another study used the Buss-Durkee Scale to measure various forms of hostility in 80 psychiatric service users and found that self harm was significantly associated with indirect hostility, irritableness, negativism and resentment (Yesavage 1983). There were no studies which specifically looked at the personality traits of service users who attempted suicide.

5.7 Marital status

Three studies included data on the marital status of people who self harmed during an admission. All were case control studies, and all found no significant differences in marital status between service users who self harmed and those who did not (Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Hillbrand, Krystal, Sharpe, & Foster 1994). One study also looked at the marital status service users who attempted suicide during their admission, and also found no significant results (Stewart et al, in press).

5.8 Living arrangements

A study of over 100 service users found that those who self harmed were significantly more likely to be living in rural areas (Modestin & Kamm 1990), whilst another study of over 21,000 admissions found that living with parents predicted a suicide attempt during hospitalization (Spiebl, Hubner-Liebermann, & Cording 2002). One study of people admitted to 136 acute psychiatric wards in the UK found that wards situated in areas with lower levels of deprivation experienced higher rates of self harm (Bowers et al. 2008b). There were no studies which specifically looked at the living arrangements of service users who attempted suicide.
<table>
<thead>
<tr>
<th>Paper</th>
<th>Context</th>
<th>Number of incidents</th>
<th>Most commonly used methods</th>
<th>Other methods used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beasley (1999)</td>
<td>UK. Acute care. (Service users who self harmed on 5+ occasions)</td>
<td>1165</td>
<td>Cutting (30%) Head banging (25%) Self ligation (18%)</td>
<td>Injection of foreign body (6%), burning (5%), insertion of a foreign object (5%), picking at skin/old wounds (3%), self-biting (1%), enucleation (1%).</td>
</tr>
<tr>
<td>Beer (2009)</td>
<td>UK. Acute care.</td>
<td>105</td>
<td>Cutting (40%) Strangulation suffocation or drowning (18%) Head banging, punching or kicking (13%)</td>
<td>Ingestion of harmful substances (9%), attempted hanging (6%), inflicting burns (4%), other (2%).</td>
</tr>
<tr>
<td>Burrow (1992)</td>
<td>UK. Forensic care.</td>
<td>381</td>
<td>Head banging (29%) Cutting (26%) Not reported</td>
<td>Self harm behaviours documented were categorized into the following groups:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Self-assault (facial punching, eye gouging, biting), ingestion (foreign bodies, fluids, medication), insertion (forcing foreign bodies into wounds or other body cavities), ligation use (attempted hanging or tied cord around the neck), picking (wounds or sutures), laceration (cutting the body, usually with an implement), head banging, friction burns (abrasive or masturbatory injury), miscellaneous (burns, electrocution, attempted vehicular injury and immersion)</td>
</tr>
<tr>
<td>Callias (1994)</td>
<td>USA. Acute care.</td>
<td>127</td>
<td>Putting hand through window (39%) Head banging (20%) Scratching (10%)</td>
<td>Cutting (10%), throwing self against wall or floor (6%), hitting (4%), biting (2%), swallowing objects (2%), other (5%)</td>
</tr>
<tr>
<td>Jackson (2000)</td>
<td>UK. Forensic care.</td>
<td>122</td>
<td>Cutting or scratching (25%) Punching or kicking solid object (21%) Head banging (19%)</td>
<td>Self-ligation (12%), insertion of foreign objects into body (6%), reopening or worsening of pre-existing wounds (5%), self-poisoning (4%), swallowing foreign objects (3%), punching/slapping face (2%), burning or scalding (2%), biting own hand (2%), self-suffocation (1%), injuring penis via overzealous masturbation (1%).</td>
</tr>
<tr>
<td>Low (1997)</td>
<td>UK. Forensic care.</td>
<td>1607</td>
<td>Cutting or scratching (24%) Strangulation (15%) Re-opening old wounds (13%)</td>
<td>Head banging (11%), bingeing or vomiting (9%), burning or scalding (8%), insertion of foreign objects (8%), body hitting (6%), abnormal swallowing (3%), friction/rubbing (2%), self poisoning (1%).</td>
</tr>
<tr>
<td>Mannion (2009)</td>
<td>UK. Forensic care.</td>
<td>309</td>
<td>Cutting (55%) Hitting an object (13%) Scratching (9%)</td>
<td>Head banging (7%), punching/hitting self (7%), tying up genitalia (0.3%), hunger strike (1%), burning (1%)</td>
</tr>
<tr>
<td>Swinton (1998)</td>
<td>UK. Acute care.</td>
<td>1167</td>
<td>Cutting (51%) Strangulation (19%) Insertion of object into body (12%)</td>
<td>Head banging (11%), Other (4%)</td>
</tr>
</tbody>
</table>
5.9 Employment and education

A study of 78 service users found that those who self harmed during their admission were significantly more likely to have no educational qualifications (81% vs 47%), however were not less likely to be in employment (Beer, Muthukumaraswamy, Khan, & Musabbir 2010). Another study found that having a high school qualification predicted a suicide attempt during an admission (Spiebl, Hubner-Liebermann, & Cording 2002).

5.10 Characteristics of ward population

A number of studies collected data about the characteristics of the ward population, and found that this had an impact on the rates of self harm. One study of 136 acute wards found that having large numbers of service users under 35 years old, without a diagnosis of schizophrenia, or from a Caribbean ethnic background, were significantly associated with an increase in rates of self harm (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b). A study conducted across 16 acute admission wards also found that the proportion of service users under 35 was associated with increased rates of self harm, as well as the admission of people with a diagnosis of personality disorder, neurotic disorder or substance misuse (Stewart, Bowers, & Warburton 2009). These findings may suggest that people with the above characteristics are more likely to self harm, however alternatively it could be that the admission of people with certain characteristics changes the ward environment in such a way that increases the risk of others self harming. For example, they may bring about a change to the atmosphere of the ward, or might require more support from nurses, making them less available to others (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b; Stewart, Bowers, & Warburton 2009).
6. Method and characteristics of self harm

6.1 Methods used

6.1.1. Methods of self harm

Thirteen studies featured information about the method of self harm, Table 3 summarises how often different methods of self harm were used, and demonstrates the wide variety of different ways in which people self harmed. Cutting was identified as the most commonly used method in six out of eight studies, head banging, strangulation, punching or kicking objects, scratching, re-opening old wounds, putting hand through windows and inserting objects into the body were other methods frequently used.

A number of studies found that people often used more than one method of self harm during their admission. One study of 28 service users reported that 39% used at least 2 different methods (Beasley 1999), whilst another found that 42% (n=15) of people with a diagnosis of a personality disorder who self harmed used more than one method, and one person self harmed in seven different ways (Burrow 1992). Another study of 1,607 incidents of self harm found that in 9% of cases two methods, and in 1% of cases three methods of self harm were used (Low, Terry, Duggan, MacLeod, & Power 1997).

6.1.2 Method of attempted suicide

Only one paper documented the methods used by people who attempted suicide during their inpatient stay. This study looked at all reports (n=244) of attempted suicides occurring in England and Wales during 2009 and found that the most commonly used method was strangulation, which was used in 82.4% of attempts, followed by suffocation (9.4%) and self poisoning (2.9%). Less commonly used were cutting (1.2%), jumping (1.2%), collision with automobile (1.2%), duplicate methods (1.2%), and one person set themselves on fire (0.4%). In cases of strangulation 56.2% of people tied the ligature around their neck, whilst 40.5% used some kind of ligature point (Bowers et al, in press).
6.2 Objects used

6.2.1 Objects used for self harm

Three studies recorded information about the types of objects people were using to self harm. A study of 31 incidents found that people often used objects that they could easily access whilst on the ward. In 26% of cases a weapon or dangerous method was used, this included a knife, plastic bag, broken plate, razor blade and teapot, and in 19% of cases some form of glassware was used (Foster, Bowers, & Nijman 2007). A study of 309 cases of self harm found that an object was used in 81% of incidents. Most frequently used were a wall or door (for head banging or punching 18%), and a pen (11%) or a staple (11%) for cutting, opening old wounds and scratching (Mannion 2009). Finally, a study of 18 service users and 25 incidents of self harm found that most often people used razors to self harm, and that other objects used were broken bottles, safety pins, plastic knives and phonograph records (Rosenthal et al. 1972).

6.2.2 Objects used for attempted suicide

A study of 244 reports of attempted suicide found that over 50 different objects featured in suicide attempts, the majority of which were used as some kind of ligature, and were readily available to service users. Most commonly used were items of clothing or underwear (40.6%), plastic bags (7.0%), bed linen (6.6%), electrical cables from objects such as hair straighteners or phone chargers (4.9%) and medications (2.9%). The study also found that in cases of strangulation over 40 different ligature points were used, and that windows (5.5%), doors (4.5%), beds (3.0%) and bathroom rails (2.5%) were used most frequently (Bowers et al, in press).

6.3 Location on ward

6.3.1. Location of self harm

Studies that looked at the location of self harm generally found that people were more likely to self harm in the private areas of the ward. One paper reported that 95% (n=21) of service users self harmed in private, and two studies found that 64% (n=672), and 66% (n=101) of incidents of self harm occurred in the bedroom (Beasley 1999; Nijman, Joost, & Campo 2002). A study of 1,067 incidents of self
harm reported that 46% occurred in the private toilet areas, and 32% in the bedroom (Low, Terry, Duggan, MacLeod, & Power 1997). This study also found that service users with a diagnosis of a personality disorder were significantly more likely to self-harm in private compared to those without this diagnosis. Contrary to these findings, a study of 381 incidents found that most (46%) occurred within the public general ward areas (day areas, toilets, corridors) rather than in the more private areas of the ward, with 24% of incidents occurring within seclusion or a cleared side room and just 23% within the service user’s own room. Other incidents occurred at occupational workshops, hospital socials and the education centre (Burrow 1992). Finally one study found that the majority of incidents occurred whilst service users were on the ward, rather than whist on leave, or after absconding (Modestin & Kamm 1990)

6.3.2 Location of attempted suicide

A study of 244 reports of attempted suicide found that most took place in the bedroom (41.0%), and a number in other private areas on the ward such as bathrooms and shower rooms (11.5%), and toilets (9.8%). It found that a smaller number of attempts took place in ward outside areas (3.7%), or outside of the ward itself (4.4%) and very few attempts occurred in more public areas such as the living room (0.8%), dining room (0.8%), laundry room (0.8%), corridor (0.4%), dormitory (0.4%), and quiet room (0.4%) (Bowers et al, in press). Another study looked at rates of attempted suicide across inpatient, residential and community services and found that there were significantly higher numbers of suicide attempts in inpatient care (8.3%) as compared with residential (5.3%), and community care (3.3%). This study also found and that there were significant differences in incident density (attempts/1000 days) between these providers, with inpatient services having the highest incident density (5.4 vs 0.6, 0.5 respectively) (Pirkis, Burgess, & Jolley 1999)

7. Timing of self harm

7.1 Time of day

In general, the majority of studies found that the highest rates of self harm and attempted suicide were in the evening hours, with a peak around 21:00. One study found that there were significantly more incidents during afternoon shifts compared to morning and night shifts (46% vs 29% and 26% respectively) (Stewart et al, in press),
and another that 58% of incidents occurred between 17:00 and 23:00 (Myers & Dunner 1984). One study reported that 50% of incidents occurred between 18:00 and 24:00, with a peak between 20:00 and 21:00 (Nijman, Joost, & Campo 2002), and another of over 1,000 incidents found that there was a substantial increase in incidents of self harm between 21:00-23:00, with a peak at 21:30 (Swinton, Hopkins, & Swinton 1998)

Studies which looked at the timing of attempted suicides throughout the day had similar findings. One study of 40 attempted suicides found that there were more attempts during afternoon (40%) and night shifts (40%) compared to morning shifts (20%), however this difference was not significant (Stewart et al, in press), whilst a study of 244 reports of attempted suicide found that a significantly higher proportion of attempts occurred in the evening, with the highest numbers between 18:00 and 21:00. This study also reported a peak in the number of attempts during the day between 11:00 and 13:00 hours (Bowers et al, in press).

7.2 Day of week

There were mixed findings regarding rates of self harm and attempted suicide for days of the week. One study found that 31% of incidents of self harm happened at the weekend, however this was not significantly different from rates during the week (Nijman, Joost, & Campo 2002), two more studies also reported no significant differences in self harm (Beasley 1999) or attempted suicide (Bowers et al, in press) between weekdays and weekends. One study found higher rates of self harm at the weekend, and on Mondays, however did not report any rates (McKerracher, Loughnane, & Watson 1968a). Another study found that rates of self harm were reduced by a third at weekends (Burrow 1992), and one found that there were significantly less incidents on Fridays (Swinton, Hopkins, & Swinton 1998)

7.1 Relationship of incident to length of stay

Four papers reported a relationship between incidents of self harm or attempted suicide and length of stay. One study of over 2,000 admissions found that incidents of self harm were most prominent soon after admission, with 47% of incidents occurring during the first 72 hours (Myers & Dunner 1984), whilst another smaller study of 41 service users found that self harm was more likely to occur in the latter part of an admission (Daffern & Howells 2009). One study which looked at rates of
self harm during the first two weeks of admission found that 20% (n=11) of incidents of self harm occurred during the first 24 hours, and that on average, the first incident occurred after 5.5 days. This study also found that 13% (n=3) of attempted suicides occurred within the first 24 hours, and on average 5.6 days into an admission (Stewart et al, in press). Finally, one study found that among service users who have previously attempted suicide, the risk of inpatient attempted suicide was increased for long stay service users, particularly long stay service users younger than 41.5 years. Among these service users low Global Assessment of Functioning score at admission increases risk further. For service users without previous suicide attempt, the duration of hospitalization exceeding 293 days was a significant risk factor. Among service users with a duration less than this, a duration of more that 105.5 days emerged as a risk factor. In this subgroup service users with suicidal thoughts at admission were at particular risk (Neuner, Schmid, Wolfersdorf, & Spiebl 2008).

7.2 Other information about timing of self harm

One study which reported data for rates of self harm during each month of the year found no significant differences (Beasley 1999), another study found that the number of suicide attempts were not equally distributed across each month of the year, however noted that these differences did not appear to follow a coherent pattern (Bowers et al, in press). Two studies looked at rates of self harm during the menstrual cycle in women; one found no association between self harm and the menstrual cycle (McKerracher, Loughnane, & Watson 1968a), whilst another reported that 60% of incidents of self harm occurred at the time of menses, 30% occurred in the 2 days preceding menses and 30% during the last 2 days of menses (Rosenthal, Rinzler, Walsh, & Klausner 1972).

8. Antecedents to self harm and attempted suicide

8.1 Antecedents to, and causes of self harm

Information about the antecedents to, and causes of self harm were collected in 18 studies, three consulted service users themselves, however the majority of studies analysed information recorded nursing notes or incident reports. The antecedents to, and causes of self harm reported in these studies could be split into eight main themes outlined below in order of prevalence.
8.1.1 Service user emotional state and inner experiences

This featured in ten papers, and was most frequently cited as a cause of, or antecedent to self harm. Studies described a range of difficult emotions and experiences including despair, loneliness, hopelessness, thoughts of self punishment, psychotic delusions, anger, and feelings of emptiness. Quantitative papers gave information about the numbers of people experiencing distressing feelings before self harming, whilst qualitative papers provided more detailed descriptions of the person’s emotional state, their findings are reported below.

One quantitative study which examined the case notes of 66 service users who self harmed found that 64% appeared to self harm in response to their low mood, intrusive thoughts and psychotic experiences (Beasley 1999). Another paper investigating the case notes of 35 service users found that 40% self harmed in response to difficult emotions and thoughts; most commonly anger, hopelessness, guilt, and cognitions about self punishment (Mannion 2009). One paper investigating self harm in people with a diagnosis of a personality disorder found that negative psychological state (irritability, impulsivity and disagreeableness) as measured by the HCR-20 and the Dynamic Appraisal of Situational Aggression reliably predicted self harm the following day (Daffern & Howells 2007). A case control study reported that, compared with controls, the emotional condition of 95% (n=18) of people who self harmed was judged to be dysphoric (depressed, anxious, despondent, hostile, irritated) at the time of the act (Modestin & Kamm 1990). Finally, one study of nine service users found that six said that delusions prompted their acts, and two also heard auditory hallucinations before self harming (Sweeny & Zamecnik 1981).

Three case studies described people who self harmed in response to their emotional state and inner experiences. One paper described a person who took out his eye because of delusions that an animal was behind it and was talking to him (Eisenhauer 1985). One service user described her self harm as a form of self punishment for her perceived failures, and a response to feelings of despair, loneliness, and low self-worth (Nijman, Joost, & Campo 2002). Another person described feelings of increasing remoteness and emptiness before she self harmed (Rinzler & Shapiro 1968). Studies which interviewed service users also reported similar findings. One found that 18% (n=4) of people self harmed because they felt angry with themselves (Gardner & Gardner 1975). Another study interviewed nine female service users, with the aim of discovering what self harm meant to them, and
the role that it played in their lives. The study found that participants often used the word ‘trigger’ to describe the events preceding acts of self harm, triggers included feelings such as anger, upset or loneliness (Weber 2002). Another reported that many episodes of self harm followed increases in emotional stress, and that the words ‘numbness’, ‘unreal’ and ‘empty’ were often used to describe how people felt before they self harmed. Some people said they had no feelings or felt empty inside, others described feeling separate inside, as if their mind and body were separated. On the basis of these descriptions the authors concluded that 92% (n=23) of episodes of self harm occurred whilst the service user was in a depersonalized state (Rosenthal, Rinzler, Walsh, & Klausner 1972).

8.1.2 Ward management and nursing care

Factors relating to the management of the ward and nursing care were cited as antecedents to self harm in eight papers. One study found that 18% (n=207) of incidents of self harm were due to external factors, which, amongst other things included residential location and care (Beasley 1999). A retrospective study of nursing notes documenting 309 episodes of self harm, found that 44.4% were preceded by a range of factors relating to service user care, including ward issues (25.2%), denial of a service user request (7.8%), seclusion (7.4%), concerns around things discussed in therapy (1.9%), not engaging with support/medication (0.7%), making a request (0.7%), and anxieties concerning upcoming CPA (0.7%). This study also found that people with a diagnosis of antisocial personality disorder were significantly more likely to self harm after being denied a request, compared to those without this diagnosis (Mannion 2009). Denial of a request also featured in another study, where it was found to precede 17% (n=26) of incidents of self harm (Nijman, Joost, & Campo 2002). One study investigating the use of non-suicide contracts with 20 people who self harmed found that the greater the level of environmental restriction enforced on a person, (degree of staff’s control over the service user’s movements), the greater the likelihood of self harm. These findings are in agreement with a study described in section 9.2.5, which found that having the ward door locked for more than 3 hours (but not less than), or for a full shift, was associated with increased rates of all self harm (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b). Finally, one study found that people were more likely to have no privileges before they self harmed, compared to controls (Modestin & Kamm 1990).
A number of qualitative studies found similar issues relating to ward management and nursing care. One described a service user who self harmed after being denied access to items or activities (Bisconer et al. 2006), whilst another described someone who self harmed in response to their anger at being placed in seclusion (Coons & Milstein 1990). One paper gave an account of a service user who self harmed after a meaningful member of staff departed from her environment (Pao 1969), and a study which conducted interviews with 18 people immediately after they had self harmed found that 40% (n=10) of incidents were related to the service user’s feelings of disappointment with their doctor. This study also noted that 24% (n=6) of incidents occurred during active planning for the service user’s discharge (Rosenthal, Rinzler, Walsh, & Klausner 1972). In another study, service users spoke of their experiences of being controlled, for example when staff made important decisions about their care without consulting them, or forced them to take medication. They felt angry about this, which in some cases led to self harm. The authors described the act of self harm as the service user’s ‘overt struggle for control’ and argued that empowering nursing care would help to reduce this (Breeze & Repper 1998).

8.1.3 Ward community and environment

Four papers cited factors relating to the ward community or environment as being antecedents to self harm. A quantitative study involving 38 service users found that 6% of people self harmed in response to other service user’s behaviour (Nijman, Joost, & Campo 2002), whilst a retrospective analysis of the notes of 66 service users found that external factors including issues relating to their peer group were antecedents to 20% (n=207) of incidents of self harm. The same study conducted a runs test and found that people were significantly more likely to self harm after another had done so, with clusters of incidents over 5 day periods involving up to 11 service users at one time (Beasley 1999). This was also noted in a study which described a person who appeared to imitate another service user’s self harming behaviour (Rosenthal, Rinzler, Walsh, & Klausner 1972). One paper described a case study of someone who self harmed in response to a variety of factors relating to the ward community and environment, for example when the ward was noisy and disruptive, when he wanted to avoid peers or staff, or ward activities and when he felt that peers or staff were bothering him (Bisconer, Green, Mallon-Czajka, & Johnson 2006).
8.1.4 Relationships

Four papers reported that people self harmed when they experienced difficulties in their relationships. One quantitative analysis of service user notes found that 3.2% (n=10) of episodes of self harm were due to family matters (Mannion 2009). Two papers described case studies of people who self harmed when they experienced problems in their relationships with others (Grunebaum & Klerman 1967; Rinzler & Shapiro 1968) and one study conducted 22 interviews with service users and reported that 31% said they self harmed because of ‘anger at others’ (Gardner & Gardner 1975).

8.1.5 Sensation seeking, or regulation

Three studies described people who self harmed to seek, or to relieve some form of sensation. One study found that in 0.7% (n=2) of episodes, service users had self harmed to chase a ‘buzz’ they felt during previous episodes of self harm (Mannion 2009). Two case studies described service users who experienced feelings of inner tension leading up to the time of the act (Grunebaum & Klerman 1967; Pao 1969), and one study reported that 86% (n=19) of service users said that they self harmed to relieve feelings of tension (Gardner & Gardner 1975).

8.1.6 Significant life events

A small number of studies found that some people self harmed due to stressful events in their life. One study which examined the case notes of 66 service users, reported that some self harmed because of anniversaries of traumatic life events, or seasonal events (Beasley 1999). Another reported that people appeared to self harm when faced with the loss of a meaningful person (Grunebaum & Klerman 1967). One study of 309 incidents of self harm found that 3.2% were in response to a bereavement and 1.9% because of anxiety around legal matters, such as upcoming court appearances (Mannion 2009).

8.1.7 Suicidal intent

Of the 17 papers reporting antecedents to self harm, only one discounted episodes of self harm where there was evidence of conscious suicidal intent, and three papers identified suicidal intent as a motivation for self harm. One simply reported that a
number of people self harmed ‘because they wanted to die’ (Rosenthal, Rinzler, Walsh, & Klausner 1972), whilst a review of the notes of 31 service users found that 45% expressed suicidal intent (Drew 2001a). Another study which conducted 22 interviews with service users reported that 41% said that their reason for self harming was ‘suicide’ (Gardner & Gardner 1975).

8.1.8 Interpersonal communication, or influence

Just two papers described people who self harmed in an attempt to communicate with, or influence others. One paper described a case study of a service user who, at times, self harmed because he felt unable to communicate his thoughts and needs (Bisconer, Green, Mallon-Czajka, & Johnson 2006). Another paper conducted interviews with people who self harm, and reported that 23% (n=5) said that they self harmed to get attention (Gardner & Gardner 1975).

8.1.9 Other

A number of other antecedents to self harm were reported that did not fit into any of the themes above. One study described a service user who said she felt an urge to self harm, which she had no control over (Nijman, Joost, & Campo 2002). Another reported the conflict and containment events occurring before 125 incidents of self harm, and found that the most frequent precursors to self harm were PRN medication (19% of precursors), special observation (12%), aggression towards objects (10%) and verbal de escalation by staff (10%). Other antecedents to self harm were verbal aggression (7%), refusing to see workers (6%), self-harm (6%), start of detention (6%), refused regular medication (4%), start of seclusion (4%), end of seclusion (3%), and refusing to eat (3%). The following events were antecedents to 1% of incidents of self harm respectively: refusing to go to bed, refusing to attend to personal hygiene, attempted abscond, abscond, demanding PRN, enforced IM medication, and time out (Stewart et al, in press). A study of nine service users found that self-imposed change in physical appearance was a significant predictor of subsequent self harm (five people either shaved their heads, or plucked out their eyebrows and eyelashes before self harming). This study also reported that seven people self harmed because they believed the act would preserve their own health and well-being, and that of their loved ones (Sweeney & Zamecnik 1981). One paper described someone who said that she self harmed to make herself look unattractive, explaining: "my legs were always the ugliest part of me and I want to make them
really ugly” (Rinzler & Shapiro 1968). One study found that one person self harmed because of sexual frustration (Gardner & Gardner 1975), and another described a service user who self harmed because she ‘would rather hurt herself than hurt others’ (Coons & Milstein 1990). Finally, one study found that people expressed thoughts of self harm before actually self harming in just 1% (n=3) of cases (Mannion 2009).

8.2 Antecedents to, and causes of attempted suicide

Just four studies looked specifically at the antecedents to, and causes of attempted suicide. One study recorded conflict and containment events occurring before 40 attempted suicides. It found that the most frequent precursors to attempted suicide were PRN medication (25% of precursors), the start of special observation (13%), refusing to eat (9%), abscond (9%), attempted abscond (6%) and return from abscond (6%). Other precursors were: self-harm (6%), de-escalation (6%), verbal aggression (3%), physical violence (3%), refusing to drink 3%), refused regular medication (3%), refused PRN (3%) and attempted suicide (3%) (Stewart et al, in press). Another quantitative study examined reports of 15 incidents of attempted suicide, and categorised the service user’s pre-incident behaviours. The study found that 60% of people were anxious, apprehensive or depressed before attempting suicide, and 40% of people were hyperactive, loud, verbally abusive, angry or hostile (Lee, Villar, Juthani, & Bluestone 1989). Another quantitative study of 41 attempted suicides found that suicidal thoughts at admission was a significant risk factor for attempted suicide (Neuner, Schmid, Wolfersdorf, & Spiebl 2008), these findings were replicated by a study of 296 attempted suicides which reported that suicide attempts and suicidal thoughts on admission (but not a history of suicide attempts) predicted suicide attempts during hospitalization (Spiebl, Hubner-Liebermann, & Cording 2002). One study conducted semi-structured interviews with 11 nurses and asked them to describe people they cared for who had exhibited suicidal behaviour. Nurses believed that these people felt suicidal because of their inner emotional state, and life experiences. Researchers grouped the nurses descriptions of service user’s experiences into three categories: Hopelessness (the person does not see any hope, they cannot see a way out or a chance for change); meaninglessness (they do not feel they have anything to live for, they feel that that nobody cares about them, they have a negative perception of their life- ‘darkness, worthlessness, weakness’), and being out of control (have catastrophic feelings, invasive and obsessional thoughts, see suicide as a way for them to gain control). Nurses mentioned that some people displayed suicidal behaviour before being discharged, and believed this was because
they wanted to stay in inpatient care, as they did not have enough support outside of hospital (Carlen & Bengtsson 2007).

9. Interventions for self harm

9.1 Containment measures

Twenty one studies included information about the types of interventions that wards were using to manage self harm or attempted suicide, and all reported the use of some form of containment, summarised below in order of prevalence.

9.1.1 Special Observation

Eleven studies featured information about the use of special observation, and had mixed findings. Consequently there is no clear indication of how frequently special observation is used to manage self harm, nor is there any substantial evidence as to how effective this management strategy is.

9.1.1.1 The use of special observation

One study of 475 incidents of self harm on a forensic ward, found that in only 0.4% (n=2) of cases service users were placed under some form of special observation, and that in 1% (n=6) of cases people were observed in the ward courtyard (Burrow 1992). Another study of 1,067 incidents of self harm found that special levels of nursing observations were initiated in 4% of cases, with 57% of these following an incident of self ligation (Low, Terry, Duggan, MacLeod, & Power 1997). Conversely, a study of 31 people admitted to an acute ward found that all were under some form of special observation, with three under constant observation to prevent self harm (Drew 2001a), and a study which surveyed 27 psychiatric inpatient providers in England and Wales reported that 90-100% of respondents said they used constant observation to manage the risk of self harm and suicide (Bowers, Gournay, & Duffy 2000). Special observation was mentioned in two qualitative studies; one study which interviewed four service users commented that they were often under special observation (Breeze & Repper 1998), and in another study nurses (n=8) stated that special observation was one of the primary strategies used to ensure the safety of people who self-harmed. The nurses explained that the decision to use special observation was often made during the assessment of a service user, however the
strategy was sometimes used as a reactive measure if someone self harmed whilst on the ward. The decisions around when to start using observation, and when to stop were primarily made by medical staff, however nurses were able to influence this decision. This study also noted that the two wards involved in the study had differing policies around the implementation of special observation, and that these polices did not specify in what circumstances, and for how long a person should be under observation (O'Donovan 2007). Inconsistencies in the use of special observation were noted in another study of 19 cases of self harm, which found that that there were considerable variations in policies regarding observation across trusts. This study also found that nursing staff did not make any decisions regarding the level of observation that service users were given (Gournay & Bowers 2000).

9.1.1.2 The effectiveness of special observation

A number of studies contained information about the effectiveness of special observation in reducing rates of self harm and attempted suicide. One study of over 16,000 admissions found that the use of intermittent observation within a shift was associated with lower rates of self harm within that same shift. The same study, however found no significant relationship between constant special observation and rates of self harm (Bowers et al. 2007b). A study of 244 reports of attempted suicide found that 7 suicides were prevented because the service user was under constant observation, and 26 because they were under intermittent observation (Bowers et al, in press). Another study however found that self harm was significantly associated with constant observation (Bowers, Simpson, & Alexander 2003), and these findings were replicated in a study which examined the use of constant observation and rate of self harm in acute care over successive weeks. The study found that constant observation in one week was associated with higher levels of self harm during that same week, and that the use of constant observation in one week was not associated with reduced levels of self harm in the following week (Stewart, Bowers, & Warburton 2009). Another study found that in 10% of cases of self harm (n=3) there was a reduction in the level of observation before service users self harmed (Drew 2001a). One study of 19 cases of self harm and attempted suicide where legal action was taken against the NHS regarding negligence found that in 79% (n=15) of cases service users were under constant observation, and two were under intermittent observation, so in these cases service users were able to seriously harm themselves, despite being under special observation (Gournay K. & Bowers 2000). There is some evidence to suggest that being under constant observation can help to prevent
suicide, however in general these findings suggest that constant observation may not be effective in preventing self harm, although the relationship between self harm and constant observation reported in these studies is difficult to interpret. There is however evidence to suggest that intermittent observation is an effective preventative measure.

9.1.1.3 Staff and service user views of special observation

Qualitative studies have found that both service users and staff have expressed concerns about the use of constant observation for people who self harm and attempt suicide. One study, which interviewed four service users reported that three found constant observation to be restrictive and 'claustrophobic', whilst one preferred to be under observation, and stated that conflict with the nurses would arise when it was stopped (Breeze & Repper 1998). A qualitative study which conducted interviews with eight psychiatric nurses reported that staff believed that constant observation was necessary to prevent self-harm, however they also felt that it invaded the service user’s personal space, made them feel uneasy, gave them too much attention, and also too much time to plan the act of self-harm. One member of staff disputed its effectiveness, recalling incidents where people had been on special observation for months and self-harmed within seconds from coming off it (O'Donovan 2007).

9.1.2 Seclusion

Seven studies reported information about the use of seclusion to manage self harm. One study of the management of 216 incidents of self harm occurring within a forensic unit found that seclusion was used in 2% of incidents (Parkes 2003), and another such study of 425 episodes of self harm reported that around 130 service users (28%) were moved to a cleared side room, or seclusion room (Burrow 1992). One study of the use of seclusion in a forensic unit reported that 27% (n=83) of episodes of seclusion were to manage self harm and suicidal gestures (Ahmed & Lepnurm 2001). One study found that service users on a forensic ward were placed in seclusion for an average of 292 hours following self harm (Hillbrand, Young, & Krystal 1996). Another study found that being in seclusion did not necessarily prevent people from self harming, reporting that over half of forensic service users self harmed whilst they were in the seclusion room (n=19). This study also found that self harm within a seclusion room occurred significantly more frequently for people
with a diagnosis of anti-social personality disorder compared to those without this diagnosis (Mannion 2009). One paper reported that seclusion was used for the management of self harm in acute care, however did not give any further information (Drew 2001a). The two studies that did give rates of seclusion for self harm in acute services both had a sample of 31 service users, and both reported that only one was secluded following self harm (Chengappa, Ebeling, Kang, Levine, & Parepally 1999; Foster, Bowers, & Nijman 2007). This data does suggest that seclusion is used more frequently on forensic wards, although more research on the use of seclusion in acute services is needed for accurate comparisons to be made.

9.1.3 Restraint

Seven studies reported the manual or mechanical restraint of service users who self harmed during their admission. One forensic study reported that manual restraint was used in 12% (n=26) of cases (Parkes 2003), and a study of over 1,000 incidents of self harm in forensic services found that it was used in 25% of cases (Beasley 1999). An earlier study found that individualised mechanical 'restraint garments and helmets' were used in 12% (n=51) of incidents, all of which involved women. This study also found that in 2.6% of incidents medication, seclusion and restraint were combined (Burrow 1992). Another study reported that on average, people who self harmed spent 857 hours in mechanical restraints during their admission, which was almost three times longer than time spent in seclusion (Hillbrand, Young, & Krystal 1996). A study of 27 incidents of self harm on an acute ward found that restraint was used in 52% of cases (n=14) (Tobin, Lim, & Falkowshi 1991), and one found that 7% (n=2) of people were held with force, whilst 13% (n=4) restrained manually (Foster, Bowers, & Nijman 2007). Finally, one paper reported that ‘restraint interventions were nearly always applied in instances of self mutilation’, however did not report how often restraint was actually used (Chengappa, Ebeling, Kang, Levine, & Parepally 1999)

9.1.4 Medication

Six studies reported the use of oral, or parenteral medication in the management of self harm. Two forensic studies reported that prescribed medication was used in 35% (n=148) (Burrow 1992), and 19% (n=203) (Beasley 1999) of cases of self harm. The remaining four studies were conducted within acute services, and reported varying levels of the use of medication. One found that medication was administered in 14%
of episodes of self harm (Tobin, Lim, & Falkowshi 1991), and another that 10% (n=3) of service users who self harmed were given some form of oral medication, whilst 16% (n=5) were given parenteral medication (Foster, Bowers, & Nijman 2007). The specific types of parenteral medication given following self harm were specified in two studies, which reported the use of parenteral lorazepam, neuroleptic agents and pentobarbital (Chengappa, Ebeling, Kang, Levine, & Parepally 1999; Grunebaum & Klerman 1967)

9.1.5 Locked doors

Only one study contained information about locked doors and self harm, this study included 136 acute psychiatric wards and found that having the door locked for more than 3 hours (but not less than), or for a full shift, was associated with increased rates of all self harm (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b).

9.2 Other interventions

A number of studies reported a range of other interventions for people who self harmed or attempted suicide, which were often used more frequently than the containment measures previously described. One study of 1,165 incidents of self harm found that in 91% of cases there was some form of verbal intervention from staff (Beasley 1999), and one study found that in 36% (n=10) of cases service users were given some form of counselling (Tobin, Lim, & Falkowshi 1991). Another study of 31 incidents found that in 49% of cases staff spoke to the service user, and in 10% of cases they calmly took them away to a private space (Foster, Bowers, & Nijman 2007). One study investigated the use of no suicide contracts in two acute psychiatric units and reported that contracts were used with 65% of all service users who self harmed (n=20). It found that people with contracts were 7 times more likely to engage in self-harm behaviour and 5 times more likely to engage in suicidal behaviour than those without contracts. It also found that the higher the level of environmental restriction (degree of staff’s control over the service user’s movements), the greater the likelihood of self harm (Drew 2001a). One study examined 244 reports of attempted suicide and documented how each suicide was prevented. It found that 71% of suicides were prevented because the service user was found by nursing staff, and 1.2% because nursing staff stopped people from jumping off hospital buildings. In 98 reports there was further detail as to how service
users were found by nursing staff. Most people were found because of staff being ‘caringly vigilant and inquisitive’ (n=32). This compromised of the following behaviours: following a person in distress, listening carefully to safety calls, noticing a person’s absence, noticing suspicious actions, noticing that someone appears physically ill, noticing that someone is taking a long time in the toilet, and responding to an unusual noise. Other ways in which service users were found by staff were through general routine checks (n=18), during the medication round (n=4), because of other normal daily activity on the ward (n=6), meal or drink checks (n=2), and doing observations on another service user (n=1) (Bowers et al, in press).

Three qualitative studies reported some information regarding other interventions used to manage self harm. In one study four service users were interviewed, and spoke of how some nurses threatened them with negative consequences if they self harmed. Service users explained that they experienced this as being threatened or coerced into changing or restricting their behaviour (Breeze & Repper 1998). One study looked at the practise of directing service users to remain in their nightclothes during the day within an acute psychiatric ward. Twenty seven nursing staff working on the ward completed a survey which asked them about this practise, and 59% of respondents stated that it was used to reduce the risk of self harm. Service users were also interviewed, and 68% reported feeling uncomfortable remaining in their nightclothes (Langan & McDonald 2008). This practise featured in another study which conducted interviews with eight nursing staff on two wards. It found that it was one of the primary methods used to reduce self-harm, and the strategy was most often used when the person was not known to the service. Some staff felt that this practise violated the service user’s privacy, and felt uncomfortable implementing it. Staff explained that they took part in it because they did not know of any alternative, and that when they explained the rationale behind it the service user usually complied. Other strategies used to prevent self-harm were the removal of objects that could be used for self harm, special observation, distraction strategies, no-harm contracts and threatening negative consequences for self-harming behaviour (e.g. not being able to receive visitors or being transferred to a secure unit). The nurses also felt that therapeutic interaction with service users was important, and this took up from 15 to 90 minutes each day. The staff used a variety of strategies during therapeutic interaction, such as instilling hope, finding a solution to self-harming behaviour, focussing on life outside of hospital, reinforcing positive thinking, encouraging expression on paper, and conducting stress-management and assertiveness training (O'Donovan 2007).
9.3 Service user views of appropriate interventions

One qualitative study conducted 43 interviews with nine women admitted to a locked psychiatric ward who had either self harmed during, or immediately before their admission. The researchers asked these women to share any ideas they had as to how nurses could intervene to prevent them from self harming. The women said it was important for nurses to recognise when they are feeling upset, or angry (e.g. by their facial expression) and to talk to them, they also spoke of the importance of having hope for the future, and for recovery. One women said that distracting herself from thoughts of self harm by participating in ward activities also helped to stop her from self harming. Another woman explained that it was important to be comforted by nurses during times of crisis, for example for nurses to offer reassurance “because many times, just having someone there to talk to, soft and caring. It takes the anger side...away”. She also said that if physical intervention was necessary it was important for this to be done gently, and with prior warning (Weber 2002).

9.4 Intervention studies

Seven studies evaluated the effectiveness of specific interventions in reducing rates of self harm, some of these interventions were solely designed to reduce self harm (n= 2), whilst others aimed to reduce all types of aggression (n=2), or to improve the psychiatric care offered on the ward as a whole (n=3).

One study evaluated the effectiveness of dialectical behavioural therapy (DBT), a form of cognitive-behavioural therapy, in reducing self harm amongst ten women with a diagnosis of personality disorder. The intervention consisted of weekly individual psychotherapy sessions, combined with group behavioural skills training (covering emotional regulation, interpersonal effectiveness, distress tolerance, mindfulness and problem solving) over the course of 1 year. Self harm rates were measured in 3 month blocks. There was a significant reduction in rates of self harm between the pre treatment, and end of treatment blocks, however rates post treatment did not differ significantly from those pre treatment. The authors also reported that there was a significant reduction in dissociative experiences, and a significant increase in survival and coping beliefs after treatment (Low 2001). Another study investigated the efficacy of Clozapine for reducing self harm amongst seven service users. The study used restraint as a proxy measure for self harm, and reported significant reductions
in restraint after people had taken Clozapine for from 6-12 months, however it’s actual impact on self harm is unknown as the study did not report this data (Chengappa, Ebeling, Kang, Levine, & Parepally 1999).

Two studies evaluated interventions that aimed to reduce self harm alongside all other forms of aggression on the ward. One study featured a behavioural rehabilitation programme, where a token economy was used to reinforce a wide range of adaptive behaviours such as daily activities and participation in rehabilitation programming. Service users were offered rewards for exhibiting adaptive behaviours, given fines to address maladaptive behaviours, and were also provided with 50 hours of rehabilitative services a week. The study found that there was a significant reduction in rates of self harm amongst service users on the program ward following its implementation, and that rates of self harm amongst the program group were significantly less than rates amongst controls at the end of the 2 year study period (Bellus et al. 1999). Another study looked at the effectiveness of a behaviour plan in reducing rates of aggression and self harm. The plan identified target behaviours to decrease, or increase. Reinforcers or rewards were given for the presence of adaptive behaviours, and the absence of maladaptive behaviours. Staff were trained to recognise the antecedents to maladaptive behaviours and to provide consistent responses to target behaviours. The study reported a 50% reduction in incidents of self harm after the 39 month implementation period. There was also a reduction in restraint, 1:1 observation and pro re nata (PRN) medication over this period (Bisconer, Green, Mallon-Czajka, & Johnson 2006).

Three studies evaluated interventions which aimed to improve all nursing care on the ward in general, and measured their impact on rates of self harm amongst other outcomes. One paper reported the preliminary findings of an evaluation of the ‘Tidal model’ of psychiatric nursing care. The critical features of this model are active collaboration with the individual and family to plan, and deliver care, empowerment of the person by locating the narrative experience of illness and health, integration of nursing with other services within the team, and resolution of problems through narrative based interventions. The study found that following implementation on one ward there was a 6% reduction in episodes of self harm (Fletcher & Stevenson 1923). Another study evaluated a project where two ‘city nurses’ were recruited to bring about a change in practise on two acute psychiatric wards. The city nurses based their practise on the ‘city model’ which aims to reduce rates of conflict and containment by changing the behaviour of staff, specifically increasing staff's positive
appreciation of service users, their skills in managing their emotional responses to service users behaviour, and through the provision of effective rules and routines. There was a significant reduction in the mean number of incidents of self harm per shift following implementation of the intervention, and a reduction in the mean number of suicide attempts per shift, however this was not statistically significant (Bowers, Flood, Brennan, LiPang, & Oladapo 2006). This study was repeated some years later where the intervention was implemented on three wards, and data collected from a further five control wards. There was a decrease in the mean number of suicide attempts and incidents of self harm per shift following implementation of the intervention, however neither change was significant, and did not differ significantly from control wards (Bowers et al. 2008a).

10. Relationship between self harm, attempted suicide, and other conflict events

NB: Relevant information regarding the relationship between self harm, attempted suicide, and other conflict events can also be found in section 11.4: Conflict and containment following self harm.

10.1 Relationship with aggression

10.1.2 Proportions of people who self harm and are also aggressive

It has been suggested that in some cases, the underlying motivations for acts of aggression and self harm are the same (Plutchik 1995), and so in many studies self harm is recorded as a form of aggression itself (Sorgi et al. 1991). In this review nineteen studies explored the relationship between aggression and self harm amongst psychiatric service users. Six studies reported the proportions of service users who self harmed and were also aggressive, on average 53% of service users who self harmed were aggressive, ranging from 0 (Myers & Dunner 1984) to 96% (Beasley 1999) of those who self harmed. Eleven studies ran statistical tests to determine if there was a relationship between aggression and self harm; two case control studies found that service users who self harmed were significantly more likely engage in acts of verbal aggression, physical aggression against objects and physical aggression against others compared to controls (Hillbrand 1992; Hillbrand, Krystal, Sharpe, & Foster 1994). Another found that service users who self harmed
were involved in almost three times as many incidents of aggression against others than controls, however this difference was not significant. One study of 3,859 incidents of self harm found that there was a significant positive correlation between violence and self harm, but only in people with a diagnosis of a psychopathic disorder (Swinton & Hopkins 1996). A study that looked at rates of violence among people who repetitively self harmed found that they were significantly more likely to engage in verbal aggression and aggression towards objects and others compared with people who self harmed on only one occasion during their admission. Conversely, a study which compared a group of service users who were repeatedly violent, with a group who were not found that people who were less violent were more likely to self harm (Owen et al. 1998). Two studies, one involving 136 acute wards found that aggression towards objects and others was significantly associated with increased rates of self harm (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b;Ehmann et al. 2001), and another that increases in physical aggression (but not verbal aggression or aggression to objects) were significantly associated with self harm (Bowers et al. 2007a). However, two studies including one which looked at rates of self harm and aggression across three European countries found no correlations between aggression and self harm (Bowers, Douzenis, Galeazzi, Forghieri, Tsopelas, Simpson, & Allan 2005b;Hill, Rogers, & Bickford 1996b).

Two studies looked at the history of aggression amongst service users who self harmed. One found that people who self harmed were significantly more likely to have a history of violent behaviour (Myers & Dunner 1984), and another reported that 53% had been violent in the past. However, this number was not significantly different from the control group (Hillbrand, Krystal, Sharpe, & Foster 1994).

In summary, the findings from the majority of studies suggest that there is an association between aggression and self harm, however the reasons why some people who self harm are also more likely to be aggressive during their inpatient stay have not yet been explored.
10.1.2 Other associations between self harm and aggression

One study investigated the use of the DASA and HCR-20 in predicting self harm and aggression and found that self harm and aggression (in service users with a diagnosis of personality disorder) can be predicted by the same negative psychological state (Daffern & Howells 2007). Another study of 20,543 service users admitted to a psychiatric state hospital over a 10 year period found that assault during hospitalisation was identified as a risk factor for attempted suicide during admission (Neuner, Schmid, Wolfersdorf, & Spiebl 2008).

10.2 Relationship with other conflict events

Two studies, including one across three European countries, found that self harm and attempted suicide were not related to other forms of conflict (Bowers, Douzenis, Galeazzi, Forghieri, Tsopelas, Simpson, & Allan 2005b; Bowers, Simpson, & Alexander 2003). One study involving 136 acute psychiatric wards found that both abscondion and refusing to see workers were associated with increased rates of self harm (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b), whilst another reported that people who self harmed also absconded from the hospital, however did not report how many service users were involved in these incidents (Pao 1969).

10.3 History of self harm and attempted suicide

Five studies reported that service users who self harmed during their inpatient stay also had a history of self harm (Ballinger 1971; Gardner & Gardner 1975; Hillbrand, Krystal, Sharpe, & Foster 1994; Modestin & Kamm 1990; Rosenthal, Rinzler, Walsh, & Klausner 1972). The proportion of these service users ranged from 44% to 89% of all people who self harmed during an admission. Two case control studies found that compared to controls, service users who self harmed during their admission were significantly more likely to have a history of self harm (Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Sweeny & Zamecnik 1981). One study found that 78% of service users who self harmed had attempted suicide before their admission, and another that a previous suicide attempt was a significant predictor of an attempt during hospitalisation (Neuner, Schmid, Wolfersdorf, & Spiebl 2008).
These findings could also mean that between 11% and 56% of service users self-harmed (Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Sweeny & Zamecnik 1981), and 22% of service users attempted suicide (Neuner, Schmid, Woltersdorff, & Spiebl 2008) for the first time whilst admitted to a ward. However these figures depend upon the reliability of the service user's clinical notes, and the assumption that most service users will disclose past episodes of self-harm, which may not be the case.

11. Outcomes and consequences of self harm

The outcomes of self-harm were reported in twenty studies and generally related to the severity of self-harm, the service user's psychological state following self-harm, or conflict and containment following self-harm.

11.1 Severity of self harm

Seventeen papers documented information about the severity of self-harm. This was documented using a variety of different measures; some studies recorded the potential lethality of the act, some the actual amount of physical damage inflicted, and others the level of treatment required following self-harm.

11.2 Potential lethality of the act

Two studies used the Lethality of Suicide Attempt Rating Scale to score severity. This is an 11 point scale which takes into consideration the lethality of the method used, and also the circumstances surrounding the attempt (such as the likelihood of someone being discovered). The scale ranges from 0-10 with each score expressing the probability that someone could take their own life as a result of the suicidal act. A score of 0 on the scale represents an act where ‘death is an impossible result of the suicidal behaviour’, and a score of 10 where ‘death is almost a certainty regardless of the circumstances or interventions by an outside agent’. One study reported that 86% of incidents (n= 3,510) were low severity, with a score of 0-1, (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b), whilst a study of 602 reports of attempted suicide found that 219 were classified as low severity, with scores ranging from 0-3.5 (mean 2.1) and 244 were classified as high severity, with scores ranging from 5-10 (mean 8.0) (Bowers et al, in press).
11.3 Physical damage sustained

Two studies examined the amount of physical damage sustained through the act of self harm. One study scored the severity of 196 incidents of self harm using the Modified Overt Aggression Scale. The MOAS measures four types of aggression (verbal, against objects, against self, against others), each type is either scored as absent, or as one of four levels of severity ranging from mild self harm (scratching skin and hitting self) to severe (mutilating self with deep cuts, fracture and internal injury). The study reported that 26% were mild, 55% moderate, 14% severe and 6% very severe (Ehmann, Smith, Yamamoto, McCarthy, Ross, Au, Flynn, Altman, & Honer 2001). Another study of 237 incidents devised its own system of categorising severity based on damage sustained, and reported that 35% of incidents were severity level 1 (scratching skin, pulling hair), 38% severity level 2 (head banging, pounding wall), 7% severity level 3 (slashing skin, cigarette burn), and 19% severity level 4 (broken bones, enucleation) (Hillbrand, Krystal, Sharpe, & Foster 1994).

11.4 Treatment required

A number of quantitative papers rated the severity of self harm according to the medical interventions that the service user received for their injuries. A study of 405 incidents reported that 44% had a mild outcome, requiring no intervention, 43% a moderate outcome (requiring a non invasive medical intervention) and 12% a severe outcome which required an invasive medical intervention (Burrow 1992). Another study of 1607 incidents found that 58% required no first aid, 33% required non-invasive interventions, 8% required invasive intervention and 1% were potentially life threatening, and required a call to emergency services (Low, Terry, Duggan, MacLeod, & Power 1997;Mannion 2009). A similar study of 309 incidents reported that 41% required no first aid required, 29% a non-invasive intervention, 13% invasive intervention and 1% hospitalisation for less than 24 hours (Mannion 2009). One study reported that 93% of cases of self harm (n=978) did not require treatment from a general hospital, however in 86% of cases service users were examined by a doctor, and in 58% of cases they were administered first aid (Beasley 1999), and another that only 23% (n=7) of cases required treatment (Foster, Bowers, & Nijman 2007). One study however found that 73% of incidents (n=112) resulted in visible injury and/or need for treatment (Nijman, Joost, & Campo 2002).
11.5 Other

One paper reported that 13% (n=19) of episodes of self harm were classified as serious untoward incidents (SUIs), requiring special investigation (Bowers, Allan, Simpson, Nijman, & Warren 2007a), whilst another found that 23% (n=41) of episodes were classified as an SUI (Stewart, Bowers, & Warburton 2009). A study of nine service users reported that four incidents were life-threatening, and six left the person permanently disfigured (Sweeny & Zamecnik 1981). One paper described a case study of a service user who suffered lasting damage after removing her eye and optic nerve (Eisenhauer 1985).

In summary, studies generally found that most cases of self harm were of low severity, however some incidents were very severe. In these cases there was a high risk of death, and people sustained serious injuries, often requiring invasive medical intervention.

11.2 Part of body affected

Two studies recorded information about the part of body injured through self harm. A study of 22 service users found that all self harmed on their wrist or forearm, two sustained injuries on their face, and one on their neck, abdomen, thigh, leg, toes and feet (Gardner & Gardner 1975). Another study of 57 service users involved in 309 incidents of self harm also found that the majority of people sustained injuries to their arms (80%), and a number sustained injuries to their head (46%), least affected were the torso (2%), and genitalia (2%) (Mannion 2009).

11.3 Pain during, and after self harm

A number of studies reported that the majority of service users did not feel any pain whilst they were self harming (Foster, Bowers, & Nijman 2007; Gardner & Gardner 1975; Grunebaum & Klerman 1967; McKerracher, Loughnane, & Watson 1968b; Rosenthal, Rinzler, Walsh, & Klausner 1972). Two studies reported that most service users did not feel any pain soon after they had self harmed (Grunebaum & Klerman 1967; Rosenthal, Rinzler, Walsh, & Klausner 1972), whilst two reported that service users did feel pain after self harming (Gardner & Gardner 1975; McKerracher, Loughnane, & Watson 1968b).
11.4 Psychological state after self harm

Some papers documented how the service user felt after they had self harmed. One described a case study of a service user who felt relieved after she cut herself, she described this as a relief from feeling "dead, empty, like a leech" (Rinzler & Shapiro 1968). One study described a service user who seemed pleased with herself after self harming, and appeared calm and felt less tense (Grunebaum & Klerman 1967). Another study reported similar findings, stating that service users felt a sense of relief after they had cut, and felt pleased as they were less tense. This study also found that some service users could not remember cutting themselves (Pao 1969). One study interviewed 18 service users immediately after they had self harmed by cutting. The study asked people about how they felt during, and after they had self harmed. They study reported that during cutting, most people experienced drastic changes in their mood, and many had intense reactions to the blood or wound. Sixty five percent (n=11) of people who saw blood had positive reactions ("happy", "fascinated") and 11% (n=2) liked the warmth of the blood. Another service user said that when she self harmed she liked to see the wound. One service user stated "I like to see pain". Most service users stopped cutting because they felt relieved and satisfied (having had enough pain, seeing enough blood) (Rosenthal, Rinzler, Walsh, & Klausner 1972).

11.4 Conflict and containment events following self harm

One paper looked at the conflict and containment events preceding acts of self harm (n=125) or attempted suicide (n=40). It found that the most frequent events following self harm were PRN medication (27%), de-escalation (18%), manual restraint (7%), and the start of special observation (6%). Other events were verbal aggression (5%), refusing to see workers (4%), refused PRN (4%), self-harm (4%), attempted abscond (3%), aggression to objects (3%), refusing to eat (3%), suicide attempt (2%), refusing to go to bed (2%), sent to PICU or ICA (2%), end special observation (2%) and time out (2%). The following events occurred after just 1% of episodes of self harm respectively: refusing to attend to personal hygiene, abscond, substance use, demanding PRN, start of detention, end of seclusion, and a show of force. The most frequent events following attempted suicide were PRN medication (29%), the start of special observation (11%), aggression to objects (6%) and the end of special observation (6%). Other events following attempted suicide were: verbal aggression (3%), physical violence (3%), refusing to see workers (3%), attempted abscond (3%),
returned from abscond (3%), refused regular medication (3%), suicide attempt (3%), sent to PICU or ICA (3%), manual restraint (3%) and time out (3%) (Stewart et al, in press).

12. Costs of self harm

Very few papers contained information about the costs of self harm. One study interviewed staff about the resources typically used to deal with incidents in terms of numbers, skill mix and time of staff involved, medication and administration costs. The authors estimated that self harm had a mean cost of £62.52 per event, £22.40 per day (based on a rate of 0.36 episodes/day), £8.2k per ward per year and just over £4 million per year across England (Flood, Bowers, & Parkin 2008). Two papers found that experiencing self harm led to some staff taking days off work; One quantitative study found that experiencing mild or severe violence against self or a suicide attempt was associated with staff having days off work sick (Nijman et al. 2005), whilst a qualitative study conducted interviews with 6 nursing staff and found that when supporting service users who self harmed, staff sometimes experienced negative emotions so intensely that they had to take sick leave from work (Wilstrand et al. 2007)

13. Staff supporting people who self harm

13.1 Staff experience of self harm

One study of 10 service users admitted to a forensic unit reported that the vast majority of incidents were dealt with by the nursing staff (Low, Terry, Duggan, MacLeod, & Power 1997), whilst another survey of 154 nursing staff found that 84% had experienced mild self harm, 57% severe self harm and 68% a suicide attempt in the past year. On average staff had experienced 12 incidents of mild self harm, 4.2 incidents of severe self harm and 4.4 attempted suicides (Nijman, Bowers, Oud, & Jansen 2005)

13.2 Impact of staffing factors on self harm

A number of studies found some evidence that the type and numbers of staff on a shift had an impact on the rates of self harm. One looked at the rates of self harm in
16 psychiatric wards over 140 weeks and found that bank and agency staff hours were associated with an increased rate of self harm (Stewart, Bowers, & Warburton 2009). Another study of 136 acute psychiatric wards over a 6 month period found that having qualified staff on duty was significantly associated with decreases in rates of all self harm, whilst having student nurses on duty was significantly associated with increases in rates of all self harm. (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b). A study of incidents of self harm over 30 months, within 3 hospitals found that increases in staff absence was significantly associated with self harm (Bowers, Allan, Simpson, Nijman, & Warren 2007a), and one study which examined the impact of a 6 monthly rotation of resident physicians on levels of self harm in a psychiatric ward found that there was an increase in incidences of self harm during a period where new resident physicians reportedly disrupted practise on the ward (Kroll 1978).

13.3 Staff attitudes and perceptions

Eight studies collected information about staff perceptions, using a mixture of both quantitative and qualitative methodologies. Their findings could be separated into five themes outlined below.

13.3.1 Staff perceptions of, and attitudes towards people who self harm and attempt suicide

One study which conducted interviews with six nursing staff found that staff described service user's self harming as a forceful action towards the people around them. Some staff felt that these service users were manipulative, or tried to deceive them (Wilstrand, Lindgren, Gilje, & Olofsson 2007), and this evoked an emotional response from staff as explained above. One paper presented the observations of two clinicians caring for service users who self harmed. The clinicians theorised that self harming behaviour differs from attempted suicide, and perceived it as a mechanism through which people could confirm the integrity of their body and their ego after experiencing severe ego dysfunction and episodes of depersonalisation. They felt that self harm was therefore a protective mechanism, an attempt to avoid psychosis and to be cared for (Rinzler & Shapiro 1968). Another study interviewed 8 nurses and reported that staff differentiated between self harm and suicidal behaviour, however noted that this was not reflected in their practise. They ascribed a variety of behaviours to self harm; some gave a broad explanation of the behaviour.
which included both socially acceptable and unacceptable self harm, whilst others gave a more specific definition of the behaviour and suggested it could be a cry for help, a way of coping, a way to release emotion or a way of dealing with distress. Three members of staff interviewed stated that they did not judge service users who self harmed, one nurse however felt that it was impossible to be non judgemental explaining that “at the end of the day you’re human and personal feelings are going to come in, but you would hope that they don’t come across” (O’Donovan 2007). One study conducted a focus group with psychiatric nurses and found that staff identified self harm as a characteristic of the service users who they considered to be the most difficult. The authors suggested that staff viewed these service users as a threat to their professional competence, and their control of the ward (Breeze & Repper 1998). Another paper presented an analysis of interviews with 11 nursing staff and found that staff perceived people exhibiting suicidal behaviour as being severely depressed, the nurses reflected on the service user’s suffering, specifically their sense of hopelessness, meaninglessness, and lack of control. The authors categorised their descriptions of these service users into five labels: ‘The mask wearer’ (well educated men with status and position, reveal much less than others, conceal their depression well, are difficult to reach, are more likely to attempt to take their own life). Nurses commented that they felt some insecurity when working with these particular service users, as because they did not express their thoughts and feelings they found it difficult to assess risk of self harm. ‘The Screened off’ (service users who were asocial, or did not communicate at all, were not very active). Nurses stated that they found it difficult to care for these service users as they avoided social contact. ‘The social service user’ (social end extrovert, have the ability to express all kinds of feelings). Nurses found these people easier to support, and to assess, as they made it clear how they were feeling. ‘The relapsing service user’ (service users who relapse, who are chronically suicidal). Nurses felt that these people did not have enough sources of support outside of hospital. Finally, ‘The determined service user’ (actively suicidal). Nurses did not feel that they could help these people, they felt that although they were able to keep these people from harming themselves for a short while it was inevitable that they would eventually take their own life. The authors felt that the tendency of nurses to categorise people into different categories was a way for them to create emotional distance, to protect themselves from feeling difficult emotions that may arise when working with people who self harm. (Carlen & Bengtsson 2007).
13.3.2 Staff emotional responses to working with people who self harm and attempt suicide

One study which interviewed eight psychiatric nursing staff reported that nurses viewed working with people who self harm as both challenging and frustrating (O'Donovan 2007). Another documented a wide range of responses to working with people who self harm; Nurses described feelings of uncertainty and fear that a service user may take their own life, they felt overcome and powerless when faced with caring for people at risk of self-harm, and this also led to feelings of frustration. Some staff felt that it was not fair that they were exposed to self harm, and some staff who viewed self harm as an attempt to manipulate them felt cheated by service users. Because of these experiences staff sometimes felt angry at service users. Nurses described seeing their colleagues loose control of their emotions and humiliate service users by shouting at them. One nurse said to a service user “how do you think that we, as staff feel? Do you think that we experience it as unpleasant, and horrible, and creepy and frightening to take care of you when you cut yourself all over, or when you try to hang yourself?”. Staff found it difficult to manage their personal feelings, they often did this by shutting off their feelings or joking with the service user. This was necessary to make sure they could maintain the service users safety, one nurse stated “i can feel cold in a way, emotionally you have to cut off some part otherwise it can be very, very hard. In an acute situation you have to act first.” (Wilstrand, Lindgren, Gilje, & Olofsson 2007).

13.3.5 Staff’s perceptions of their practise

One study reported that nurses expressed little satisfaction with their current practise, and felt there was little they could do to improve practise because of a lack of time and resources. Staff felt that because of the nature of their all-encompassing role, they did not have enough time to engage in therapeutic care with individuals who self harmed, and felt that the unpredictable nature of the ward made it difficult to plan anything. Nurses identified the following factors as having a negative impact on the care they provided to people who self harmed: insufficient support structures, lack of consistence of nursing staff, lack of autonomy, lack of services and resources, clients of a mix of ages, and the dominance of the medical model which contradicted the person centred approach that they wished to practise (O'Donovan & Gijbels 2006). Another paper reported similar feelings of dissatisfaction among nurses. Nurses expressed a need for education, and more physical, financial, and staff resources.
They felt that ideally people who self harmed should be cared for in small units without mixing with other service users, and that there should be adequate finances, more time to spend with service users, and trained staff. Nurses felt that they did not understand the service user’s problems and did not know how to care for those with complex problems. Staff also found it difficult to observe the service user closely, but also to protect their integrity (i.e. if a service user is on close observation but is under a blanket, should or could staff remove the blanket periodically, or would that interfere with their integrity?). Staff felt that they had to be on their guard all the time, constantly aware that any risk could be fatal. They described having to negotiate boundaries of closeness to, but also distance from the service user, and that this required ‘sensitive ear’. Staff also felt they had to manage the need to care for the service user as well as not give them too much attention. The nurses said that it was a challenge to work with people who self harmed, but also believed it was possible to help them and described positive elements of their practise such as understanding, engagement, and hopefulness. Some staff experienced a lack of support from co-workers and management. They felt that nobody listened to them, and said that there was a lack of staff involvement in debriefing. This led to feelings of abandonment and separation from their colleges. Some staff however felt supported by co-workers and management. They said that this support was important as it helped them to not feel alone, allowed them to share their personal feelings, and to feel confirmed by co-workers. Staff said that supervision and debriefing after incidents was also important (Wilstrand, Lindgren, Gilje, & Olofsson 2007).

13.3.6 Other

One paper conducted a quantitative analysis of the relationship between staff attitudes towards service users and self harm on 136 acute admission wards using the Attitude to Personality Disorder Questionnaire. This study found that there was no significant relationship between staff attitudes and rates of self harm (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b). Another quantitative study examined the relationship between staff perceptions’ of self harm and their emotional responses and helping behaviours. Seventy six nursing staff answered questions about a hypothetical case of self harm and completed a knowledge and attitudes questionnaire. They found significant associations between staff perceptions of self harm and their attitudes towards service users and hope for the future; lower ratings of the likelihood that self harm was a stable, repeatable behaviour was associated with higher optimism for treatment to be helpful, and when
self harm was perceived as being due to external factors it was associated with higher pity and helping scores. Staff attitudes towards service users were significantly related to their helping behaviours and attitudes towards their work; there was a significant correlation between lower irritation and adequate skills in dealing with self harm, and a significant positive correlation between optimism for follow up and higher helping behaviour scores. There was also a significant positive correlation between negativity about self harm and worry about working with people who self harm. Unqualified staff had significantly higher negativity scores and worry scores than qualified staff. However, there were no significant associations found between staff knowledge and effectiveness on these variables. Staff reported feeling reasonably effective in managing self harm (mean effectiveness scores= 11.5 out of 15). Negativity scores were low, as were worry scores. The average score for the knowledge questionnaire was 64% (7 out of 11), particular gaps in knowledge were in relation to subgroups of the population who are at high risk of self harming (gay men, people who have experienced sexual abuse or have low socio-economic status). There were no significant differences between male and female staff, and no significant correlations between length of work experience and effectiveness, knowledge and attitudes (Wheatley & Austin-Payne 2009).

14. Other factors associated with self harm and attempted suicide

One study of 516,079 service users admitted to ten psychiatric hospitals in Germany over two decades found that in the second decade there was a positive correlation between the number of beds in the hospital, and the number of attempted suicides. The study also found that the rate of attempted suicide significantly increased during the second decade in 4 out of 10 hospitals, despite an 'above optimum' ratio of physicians and nurses to service users (Gorenc & Bruner 1985).

One study of 138 service users found that the subsequent number of hospitalizations was significantly predicted by self harm (Steinert, Wiebe, & Gebhardt 1999)

One study found that significantly more service users who self harmed had no privileges (free passes) at the time they harmed themselves compared to controls (Modestin & Kamm 1990)
15. Other findings

One prospective study collected data regarding incidents of self harm and aggression within a ward over a period of 2 years, and compared the reporting of self harm through incident reports with the recording of self harm using the Modified Overt Aggression Scale. The study found that incident reports underestimated self harm by 65% (Ehmann, Smith, Yamamoto, McCarthy, Ross, Au, Flynn, Altman, & Honer 2001).

One study investigated whether service user's self reported risks of self harm accurately predicted actual episodes of self harm during their admission. All service users admitted during one year (n=489) completed a self report risk scale recording their own risk estimates for self harm behaviour, and ward staff recorded episodes of suicidal and self-harm behaviour during each admission. They study found that female service user's ratings of their risk of suicidal and self-injurious behaviour correlated significantly with episodes occurring during their admission, however there was no significant correlation for male service users (Roaldset 2010).

One study examined 244 reports of attempted suicide and reported how each suicide was prevented. The study found that alongside the actions of staff (72.2%), 6.6% of people were found by a fellow service user, 3.2% after a friend or relative alerted staff, 2.8% revealed what they were doing/activated an alarm, and 1.6% could not take their own life due to problems with the method they were using such as the use of collapsible curtain rails (Bowers et al, in press).

16. The ‘City Model’

16.1 Evidence for the City Model

16.1.1 Quantitative research

Nine quantitative studies provided evidence for the City Model, and the findings from the majority of these studies (n=6) were in support of the concept of ‘technical mastery’. One study found that of the attempted suicides occurring within inpatient
care, the largest number were prevented because of staff being ‘caringly vigilant and inquisitive’ (Bowers et al, in press). One study evaluated the effectiveness of a ‘behaviour plan’ on the behaviour of a service user admitted to acute psychiatric care, and found there was a reduction of rates of self harm following its implementation. The ‘behaviour plan’ incorporated some of the features of the City Model; it required all staff to maintain a consistent approach when supporting the service user, in line with ‘effective structure’ and ‘teamwork skill’. It incorporated additional training for staff, in line with ‘technical mastery’, and required staff to provide genuine verbal praise of the service user, in line with ‘positive appreciation’ (Bisconer, Green, Mallon-Czajka, & Johnson 2006). A study, in which 72 nursing staff completed a questionnaire exploring their knowledge of, and attitudes towards service users who self harm found that there was a significant correlation between lower irritation with service users and adequate skills in dealing with self harm, providing evidence for the importance of ‘emotional regulation’. The study also found that unqualified staff had significantly higher negativity scores and worry scores, and that there was a significant correlation between negativity about self harm and worry about working with service users who self harmed, highlighting the importance of ‘technical mastery’ and ‘positive appreciation’. (Wheatley & Austin-Payne 2009). One study of 309 incidents of self harm found that ‘issues to do with the ward’ including altercations between staff and service users was an antecedent to 25% of incidents of self harm, and that denial of a request was an antecedent to 8% of incidents suggesting that ‘technical mastery’, and also possibly ‘emotional regulation’ could reduce rates of self harm. One study conducted interviews with 18 service users immediately after they had self harmed and found that 40% (n=10) of incidents were related to the service user’s feelings of disappointment with their doctor, highlighting the importance of ‘technical mastery’. Further evidence for this component is provided by a study of 136 acute wards which reported that the availability of qualified nurses on ward was associated with reduced rates of self harm as was panned activities on the ward, suggesting that ‘effective structure’ is important. A study of 14 acute psychiatric wards found that staff absence was associated with increases in self harm, also in line with ‘effective structure’ (Bowers, Allan, Simpson, Nijman, & Warren 2007a), and a study of 31 service users found that the greater the proportion of hospital days with the same registered nurse the lower the likelihood of self-harm, which provides further evidence for the importance of this component (Drew 2001a). Finally, one study evaluated the impact of an intervention based upon the City Model on practise across two acute psychiatric wards and found that there was a significant reduction in conflict (including self-harm) following its
implementation, providing evidence for the entire model itself (Bowers, Flood, Brennan, LiPang, & Oladapo 2006)

16.1.2 Qualitative research

Four qualitative studies provided evidence for the City Model. One study conducted interviews with four service users who self harmed, during these interviews service users described ‘helpful nurses’, who treated them with respect, as a valued person and enabled them to have some meaningful control over their life (Breeze & Repper 1998). This is in line with ‘positive appreciation’ and ‘moral commitments’. Another study conducted interviews with 21 service users who had thought about, expressed the wish to, or attempted to take their own life and noted that they emphasized their need for conformation, and recognition as a valuable person during their interaction with nurses, also in support of ‘moral commitments’ and ‘positive appreciation’. A study with conducted interviews with eight nurses reported that nurses felt that insufficient support structures, lack of consistence in nursing staff, lack of autonomy, and a lack of services and resources affected the quality of care they provided for people who self harmed (O’Donovan 2007), highlighting the importance of ‘effective structure’ and ‘organisational support’. One study which also interviewed service users found that they emphasized a need for conformation, and recognition as a valuable person during their interaction with nurses, in line with ‘positive appreciation’ (Talseth, Lindseth, & Jacobsson 1999). Another study which conducted interviews with six nurses also provided evidence for ‘organisational support’, it found that staff felt they needed more financial and staff resources, and more support from their organisation. Nurses also said they required more training, and support from co-workers in order to support service users who self harmed, and that they found that working with people who self harm evoked personal feelings which they found difficult to manage. This is all in support of ‘technical mastery’, ‘teamwork skill’, and ‘cognitive-emotional self management’(Wilstrand, Lindgren, Gilje, & Olofsson 2007).

16.2 Evidence against the City Model

Two studies reported findings which were in conflict with elements of the City Model. A study of 136 acute psychiatric wards found that there was no relationship between staff attitudes and rates of self harm, which may suggest that ‘positive appreciation’ and ‘moral commitments’ do not have a key role to play in managing self harm. And one study which evaluated the effectiveness of an intervention based upon the City
Model across three acute psychiatric wards found that although before and after analysis showed significant reductions in self harm, when this was compared with five control wards no effect was found (Bowers, Flood, Brennan, & Allan 2008a).

**16.3 Points the City Model has missed**

**16.3.1 Behavioural interventions**

Two papers presented some evidence to suggest that behavioural interventions such as dialectical behavioural therapy (Low 2001), or behavioural rehabilitation programmes (Bellus, Vergo, Kost, Stewart, & Barkstrom 1999) have a role to play in reducing rates of self harm amongst people admitted to inpatient care (see section 9.4 for further details).

**16.3.2 External factors**

One paper found that 'external factors' were reasons for 19.77% (n=207) incidents of self harm, this included anniversaries of traumatic life events and seasonal events (Beasley 1999). Another study found that family matters featured in 3.2% (n=10) of incidents, and the loss of a friend or relative in 3.2% (n=10) of incidents (Mannion 2009).

**16.3.3 Relationship with other forms of conflict and containment**

A number of studies found that there were relationships between different forms of conflict and containment, and this is not represented in the City Model.

Conflict: Increased self harm has been found to be associated with service users refusing to see workers (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b)

Containment: Increased self harm has been found to be associated with constant observation (Bowers, Simpson, & Alexander 2003), door locked for more than 3 hours or door locked for a full shift (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b) Decreased self harm has been found to be associated with intermittent observation (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b)
16.3.4 Service user characteristics

A number of studies found that service users from specific demographic groups were more likely to self harm during an admission, although many studies had opposing findings with regards to a number of characteristics (see section 5 for further detail). There is, however significant evidence to suggest that service users who are young, or have a diagnosis of personality disorder are at increased risk of self harming, and that women, and service users with a diagnosis of personality disorder, depression, or schizophrenia are at increased risk of attempting suicide.

16.3.5 Service user emotional state and inner experiences

Service user emotional state was most frequently identified as an antecedent to self harm and attempted suicide amongst the studies in this review, and this is not included in the 'City Model'. A study of 66 service users found that 64% appeared to self harm in response to their low mood, intrusive thoughts and psychotic experiences (Beasley 1999), and one study of 35 service users found that 40% self harmed in response to difficult emotions, most commonly anger, hopelessness, guilt, and cognitions about self punishment (Mannion 2009), further relevant findings are outlined in Section 8.1.1.

16.3.7 Time of day

Two papers reported variations in the rates of self harm according to the time of day, both found increases in self harm in the evening hours (Beasley 1999; Swinton, Hopkins, & Swinton 1998)

16.3.8 Ward community and interactions between service users.

Three papers found that changes in the ward community were related to increases in self harm. This included the admission of new service users (Bowers, Allan, Simpson, Nijman, & Warren 2007a), the admission of service users under a section (Drew 2001a), under 35, with a diagnosis of personality disorder, neurotic disorder or substance misuse (Stewart, Bowers, & Warburton 2009) . Or a ward community with large numbers of service users from a Carribean ethnic background, without a diagnosis of schizophrenia (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui,
Hackney, Allan, & Simpson 2008b). Four studies found that some people self harmed because of issues related to other service users, or in response to the behaviour of other service users (Beasley 1999; Bisconer, Green, Mallon-Czajka, & Johnson 2006; Nijman, Joost, & Campo 2002; Rosenthal, Rinzler, Walsh, & Klausner 1972). One paper however found that a number of suicides were prevented because the person was discovered by another service user on the ward (Bowers et al, in press).

17. Discussion

There are considerable challenges, and complexities in delivering effective support for those who self harm and attempt suicide within psychiatric inpatient care. People who self harm are likely to be experiencing an overwhelming amount of psychological distress, and are at an increased risk of suicide. At the same time however, there is a lack of knowledge about which interventions are most effective in providing psychological support, and managing self harming behaviour. Additionally, nursing staff often find service users who self harm challenging to work with, and there is evidence that some can develop an intolerance of self harming behaviour and negative attitudes towards those who self harm. This is the first systematic review of research into the characteristics and care of people who self harm or attempt suicide during an admission to a psychiatric inpatient ward, and its key findings are outlined below:

17.1 Summary of studies reviewed

Eighty nine papers were included in this review, the majority (81%) collected and analysed quantitative data, 10% used qualitative methods and 9% adopted a mixed methods approach. Of the studies using quantitative research methods 34 adopted a case control/comparison approach, eight evaluated the impact of an intervention on rates of self harm, 17 investigated the incidence, or type of self harming behaviour and the profile of service users who self harm, eight were primarily interested in aggressive service users (and included aggression against self in their analysis), nine investigated the impact of containment measures on self harm and four examined other aspects of self harming behaviour. Studies were conducted across 13 different countries, however the majority of research took place in the UK (47%) and the USA (25%), with smaller numbers of projects in other Western countries.
17.2 Incidence of self harm

There was huge variation in the rates of self harm and attempted suicide between studies, suggesting that the incidence of self harm is likely to vary significantly across different geographical locations, between different services, and amongst wards serving different population groups. On average, the rates of self harm were substantially higher than rates of attempted suicide, and highest on forensic wards. One study compared rates of attempted suicide between different inpatient services and found that the odds of an attempted suicides on an acute ward were over seven times greater than for forensic, and other types of wards (Bowers et al, in press). On average, just over a third of service users who self harmed did so on more than one occasion, suggesting that rates of self harm could possibly be reduced if focused interventions were delivered for service users directly after their first episode of self harm.

17.3 Characteristics of service users who self harm

17.3.1 Gender and self harm

None of the case control studies found any significant differences in the numbers of men and women who self harmed during an admission, despite the fact that reported rates of self harm are generally higher among women in the community (Bergen, Hawton, Waters, Cooper, & Kapur 2010). These studies tend to look at the rates of self harm by gender, and so it could be that women are more likely to self harm repetitively. Additionally, it has been found that there is a changing gender ratio in the rates of self harm across different age groups (Hawton & Harriss 2008), and so studies reporting gender ratios for all age groups may not be giving an accurate picture regarding differences in rates of self harm. Nevertheless, the findings from studies in this review suggest that there are no gender differences in risk of self harm within psychiatric inpatient care.

All studies that recorded the gender of people who attempted suicide during an admission reported significantly higher numbers of women, and most studies found that younger service users, and those with a diagnosis of personality disorder were significantly more likely to self harm. Two case control studies reported that people who had experienced problems in childhood such as abuse or family disintegration
were also significantly more likely to self harm (Beasley 1999; Beer, Muthukumaraswamy, Khan, & Musabbir 2010). However, despite the large numbers of studies that examined the profile of service users who self harm (including thirty five case/control studies), these were the only conclusive findings from the review, suggesting that most demographic or clinical characteristics cannot be reliably used to assess risk of self harm.

17.4 Characteristics of self harming behaviour

Studies reported a huge variety of different methods used by people to self harm, the majority identified ‘cutting’ as the most common method, other methods commonly used were head banging and strangulation. A wide variety of objects were used for self harm, with one study reporting that over 50 different objects featured in attempted suicides (Bowers et al, in press). This finding highlights the challenges faced by wards that have self harm reduction policies which include restricting access to a particular method of self harm. In general, it was reported that people were more likely to self harm in private areas of the ward such as bathrooms or bedrooms, and studies found that the highest rates of self harm were in the evening hours. Targeted interventions, such as regular checks of the private areas of the ward, and increased checks or activities in the evening hours may help to reduce rates of self harm during these times.

17.5 Reasons for self harm

The majority of studies that explored the motivations for self harm analysed information recorded in nursing notes or incident reports, with only two studies (both published in the 1970’s) consulting service users themselves (Gardner & Gardner 1975; Rosenthal, Rinzler, Walsh, & Klausner 1972). Consequently most of the data regarding motivations for self harm in inpatient care relates to the events, or emotional states preceding episodes self harm, which are likely to be associated with the act itself. In general most episodes of self harm were related to times when people were experiencing distressing thoughts and feelings, or dissociative states such as ‘numbness’ (Beasley 1999; Daffern & Howells 2007; Mannion 2009; Modestin & Kamm 1990; Nijman, Joost, & Campo 2002). This is a frequent finding in community based studies, which often report that self harm functions as a coping mechanism, reducing the intensity of psychological distress (Klonsky 2007). This suggests that people who self harm whilst in inpatient care may benefit from an
intervention which helps them to identify, and utilise alternative mechanisms of coping with the feelings they find most distressing. External factors which are likely to have an impact on emotional wellbeing such as relationship difficulties, stressful life events or bereavement were also antecedents to self harm. Interestingly, factors relating to the management of the ward or nursing care preceded as many as 44% (n=137) of episodes of self harm (Mannion 2009), it is likely that aspects of inpatient care such as the refusal of a request, will also have a negative impact on emotional wellbeing and so may lead to self harm. In such cases these ‘triggers’ for self harm should be identified so that staff practise can be changed to better manage, or avoid situations which can increase emotional distress. Significantly, one study found that rates of self harm were reduced following an intervention which didn’t have a focus on self harm behaviour itself, but on the way in which staff interacted with all service users on the ward (Bowers, Flood, Brennan, LiPang, & Oladapo 2006). Although emotional distress appears to be a common antecedent to self harm, it is important to note that people can self harm for a variety of reasons, including to communicate psychological pain (Bisconer, Green, Mallon-Czajka, & Johnson 2006), to seek help from others (Gardner & Gardner 1975), to feel the exhilaration following self harm (Mannion 2009), to prevent themselves from hurting others (Coons & Milstein 1990) or in response to delusional thoughts or hallucinations (Eisenhauer 1985). Self harm may also have a variety of functions for one single person and so the unique reasons for self harm, and ‘triggers’ of self harming behaviour should be identified with each individual in order to provide them meaningful support. Arguably, those who work within psychiatric inpatient care are in the best position to help people who self harm to understand and manage their behaviour, as nursing staff are able to observe the circumstances surrounding self harm, and to explore the reasons for self harm immediately after the act.

### 17.6 Interventions for self harm

Interventions provided for service users who self harm fell into four broad groups: management strategies, behavioural interventions, psychotherapeutic interventions and medication. Self harm management strategies were prominent in the literature and were used to directly prevent self harm; these included constant and intermittent special observation, seclusion, mechanical and manual restraint, removal of means, instructing service users to remain in their nightclothes and PRN medication. The findings from this review suggest there is considerable variation in the strategies used to reduce self harm across different services. Although there is some evidence
to suggest that intermittent observation is effective in reducing rates of self harm (Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b), on the whole there has been very little research into the effectiveness of these management strategies. Additionally, each of these interventions has different implications for the care and experience of service users during their admission, and so some are likely to be viewed more negatively than others. Service users reported that they found some of these interventions claustrophobic (Breeze & Repper 1998), and that they increased levels of emotional distress (Langan & McDonald 2008), suggesting that the type of management strategies used may have implications for service user recovery. Staff have also voiced concerns that certain management strategies have a negative impact on wellbeing and are an infringement of service user rights (O’Donovan 2007). However, these strategies underlie one of the key functions of inpatient care, which is to prevent self harm and suicide (Bowers 2005), and are therefore both necessary and important. There is consequently a need for far more research into their effectiveness, and into service user preferences in order for wards to deliver effective and appropriate interventions to ensure safety on the ward.

Pharmacological, behavioural and psychotherapeutic interventions for people who self harm were far less prominent in the literature and aimed to change the self harming behaviour, or to alleviate emotional distress. One study examined the effectiveness of Clozapine for self harm and reported significant reductions in restraint after service users had taken the drug for from 6-12 months, however did not report it’s impact on rates of self harm (Chengappa, Ebeling, Kang, Levine, & Parepally 1999). Behavioural interventions included no-suicide contracts (Drew 2001a), negative consequences for self harming behaviour (O’Donovan 2007), distraction strategies, behavioural rehabilitation programming, behaviour plans and dialectical behavioural therapy. One paper presented some evidence for the effectiveness of behavioural rehabilitation programming, whilst another study found no evidence for the effectiveness of no-suicide contracting (Drew 2001a). Just two papers mentioned the use of psychotherapeutic interventions; one stating that service users were offered counselling (Tobin, Lim, & Falkowshi 1991), and another that nurses offered therapeutic time with people, which had a range of different functions, such as instilling hope and focussing on life outside of hospital (O’Donovan 2007). Community based research into interventions for self harm has not yet generated conclusive evidence for the effectiveness of any one approach. A Cochrane review of 23 studies found modest evidence for the use of problem solving therapy, depot flupenthixol and long term psychological therapy, however concluded that there is still ‘considerable uncertainty’ regarding effective treatment of self harm,
and a need for much larger clinical trials (Hawton et al. 1999). People who self harm tend to have shorter lengths of stay in acute inpatient care compared to those who do not, with admissions ranging from 3 to 50 days (Gunnell et al. 2008). Consequently, in many cases there may not be sufficient time for wards to provide structured psychotherapeutic interventions during an admission, this is further complicated by the fact that the amount of time someone will remain in inpatient care is unknown. However, alongside the containment of self harming behaviour, people admitted to inpatient care are also in need of psychological support. There may be a place for brief psychological interventions such as counselling, or behavioural therapy, which could be administered by psychologists or nurses during 1:1 time, and do appear to be provided by some wards. There is also a substantial amount of literature highlighting the importance of the therapeutic relationship between service users and nurses, who will provide the majority of their care during an admission (Bee et al. 2008; Bowers et al. 2005a; O’Donovan 2007). Service users have identified ‘helpful’ nurses as being those who treated them with respect, as a valued person, displayed empathy, listened to and believed them, and enabled them to have meaningful control over their life (Breeze & Repper 1998). A framework for the meaningful nursing care of suicidal people has also been conceptualised by Cutcliffe et al (2007), and has the key function of ‘reconnecting the person with humanity’ by creating an interpersonal atmosphere where the person can experience a caring, helping relationship. However, when considering interventions for self harm it is important to note that the behaviour can have a variety of different functions (see section 17.5), and so people who self harm will have different needs in terms of psychological support. For example, not all people who self harm are suicidal (Klonsky 2007), and so may benefit from other aspects of therapeutic nursing care. Given that self harm is a key determinant of admission to a psychiatric ward (Brooker et al. 2007), and the subsequent risk of suicide following self harm (Hawton, Zahl, & Weatherall 2003), there is a pressing need to identify appropriate and effective management strategies and interventions which can be provided for people who self harm during their inpatient stay.

17.7 Staff experience of working with people who self harm

Nurses frequently described their experiences caring for people who self harm as challenging. Some nurses stated that whilst they recognised they needed to keep people safe, they felt uncomfortable implementing certain self harm management strategies such as constant observation, asking service users to remain in their
nightclothes and confiscating their possessions (O’Donovan 2007). As discussed in section 17.7, some staff felt that these interventions were an infringement of service user rights, an invasion of their personal space and had a negative impact on their wellbeing (O’Donovan 2007; Wilstrand, Lindgren, Gilje, & Olofsson 2007). Staff often described service users who self harmed as ‘difficult’ (Breeze & Repper 1998), or difficult to care for, this seemed to relate to people who did not express their emotions, or did not communicate with nurses (Carlen & Bengtsson 2007). There also appeared to be particular concerns around assessing risk, and a real fear of service users harming themselves, or taking their own life (Carlen & Bengtsson 2007; Wilstrand, Lindgren, Gilje, & Olofsson 2007). Nurses described experiencing a range of other negative emotions whilst working with people who self harm including powerlessness, anger and frustration which they found difficult to manage. Consequently some staff shut off their feelings, or distanced themselves emotionally from the people they were caring for (Carlen & Bengtsson 2007; Wilstrand, Lindgren, Gilje, & Olofsson 2007). Additionally some nurses spoke of a lack of support from their co workers and management, and some had to take time off work because of the intensity of their emotional distress (Wilstrand, Lindgren, Gilje, & Olofsson 2007). Some nurses said that they did not understand the problems experienced by service users who self harmed, and in some cases self harming behaviour was seen as ‘manipulative’, ‘a forceful action’ towards others, or as a threat to nurses competence and control (Breeze & Repper 1998; Wilstrand, Lindgren, Gilje, & Olofsson 2007). There was some evidence that these difficulties contributed to negative attitudes towards service users who self harmed, and inevitably had an impact on nursing practise. One study found a positive correlation between staff optimism for follow up and higher helping behaviour scores, and lower irritation and adequate skills in dealing with self harm (Wheatley & Austin-Payne 2009). Another reported cases of nurses shouting at service users, or humiliating them (Wilstrand, Lindgren, Gilje, & Olofsson 2007), and one study found that nurses felt unable to help people change their suicidal behaviour, that it was inevitable that some would eventually take their own life (Carlen & Bengtsson 2007).

This review has highlighted some complex and difficult issues experienced by nurses when working with people who self harm within inpatient care; nurses must provide a therapeutic environment for people, one which promotes recovery, whilst also keeping them safe from harm and at times these roles will be in conflict with one another. Acts of self harm, and suicidal behaviour are difficult to witness, and nurses must manage their own emotional responses whilst working with people experiencing
an overwhelming amount of psychological distress. This is coupled with a lack of understanding of self harm, a lack of evidence based knowledge around what is effective in supporting people who self harm, and at times, little organisational support. It is likely that these difficulties will have a negative impact on the therapeutic relationship between service users and nursing staff. There is currently evidence that staff attitudes, knowledge and emotional wellbeing have an impact on the levels of conflict and containment within psychiatric inpatient care (Bowers 2002; Bowers et al. 2000), however more research is required to determine precisely how difficulties associated with supporting people who self harm impact on the delivery of care, and how they can be addressed. Currently there are few theoretical models of practise, and little guidance around appropriate inpatient nursing care for those who self harm. As discussed in section 17.7, there is a need for more research into effective interventions for self harm, however the development of some form of guidance based on what we do know could help to reduce feelings of helplessness and frustration amongst nursing staff, and increase their knowledge and skills, as well as feelings of hope for recovery. It is clear that staff require support in managing difficult emotions that arise when working with people who self harm, which should be addressed through some form of structured supervision, informal support from colleagues, staff support groups or training in emotional regulation. Staff also expressed concerns around implementing certain self harm management strategies, which they felt were detrimental to service user wellbeing. The use of joint care planning to identify the service user’s preferred method of managing their self harm may help to alleviate some staff concerns about these practises.

Despite these challenges it is important to note that the literature provided many examples of nurses working positively with those who self harm. Service users described nurses who displayed warmth, empathy and empowered them to achieve their goals (Breeze & Repper 1998), and in a recent study service users have identified inpatient care for those who are suicidal as ‘important and useful’ (Ghio et al. 2011). Nurses described many ways in which they provided therapeutic support for service users, and there were examples of nurses expressing hope for the future, and valuing the opportunity to support people during a very difficult time in their lives (O’Donovan 2007; Wilstrand, Lindgren, Gilje, & Olofsson 2007). Alongside these therapeutic aspects of nursing care, nurses also kept people safe from harm, one study reporting that as many as 150 inpatient suicides were prevented because of the actions of nursing staff (Bowers, James, Dack, Gul & Thomas, in press).
There has been much discussion about the precise definition of the term 'self harm', because the act encompasses a range of different behaviours, which can have many different functions. There has been particular debate around whether, or not 'self harm' should include acts of attempted suicide. Some argue that self harm and attempted suicide are different behaviours; that self harm is an attempt to enter into an ongoing discourse, to relive psychological pain, and to survive, whilst attempted suicide is an effort to end all discourse and to stop living (Gallop 2002; Klonsky 2007; Simpson 2006). The majority of studies in this review (76%, n= 69) adopted a broad definition, where 'self harm' included all acts of intentional injury to self, regardless of the intent. Many studies chose this definition because researchers felt that it was not possible to determine intent. However, some studies (n=20) did attempt to differentiate between acts of self harm and attempted suicide (Bellus, Vergo, Kost, Stewart, & Barkstrom 1999; Bowers et al.; Bowers, Whittington, Nolan, Parkin, Curtis, Bhui, Hackney, Allan, & Simpson 2008b; Coons & Milstein 1990; Drew 2001a; Gorec & Bruner 1985; Gournay & Bowers 2000; Hillbrand, Krystal, Sharpe, & Foster 1994; Lee, Villar, Juthani, & Bluestone 1989; Low, Terry, Duggan, MacLeod, & Power 1997; McLaughlin 1999; Neuner, Schmid, Wolfersdorf, & Spiebl 2008; O'Donovan 2007; Pirkis, Burgess, & Jolley 2002; Pirkis, Burgess, & Jolley 1999; Roaldset 2010; Spiebl, Hubner-Liebermann, & Cording 2002; Stewart et al.; Stewart, Bowers, & Warburton 2009; Talseth, Lindseth, & Jacobsson 1999). These studies used a variety of criteria to classify attempted suicide including the lethality of the attempt and the methods used (Stewart, Bowers, & Warburton 2009), expression of suicidal intent at the time of the act (Drew 2001a), adopting the clinicians own classification of the incident (Neuner, Schmid, Wolfersdorf, & Spiebl 2008) or the use of measures such the Health Of the Nations Outcome Scale (HoNOS) (Pirkis, Burgess, & Jolley 1999). A number of studies in this review investigating attempted suicides have reported different findings from those which looked at all self harm. Case control studies found no differences in gender amongst people who self harmed during their inpatient stay (Beer, Muthukumaraswamy, Khan, & Musabbir 2010; Bowers, Simpson, & Alexander 2003; Callias & Carpenter 1994; Karson & Bigelow 1987; Myers & Dunner 1984), but found that women were at an increased risk of attempted suicide (Lee, Villar, Juthani, & Bluestone 1989; Neuner, Schmid, Wolfersdorf, & Spiebl 2008). Studies also found behavioural differences in the act itself; people were most likely to self harm by cutting (Table 3), whilst the vast majority
of suicide attempts were by strangulation (Bowers, James, Dack, Gul & Thomas, in press), these same differences are also reported in community based studies (Bergen, Hawton, Waters, Cooper, & Kapur 2010; National Confidential Inquiry into Suicide and Homicide by People with Mental Illness 2010). Because the majority of studies of self harm have adopted the broad definition of the act it is also possible that further differences may have been found, had studies excluded acts of self harm where the person intent to take their own life. Most importantly, however are reports that both clinicians and service users frequently differentiate between acts of self harm and attempted suicide (Babiker & Arnold 1997; O'Donovan & Gijbels 2006), as does the UK’s National Patient Safety Agency, whilst research and clinical guidance continue to address them as the same. This has significant implications for both research and practise; it may be that there are different risk factors for self harm and attempted suicide, there may also be a different relative risk of suicide following an act of self harm compared to a suicide attempt, and if these acts are different they will require different therapeutic interventions. In addition, research findings cannot be reliably compared across studies using different definitions of self harm. There are undoubtedly many challenges in differentiating between these acts, however as long are they are studied together we will be unable to develop reliable methodologies which will allow them to be studied separately, and so enable us to determine whether there are any significant differences in these behaviours at all.

17.9 Future research

Given the complexities associated with providing appropriate inpatient care for people who self harm and attempt suicide, the levels of psychological distress experienced by those who carry out these acts and the subsequent risk of suicide associated with them, there is a pressing need for more research in this field. Of the studies included in this review only four sought the views of service users, and just 23 were published within the last five years. Future research should determine the effectiveness of self harm management strategies and therapeutic interventions for those who self harm, with the aim to develop a model of meaningful nursing care for people who self harm during an admission. There needs to be more research into the reasons for self harm in inpatient care, as these may be different from self harm in the community; studies should particularly focus on the relationship between self harm and elements of nursing practise. Research should also investigate how the difficulties that staff experience when working with people who self harm impact on their practise, and should explore how these issues can be addressed. Studies need
to investigate any possible differences in factors associated with acts of self harm and attempted suicide, and to test ways in which researchers can reliably differentiate between these behaviours. Finally, there needs to be far more research documenting the views and experiences of people who self harm and/or attempt suicide during their inpatient stay.
18. References


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## Appendix 1. Table of studies included in the review

<table>
<thead>
<tr>
<th>Paper</th>
<th>Type of service</th>
<th>Study type</th>
<th>Country</th>
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<tr>
<td>Bisconer, S.W., Green, M., Mallon-Czajka, J., Johnson, J.S. (2006). Managing aggression in a psychiatric hospital using a behaviour plan: a case study</td>
<td>Acute</td>
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<td>Callias, C.G and Carpenter, M.D. (1994) Self injurious behaviour in a state psychiatric hospital. Hospital and Community Psychiatry, 45(2), 170-172</td>
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<td>Coons, P and Milstein, V. (1990) Self-mutilation associated with dissociative disorders. Dissociation, 3(2), 81-87</td>
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<td>Jackson,N. (2000). The prevalence and frequency of deliberate self-harm among male patients in a maximum secure hospital. Criminal Behaviour and Mental Health, 10, 21-28</td>
<td>Forensic</td>
<td>Case control/comparison</td>
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<td>Kroll, J.L. (1978). Self-destructive behaviour on an inpatient ward. Journal of Nervous and Mental Disease 166(6), 429-433</td>
<td>Acute</td>
<td>Natural before and after design</td>
<td>USA</td>
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<td>Langan,C.; McDonald,C. (2008). Daytime night attire as a therapeutic intervention in an acute adult psychiatric inpatient unit, Psychiatric Bulletin, 32, 221-224</td>
<td>Acute</td>
<td>Investigation into containment measures</td>
<td>Ireland</td>
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