

**A Retrospective Case Note Comparison of Psychosocial  
Presentation and Proposed After Care in Early Adolescent  
Emergency Department Attendees for Acute Alcohol  
Intoxication and Self-harm.**

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## **Abstract**

This project aimed to compare psychosocial features, assessment, treatment and proposed after care of adolescent patients presenting with alcohol intoxication or self-harm at an emergency department (ED) in Leeds, West Yorkshire.

Literature shows adverse effects on physical development and psychological wellbeing, as well as increased risks of intentional and unintentional injury and suicide in adolescents who binge drink. EDs don't appear to manage the assessment and care of intoxicated adolescents as well as for those adolescents who self-harm and local and national policies in the area of mental health do not seem to reflect the risks of binge drinking in adolescence.

This research used a comparative case note analysis to evaluate the differences and/or similarities between adolescent self-harm and alcohol patients at a Leeds ED. Psychosocial data, level of alertness, triage category, admission data and proposed after care were compared between the self-harm and alcohol groups. Groups were separated based on their presenting complaint at the time of ED attendance, but data for adolescents who also used alcohol as part of a self-harm episode was also included in the analysis. A total of 127 cases for a 6 month period were analysed using SPSS. Comparative statistics were undertaken in the form of contingency tables and chi squared tests for the categorical data.

The total sample for both groups was dominated by females and the alcohol group-despite being a significant proportion of the sample-received less psychosocial assessment, proposed mental health care and hospital admission than did the self-harm group. Adolescents presenting with alcohol intoxication at a Leeds ED during the 6 month period were not admitted to hospital as often as adolescents who self-harmed, and they did not receive the same proposed after care by mental health

services as young people who presented with self-harm, despite a similar psychosocial background.

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## Introduction

### Terminology

The terms 'alcohol misuse', 'hazardous', 'harmful' and 'dependent' drinking, 'alcohol use disorder', 'binge drinking', 'heavy episodic drinking' and 'acute alcohol intoxication' are evident throughout the literature. These terms will be used to varying degrees throughout the current study and they are defined below for clarity.

The Department of Health (2013) defines 'alcohol misuse' as drinking excessively and drinking more than the recommended daily limits of alcohol. The recommended safe limits of alcohol are 3 to 4 units a day for men and 2 to 3 units a day for women. Under the umbrella term of 'alcohol misuse', the Department of Health (DH; 2013) utilises the terms 'harmful', 'hazardous' and 'dependent' drinking. Hazardous drinking usually refers to drinking above the recommended levels without any current evidence of harm to health. Harmful drinkers should be taken to mean those that are already showing evidence of health harms but without signs of alcohol dependence. Dependent drinking refers to having developed alcohol dependence with the affected person showing a loss of control over their drinking; this condition is sometimes referred to as an alcohol use disorder.

'Alcohol intoxication' or 'acute alcohol intoxication' will be used as terms for alcohol misuse eventuating in attendance at hospital. These terms can be taken to mean 'binge drinking' which is defined by the National Institute on Alcohol Abuse and Alcoholism as a pattern of drinking that typically occurs after 4 drinks for women and 5 drinks for men in approximately 2 hours. The DH (2013) also defines 'binge drinking' as an episode of heavy drinking over a short period of time and they include drinking to intoxication or drunkenness, as binge drinking. Attendance at an ED for young people intoxicated with alcohol therefore,

could be defined as a binge drinking episode and at times will be described as such in this study. The literature uses several terms for this binge drinking pattern such as 'heavy episodic drinking', and these terms will be clarified for the reader where necessary.

The Leeds General Infirmary (LGI) now describes what used to be known as their Accident and Emergency (A&E) department as the Emergency Department (ED). For this reason, ED will be used to describe this area of the LGI. In much of the North American literature and some European literature these hospital departments are also known as EDs or Trauma centres. Older British literature still describes EDs as A&E departments; these terms will be used interchangeably throughout and should be taken to mean the same thing.

The term 'self-harm' in this document is overarching and will be used to describe self-injury and overdose/poisoning - this is generally the case in the UK literature as well. Distinctions between types of self-harm will be made where necessary in the results section, but typically self-harm should be taken to mean self-injury and overdose/poisoning.

Leeds' children's ED is at the LGI and this study was undertaken with a sample that represents all young people (under 16 years of age) in Leeds who presented at the ED with self-harm or alcohol intoxication over a 6 month period. The Leeds population was estimated to be 751,500 in the 2011 census (Office for National Statistics (ONS), 2012).

In relation to the age range of the sample in the current study, 'adolescence', 'adolescents' or 'young people' should be taken to mean between the age of 10 years until the day before their 16<sup>th</sup> birthday. The World Health Organisation (WHO; 2015) defines adolescence as the period in human growth and development that happens after childhood and before adulthood between the ages of 10 and 19 years. Our upper age range for this study is lower therefore than the WHO definition and ends before the 16<sup>th</sup> birthday. This period can also be described as 'early adolescence' (Urdan & Klein, 1998). However, for the sake of brevity, in

my descriptions of the sample and results, ‘adolescents/adolescence’ should be taken to mean from 10 to under 16 years of age.

For data collection purposes I felt it made sense to keep the upper age limit under 16 years because all records for these patients were held at the LGI, and adolescents under this age limit with an emergency were required to present to the LGI. The Leeds Teaching Hospitals Trust highlights its children’s ED provision on its website: “a separate dedicated facility catering for children up of the age of 16, adjacent to the facilities of Leeds Children's Hospital to ensure seamless care for youngsters” (2015).

Our lower age range was determined to be 10 years and older after preliminary data review and supervisory discussions determined this age as low enough to make certain I collected all alcohol and non-accidental overdose cases. This lower age was also in line with the WHO (2015) defined age range for adolescence. My results subsequently showed that very few presentations were aged under 12 years which justified this decision, and these sample characteristics can be seen in table 1.

In summary, when referring to my participants, adolescents should be taken to mean young people over the age of 10 years and under the age of 16 years. The literature may define adolescence in slightly broader terms and more in line with the WHO definition (10-19 years); this will be clarified for the reader throughout, as will instances where studies or policies highlight issues or findings of relevance to all age ranges.

## **Literature Review**

The current narrative literature review will outline the relevant research papers of direct interest to the current study. The review will also critically appraise papers dealing specifically with adolescent populations presenting at EDs with alcohol intoxication or self-harm.

To provide an important but more general context in relation to the alcohol misuse risks for young people, the literature review will also look at physiological and psychological risks of alcohol intoxication for adolescents. Self-harm risks will also be highlighted due to the fact that young people who self-harm and attend the ED are used as a comparison group in this study. The literature search will also consider national policy and guidance for both self-harm and alcohol misuse.

Alcohol misuse will garner more focus in this review as it is hypothesised that acute alcohol intoxication in adolescence is not considered seriously enough within children's mental health practice. More specific factors such as alcohol misuse patterns, drinking habits by region and gender, and alcohol and suicide risk will also be explored briefly from the context of the literature. Citing general alcohol use risks and patterns of misuse both within the adolescent demographic, and across age ranges, may highlight to the reader that alcohol misuse risks demand more serious attention.

### **Literature Search Strategy and Selection Criteria**

A search for contemporary published studies, review articles and government publications was carried out using OvidMEDLINE(R)(1996-2015); PsychINFO (2002-2015); PsycARTICLES (Full Text) and Google Scholar. The search period was between July 2013 and May 2015. The search terms used were determined by the research question which investigated whether there was a difference in the psychosocial care and proposed aftercare offered to adolescents who had self-harmed or were acutely intoxicated at the time of an ED presentation.

## **Primary Search**

The initial literature search used the OvidMEDLINE(R), PsychINFO, and PsycARTICLES databases. This search did not utilise any predefined search limits and employed a combination of the following keyword search terms: “adolescent alcohol misuse”, “adolescent alcohol abuse”, “adolescent self-harm” and “emergency department attendance”. This search returned 278 papers. Articles not of direct relevance to the adolescent population and which didn’t focus on self-harm and/or alcohol use and ED treatment were excluded from the review. After filtering, 82 articles met this search criteria and were subsequently included in the review.

## **Secondary Search**

Broader searches were undertaken subsequent to the primary search; these searches also employed Google scholar, in addition to the databases cited above, and were influenced by supervisory discussions, study results and citations identified in the primary search.

The secondary search strategy also focussed on Government policy documents and clinical guidance in the areas of alcohol and self-harm in the adolescent population. Articles focusing on mental health and suicide risks associated with alcohol use as well as regional and cultural drinking patterns were included where it was felt they were of relevance to the study.

Search terms used in the secondary keyword search (without predefined search limits) were: “Government alcohol policy”, “British drinking patterns”, “European drinking patterns”, “adolescent alcohol risks”, “gender and adolescent alcohol misuse”, “alcohol and mental health risk” and “alcohol and suicide risk”. These searches identified 44 papers, book chapters or policies of relevance to the study focus and were included in the final review.

## Research Focus

The current study will focus on a comparison between acute alcohol intoxication and self-harm in adolescent groups presenting at the ED in the LGI. I seek to gain an understanding of some of the characteristics of this adolescent demographic and the proposed follow-up support they are offered in relation to self-harm or their drinking and associated difficulties. For this reason, it is important to review the literature on adolescents who self-harm or abuse alcohol and explore commonality between these groups in relation to risk factors and mental health. How these groups are treated within EDs is something that will be explored in the literature; binge drinking patterns and alcohol's role in suicidality and mental health will also be discussed from the context of relevant research articles.

The present research extends an earlier smaller and more limited primary research survey of the characteristics of adolescents who presented at Leeds EDs either intoxicated with alcohol or as a result of self-harm in 2007 (Holme, 2007). This research highlighted an apparent lack of adequate follow-up care for the alcohol group when contrasted with young people who self-harm. In a similar study, Chan, Michaelis and Raffles (2005) recorded admissions for alcohol and self-harm at a children's rapid access unit at a general hospital in the UK, and like Holme (2007) they found that the alcohol group received less satisfactory care than did the self-harm group. They concluded that "self-harm by alcohol overdose failed to receive the same management as other types of self-harm behaviour. Alcohol overdoses accounted for a large proportion of admissions but were not referred to the Child and Adolescent Mental Health Service" (Chan, Michaelis & Raffles, 2005, p.50).

The health and social concerns associated with binge drinking are currently high on the British political agenda (Alcohol Concern, 2012; DOH, 2004). Having had the benefit of being raised and educated in Southern Africa and subsequently relocating to North America for 6



years and playing rugby union in all three countries, I would argue that I have a relatively unusual perspective on the drinking patterns within these cultures. The literature shows that alcohol presents a significant risk to the psychological and physical health of our young people. The associated political debate is interesting, but more specifically, the psychological motivation and consequences of binge drinking are fascinating to me and this project is motivated by this interest.

### **The Significance of Self-Harm and Alcohol Misuse**

Acute alcohol intoxication and binge drinking are of concern to policy makers and health professionals in England and are currently a topic of popular national debate. These concerns take on additional significance when one considers the implications for young people. The Chief Medical Officer states that almost 10,000 children between the ages of 11-17 are admitted to hospital each year in the UK due to alcohol consumption (Donaldson, 2008). There appears to be little research on the characteristics of adolescent ED attendees who present with alcohol intoxication. A focus of this project therefore is to investigate whether this group receives appropriate care for their problematic alcohol use as the associated negative implications for their physical and mental health are clear (The Home Office, 2012).

Self-harm in adolescents is a significant health problem associated with poor outcomes for young people including reduced life expectancy and the risk of completed suicide as adults (Guerreiro, Sampaio, Rihmer, Gonda & Figueir, 2013). In a systematic review of self-harm, 26% of adolescents were shown to have harmed themselves during the past year; these rates were higher among females during the adolescent years (Evans, Hawton, Rodham & Deeks, 2005). Only 1 in 8 episodes of self-harm results in a hospital presentation; despite this, a large number (20,000 to 30,000) of young people present at EDs after harming themselves (Hawton, Rodham, Evans & Weatherhall, 2002). A

concerning feature of adolescent self-harm is that young people appear to underestimate the danger of their chosen methods of harm (Cottrell et al., 2012).

## **Alcohol Misuse Risks in Adolescence**

### **Mental Health Difficulties**

It is reported that adolescent alcohol use disorders are associated with serious psychosocial problems and adolescents with alcohol dependence issues show increased rates of comorbid mental health disorders and neurocognitive deficits. They also demonstrate reduced motivation in relation to academic success. Alcohol misuse in adolescence places youth at increased risk for subsequent adult alcohol abuse and its related problems (Tripodi, Bender, Litschge & Vaughn, 2010; Rowe, Liddle, Greenbaum & Henderson, 2004; Tapert, Brown, Myers, & Granholm, 1999; Baer, Garrett, Beadnell, Wells & Peterson, 2007).

Comorbid psychiatric concerns associated with alcohol use in adolescence include attention deficit hyperactivity disorder, oppositional defiance and conduct disorders, post-traumatic stress disorder, and major depression (Woolfenden, Dossetor & Williams, 2002). Chronic alcohol consumption in adolescence may heighten feelings of depression (Groves, Stanley & Sher, 2007), and of youths engaged in substance misuse, 60% are said to have some type of co-morbid psychiatric diagnosis (Armstrong & Costello, 2002). Evans (2007) highlights literature suggesting that negative affect and conduct disorders are highly predictive of the development of alcohol use disorders. He suggests that there is an overlap in the risk for developing self-harm behaviours and alcohol use disorders.

Alcohol use and mental health concerns in adolescence is an area of great complexity, with several related psychosocial and developmental factors requiring consideration. There is a suggestion that alcohol misuse

and mental health difficulties aggregate together as part of a diathesis or predisposition known as ‘psychological dysregulation’ or ‘neuro-behavioural disinhibition’ involving risk taking and behavioural disorders (Clark, 2004). Thatcher and Clark (2006) state that alcohol use and dependence is one of the most common psychiatric disorders in the adolescent demographic. They report that a developmental history of disorders characterised by psychological dysregulation predicts adolescent alcohol abuse disorders. Mental health problems are associated with the use of alcohol in young people (The Home Office, 2012) and the weekly use of alcohol is associated with mental health problems (Verdurmen, Monshouwer, Van Dorsselaer, Ter Bogt & Vollebergh, 2001).

### **Neuro-developmental Implications**

Alcohol is the most used substance within the adolescent population. It is argued that alcohol use begins earlier because it is relatively easy to obtain and it lacks the same legal consequences as other more illicit substances (Tripodi et al., 2010). Drinking too much too early in life is a risk to children’s health and development (Fuller, 2011). It is advised that young people under the age of 15 do not drink at all (The Home Office, 2012).

In a systematic review of published studies focusing on children aged 5 to 19 years, Newbury-Birch et al. (2009) state that persistent alcohol abuse can result in a decrease of overall hippocampal volume in young people. Zeigler et al. (2005) reviewed papers focusing on the neurological and cognitive effects of underage drinking. They found evidence of poorer neuropsychological testing performance in spelling, verbal IQ and reading tests in alcohol users compared with non-users. It should be noted however that this was an American review of literature and for this reason ‘underage drinking’ typically means under the age of 21 years, which is the legal drinking age in the United States. However, Newbury-Birch et al. (2009) mirror the concerns in the Zeigler study

(2005) concluding that alcohol use can “pose a risk to young people’s brains due to the plasticity of this organ during an important developmental period” (p. 22). Ashton and Silverstone (2012) come to similar conclusions, reporting that early abuse of alcohol can promote structural and functional brain changes.

### **Physical Injury**

The 2007 European School Survey Project on Alcohol and other Drugs Report (ESPAD; Hibell et al., 2009) states that high alcohol consumption and risky and intensive drinking patterns result in greater risks for UK adolescents in particular. They are more likely than adolescents in any other EU country to be injured or have an accident as a result of alcohol. Young people who drink regularly and heavily, and who experience more negative consequences as a result of this, are more likely to be viewed as dominant, impulsive, disinhibited, deviant, rebellious or non-conforming novelty seekers (Brennan, Walfish & AuBuchon, 1986; Borsari, Murphy & Barnett, 2007; Saltz & Elandt, 1986).

A further two studies highlight the risks of physical injury with alcohol misuse. It should be noted that these study samples were not from the UK (Spanish and Swiss) or specific to the adolescent demographic and should therefore be interpreted with caution in relation to the current research focus. They are cited here as general examples of physical injury risk and hospital attendance across the age range where alcohol misuse is involved. In the Spanish study, Perez et al. (2009) investigated substance misuse among patients attending the ED because of injury. In those aged under 40, 25% of men and 15% of women tested positive for alcohol. The Swiss study (Kuendig, Hasselberg, Laflamme, Daepfen & Gmel, 2008) investigated alcohol consumption as a risk determinant for injury and using multinomial regression models showed (in 3,682 injured patients) that even at lower levels, alcohol is consistently associated with almost all types of injury to all bodily regions.

## **The Onset and Trajectory of Alcohol Misuse**

The aetiology of an alcohol abuse disorder in adolescence is not simply understood and is “likely to result from a developmental process involving the dynamic interplay of multiple influences over time” (Guo, Hawkins, Hill & Abbott, 2001, p.755).

Mason et al. (2011) examined the relationship between early age alcohol use and adolescent alcohol problems in the first cross-national (Washington state, USA/Victoria, Australia) longitudinal panel survey study (over 3 years) on the influence of early exposure to alcohol on the development of adolescent alcohol problems. Their data analysis used multiple-group structural equation modelling and they found that early alcohol use (at 13 years) had a small but statistically significant association with subsequent alcohol problems (at 15 years). Furthermore, low self-regulation prospectively predicted peer deviance, alcohol use and alcohol problems in both samples, which they contend suggests the need for further investigation of the developmental contribution of neuro-behavioural disinhibition (Mason et al., 2011). An Italian study confirmed the suggestion that alcohol abuse in adolescence is the result of a combination of risk factors, finding that the strongest predictor of alcohol abuse is an antisocial peer group (Vieno, Scacchi, Cielo & Barbato, 1999).

As highlighted earlier (Mason, 2011), the age of onset of drinking is said to have an impact upon the risk of future alcohol abuse. Grant and Dawson (1999) report that their “findings...identified preadolescence and early adolescence (aged 16 and younger) as a particularly vulnerable period for initiation of drinking...strongly associated with an elevated risk of developing an alcohol use disorder” (p.108). Buydens-Branchey, Branchey and Noumair (1989) identify a sub-group of alcoholics who display alcohol-seeking behaviours earlier in life, specifically alcohol abuse before the age of 20 years. This group was three times as likely to

be depressed and four times as likely to have attempted suicide than individuals who began using alcohol later in life (Buydens-Branchey et al., 1989).

Ekland and Klinteberg (2009) conducted a Swedish study with a large sample (n=938: 406 males/532 females) of adolescents aged 14 years. Their results showed that adolescents with violent, delinquent or antisocial behaviour were more likely to be problematic alcohol users. Their research also highlighted adolescents with an early drinking debut and a high level of binge drinking in early adolescence as having a high likelihood of continued heavy alcohol use.

## **Alcohol Misuse in Europe and Britain**

The European Union (EU) is the heaviest drinking region in the world and adults in the United Kingdom (UK) have the third highest binge drinking rates in the EU (Patton, Strang, Birtles & Crawford, 2007). The most recent report on alcohol-related deaths in the UK confirms 8,748 deaths from alcohol related issues in 2011 (ONS, 2013). The DH estimates the cost of alcohol harm to the NHS in England to be £2.7 billion each year (DH, 2008). “The majority (66%) of all alcohol-related deaths in the UK in 2011 were among males....Liver Disease is the most prevalent of all alcohol-related causes of death...and is responsible for approximately 66% of all alcohol-related deaths in 2011” (ONS 2013, p.6-7). A more recent report in the British Medical Journal (BMJ) citing new figures from Public Health England showed how 59% of local authorities in England reported a slight rise in hospital admissions of adults where alcohol was the main cause of admission. This increase was higher in women (2.1%) than in men (0.7%) (*BMJ* 2015; 350: h3010).

As outlined earlier, associated with alcohol use is the risk of injury. Simpson, Murphy and Peck (2001) assessed alcohol concentrations in a comprehensive sample of ED attenders in Scotland. Positive alcohol

sample readings were found in 22% of attenders, increasing to 25% if those who refused to provide a sample and were judged to be intoxicated were included in the group. Of interest to the present research was the fact that, of patients attending for self-harm, 94% tested positive for alcohol. The authors (Simpson, Murphy & Peck 2001) recommend caution when interpreting these results because they state that the Scottish Highlands are a high risk drinking area and wonder whether these results can be generalised to other NHS settings. It could be argued that because Leeds is located in the heaviest drinking region in England (Patton et al., 2007), that the Simpson paper (2001) warrants attention from the perspective of locality. However, any potential regional relevance may be tempered by the fact that the study age range is not specific to adolescents and the paper was published well over a decade ago.

### **Alcohol Misuse: Cultural, Regional and Social Context**

Alcohol policy and treatment is of special importance to the region where this study took place, particularly when we consider that adults in the UK have the third highest binge drinking rates in the EU. Furthermore, within the UK, Northern England (North East England, North West England and Yorkshire) has the largest proportion of harmful and hazardous drinkers (Patton, et al., 2007). Hibell et al. (2009) have also shown that UK youth appear more at risk of injury due to alcohol than are their counterparts in any other EU country and this is related to high consumption and risky and intensive drinking patterns.

There is some evidence to suggest that British people associate drinking with their British identity. For example, in 2007 two thirds of adults responding to the General Household Survey believed that drinking was a major part of the British way of life. The Youth Alcohol Action Plan states that “for many people in Britain, drinking alcohol is an important part of life and culture” (DH 2008, p.2). Despite this, respondents to the General Household Survey also felt that other parts of

Europe were more sensible with alcohol than in the UK. Regardless of these concerns, British citizens still seem to be amongst the least welcoming of government interventions on alcohol, such as alcohol taxation (Meier, 2010).

Social context is extremely important to consider from a mental health and binge drinking perspective due to the many shared risk factors between alcohol misuse and social adversity. Chassin, Pitts and Prost (2002) report in their findings of binge drinking trajectories that adversarial social environments and stressors increase risk for adolescent alcohol involvement; this replicates older reported research findings (Wills et al., 1996; Hawkins, et al., 1992). Stress, single parent families and familial environments high in conflict with little discipline and parental nurturance are reported to predict adolescent alcohol involvement (Chassin et al., 2002).

Northern England appears to have a high proportion of riskier alcohol users; the Alcohol Needs Assessment project identified the north of England as having the largest proportion of harmful and hazardous drinkers. Despite this only 11% of A&E departments had documented evidence of having asked questions about alcohol consumption (Patton et al., 2007). A more recent report by the ONS (2013) confirms that alcohol-related deaths in 2011 tended to be higher in the north of England.

### **Alcohol Misuse: Self-harm and Suicide**

Acute alcohol use increases the likelihood of suicide (Groves, Stanley & Sher, 2007) and a disinhibiting effect in suicide is acute alcohol intoxication (Holmgren & Jones, 2010) or alcohol abuse/dependence (Pirkola, et al., 1999; Foster, Gillespie & McClelland, 1997; Henriksson et al., 1993). Many self-harm attenders have been shown to test positive for alcohol (Simpson, Murphy & Peck 2001) and binge drinking patterns



are implicated in increased risks for harm and suicide (Brady, 2006; Pirkola et al., 1999).

The Department of Health, Social Services and Public Safety for Northern Ireland (DHSSPSNI) released a report in 2006 regarding the evidence for the prevention of suicide and self-harm. The comorbidity of alcohol and self-harm was highlighted in their report where they suggest that people who abuse alcohol have six to eight times the baseline risk of suicide. Research from Northern Ireland in the early 1990s found that over a third of suicide victims had a history of alcohol addiction and the majority of this group also had a comorbid psychiatric illness (DHSSPSNI, 2006). As noted earlier, in a study investigating the presence of alcohol in ED attenders in the UK, Simpson et al. (2001) found that of patients attending for self-harm 94% tested positive for alcohol.

Holmgren and Jones (2010) investigated demographics and associations with blood alcohol concentrations and method of death in all suicides in Sweden over a 10 year period. They found that a catalyst to suicide is acute alcohol intoxication. Heavy drinking can lead to a loss of inhibitions and may promote impulsive behaviour, impair judgment and promote risk taking. These features of intoxication may heighten the propensity of predisposed individuals to take their own lives (Holmgren & Jones, 2010). Kokkevi et al. (2012) report that suicide rates have risen across Western Europe since the 1980s. They suggest that a principal factor implicated in this suicide trend, particularly among males, is increased use of alcohol and other substances. In relation to suicide and alcohol, it has been argued that major depression is the most common comorbidity of completed suicide, but that the risk of depression is increased by a factor of 6 if alcohol misuse is part of the presenting problem (Galaif, Sussman, Newcomb & Locke, 2007).

In Northern Ireland (Foster, Gillespie & McClelland, 1997) and Finland (Henriksson et al., 1993) autopsies showed that 44% (Northern Ireland) and 43% (Finland) of the victims were suffering from alcohol

abuse or dependence. It appears that acute intoxication is more of a risk for suicidal ideation and unplanned suicide attempts than is chronic abuse (Borges et al., 2000). Other studies report similar findings (Smith, Shevlin, Murphy & Houston, 2010), suggesting that those engaging in suicidal behaviours (attempts in a previous year) are more likely to be higher consumers of alcohol. Kaplan et al. (2013) undertook a large gender-stratified analysis (n=57,813) of acute alcohol intoxication and suicide, and confirmed that in both men and women intoxication was associated with violent methods of suicide. They found that this risk diminished markedly with age, suggesting that addressing risks of violent suicide associated with acute alcohol use might prove most useful with younger and middle aged adults. They warn that “acute use of alcohol is a potent independent risk factor over and above any risk conferred by chronic alcohol use pattern” (p.38).

Brady (2006) acknowledges the complexity of the relationship between alcohol and suicide but argues that “the link between alcohol misuse and suicidal behaviour is robust” (p.376). Cornelius et al. (1995) go further still, asserting that alcohol dependence is a significant risk factor for all types of suicidal behaviour and stating that this is beyond dispute. These preceding studies (Brady, 2006; Cornelius et al., 1995) should be viewed with caution however, in part because of the age of the studies, but mainly because alcohol dependence is not of direct relevance to the current study and is rare in adolescence. Young people in my study were more likely to be binge drinkers (acute) versus dependent (chronic) drinkers.

It may be argued that the literature referenced in the preceding section (Alcohol Misuse: Self-harm and Suicide) is not of direct relevance to the current study because it is not specific to the adolescent demographic. However, I feel it is reasonable to assume (as has been reported in the literature) that if adolescents are misusing alcohol they are then more likely to have difficulties with alcohol later in life (Buydens-Branchey et al., 1989; Ekland & Klinteberg, 2009; Fuller, 2011;

Grant & Dawson, 1999; Mason, 2011). For this reason, I believe that literature dealing with adult alcohol misuse, self-harm and suicide risk is justifiably included in the preceding section, with more specific references to adolescent alcohol misuse, self-harm and suicide risk to follow.

### **Alcohol Misuse: Self-harm and Suicide Risk in Adolescence**

Brady (2006) stated in his review of the research evidence for alcohol misuse and suicide that “young people appear to be particularly susceptible to alcohol-associated suicidal behaviour, and the pattern of drinking, especially binge-drinking, may be of relevance” (p.476). Groves, Stanley and Sher (2007) reviewed the evidence for ethnicity and the influence of alcohol use in suicidal behaviour in adolescents. They report that alcohol is estimated to increase the likelihood of suicide attempts (17 times for males and 3 times for females) in adolescents, especially if they are at greater risk because depression and alcoholism have independently increased the risk of suicidal behaviour in a potentially synergistic fashion. (Groves, Stanley & Sher, 2007).

Pirkola et al. (1999) studied suicides (n=106) in young people (13-22 years) in Finland over a twelve month period from April 1987 to March 1988 utilising the ‘psychological autopsy method’. “The principle of psychological autopsy is based on the meticulous collection of data that are likely to help reconstitute the psychosocial environment of individuals who have committed suicide and thus understand better the circumstances of their death” (Batt, Bellivier, Delatte & Spreux-Varoquaux, 2005). Of the 106 suicides in the Pirkola et al. (1999) study, they found that 42% had an alcohol use disorder. The study authors attempted to be methodologically rigorous in the detection of subthreshold or diagnosable alcohol misuse by assessing problematic use from the detailed sources of information available to them. Their data collection method included family and health care interviews conducted by experienced mental health professionals. They also reported during

the study period that police and toxicology reports were more detailed than usual (Pirkola et al., 1999). Problematic alcohol use was detected for the suicide victims by using the Michigan Alcohol Screening test (Seltzer, 1971) and scoring each available item for every victim by retrospectively analysing the various sources of information available to them. They report (Pirkola et al., 1999) that in their study psychiatric diagnoses and psychosocial impairment in the subjects were independently assessed by two psychiatrists and cases with diagnostic disagreement were re-assessed by a third psychiatrist to achieve general consensus. Contact with healthcare professionals within the last year of life for the victims was determined by medical records and interviews, as was the classification of psychosocial stressors for the victims. The 42% of victims classified as having an alcohol use disorder in the study were found to differ in several areas from the other suicides. They were more likely to have co-morbid psychiatric diagnoses, antisocial behaviours, disturbed family backgrounds and psychosocial stressors as well as severe psychosocial impairment. Furthermore, these individuals were more likely to be intoxicated with alcohol during the time of the act which tended to be over the week-end. They conclude that the adolescent victims who misused alcohol received no more psychiatric input than other victims (Pirkola et al., 1999). Pirkola et al. (1999) conclude that the use of alcohol below the threshold for the diagnosis of abuse and dependence may be an indication of serious difficulties or symptoms which may enhance the suicide process. They also warn that alcohol misuse at the week-ends in their study group appeared to contribute to the final suicidal act.

A strength of the Pirkola et al. (1999) study was the psychosocial detail they were able to glean from patient records and family/healthcare interviews using the data collection techniques highlighted above. The study focused clearly on psychosocial stressors in the alcohol group of relevance to the current study, and they sampled from a similar age range. They also sampled an ethnically homogenous population so

potential complications associated with ethnically diverse subjects and associated alcohol misuse/suicide links were minimised and the results were therefore generalizable to the Finnish adolescent population at the time. The study also appears methodologically rigorous and highlights concerns of direct relevance to my study. However, the age of the study (1999) and the fact it dealt with Finnish adolescents makes it unlikely that the results are directly generalizable to my sample. Despite these considerations, the research raises general concerns regarding the vulnerability of adolescents who misuse alcohol at the week-ends from the context of mental health and suicide risk.

Pompili et al. (2010) conducted a review of the evidence on the link between suicide and alcohol across the age range (children and adults) and they did also discuss briefly the adolescent demographic. They suggest that “alcohol use and suicide are intimately linked, but they are both complex phenomena, springing from a multitude of factors” (p.1394). They report that suicides among younger people have increased to the extent that they are now the group at highest risk in roughly one third of nations, in both developed and lower income countries. Alongside this increase in suicide is an increase in alcohol use over recent decades, particularly in developing nations. Pompili et al. (2010) tentatively suggest that alcohol abuse may contribute to suicidality through disinhibition, impulsivity and impaired judgement in the general population, but their review of the available evidence is less clear on the link in the adolescent age group. They maintain that “it is difficult to attribute a role for alcohol in adolescent suicide” (p.1407).

Despite the acknowledgement of the complexity of research associated with this area (Pompili et al., 2010), it is argued in some by some that the rigor of the body of research asserting this link should be questioned. For example, Newbury-Birch et al. (2009) state that findings in alcohol and mental health research in adolescence are “suggestive” due to methodological limitations (p.24). Despite this, they do concede

that “all young people with alcohol problems should have a mental health assessment” (2009, p.24).

### **Alcohol Misuse: Drinking Patterns and Binge Drinking Risks**

Another Finnish study (Puljula, Savola, Tuomivaara, Pribula & Hillbom, 2007) investigated alcohol-related risk for head trauma at an ED. Results showed alcohol-related head traumas to be highest in young adults and people of working age. Head trauma in sober subjects showed no temporal variations, whereas head trauma in intoxicated individuals peaked at weekends (27.3% in women and 20.3% in men) and during the most popular holiday month (July). They found this excess of head trauma during week-ends and July to be associated with binge drinking.

Tadros, Davidov, Coleman and Davis (2008) report that alcohol use can lead to traumatic injuries, respiratory failure, misuse of other drugs and high-risk sexual behaviours. In an American study the risk of attempted suicide associated with binge drinking was 4.3 fold higher than without binge drinking (Miller, Naimi, Brewer & Jones, 2007). Norstrom and Skog (2001) confirm per capita consumption of alcohol as a crucial determinant of alcohol related harm, but they also suggest an amplifying or mitigating effect on this consumption dependent on a region’s unique drinking culture and patterns. The importance of spirit drinking patterns in Northern Europe, for example, are highlighted by the strong aggregate link between suicide and alcohol in these countries. (Norstrom & Skog, 2001).

Ramstedt’s (2001) paper on alcohol and suicide in Europe notes differences between regions, and points to elevated suicide risk in younger drinkers in Northern and Central European countries. Ramstedt’s paper garners support for the idea that the alcohol–suicide link is conditioned by cultural elements and is not universal as is seen to be the case with mortality and alcohol in which overall alcohol

consumption is the main risk factor. An explanation for this finding is that cultural drinking patterns, which are less focused on intoxication, are resistant towards an elevated suicide risk in younger age groups; this suggests therefore that the concerns associated with Northern European countries might be the result of binge drinking patterns (Ramstedt, 2001). Norstrom and Skog (2001) interpret the same data to suggest that the more alcohol use is culturally integrated, the less excessive intake gives rise to social problems and results in disintegration as might be the case in the Northern European regions.

From a British perspective Meier (2010) reports a reduction in population level consumption with a simultaneous rise in heavy episodic drinking (binge drinking) and a preference for higher alcohol content beverages. She outlines that heavier drinkers drink even more while moderate drinkers appear to have diminished their intake. This might explain the reported increases in alcohol related morbidity and mortality despite overall reduction in consumption.

### **Binge Drinking Risks in Adolescence**

As highlighted earlier, Pirkola et al. (1999) suggest that misusing alcohol at the weekends (binge drinking) seemed to contribute to the final suicidal act in adolescents. Drinking patterns can therefore determine whether drinking is harmful, and another interesting consideration is drinking motive, which appears related to the type of alcohol consumed. In their study of drinking motives Kuntsche, Knibbe, Gmel and Engels (2006) suggest that when drunk exclusively, wine appears the drink of moderation for adolescents and it is consumed in normative settings. Their results confirmed beer and spirit consumption to be related to high drinking levels and an increased frequency of risky drinking occasions (binge drinking). A finding of particular concern was that adolescents who preferred to drink spirits and drink to cope and forget their problems also tended to drink excessively (Kuntsche, Knibbe, Gmel & Engels, 2006).

Hallgren, Leifman and Andréasson (2012) raise awareness regarding concerning trends in the drinking habits of women in Sweden aged 15-24 years. These young women were reported to have shown the biggest increase in both total volume of alcohol consumed and the frequency of binge drinking episodes. They argue that the dramatic increase in alcohol-related hospitalizations in this group in Stockholm points to them as a high-risk group for alcohol misuse. They feel the polarization hypothesis (decrease in overall consumption at a population level but increased risks in sub-groups) applies to this group. They believe this group of female adolescents and young women may not be large enough to affect the overall consumption rates in Sweden but is large enough to increase hospital admission data-resulting in reduced consumption but increased alcohol-related harm in Sweden (Hallgren, Leifman & Andréasson, 2012).

MacArthur et al. (2012) analysed longitudinal birth cohort data to assess the prevalence and distribution of multiple risk behaviours by gender at specific ages in adolescents. They report risky behaviours with less immediate adverse impacts on health, including self-harm, to have been more prevalent in girls. They suggest the potential for differing underlying psychological motivations and/or coping mechanisms by gender in adolescence as an explanation for this finding. As risk behaviours they put forward the regular use of alcohol and binge drinking among adolescents as particularly concerning, and they also cite the narrowing of the gender gap in relation to alcohol use and binge drinking in youth (MacArthur et al. 2012).

Chassin, Pitts and Prost (2002) explored binge drinking trajectories from adolescence to adulthood in a high-risk sample. Their findings are of relevance to the current results from the perspective of gender and drinking patterns. Firstly, they identified the 'early-heavy' (early onset, high frequency) trajectory as the most problematic in terms of adolescent risk factors and later heavy use, and they also drew attention to numerous risk factors including higher levels of



externalising behaviours in males. The 'early-heavy' trajectory resembles the Type 2 (Cloninger, 1987) or Type B adult alcoholics (Barbor et al., 1992) characterised by early onset, higher levels of antisocial behaviour, childhood risk factors, and higher prevalence in males. Of interest, for boys in particular in the early-heavy group, was that they showed significantly less depression than did any of the other groups. Their drinking behaviours might therefore not be explained by affect regulation motives and be more closely tied to a broader pattern of externalising behaviour (Sher 1991, in Chassin, Pitts & Prost, 2002). The infrequent group (early onset-low frequency) was less likely to develop anti-sociality or alcoholism but were more likely than the non-binger group, and as likely as the early-heavy group, to develop drug abuse or dependence. Some of the elevated adolescent risk factors for these young people (early onset-low frequency) were specific to girls, particularly in terms of elevated depression. The occurrence of infrequent binge drinking is therefore a drinking trajectory that is more characteristic of females and is more tied to negative affect regulation, specifically depression. As highlighted above, for boys in the early-heavy group, lowered depression rates were reported which seemed counterintuitive and called for replication. The authors (Chassin, Pitts & Prost, 2002) queried whether an explanation might be that boys were drinking in a social context with peers which reduced their depressive affect. It was also important to note however that this lowered level of depression did not remain when the group was tracked into adulthood (Chassin, Pitts & Prost, 2002).

Britain, as a drinking region, appears to engage more in binge type consumption characteristic of the Central and Northern European regions. In these beer-and spirit-drinking cultures (compared to Southern Europe) alcohol is less integrated in to meal times for young people, and daily consumption is less prevalent in adolescents, but they tend to drink to intoxication more often (Saunders & Rey, 2011). Gmel et al. (2008) in their Swiss study implicate binge drinking in several

unfavourable outcomes for young people and younger adults. These outcomes were cited as intentional and unintentional injuries and a causal relationship was noted with road traffic accidents. They reported binge drinking patterns over the weekends and suggest that “most of the total alcohol used within the population of young men is consumed on occasions that place drinkers at high risk for detrimental consequences” (p.696).

It would appear therefore, as with the adult population, that binge drinking risks are transferable to the adolescent age group. Furthermore, in relation to injuries associated alcohol misuse, the UK adolescent group seem particularly susceptible as a result of their drinking patterns (Hibell et al.,2009).

## **Adolescent Self-Harm**

Kokkevi, Rotsika, Arapaki and Richardson (2012) state that suicide is one of the leading causes of death among adolescents across Europe and that documented precursors to suicide are self-harm thoughts and behaviours. Bergen et al. (2012) warn that self-harm, especially when repeated, is the strongest predictor of future suicide. In their systematic review, Evans, Hawton, Rodham and Deeks (2005) show that self-harm is relatively common among adolescents, and that this is a particularly concerning phenomenon as self-harm in adolescents is associated with an elevated risk of mortality and suicide (Carter, Reith, Whyte & McPherson 2005; Hawton et al., 2003).

Adolescents appear to underestimate the potential danger of their chosen methods of harm (Self Harm Intervention Family Therapy (SHIFT); 2012) and hospital studies in the UK show that the dominant chosen method of harm is overdose by analgesic which also raises the risk of liver failure (Hawton et al., 2001). The rates of self-harm appear to be rising according to studies focusing on ED attendance (Hawton et

al., 2007) with a shift toward more dangerous methods such as hanging in females (Gunnell, Bennewith, Hawton, Simkin, & Kapur, 2005).

Estimates of self-harm repetition stand at 5-15% per year (Bridge, Goldstein & Brent, 2006). A multi-centre study in the UK estimated that among 12-17 year olds with a history of harm, repetition rates stood at 25% in the first year after presentation of a new act of harm. Of significant concern are findings that associate high levels of repeated acts in women with subsequent death by suicide (Haw, Bergen, Casey & Hawton, 2007). A recent multi-site study regarding repetition of self-harm and suicide found that repetition of harm occurred in 27.3% of individuals, and multivariate analysis showed repetition to be associated with age, cutting as the method of harm, previous self-harm, and psychiatric history. Cutting showed a greater risk for repetition and eventual suicide in children and adolescents than did poisoning (Hawton et al., 2012). Moran et al. (2006) concluded from their Australian population-based cohort study that an effort to detect and treat common mental disorders during adolescence may constitute an important and previously unrecognised aspect of suicide prevention in young adults.

There is some evidence to suggest that contributory factors to self-harm in young people include mental health difficulties, impulsivity, self-esteem deficiencies and stress (Madge et al., 2011). In their study exploring psychological characteristics, stressful life-events and self-harm in adolescents, Madge et al. (2011) utilised data from the Child and Adolescent Self-harm in Europe (CASE) study. They report that 30,000 15 to 16 year olds completed anonymous questionnaires in schools across Europe investigating psychological and life-stressor events in relation to self-harm. Female students were twice as likely as male students to report having thoughts of self-harm and report both single and multiple episodes of self-harm. Important to note were the similarities found between adolescents who had thought about harming themselves and those who had harmed themselves on a single occasion. This large study

highlighted the need for even further vigilance in relation to adolescent self-harm:

There is no single pattern of self-harm among young people, but both psychological characteristics and stressful life events substantially increase risk. Those developing prevention and intervention programmes must remain 'open minded' to patient characteristics and not neglect either those who have only thought of harming themselves or, despite current practice, those who do not have evident signs of depression or mental illness.

(Madge et al., 2011, p. 507).

## **Hospital Treatment for Alcohol Intoxication and Self-harm**

### **Adolescent ED Presentations with Acute Alcohol Intoxication**

In England in 2005, 35,472 young people (16-24 years) were admitted to hospital with alcohol-related conditions (Jones, Bellis, Dedman, Sumnall & Tocque, 2008). A report by the Department for Education in 2009 (Newbury-Birch et al., 2009) estimates that alcohol-related attendance amongst children could be as high as 1,245 per week. The Donaldson report (guidance on alcohol consumption for children/young people) states that in England, from 2007 to 2008, over 7,600 children under 18 years of age were admitted to hospital for conditions directly related to their alcohol consumption. It was unclear from this quoted statistic whether these 'admissions' were to an ED or to a specific hospital ward, which is an important distinction and represents quite different treatment outcomes specifically from the perspective of the current research. The report also says that "between 2002/03 and 2007/08, admissions rates among children in England aged under 14 years have remained relatively stable, whereas in the 15 to 19 year age group rates have increased by around 75%" (DH, 2009).

The quoted DH (2009) figures are quite dated and more encouraging is the recent article in the BMJ (2015) which reports on new

figures from Public Health England. The article states that there has been a significant decrease (40%) in alcohol specific hospital admissions in under 18 year olds. These figures fell to 13,725 for the past three years-from 22,890 between 2006 and 2009 (*BMJ* 2015; 350: h3010). The cited DH (2009) figures might therefore be representative of the period with far higher observed admission rates for this age group.

An important point to discuss regarding the figures quoted in relation to hospitals and alcohol in the literature is the distinction between 'admission' and 'attendance'. For example, in the *BMJ* article (2015) which shows a significant reduction in hospital specific 'admissions' we presumably have no way of knowing whether these reductions in admissions are mirrored in alcohol related ED 'attendances'. It is clear that attending an ED as a result of an alcohol misuse and being subsequently discharged, differs markedly from presenting and then being admitted to a hospital ward. It may be that admission is standard protocol for adolescents drinking to a harmful level such as those with signs of an alcohol use disorder. Whether binge drinking presentations (without indication of alcohol use disorder) at EDs for adolescents show the same decreases as admissions is less clear. It is likely, however, that such a significant decrease in admission rates for alcohol will be mirrored in some way in the attendance rates at EDs for alcohol misuse episodes like binge drinking.

Woolfenden et al. (2002) compiled a report on the characteristics and follow-up of adolescents (aged 10 to under 18 years) presenting with acute alcohol intoxication and self-poisoning at EDs in Western Sydney, Australia. In their retrospective medical record review they highlighted that generally the relevant history of these patients was poorly documented in their medical records. In instances where this information was documented, a high proportion of psychosocial dysfunction was present. In their 5 year study period, 216 attendances for acute alcohol intoxication occurred and 82% of these happened 'after hours' (after 17.00 and before 09.00 or at the weekend). Of all these presentations,

64% happened on Friday, Saturday or Sunday. The majority of these patients (85%) were discharged and a mental health follow-up plan only documented in 14% of the records with no follow-up plan at all documented in 56% of the cases.

Woolfenden et al. (2002) excluded patients from their study if the acute alcohol intoxication was in addition to an overdose of other substances such as paracetamol. Presumably, they felt the need to exclude self-harm cases in order to have a clearer idea of alcohol misuse presentation numbers, and this may have allowed for a better understanding of the management of this group in Western Australia hospitals. However, reporting on the number of adolescents who used alcohol as part of a self-harm presentation might have provided further useful information such as the amount or type of alcohol consumed as part of a self-harm episode. The reason for the use of alcohol during the self-harm episode might have provided useful information regarding drinking motives when combined with self-harm. It is also likely that this information was available as their study was part of a larger retrospective review of children and adolescents who presented at EDs with self-harm, acute alcohol intoxication and aggression. The study subjects were also coded according to the International Classification of Diseases (ninth and tenth revisions) for 'alcohol intoxication' and 'self-poisoning, alcohol' and it is highlighted by the authors that incorrect coding may have resulted in an underestimation of the young people falling in to the alcohol intoxication category (Woolfenden, et al., 2002).

Muszlak and Picherot (2006) conducted a 1 year French study on the characteristics of adolescents (12-18 years) presenting at EDs with acute alcohol intoxication. A strength of this particular study was that the authors utilised multiple EDs for their sampling, which, it could be argued, limited the possibility of collecting results uncharacteristic of the larger adolescent population in the area. Limited generalisability may have been a risk had the researchers used a single sample site and the fact that this study was a multi-site project helped to increase the

generalisability of the findings. Muszlak and Picherot (2006) reported that a history of risk-seeking behaviour was found in 65% of the 63 cases. A single parent family was recorded in 51% of the cases. An alcoholic parent or social and family problems were reported in 25% and 24% of the sample, respectively. Of interest was the reported rate of hospitalisation for this group which was 93.4% of the cases with a mean duration of admittance of 50 hours. Furthermore, psychiatry or psychological follow-up was planned in 67.7% of the cases. The researchers argued that acute alcohol intoxication among adolescents should be considered an at risk behaviour. Considering the levels of hospital admission and psychiatric follow-up in the centres observed in the study, their concerns seem shared by hospital staff and administrators.

In a more recent Dutch study, Van Zanten, Van der Ploeg, Van Hoof and Van der Lely (2013) suggest that the number of adolescents attending EDs with severe reduced consciousness due to drunkenness is increasing in the Netherlands. They warn, however, that the individual characteristics of these adolescents remain unidentified. Their study highlighted some interesting and unexpected results. For example, blood alcohol concentrations (BAC) in these patients were significantly associated with increasing age and male gender as well as higher educational level. Parental involvement and family composition were not related to higher BAC which was a surprising result, and is in contrast to the aforementioned French study. Van Zanten et al. (2013) utilised the Dutch Paediatric Surveillance System for collecting data for all adolescents (under 18 years) with alcohol in their blood. Furthermore, whenever a young person is admitted to a ward in Holland they are interviewed the morning after admission by a paediatrician and the sample group for the study were patients who were seen by paediatricians once admitted to hospital. A large sample of 1,350 adolescents met the study criteria for blood alcohol concentration (BAC; >0.0g/l) and reduced levels of consciousness. The research employed a

questionnaire to collect patient information which focused on patient features such as family composition, parental knowledge of alcohol use, educational level, school performance, religion, culture, and registration to medical agencies. The questionnaire also concentrated on alcohol use patterns and intoxication characteristics in these patients.

The results reported by Van Zanten et al. (2013) showed that age, gender, educational level, place of alcohol purchase, place of alcohol consumption, age of first drink, and regular alcohol use during the weekends correlated with higher BAC. As cited above, older adolescents, males, and higher educational level was significantly associated with higher BAC at admittance. These findings are interesting due to the sample size and the rigor of sampling which suggest relevance in the area of adolescent alcohol misuse from a Dutch perspective. Of interest was that family composition (e.g. traditional families, foster care, divorced or single parents) did not attribute significantly to BAC. Furthermore, those patients who had previously attended a psychologist appointment had the lowest BAC. Whether patients who presented at Dutch EDs and subsequently did not wait, or were discharged before admission, have similar drinking characteristics or social demographics to those admitted to hospital is unclear from this research, and differs from the current study where information gathering will be unrelated to admission status.

The Van Zanten et al. (2013) study recruited a large sample, but it is unlikely that these results are directly transferable to an English setting due to potentially unknown cultural differences such as different attitudes toward alcohol or motives for drinking, in addition to Dutch hospital practice guidelines regarding alcohol intoxication in adolescents. It may have been helpful to have gathered more specific psychosocial information from their admitted sample which may have shed some light on drinking motives and highlighted more detailed social information in the alcohol group. Studies with large sample sizes and rigorous sampling practices such as this one (Van Zanten et al., 2013) demand replication in



the UK, with the added dimension of detailed psychosocial information both for admitted and non-admitted patients to determine whether these Dutch results should be seriously considered from an English perspective.

Several authors report significant shortcomings in ED practice regarding alcohol intoxication. Weinberg and Wyatt (2006) completed an 18 month observational profiling study in the Royal Cornwall Hospital (Truro) on young people (under the age of 17 years) presenting at hospital with alcohol intoxication. Spirits were the most common type of consumed alcohol and all patients that presented with acute alcohol intoxication were required to undergo a prolonged observation period or were admitted to the hospital. Their study highlighted that 51 (82%) of the children received no recorded or formal counselling on discharge from the ED. Weinberg and Wyatt (2006) advise on the use of educational programmes at school level and suggest the implementation of alcohol screening tests and intervention programmes as part of the emergency department provision of service.

Evans (2007) undertook an audit of alcohol intoxication presentations over a 2 month period in Prince Charles Hospital in Wales during 2007. The results of the study led to the suggestion that acute alcohol intoxication should be seen as a form of self-poisoning whether it is intentional or not. Similar to the current study, the sample dealt with adolescents under the age of 16 years and Evans argued that establishing the intent for alcohol misuse was paramount saying that this could be done via a psychosocial assessment. The project also noted that psychosocial assessment was rare in the sample and study setting under investigation at the time. The Evans audit proposes that alcohol 'experimentation' may be seen as the most likely reason for ED attendance but that this might leave underlying mental health difficulties undetected. The study concluded by stating that viewing severe intoxication as a form of self-harm should be considered seriously. Evans (2007) acknowledges the small scale of the audit, represented by a

sampling period too short to make definitive or comprehensive recommendations even at a local level. The results raise questions regarding how seriously these patients were treated at a local level in Wales in 2007. These concerns seem to mirror the issues highlighted by Weinberg and Wyatt (2006) from an English perspective and suggest shared unease with regard to how these adolescent patients were managed and viewed in relation to their alcohol use in these localities at that time. Both these reported papers (Evans, 2007; Weinberg & Wyatt, 2006) are almost a decade old and the results should be interpreted with caution. They are mentioned due to their similarities with the current study as they are British projects dealing with a similar age group of patients who misused alcohol and presented to hospital EDs.

Some European studies appear to depict a less vulnerable social group when investigating alcohol intoxication in adolescents. For example, in a Bulgarian study, Loukova (2011) investigated the medical and social dimensions of acute alcohol poisoning in children presenting at an ED. Of interest was the fact that 64% of the children had complete families with both parents having completed secondary education in 79.7% of the cases and both parents were employed in 53.3% of the cases. In this study, intoxication was more predominant in the children with good school results. The Dutch study cited earlier (Van Zanten et al., 2013) showed that higher BAC in adolescents upon ED admission were significantly associated with higher educational attainment. Whether these reports are of relevance to the English setting is not known, but it raises interesting questions about the psychosocial features of adolescents with acute alcohol intoxication in some European countries.

Policies and guidance on intoxicated adolescents presenting at EDs are relatively sparse when compared to guidance for young people who self-harm. Despite this assertion, the Donaldson report (DH, 2009) provides guidance on the consumption of alcohol by young people and highlights increasing levels of concern in this area. Furthermore, a recent document by Public Health England (2014) provides support to

ED departments in relation to young people and alcohol hospital pathways. This is encouraging, suggesting that this area of concern may be beginning to receive the attention it is warranted.

### **Alcohol Misuse and Hospital Attendance: Problems and Treatment**

Daepfen (2003) reports in a Swiss study that a third of all emergency beds are used by patients under the influence of alcohol; he feels that these centres routinely treat the injury but ignore the underlying alcohol problem. Gentilelo et al. (1999) reported (as part of a randomised trial on alcohol interventions in EDs) that studies suggest repeatedly that approximately 50% of patients admitted to ED centres in the USA are under the influence of alcohol. During their study they reported that only 19% of EDs routinely measure concentrations of blood alcohol in injured patients, and that alcohol counselling as routine practice is even rarer (Gentilelo et al., 1999). They suggest that introducing alcohol interventions in EDs may have a major impact on the health and future risk of injury in such individuals (Gentilelo et al., 1999). It should be noted that due to the age of the study (1999), the fact that it is not focused on an adolescent demographic and the fact that it is American, ensure that its findings should be interpreted with caution. They are cited here as an illustration of the co-morbidity of alcohol use and injury.

It is suggested that the lack of interventions regarding alcohol abuse in patients in EDs might be because physicians and nurses lack the time to discuss life habits or do not feel comfortable asking questions about alcohol use or administering screening questionnaires (Daepfen, 2003). Patients, likewise, might not feel comfortable talking about these issues and may experience guilt resulting in defensiveness, although it is argued that EDs provide unique opportunities for interventions associated with alcohol misuse because they can be utilised within the timeframe of overnight admissions (Daepfen, 2003).

There seem to be shortfalls in the service offered to the many patients who misuse alcohol and present at EDs. As an example of this, research conducted by Alcohol Concern (2011) reviewed ED departments provision (128 out of a possible 199 departments responded) for young people presenting with alcohol-related difficulties. They found that 48% of departments assessed had no established referral pathway for alcohol problems and 73% had not developed an alcohol harm reduction strategy that included young people. Furthermore, 78% of the ED departments assessed did not employ someone responsible for addressing alcohol concerns in young people (Alcohol Concern, 2011).

There is some evidence to suggest that interventions for alcohol abuse can be successful within ED settings (Crawford et al., 2004; Lemmens, 2012; Noeker, 2011; Schwan, et al., 2012; Tripodi et al., 2010) although more research needs to be focused on ED interventions within an adolescent demographic. Wachtel and Staniford (2010) in an Australian literature review looked for brief interventions for alcohol misuse in the adolescent age group. They report no single intervention could be recommended with confidence due to confounding variables. They do suggest that brief, one-session, motivational interviewing-style interventions focusing on harm minimisation with long term follow-up seem to hold promise.

According to the Alcohol Concern charity up to 35% of all ED and ambulance costs are alcohol related. Between midnight and 5am 70% of ED attendances are due to alcohol related issues (2012). This represents a large cost to the National Health Service (NHS) and a review of the literature suggests that young people who present at EDs often do so with more than one problem. Alcohol misuse has been said to mask underlying psychosocial concerns and this misuse might precipitate self-harm or be a form of self-harm. This vulnerable group is complex and when they attend ED in crisis, how they are assessed, treated and followed-up are important considerations from an individual, societal and public health perspective.

## **Self-Harm and Hospital Attendance: Assessment and Treatment**

Assessment of patients presenting during a crisis with self-harm is difficult due to the A&E setting, the typical time of presentation and the fact that the assessment takes place shortly after a distressing experience. However, these assessments form the basis for decisions about further mental health support and much of the potentially helpful assessment information (from other involved professionals) is unavailable outside of working hours, making assessment difficult (Nadkarni, Parkin, Dogra, Stretch & Evans, 2000).

Hawton et al. (2003) express concerns with clinical lapses in the ED assessment of self-harm. Drug and alcohol use and lack of co-operation were acknowledged to be mitigating factors in the difficulties faced by professionals in A&E. Of particular concern was that half the young people with a history of repeating self-harm were not asked about previous episodes of harm. The physical consequences of the harm attempt were noted as the main focus of professionals but, it is argued, this should not prevent a psychosocial assessment and enquiry into the reasons for the attempt and past harm history (Hawton et al., 2003). Alcohol was also cited as a factor in ED presentations for self-harm in a Scottish study: “of the 3,004 patients who presented at emergency departments following an episode of self-harm, clinicians cited alcohol as a contributory factor in 40% of attendances” (NHS Quality Improvement Scotland, 2007).

Whether UK national and regional policy and guidance in relation to self-harm and acute alcohol intoxication in young people is being followed is a debate outside the scope of this study. It is argued from the standpoint of this project, however, that policies, guidance and protocols regarding ED attendance for self-harm are relatively easily accessible and numerous, for good reason. The National Clinical Practice Guideline Number 16, (National Institute for Health & Care Excellence (NICE), 2004) suggests “As one of the most common presentations to general hospitals and one which has a strong tendency for recurrence and

increased severity, self-harm presents a considerable economic burden to the individual, family, health services, and society as a whole” (p.26). The practice guideline states that following triage “patients who have self-harmed should receive the requisite treatment for their physical condition, undergo risk and full psychosocial needs assessment and mental state examination, and referral for further treatment and care as necessary” (p.31). In the Royal College of Psychiatrists guidance they underline the importance of a full bio-psychosocial assessment and providing a more holistically focused care plan (RCP, 2010).

Examples of specific regional policy for the management of self-harm in young people can be found in documents such as Leeds Children’s Social Work Service Document (Leeds City Council, 2013) which outlines several procedures to be followed in line with broader national guidance (NICE, 2009). Among the specific recommendations is the need for assessment by professionals experienced in the field. This assessment should include a full family history (including child protection concerns) as well as an overnight admission to a paediatric ward with a detailed assessment and input from the Child and Adolescent Mental Health Service (CAMHS). In the event that a child refuses admission, a CAMHS psychiatrist or senior ED paediatrician should be consulted in relation to care management (Leeds City Council, 2013). NICE’s clinical guideline 16 (2004) outlines specific details for the treatment and management of self-harm in emergency departments. It also provides clear advice on the management of young people (under 16 years of age) who self-harm and present at ED departments. They suggest that “all children or young people who have self-harmed should normally be admitted overnight to a paediatric ward and assessed fully the following day before discharge or further treatment and care is initiated” (NICE, 2004, p.30).

The preceding paragraphs highlight deficiencies in care for patients who self-harm, but also point to some of the documents, policies and guidance for professionals to call upon in relation to the

management and care of these young people when they present at the ED. The connection between self-harm and alcohol use appears evident, as do links between mental health, suicide, alcohol abuse and self-harm. Despite this, a clearly defined management procedure for adolescents presenting at EDs intoxicated does not appear to exist, even as a broader national guidance policy, such as a NICE document.

## **UK Literature and Policy on Alcohol Misuse**

There is research reflecting concern in the UK regarding alcohol use and EDs, mostly to be found in papers that are quite dated. (e.g. Evens, 2007; Weinberg & Wyatt, 2006). More recently, British research in the area, on the whole, does not focus on hazardous alcohol use in the adolescent population and seems interested in screening tools, uptake and interventions protocols for hazardous users of alcohol across the age range. These issues are important, but not specifically relevant to this project.

A UK research paper concerned with adolescent alcohol use (Thom, Herring & Judd, 1999) raised concerns similar to those cited more recently in the European literature. The UK acute alcohol intoxication and ED research generally highlights the need for screening and management tools for hazardous users (Charalambous, 2002) and discusses the increasing levels of hazardous drinking and lack of effective alcohol interventions in ED departments (Malone & Friedman, 2005). However, these two preceding papers aren't specifically focused on an adolescent demographic.

Of local interest is a recent Leeds City Council report (Dickinson, 2014) outlining the review and commissioning of drug and alcohol treatment and recovery services for adults and children in Leeds. The document states that a review is currently being undertaken and the recommissioning of these services is scheduled for completion in June

2015. Drug and alcohol treatment and recovery services became the responsibility of the Leeds City Council in 2013 with the stated ambition of making Leeds a “city that promotes a responsible attitude to alcohol and where individuals, families and communities affected by the use of drugs and alcohol can reach their potential and lead safer, healthier and happier lives” (Dickinson 2014, p.4). This is promising from a local perspective and it is hoped that this recommissioning and policy review might increase awareness of the risks associated with alcohol misuse for young people.

### **Non-UK Literature on Adolescent Alcohol Misuse**

For more adolescent-specific literature in this field I had to consult predominantly European papers, and to a lesser extent, Australian studies. There appears to be a comparable volume of UK adolescent self-harm literature, but the dearth of research in the field of adolescent alcohol abuse in the UK is noteworthy.

Acute alcohol intoxication in children and presentation at EDs was investigated by Woolfenden et al. (2002) in Australia. They found that risk factors for psychosocial dysfunction were inadequately assessed in adolescents presenting at the ED with acute alcohol intoxication/self-poisoning. A French prospective multi-site study investigated ED management of acute alcohol intoxication in adolescents (Muszlak & Picherot, 2006), they concluded that acute alcohol intoxication resulting in ED attendance should be considered a risk behaviour with high morbidity. A Dutch cohort study looked at BAC and educational attainment in intoxicated and hospitalised adolescents (Van Zanten et al., 2013) finding that older age, male gender and higher educational attainment all correlated with higher blood alcohol concentrations. Research (Kuzelova et al., 2009) in Slovakia has also focused on acute intoxication and hospital admissions in adolescents via a retrospective analysis. They cited the severity of underage alcohol abuse in the Slovak



republic, calling for more action to curb alcohol abuse in this group. Another German study (Karaguelle, Donath, Graessel, Bleich & Hillemacher, 2010) calls for urgent action in relation to adolescent binge drinking and cites limited knowledge in the area highlighting that most studies in the field have been conducted in North America or Australia; the authors question the transferability of the findings and conclude by calling for more German and European studies.

A more recent study (Kaminska, Agnieszka, Gwalik & Malecka-Tendera, 2012) shows a Polish interest in the area; this paper investigated alcohol abuse in adolescents in Poland through a 10 year retrospective analysis. They note a trend of increasing female alcohol abuse and state that drinking alcohol in the past 12 months was reported by 78% of Polish youth. Livingston (2008) adds further to Australasian studies by investigating recent risky alcohol consumption trends in young people in Victoria, Australia and a Spanish study was interested in the psychosocial profiles and demographic features of acute alcohol intoxication in adolescent ED attenders (Matali et al., 2012). Findings suggested that 72% of adolescents who presented with intoxication were under 16 years of age. Educational data showed that 37.7% had repeated a school year, 20% had truancy issues and 19.6% had abandoned their basic studies. Of this group 9.8% were in psychiatric treatment. Most telling was the fact that only 11.4% of patients were referred to specialist service (Matali et al., 2012).

A theme throughout the preceding papers is one of concern about services for young people who misuse alcohol with a desire to galvanise further research in the area. In addition to the research cited above, Finnish papers (Pirkola et al. 1999; Hendrikson et al., 1993) investigating adolescent suicides found that 43% of adolescents who took their lives were shown to be suffering from alcohol abuse or dependence. In a Swedish study investigating polarised drinking patterns in youth (Hallgren, Leifman & Andréasson, 2012) it is advised by the authors that changes in per capita consumption can mask shifts in consumption

habits of heavy users. They call for more research investigating the social backgrounds and the risk factors in this group of young people to produce targeted intervention and reduce associated harm. Fröjd, Ranta, Kaltiala-Heino and Marttunen (2011) researched anxiety and alcohol/drug use in a community sample of Finnish adolescents. They found that generalised anxiety in middle adolescence placed children at risk for concurrent and subsequent substance abuse. Finally, Svensson and Landbergh (2013) highlight a positive relationship between violence and binge drinking in Swedish youth.

UK literature dealing with adolescent alcohol abuse is relatively sparse. Cited earlier, Holmes (2007) and Chan et al.'s (2005) papers were both examples of rising concerns regarding this risky behaviour within this group, but it appears that very little recent research has been undertaken in this area. Contrasting the UK literature on adolescent self-harm to that on intoxication, I question why self-harm attracts more research interest and policy implementation where both appear to be risky precursors for future difficulties. Government seems determined to change the culture of binge drinking but the areas of risk associated with adolescents and alcohol misuse are yet to attract the attention they have abroad. I expect that the present research will point out disparity in the level of support and proposed after care afforded adolescents presenting with self-harm and acute alcohol intoxication.

## **Research Questions and Hypotheses**

From a psychological resource perspective, adolescents who self-harm appear to garner more research interest and more clearly defined interventions and support than those who use alcohol to excess, particularly in the UK. The literature suggests a complex but important association between alcohol and mental health difficulties and I argue that this area requires further investigation, which is a motivation for this project.

Self-harm behaviours leading to ED attendance in adolescents convey strong messages of distress of direct relevance to mental health services. For this reason policies have been implemented to reflect the importance of recognising the psychological elements associated with self-harm in this group.

Of interest to this study are the characteristics of young people presenting at EDs with intoxication and whether these features differ from young people presenting with self-harm. The literature confirms a significant overlap in relation to psychological presentation in these groups. The pressing concern is the apparent lack of policy and procedures to identify and treat these adolescents and any associated psychological difficulties related to, or triggering, their alcohol misuse.

The literature confirms the use of alcohol as a common feature in self-harm, suicide attempts and completed suicide. Alcohol misuse seems to pose a neurological risk to young people. The links between alcohol, self-harm, suicide, neurological damage and mental health difficulties paint a complex and poorly resolved picture, pointing towards the significance of acute alcohol intoxication in our overall understanding of the emotional and physical health of our young people. More needs to be done to understand these links, and to better manage alcohol abuse in this group in an evidence-based way.

## **Research Aims**

- To establish whether adolescents who drink to the point of acute alcohol intoxication and present at the ED receive the same psychosocial care and proposed aftercare as adolescents who self-harm and present at the ED.
- To understand more about any similarities or differences between these groups in relation to psychosocial presentation, social care and mental health history/involvement and age and gender.

### **Primary Hypothesis**

- My primary hypothesis is that adolescents under 16 years of age who present at the ED with acute alcohol intoxication do not receive the same level of psychological assessment and proposed after care as young people who self-harm.

### **Secondary Hypotheses**

- Adolescents who present with acute alcohol intoxication will have similar psychosocial features as those who present with self-harm
- Adolescents who attend with acute alcohol intoxication will not be admitted to a hospital ward for further assessment as often as those patients presenting with self-harm.
- Adolescents who attend with acute alcohol intoxication will not have the same amount of specialist mental health assessment and proposed specialist CAMHS after care as those patients who present with self-harm.

## **Method**

### **Design**

This study design employed a retrospective case note comparison of adolescent medical records for young people who presented to the emergency department at the Leeds infirmary after a self-harm episode (self-injury or poisoning) or an acute alcohol intoxication episode. The research compared these groups of adolescents from the perspective of psychosocial presentation (mental health and social history), level of consciousness, admission to hospital and proposed after care. The data was analysed using comparative statistics undertaken in the form of contingency tables and chi squared tests.

### **Recruitment and Inclusion Criteria**

This project focused on collecting and analysing retrospective case note data, and there was no prospective recruitment of participants. Interrogation of case note data was achieved by identifying, accessing and collecting information of relevance to the study question from the databases used at the ED in the Leeds General Infirmary.

The selected information consisted of retrospective case note data over a 6 month period for adolescents who had presented at the ED with a presenting complaint of 'deliberate self-harm', 'apparently drunk' or 'overdose/poisoning'. Data were gathered for 131 cases using the two ED data recording systems. A 6-month recruitment period was deemed feasible and it was estimated (based on Holme's 2007 study) that this collection period would produce sufficient data for the purposes of this study.

Case notes were included in the data collection if they met the age criteria which was from 10 years of age until the day before the 16<sup>th</sup>

birthday. The lower age range was determined to be 10 years and older after preliminary data review and supervisory discussions determined this to be suitable to ensure that I collected all alcohol or self-harm cases. This decision was borne out in my sample results (Table 1.) which showed that prior to the age of 11 years, overdoses did not appear intentional, and self-injury and alcohol misuse were not evident under 11 years of age. 10 years of age was seen as appropriate to ensure inclusion of all relevant episodes and was also in line with the WHO's (2015) lower age range for the definition of adolescence. The fact that all child ED records for under 16s were held at the LGI, and the Leeds infirmary was the site for the data collection, also influenced my decision regarding the upper age limit.

## **Measures**

A data extraction tool was designed to aid the recording of specific information gathered from large data sets in the ED medical records. The tool was developed based on supervisory discussions and previous research projects which had extracted similar sets of data for retrospective analysis. A consultation meeting was also held with Dr Holme (at the University of Leeds in December 2013) regarding the tool she had developed in her project for extracting data related to ED attendance, alcohol and self-harm. The resulting tool used for the current study represented a development of the previous one (Holme, 2007), but was different in several respects. For example, it encompassed greater detail as a result of an updated medical record system to which I had access, and which had not been available to previous researchers, including Dr Holme.

The final extraction tool (see appendix A) had a section for the recording of the non-identifiable patient code, the patient's age, gender and the time and date that they presented at the ED. The Glasgow Coma Scale (GCS) score or a more general level of consciousness was also

recorded (if no GCS was available). Whether the patient was accompanied, and by whom, was noted down, as was the type of harm with which they presented. The type of harm was recorded in language used in the ED (Deliberate Self-Harm, Apparently Drunk and Overdose/Poisoning) on the research data-sheet, but after discussion this nomenclature was amended for the analysis, results and discussion sections of the current research. This amendment was due to our knowledge that the word 'deliberate' is regarded by many self-harm service users as potentially dismissive of their distress; this issue has been raised as a concern by this patient group (D. Owens, personal communication, 7 May, 2015). Self-harm, without the epithet 'deliberate' is now established as the standard terminology in UK Department of Health publications such as NICE guidelines. The professional who assessed the patient in the ED was anonymously recorded, as was their professional role. The type of assessment (e.g. medical and/or mental health) was also documented. A social history was noted down (if available) as was any history of current social care involvement. If available in the medical notes repeat attendances for self-harm or alcohol were also noted. The research data-sheet also provided a section for the recording of whether the child was admitted to an LGI ward subsequent to their ED presentation and finally, the confirmed, actioned or planned post-ED after care was also recorded (if available) on the sheet.

### **Ethical Clearance**

In planning this study, I established initially that the LGI's ED was the setting for all children's emergencies in the city and surrounding area and that it was a major trauma centre for the region. This provided me with the study setting of a large metropolitan area with a population of 751,500 people (ONS, 2012). I met with the Matron and the Lead Clinician at the ED in the LGI. They gave the study their full support and we discussed the data held at the LGI that I would need to access.

The Research Governance Manager for the relevant trust's (Leeds Teaching Hospitals Trust; LTHT) Research and Innovation Department confirmed that this project did not need to be registered with LTHT as a research project. They also confirmed in writing that as this project was classed as a service evaluation/audit it did not need NHS research ethics approval. As an LTHT clinical psychology trainee (on placement in the ED) I was classed as a member of the 'direct treatment team' which meant I did not require supervision when accessing the medical notes. (Please see appendix B for correspondence relating to ethical clearance).

I was advised to contact the LTHT's Quality Governance team to register the study, however the Administration Manager (LTHT Quality Governance Team) stated that the research did not need to be registered with the Quality Governance Team and that there were currently no requirements for registration of audits on the trust clinical audit database. She advised that I contact my specialism's audit lead (Senior Consultant Clinical Psychologist & Joint Head of Adult Psychological Services) to approve the project, which I subsequently did.

All doctoral projects require ethical scrutiny, and this project was therefore submitted for approval by the University of Leeds School of Medicine Research Ethics Committee, which was granted on the 22 July, 2014 (see appendix B).

## **Procedure**

After obtaining ethical clearance from the School of Medicine, a meeting was arranged with members of the ED clinical management team. Those present included the ED Matron, a Senior Sister in the Children's Emergency Medicine team and the Lead Clinician for the ED. Access to NHS computers and their databases and pragmatic aspects of data collection were discussed. Permission was given for access to the data sets via the LTHT information technology department. The Senior Sister



subsequently gave me a tutorial on how to access the systems and locate the required data.

### **Recruitment Setting, Population and Databases**

The LGI is a large urban teaching hospital in the centre of Leeds, and is the treatment site for Leeds ED care for children under 16 years; it is also a Major Trauma Centre for the surrounding area (Yorkshire region). The LGI provides a recruitment site for medical data which is likely to be typical of most northern general hospitals and it was used for the sampling and collection of case note data for the purposes of this study.

The databases used for data collection in the ED are WinDip (Civica Records Management) and Symphony (Ascribe Ltd.). WinDip is a document management application for the storage of scanned medical notes. Medical notes are scanned and uploaded to WinDip typically within 48 hours of patient discharge. Symphony is more advanced than WinDip and holds medical information specific to the ED presentation. Both systems are accessible in the ED management department suite via computer terminals. The Ascribe Symphony system uses a graphical interface which records/shows in real time the clinical management of patients in an ED setting. This system also has a section for social care screening and the recording of social concerns. This component of the system allows clinicians to record subsequent actions related to the social care screening but unrelated to medical care. This capability was of interest with respect to the study aims. There is a great deal of overlap in the information held on the two systems but they are not identical. Some relevant data is recorded on one system and not the other. In particular, as noted above, Symphony is usually the only source of information on psychosocial concerns raised during medical assessment. The purpose of Symphony therefore is to provide real time information to professionals regarding medical care and also to offer a platform on which to record actions related to the care of patients.

The ED observed in this study is currently showing initiative in their management of alcohol-related attendances in the adolescent group. A substance misuse service has begun to make its presence felt in the ED and young people are offered the opportunity to opt in to the service after a presentation for alcohol/substance misuse. This is most likely the result of a local initiative or related to the Leeds City Council's recommissioning and review of substance and alcohol services in Leeds (Dickinson, 2014).

### **Data Extraction Procedure**

The data extraction took place in the ED management offices in the LGI between the 18<sup>th</sup> August 2014 and the 16<sup>th</sup> January 2015.

Relevant cases were identified for collection by performing a search on the two systems for the defined 6 month study period and the specified patient age. The systems then returned all cases which met these criteria. These cases each had an individual presenting complaint allocated to them by the ED staff. Each one of these cases was then searched and a presenting complaint identified. Where these were relevant to the study - the terms 'apparently drunk', 'deliberate self-harm' and 'overdose/poisoning' - data were extracted. These terms were used consistently and each presenting complaint classification was mutually exclusive. The hospital clinician who triaged the patient was required to provide a term for the presenting complaint and in my sample no child had more than one of the relevant presenting complaint terms recorded in their medical notes. After the initial complaint was recorded during triage this term (either deliberate self-harm, apparently drunk or overdose/poisoning for the purposes of this study) remained the term used throughout the ED medical notes. Approximately 35,000 returned cases were reviewed to identify the original 143 selected cases for more detailed data extraction.

For the cases where data were extracted, the unique identification number (allocated by the ED and used across both systems) was recorded with the primary diagnosis. This was done for all cases over the 6 month collection period. After the relevant patients had been identified their identification numbers were used to perform a secondary search at which point more detailed information was gathered from both systems and logged on the data extraction tool for analysis at a later stage.

### **Rationale for the Data Selected for Extraction**

Patient age, gender, ethnicity and date and time of presentation was considered important to the study for the purposes of comparison between the self-harm and alcohol patients to determine any patterns of similarity or difference with other research in this area. It was also hoped that demographic characteristics of the group might help to add to existing literature on what we know about patients who present with these concerns in the under 16 age group. Data on the level of patient consciousness were recorded and considered important because it was of direct relevance to the clinically assessed levels of medical risk.

Psychosocial case note data such as whether the patient was known to social care, had recorded social care concerns, or mental health service involvement or history was considered important to the study's secondary hypothesis which suggested potential similarities in psychosocial presentation between the groups. Whether the patient was accompanied to the ED and by whom was also collected as it was hoped that this would also provide interesting data for comparative purposes in relation to the level of concern for the patients from the perspective of family, friends, carers or professionals at the point of attendance.

### **Rationale for the Exclusion of Specific Data from the Analysis**

Patient ethnicity and religion was omitted from the analysis because there was inconsistency in the reporting of these features as well as inconsistency in the terms of use. For this reason it was decided that the little consistent information which was collected would not have been of use or relevance to the results.

It had been hoped that whom the patient attended the ED with might have provided useful information on the levels of concern from those involved in the patients care at the point of ED attendance. Unfortunately, due to the staggered assessment, admission and discharge process in the ED, a patient may arrive 'unaccompanied' but be deemed 'accompanied' by the secondary point of assessment. Thereafter, prior to discharge, protocol ensured that due to patient ages a responsible adult had to be present at discharge. For this reason patients who attended unaccompanied were always discharged with a responsible adult and were therefore 'accompanied'. Finally, in some cases, at the triage stage a patient may have been reported to be unaccompanied on Symphony, but accompanied on WinDip. It was decided that very little useful or consistent information would be provided for comparative purposes by the accompaniment data and this was therefore omitted from the secondary analysis.

### **Data Protection**

Each case was given a unique code on the data extraction tool; this code was unrelated to the unique identification code allocated by the ED. The ED identification number was held separately to the research codes and extracted data. The systems recorded opinions and actions by a number of different professional staff, usually using their names. As this was potentially relevant, names were matched to profession and profession was recorded.

Subsequent to collection, data extraction forms were transferred to a secure area in the Charles Thackrah building (The University of Leeds). The extracted data with allocated research codes were held in a locked cabinet in the psychology administration office; the corresponding codes and professional information were kept in a locked cabinet in a separate office.

### **Missing Information and Exclusions**

143 cases were initially identified for data extraction and collection, but 12 of these were excluded in the final collection due to duplication, recording errors by ED staff in the presenting complaint, or mistakes in the noting of the patient's age. This left 131 cases. For approximately 20 of these cases only one of the two information systems were available for data retrieval due to a technical issue.

A further 150 cases that met the age criteria had no diagnosis recorded on either system. As a check on relevant cases which may have been missed from the study (in those without presenting complaint), I searched the medical records of 40 of these cases to clarify the presenting complaint. In no case was intoxication, self-harm or overdose/poisoning identified. Consequently, due to time constraints, the remaining 110 cases with no recorded complaint were not checked and we assumed they did not represent episodes of self-harm or intoxication.

### **Primary Analysis and Further Exclusions**

The data sets were allocated codes and the coded data were transferred to a Microsoft Excel® spreadsheet for categorisation and analysis. After inputting, I met with one of my supervisors to discuss a number of cases in which there was ambiguous or contradictory information in the data which was affecting coding decisions. Based on this discussion we agreed that it was proper to exclude a further 2 cases and this left 128 cases for

analysis. The further 2 exclusions were due to misreporting of the presenting complaint - these cases were recorded as self-harm but no recorded self-harm had taken place and they were therefore excluded from the sample.

### **Secondary Analysis**

Comparative statistics were performed using the Statistical Package for Social Sciences (SPSS) version 21.0 (SPSS, IBM). Of the 128 cases, all were analysed for triage data, whether they were accompanied (and by whom) and their level of consciousness. For the comparative statistics involving alcohol, self-harm, admission, mental health history and social care, 127 cases were analysed as a result of missing information in 1 case. For the categorical data collected in the study, comparative statistics were undertaken in the form of contingency tables and chi squared tests; the test statistic for chi squared tests and p-value are set out in each case together with degrees of freedom (df). Alpha (significance threshold) was taken, as is conventional, as 0.05.

## Results

### Sample Characteristics

During the 6 month extraction period 128 cases (11-16 years of age) were identified for data collection. Only 127 cases were analysed as a result of missing information in 1 case. The identified patients presented at the Leeds ED with a diagnosis of either acute alcohol intoxication or self-harm (self-harm includes injury, poisoning and overdose). The mean ages for the self-harm group (14.21 years) and alcohol group (14.32 years) were very similar (mean age of total sample = 14.23). Of the 127 cases included in the analysis, 25 (20%) were male and 102 (80%) were female (Table 1.). For the total sample, 70 patients (55.1%) presented with overdose; of the remaining 57 cases, 17 (13.4%) presented with self-injury and 9 patients (7.1%) presented with both poisoning and injury. The remaining 31 patients (24.4%) presented with alcohol intoxication. The three method groups – self-harm, poisoning, and self-harm plus poisoning groups – were subsequently amalgamated into a self-harm combined group for the purposes of some of the analysis and discussion. Males made up only 14% of total self-harm cases but 39% of alcohol cases (Chi squared 9.39; df=1; p=0.002). Table 1 (below) shows sample characteristics in relation to age, gender, number and type of ED presentation.

Of the combined self-harm group, a small number (n=6) also used alcohol. Of these cases, 83% (5/6) were female, which is similar in proportion to the overall sample number of females in both study groups 102/127 (80%).

**Table 1. Sample Characteristics**

<b>Presentation</b>	<b>No. (%)</b>		<b>Mean Age</b>	<b>Gender</b>
Alcohol	31 (24.4%)		14.32 SD 8.32	19 (61%) Female 12 (39%) Male
Self-injury	17 (13.4%)	Self-harm combined 96 (75.6%)	14.21 SD 9.83	83 (86%) Female 13 (14%) Male
Poisoning	70 (55.1%)			
Self-injury and poisoning	9 (7.1%)			
<b>Total</b>	<b>127 (100%)</b>		<b>14.23</b>	<b>80% Female</b> <b>20% Male</b>

### **Patient Alertness**

‘Alertness’ refers to the patients’ level of consciousness as recorded during their ED presentation and assessment. This estimate of alertness was not always recorded. Where available, I used the Glasgow Coma Scale (GCS) scores and mapped them to a simple ordinal categorisation which was obtained from the Hospital Attendances for Self-harm Project (Lilley, Owens & House, 2004). Where a GCS score was not recorded, we used the clinicians’ written account of the patients level of alertness and mapped them on to the same ordinal categorisation. As outlined by Lilley, Owens and House in their hospital self-harm project (2004), where a state of consciousness was not mentioned in the clinical notes, or recorded as a GCS, I also presumed the patient to be alert. The level of alertness categorisations were ‘alert’ (GCS of 13-15), ‘mildly drowsy’



(GCS 9-12), 'very drowsy' (GCS of 5-8) and unconscious (GCS of 1-5) (Lilley, Owens & House, 2004).

Patient alertness is shown below (Table 2) by sample group. As highlighted above, a non-alert state was defined by a GCS of 12 or below or written clinical case note records of a non-alert state. We found that the alcohol intoxicated patients were more often recorded as drowsy or unconscious than were those attending due to self-harm. Only 2/96 (2%) of self-harm patients were drowsy or unconscious compared with 6/31 (19%) of the alcohol intoxicated patients, which was a significant difference (Chi squared 11.43; df=1; p=0.001).

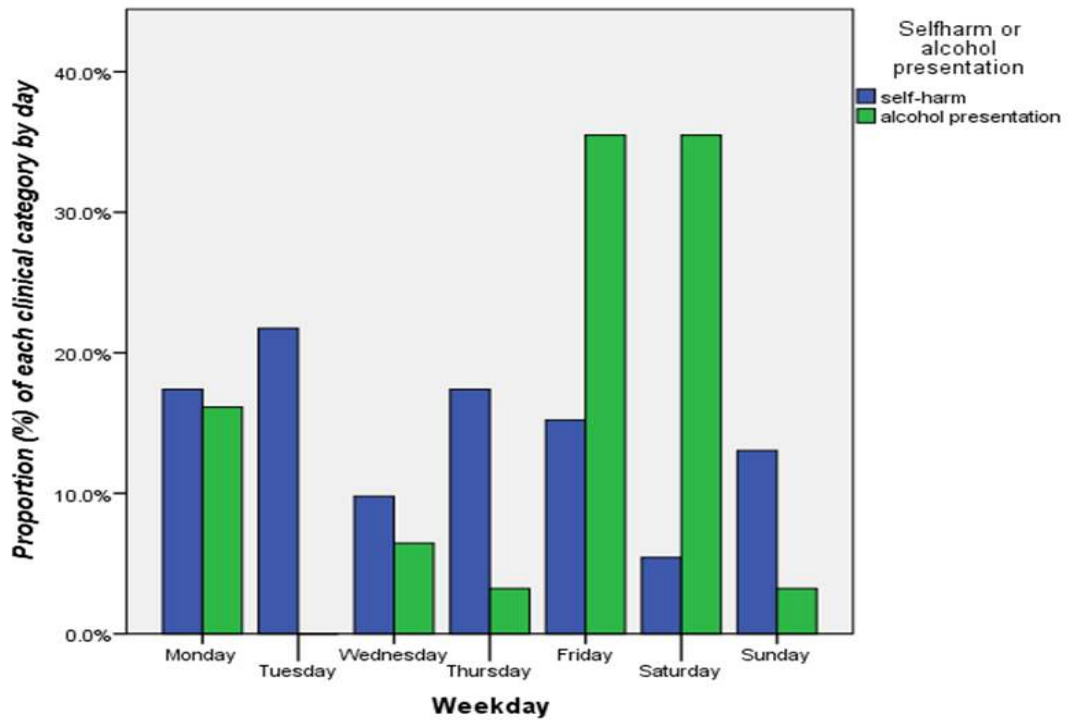
**Table 2. Patient Alertness**

<b>Group</b>	<b>Not Alert %</b>
Alcohol ( <i>n</i> =31)	6 (19%)
Self-Harm ( <i>n</i> =96)	2 (2%)

### **Day of Presentation**

Self-harm attendances were fairly evenly spread across the weekdays while alcohol intoxication was strongly associated with Friday and Saturday (Figure 1). Of the alcohol intoxication group 71 per cent attended ED on Friday or Saturday. This was in contrast to the self-harm group where only 21 per cent (Chi squared 26.42; df=1; p<0.001) presented on a Friday or Saturday in the study period.

Figure 1. Day of Presentation



## Triage Categories

Level of consciousness is likely to have played a part in the triage procedures followed with these cases in the ED. The Leeds ED uses the Manchester Triage System (MTS; Manchester Triage Group, 2009) which is the most widely used triage system in the UK. The MTS is a 5-point triage scale, with corresponding colour codes and recommended waiting times used to triage patients presenting at an ED. The codes are as follows: 1 (Red) means the patient requires immediate care; 2 (Orange) indicates very urgent care with a maximum wait time of 10 minutes; 3 (yellow) signifies urgent care with a maximum wait of 60 minutes. The final two categories are 4 (green) which is standard care with an acceptable wait of 120 minutes and 5 (blue) which suggests non-urgent care with a wait time of up to 4 hours (Manchester Triage Group, 1996; 2006).

We found that the alcohol group was equally as likely to be of significant clinical concern to staff (categories 1 and 2) as was the self-

harm group. However, we found that the alcohol intoxication patients were also significantly more likely (Chi squared 10.22; df=2; p=0.006) to have to wait longer (categories 4 & 5) than the self-harm group, shown below in Table 3.

**Table 3. Triage Categories**

<b>Group</b>	<b>Category 1 &amp; 2</b>	<b>Category 3</b>	<b>Category 4 &amp; 5</b>	<b>Missing</b>
Alcohol ( <i>n</i> =31)	4 (14%)	12 (38.7%)	12 (43%)	3 (9.7%)
Self-Harm ( <i>n</i> =96)	14 (14.6%)	65 (67.7%)	14 (14.6%)	3 (3.1%)

### **Social Care Involvement and Social Concern**

Specific terminology was used in the databases to refer to previous social care involvement in a child's case, or expressions of concern about social care. 'Social care involvement' means that young people had an allocated social worker, were classed as 'looked after', or had a worker (i.e. youth or family support worker) allocated to them and/or their family for social support. 'Social concern' means that in the medical records there was evidence of difficulties such as (but not limited to) anti-social behaviours, offending behaviours, school refusal and parental management and/or neglect issues. These categories were not mutually exclusive and if I noticed one or more of these areas of difficulty without clearly discernible 'social care involvement', I recorded the concern as it was written on the medical notes and logged it on the extraction tool; it was later coded as a 'social concern'.

Among the self-harm patients, 29% (28/96) were currently receiving some form of social care involvement. This was in contrast to the 16% (5/31) in receipt of social care arrangements in the alcohol intoxication group (5/31), shown below in Table 4. This was not a statistically significant difference (Chi squared 2.07; df=1; p=0.15).

Among those patients who had no current social care involvement, documented social concerns were nonetheless at times apparent in the case notes. This was the case for a further 21(22%) of the self-harm patients and a further 9(29%) of the alcohol group. Therefore a total of 51 per cent (49/96) of the self-harm group had social care involvement or social concern recorded in the notes, compared to a similar proportion (45%, 14/31) of those in the alcohol intoxication group (Chi squared 0.32, df=1; p=0.57). (Table 4).

**Table 4. Social Care Involvement and Social Concern**

	<b>Social Care Involvement</b>	<b>Expressions of Social Concern</b>	<b>All Social Care</b>
Alcohol (n=31)	5 (16%)	9 (29%)	14 (45%)
Self-harm (n=96)	28 (29%)	21 (22%)	49 (51%)

### **Self-Harm History**

As shown below in Table 5, ED records stated that 65 % (62/96) of the self-harm group had a history of self-harm with or without ED attendance. The comparable figure for the alcohol group was only 16 per cent (5/31). It should be pointed out, however, that there is a striking

discrepancy between the groups for the failure of ED records to contain this clinically relevant information: for 81% (25/31) of the alcohol intoxication patients it was not recorded whether or not they had a history of self-harm, while this was not recorded in just 27% (26/96) of those who had attended due to self-harm (Chi squared 27.97; df=1;  $p<0.001$ ). (Table 5).

**Table 5. Self-Harm History**

	<b>Record of Self-harm</b>	<b>Record of No Self-harm</b>	<b>Missing Data on Self-harm</b>
Alcohol ( <i>n</i> =31)	5 (16%)	1 (3%)	25 (81%)
Self-harm ( <i>n</i> =96)	62 (65%)	8 (8%)	26 (27%)

### **Mental Health Service Involvement**

In the self-harm patient group 51/95 (53.6%) had a recorded history of earlier mental health service involvement compared to only 2/31 (6.4%) of those with alcohol intoxication (Chi squared 21.40; df=1;  $p<0.001$ ). In less than 9% of each sample there was a record of an absence of mental health service involvement, these results are shown below in Table 6. Similar to the self-harm history recorded above, a large proportion of the young people with alcohol intoxication (27/31, 87.2%) had missing data regarding service involvement compared to 36/95 (38%) in the self-harm group (Chi squared 22.63; df=1;  $p<0.001$ ). (Table 6).

**Table 6. Mental Health Service Involvement**

	<b>Record of Mental Health Service History</b>	<b>Record of No Mental Health Service History</b>	<b>Missing Data on Mental Health Service History</b>
Alcohol ( <i>n</i> =31)	2 (6.4%)	2 (6.4%)	27 (87.2%)
Self-harm ( <i>n</i> =95)	51 (53.6%)	8 (8.4%)	36 (38%)

### **Admission, Assessment and Actions**

Shown below in Table 7, I found that 80 (83%) of the self-harm cases were admitted to the general hospital compared with only 5 (16%) of the young people who attended ED due to alcohol intoxication (Chi squared 47.81; *df*=1; *p*<.001). None of the adolescents who used alcohol received a specialist assessment on the ED ward by an on-call psychiatrist or a member of the CAMHS service. Of the self-harm group 14 per cent (13/96) received specialist assessment while on the ED, compared to none (0/31) of the alcohol intoxication group. For the purposes of clarification it is important to note that 11 of the 13 self-harm patients that received a specialist assessment while on the ED were also admitted to a ward, and are therefore included in the 80 patients shown in the ‘admission’ column in Table 7.

Of the patients who had self-harmed and were not admitted to an inpatient ward, a further 2 received specialist assessment in the ED and 5 more had a planned CAMHS action prior to discharge. In other words, of all the self-harm cases 91 per cent (87/96) received either a specialist

assessment, admission to a ward or a planned CAMHS intervention. With the alcohol intoxication group, on the other hand, only 5/31 patients (16%) were admitted to hospital; of the remaining 26 young people only a further one patient had a planned CAMHS intervention before discharge, and none of the alcohol intoxication cases received a specialist mental health assessment in the ED, as outlined above. Consequently, 19 per cent (6/31) of alcohol intoxication cases received either admission to a ward, a specialist mental health assessment or planned CAMHS action in contrast to 91% (87/96) of the self-harm group (Chi squared 60.71; df=1; p<0.001). (Table 7).

**Table 7. Admission, Assessment and Actions**

	Admission	CAMHS Plan (Not admitted)	Specialist Assessment (Not Admitted)	All Actions
Alcohol (n=31) (%)	5 (16%)	1 (3%)	0 (0%)	6 (19%)
Self-harm (n=96) (%)	80 (83.3%)	5 (5.2%)	2 (2.1%)	87 (91%)

### **Self-harm with Alcohol**

Of the combined self-harm group, a small number 6/96 (6.25%) also used alcohol, but were included in the combined self-harm group because their presenting complaint was recorded as self-harm by the ED staff. Of these

cases, 83% (5/6) were female, which is similar to the overall number of females in both the self-harm and alcohol groups (80%).

It was decided that further analysis be undertaken, excluding this this group (self-harm with alcohol). It was decided that this group should include all adolescents where alcohol use was recorded in the medical notes as part of the self-harm episode. This was determined to be the most appropriate method of exclusion because of the low number (n=6) and the inconsistency of recording in relation the type and amount of alcohol used in these patients. Some ED staff simply recorded 'with alcohol' for example, and for the sake of simplicity any mention of alcohol use, regardless of amount, resulted in the inclusion in the self-harm with alcohol group. It was deemed important for the rigor of the study to carry out a further analysis which excluded this group to see whether this exclusion impacted the results. This analysis excluded the self-harm with alcohol group from the overall self-harm sample for the reported variables which had shown a significant difference between groups during the initial analysis. These variables were: triage category, social care involvement, self-harm history recording, mental health service history and admission, assessment and actions for both groups.

Table 8 (below) shows all triage categories per sample group and Table 9 (below) highlights the revised totals with the self-harm with alcohol group removed. Table 10 (below) demonstrates that results between the alcohol and self-harm samples for triage categories 4 and 5 remain significantly different after the group of patients who used alcohol with self-harm are removed from the combined self-harm group (Chi-squared 10.96; df=2; p<0.001).



**Table 8. Triage Categories for Self-harm and Alcohol**

	Category 1&2	Category 3	Category 4&5	Totals
Alcohol	4 (14%)	12 (43%)	12 (43%)	28*
All Self-harm	14 (15%)	65 (70%)	14 (15%)	93*

\*3 triage values were missing from each group (N=31-3=28; 96-3=93)

**Table 9. Triage Categories: Self-harm with Alcohol Group Excluded**

	Category 1&2	Category 3	Category 4&5	Totals
Alcohol	4 (14%)	12 (43%)	12 (43%)	28*
Self-harm with Alcohol Excluded	14 (16%)	61 (69%)	13 (15%)	88**

\*3 triage values missing from alcohol only group

\*\*3 triage values missing and 5 self-harm with alcohol cases removed

**Table 10. Triage Categories 4&5: Self-harm with Alcohol Group Excluded**

Variable	Sample	Number in Self-harm group exhibiting variable	Number in alcohol only group	Chi-Squared	P Value
Triage Categories 4&5	All self-harm	14/93	12/31	10.22	p<0.006
	SH with alcohol excluded	13/88	12/31	10.17	p<0.006

The remainder of the variables which produced significant differences between the self-harm and alcohol groups were re-analysed with the group who used alcohol with the episode of self-harm removed. Table 11 (below) displays the original results for these significant variables (triage category, social care involvement, self-harm history recording, mental health service history, admission, assessment and

actions) above the re-analysed results with the self-harm group who also used alcohol removed from the analysis. As is evident in these results, the variables retained their significance even after the group who used alcohol with self-harm was removed from the overall self-harm sample.

**Table 11. Other Variables: Self-harm with Alcohol Group Excluded**

Variable	Sample	Number in Self-harm group exhibiting variable	Number in alcohol only group	Chi-Squared	P Value
Alertness	All Self-harm	2/96	6/31	11.43	p<0.001
	SH with alcohol excluded	2/90	6/31	10.96	p<0.001
Self-harm History Not Recorded	All SH	26/96	25/31	27.97	p<0.001
	SH with alcohol excluded	24/90	25/31	27.88	p<0.001
Mental Health History	All SH	51/95	2/31	21.40	p<0.001
	SH with alcohol excluded	49/89	2/31	22.23	p<0.001
Admission	All SH	80/96	5/31	47.81	p<0.001
	SH with alcohol excluded	76/90	5/31	48.63	p<0.001

### **Self-harm with Alcohol Questioning**

In the overall self-harm group, ED staff recorded that 6 of these patients (6/96, 6.25%) had used alcohol with an episode of self-harm. It was also recorded that 8 of the self-harm group (8/96, 8.33%) had not used alcohol during their self-harm. This means that the significant proportion of the self-harm cases (82/96, 85.4%) were not asked about alcohol use as part of their assessment.

## **Discussion**

### **Research Focus and Hypotheses**

I was interested in the psychosocial features and hospital care of adolescents presenting at the ED in the Leeds Infirmary for alcohol intoxication and self-harm. Similarities or differences in the profile of these groups was of importance to the research, as was whether these groups received similar ED assessment and treatment and planned after care. These questions arose because current research and clinical experience suggest a significant disparity in favour of the self-harm group. My central research hypothesis was that the patients who had attended due to alcohol intoxication would not receive the same care, assessment or planned aftercare in the ED as that meted out to those who had self-harmed.

I found that the characteristics of the young people who attended ED due to alcohol intoxication were similar to those who presented with self-harm in relation to social care concerns and social care involvement, but they differed markedly in their rates of admissions and planned aftercare, in favour of the self-harm group, as hypothesised.

### **Summary of Findings**

The research found that the majority of patients who presented during the period under observation were female in both the self-harm and the alcohol group. The proportion of males in the alcohol group was higher (39%) than in the self-harm group (14%). Girls made up 86 per cent of the self-harm sample and 61 per cent of the alcohol sample. The mean ages of the alcohol and self-harm samples were almost identical (14.32/14.21). In relation to the reason for attendance at the index

presentation to ED, 76 per cent of the study sample presented with self-harm and 24 per cent with alcohol intoxication (Table 1).

More of the alcohol group (19%) were judged to be not alert than the self-harm group (2%) (Table 2). The self-harm group's presentation days were spread fairly evenly across the week, while the alcohol group presented mainly on Friday and Saturday (Figure 1). Both groups were relatively similar in relation to their numbers in the urgent triage groups (1&2) with the self-harm group having 14 per cent in these categories compared to 15 per cent for the alcohol group. However, more alcohol patients (43%) waited longer (represented by triage categories 4&5) than did the self-harm group (15%). The self-harm and alcohol groups had 68 per cent and 39 per cent in triage category 3 respectively (Table 3).

In relation to planned ED actions, specialist assessment and care, 91 per cent of the self-harm group received either admission, specialist mental health assessment or a planned CAMHS action in comparison to just 19 per cent of those who attended for alcohol intoxication (Table 7). This discrepancy was despite the finding that for all social care involvement or concerns the self-harm group only had slightly more (51%) of these recorded social difficulties than did the alcohol group (45%) (Table 4).

Among the patients who attended because of alcohol intoxication, only 19 per cent had a recorded history of self-harm compared to a far larger proportion (73%) of young people who attended after a self-harm episode; this discrepancy was, however, in the context of most of the alcohol intoxication patients (81%) having no information on such a past episode of self-harm reported in their case records, while the shortfall in this recorded information was a more modest (27%) among the self-harm sample (Table 5).

In relation to mental health service involvement, a far higher proportion of the self-harm group (64%) had mental health service involvement than the alcohol group (6%). However, as with the self-harm history, this result was in the context of a significant proportion of the

alcohol group (87%) having no record of whether or not they were asked about mental health service involvement compared to the self-harm group (38%)(Table 6). Finally, of the self-harm group, a significant proportion (85%) had no record of being asked about whether or not they had used alcohol as part of their episode of self-harm.

## **Findings in the Context of the Literature**

Holme (2007) found 67 per cent of the alcohol group and 80 per cent of the self-harm group to be female. The characteristics of our overall combined study sample also showed a large proportion of all attenders to be female (80%) with females making up 61 per cent of the alcohol sample and 86 per cent of those who had self-harmed. This study also employed the utilisation of case note data via the Symphony system and data was collected across both St James' and the LGI sites.

Dr Holme's (2007) results showed a higher rate of attendance at the ED for the alcohol group (68 cases over a 4 month period) compared to the current study (31 cases over a 6 month period). An explanation for this discrepancy in findings might be associated with the recent observation in the BMJ (2015) that alcohol specific hospital admissions in young people (under 18 years of age) are down by 40% between 2012 and 2015 compared to figures between 2006 and 2009. Dr Holme carried out her study in 2007 and this might explain the shortfall in expected alcohol attendances in the current study. As suggested earlier, it is likely that a decrease in overall admissions for young people using alcohol may also reflect a decreased level of ED attendance for alcohol misuse in young people. However, it is worth considering the possibility, unlikely as it may be, that adolescents and their friends and family might be aware of the pressures on the ED and hospital beds and refrain from ED attendance after an intoxication episode when they may have presented previously. Acute misuse of alcohol might not be seen as worthy of medical care given the current publicity regarding pressures on hospitals

and EDs. If these figures have reduced because of a genuine decrease in alcohol misuse then these results are encouraging. Alternatively, if these young people are not attending because of a shortfall in the service provided to adolescents who misuse alcohol, but the ED staff remain the only professional contact with these high risk patients, then these figures are more worrying than might be initially thought.

The findings of the current study are that the level of care offered to the alcohol intoxication patients in terms of admissions and planned after care are significantly lower than that offered to the self-harm group, despite the fact that they made up a significant proportion (24%) of all attendances. This finding is comparable to results from Chan, Michaelis and Raffles (2005) in their UK based audit on self-harm and alcohol intoxication in an ED. They report that alcohol intoxication represented a large proportion of the total sample (40%) but had little CAMHS input. They felt that alcohol intoxication met the definition of self-harm and should be included as such in the NICE guidance. In Holme's (2007) unpublished study in Leeds, she also reported concerns regarding alcohol intoxication in the adolescent group she sampled. She highlighted that 66.2 per cent of the alcohol intoxication cases were discharged with no further follow-up. In the present study, records show that 81 per cent of the alcohol group were neither admitted, assessed by mental health specialists nor had a planned CAMHS intervention.

In the Holme study (2007) 25 per cent of the alcohol group were admitted to hospital in comparison to 16 per cent of the cases in our present alcohol intoxication sample. It is worth considering the possibility that both these figures for admission rates might be elevated because of physical injury associated with intoxication which could have determined the admission for medical observation. Examples of this scenario were observed anecdotally in the current project and differ from admission as a result of psychosocial concern or for specialist mental health assessment as was found in the self-harm group. On the other hand, although the self-harm group clearly received medical

care/observation for their injuries/poisoning, it is also clearly recorded that of the admissions in the self-harm group (83%) a contributory factor was the requirement for specialist mental health assessment by CAMHS.

In their French study of ED responses to adolescents with alcohol intoxication, Muszlak and Picherot (2006) point to social concerns (social/family problems) in 24 per cent of the sample. The findings of the current study are higher for social concerns (45%) in the alcohol sample but this discrepancy might be related to cultural differences or subjective impressions of what is deemed a 'social concern'. Holme (2007) also reported a significant proportion of children with 'looked after' status in both her self-harm and alcohol groups. Despite the lower recorded number of social difficulties in their study, Muszlak and Picherot (2006) note a far higher proportion of hospital admissions (93.4% for a mean duration of 50 hours) for alcohol intoxication when contrasted to our findings of a 16 per cent admission rate. Furthermore, they state that specialist (psychological/psychiatric) follow-up was planned in 68 per cent of these cases. These findings are very different to those of the present study, where 81 per cent of the alcohol group received no admission, specialist assessment or CAMHS follow-up. Similar findings to mine were reported, however, by Matali et al. (2012) in a Spanish study which found that only 11.4 per cent of patients who presented at the ED with acute alcohol intoxication were referred to specialist services. Similarly, Weinberg and Wyatt (2006) in their observational profiling study in the Royal Cornwall Hospital for adolescent alcohol attendance in ED, showed that 82 per cent of young people received no formal/recorded counselling on discharge.

Published studies note social concerns in the adolescent patients presenting at ED for treatment of acute alcohol intoxication, and the majority of the research on the topic also highlights the lack of appropriate psychological care and assessment offered to these groups given their levels of risk for harm and mental health difficulties. This is in line with the current findings where the alcohol intoxication sample

received far less psychological care and follow-up than did the self-harm group despite a relatively similar level of social concern.

The current results show a significant proportion of missing data (81%) regarding the self-harm history of the alcohol group. The self-harm history for the self-harm group was recorded far more often, although no record of this information was noted down in 27 per cent of the cases. It is possible that far less self-harm history was recorded for the alcohol group because there was no history to report, but a record of no self-harm history should still have been made. The researchers Woolfenden et al. (2002) also noted in their retrospective study of alcohol intoxication and poisoning in adolescents in Australia that the relevant psychosocial histories of their patients were poorly documented. They observed that where this information was recorded, a high proportion showed psychosocial dysfunction.

Holme (2007) drew attention to concerns regarding level of consciousness of her study patients, and Van Zanten et al. (2013) noted in their Dutch study that the number of adolescents presenting at EDs with severe levels of reduced consciousness is increasing. Our research found, when we analysed levels of alertness, that the alcohol intoxication patients were more concerning in terms of their level of consciousness, and judged 'not alert' in 19 per cent of the cases compared to 2 per cent of the self-harm group. This is concerning when we consider the significant level of social concern that we also observed in the alcohol intoxicated group. It is likely that by the time these individuals had presented and been assessed levels of alertness would have increased from an even worse level before their attendance at hospital. Reduced levels of alertness might very well place this already vulnerable group at risk of exploitation, injury, sexual attack or abuse.

The overwhelming majority of our sample was female (80%) with girls representing the majority (61%) of alcohol presentations as well as those presentations related to self-harm (86%). These findings are similar to those reported elsewhere (Holme, 2007). Some commentators



suggest that the gender gap in relation to adolescent alcohol consumption is closing (where historically boys were drinking more than girls) specifically in countries with greater gender equality (i.e. Scandinavian countries) or where a country is characterised by extensive drunkenness, such as the UK, Norway and Finland (Saunders & Rey, 2011).

Our present findings showed that boys made up only 20 per cent of all attendances in both categories, but represented 39 per cent of all alcohol attendances. In line with findings summarised in the introduction (binge drinking risks in adolescence), there may be a social reinforcement element in the male drinking group in the current research. A sense of belonging may be relevant to boys where, within a group of peers, externalising behaviours (Chassin et al., 2002) are seen as acceptable, particularly within the context of a heavy binge drinking region. Girls dominated the alcohol intoxication group and the overall sample numbers in the current study, and it may be that binge drinking for the girls served a very different psychological need than for the boys, and their heavy use may be more allied to negative affect regulation (Chassin et al., 2002).

The analysis of the day of the week presentation for the alcohol group contrasted to the self-harm group is worth commenting upon. Of the alcohol intoxication group 71 per cent presented on Friday or Saturday compared to just 21 per cent of the self-harm group presenting on these days of the week. This may be of relevance to the binge drinking debate and what Hallgren et al. (2012) refer to as polarised drinking habits. They comment on reduced overall alcohol consumption in Sweden with contrasting and simultaneous increases in hospitalisation for youth over the same period. Binge drinking in the alcohol group appears a significant concern therefore. A related point was the subjective observation during the data collection phase that in the majority of alcohol cases, where the drink was recorded, it was stated that vodka was the drink of choice. Kuntsche et al. (2006) review drinking motives and alcohol use in adolescents and point toward spirit

and beer consumption being implicated in riskier and higher frequency binge drinking occasions. They also highlight that adolescents who prefer spirits, and drink to forget their problems, also tend to drink excessively. Furthermore, Weinberg and Wyatt (2006) report that in their study (and similar to studies in adults), spirits are the most common type of alcohol consumed for hospital presentation episodes.

Findings showed that, compared with 91 per cent of patients who attended ED because of self-harm, the young people attending ED because they were intoxicated with alcohol received either specialist mental health assessment, hospital admission, or a CAMHS plan of action in only 19 per cent of recorded cases, despite being a significant proportion of overall attenders. The alcohol group also were deemed to be not alert in 19 per cent of their attendances compared to 2 per cent of the self-harm group. Our findings point to a significant proportion of unrecorded self-harm history for the alcohol group (81%) when compared to the self-harm group (27%). Our results did not differ markedly from other studies in other ED settings, aside from some results (Van Zanten et al., 2013; Loukova, 2011) showing less evidence for psychosocial vulnerability in the alcohol groups. Muszlak and Picherot (2006) in France also showed a far higher admission and specialist referral rate for the alcohol intoxication group in their project than the other studies cited in our review.

Existing literature and our current findings show that young people who drink to excess and present at the ED with acute alcohol intoxication receive a lesser rate of psychosocial assessment and proposed follow-up care. This is despite the evidence that in the majority of studies they are also shown to be a vulnerable group. Published literature also highlights developmental, mental health, psychosocial and suicide risks associated with alcohol consumption in adolescents.

## **Potential Explanations for Findings**

### **Missing Self-harm History Data (Alcohol Group)**

The omission of self-harm history data for the alcohol group (81%) was interesting when contrasted with the self-harm group (27%). A hypothesis which may explain this is that, due to the presentation in the self-harm group, staff might have been more primed to gather a self-harm history. Furthermore, hospital staff might not be aware of the acute alcohol intoxication risks and may not consider it a form of self-harm or as a symptom of underlying psychological distress and for this reason not screen for self-harm history. This missing information may also very well be because ED staff know from experience that CAMHS doesn't expect to play any role in intoxication episodes so there seems little point in taking a mental health history. The self-harm history may not have been recorded because there was nothing of note to document, such as a negative response on direct questioning which was not then recorded.

### **Missing Mental Health History Data (Alcohol Group)**

There was also a lack of records for mental health service involvement history for the alcohol group (87%) when compared to the self-harm group (38%). This result might be because of drowsiness associated with their alcohol intoxication and may also account for some of the discrepancy in recording of self-harm history for the alcohol group cited above.

It is also worth considering that a level of embarrassment or drunkenness may have impacted the recording of relevant self-harm and mental health histories in the alcohol and self-harm groups. It could also be that the presence of a responsible adult (parent/carer) or a friend might have caused the alcohol patients to be less open in their responses

to these questions if they were asked, which may have in turn impacted the recording of a negative response on direct questioning.

### **Missing Data on Alcohol Use (Self-harm Group)**

There was a significant level (85%) of self-harm patients that appeared not to be questioned regarding alcohol use with their episode of self-harm. A potential explanation of this finding might be that staff felt in their clinical judgement that self-harm was of more concern than alcohol use which led to the omission of alcohol information and the inclusion of self-harm information as the primary complaint. This is an interesting finding, particularly when we consider that alcohol is often taken as part of, or prior to an act of self-harm. For example, in the self-harm in Oxford study results showed that 59.7% of men and 47.2% of women ingested alcohol 6 hours before, or as part of, the self-harm act (Hawton et al., 2014). It may be that in the presence of family or carers, young people felt embarrassed or afraid to admit to alcohol use due to the law governing age and the consumption of alcohol. The cited Oxford self-harm study (Hawton et al., 2014) focused on the adult age group, but showed a high incidence of alcohol use with the act of self-harm (59.7% for men; 47.2% for women). It is unlikely that alcohol consumption with self-harm increases as dramatically with age as would be suggested when the Oxford results are contrasted with our results (6.25%) for patients who used alcohol as part of act of self-harm. The majority (85%) of our self-harm sample appeared not to be questioned about alcohol use. It is very important that this questioning takes place and is recorded- particularly when we consider that acute intoxication has also been implicated in self-harm and suicide in adults and adolescents (Hawton et al., 2014; Holmgren & Jones, 2010; Kaplan et al., 2013; Pirkola et al., 1999).

## **Appropriate Management of Self-Harm**

Attention should be drawn here to our finding that the ED at Leeds General Infirmary deployed an appropriate management strategy for the self-harm admissions in 96% of recorded cases. It is clear therefore that treatment was in line with national guidance in the overwhelming majority of cases during the study period; this observation is commendable.

## **General Considerations in the Context of the Findings**

The ED initiative with the local substance misuse service shows the level of concern attributed to alcohol attendances in the adolescent group in the Leeds ED. However, without appropriate funding and a recognition of the psychological impact of alcohol on young people, initiatives like those in Leeds will remain small but noteworthy attempts to tackle a much larger problem.

Alcohol Concern (2011) reviewed ED provisions for young people presenting with alcohol intoxication in 128 EDs. They reported no established referral pathway for alcohol problems in 48% of departments assessed, and 73% had no alcohol reduction strategy for young people. Of the assessed departments 78% did not employ someone responsible for addressing alcohol concerns in young people. The level of concern regarding alcohol misuse in Leeds might not be typical of other hospitals in the country therefore, and for this reason our findings might not be generalizable as Leeds appears unique and progressive in the management of alcohol misuse in young people.

There is the possibility that discrepancies in care between alcohol and self-harm move beyond policy shortfalls, funding or commissioning concerns and involve a broader issue related to British cultural attitudes to alcohol and drinking. This speculation is outside the scope of this project, but is an important consideration for future research. The

missing data in our study may point to cultural attitudes such as the role alcohol is seen to play in adolescent social development and getting drunk may be viewed as a normal aspect of adolescence and not a marker for self-harm or psychological distress and is therefore treated as such by medical staff.

As shown above in Table 11 (results section), adolescents presenting with alcohol intoxication were significantly more likely ( $p < 0.006$ ) to have to wait longer (triage categories 4&5) than those presenting with self-harm. It should not be assumed that they received a poorer service therefore, as a good reason for this increased wait time might be that they were less seriously unwell and this result may reflect an appropriate clinical prioritisation.

## **Strengths and Limitations**

### **Strengths**

The Leeds General Infirmary is a regional trauma centre and is the location for the emergency treatment of all young people under 16 years of age in the Leeds metropolitan area. The Infirmary is highly accessible, located in Leeds city centre, and has modern electronic data systems befitting a large regional hospital. These reasons, in addition to its location within a heavy drinking region in the north of England, make the Leeds Infirmary's ED an appropriate location to undertake the current study.

The design for the current project employed consecutive sampling for all attendances for alcohol intoxication and for self-harm in adolescents over a 6 month period, a method designed to avoid selection biases. Selecting a study period of only part of a calendar year means that there may have been uneven representation of the study population due to seasonality. Unlike the known patterns of suicides, there is no

generally established seasonality in non-fatal self-harm (Bickley et al., 2013; Dickson et al., 2011). However, since published accounts of hospital attendances are not broken down by age, unrecognised patterns of monthly seasonality among children and adolescents cannot be ruled out.

The chosen sampling period, however, covered late summer and most of winter, so Christmas, New Year and the latter half of the school summer holidays fell within the sample time. The longer summer evenings during the school break might have resulted in some seasonality in alcohol intoxication and hospital attendance, being a time when young people are inclined to congregate in public parks and open spaces to drink. Christmas and New Year are typically festive occasions in Britain and as a result alcohol may be more easily accessible to young people at these times.

In their analysis of self-harm ED presentations to the general hospital in Oxford for the period of 1976 to 2003, Bergen and Hawton (2007) show a protective effect for the Christmas holiday period on people who self-harm. However, they also demonstrated that this protective effect is lost if attendees used alcohol preceding the act of harm. Moreover, New Year's day attendances for self-harm showed a very sharp increase (250%) in this group. They suggest that the disinhibiting effect of alcohol (in non-chronic users) may account for this significant rise. Their study dealt with every attender for self-harm aged 10 years or over and for this reason their results are of relevance to our methodological considerations. It is worth noting that the self-harm presentations in the present study may have increased over the New Year period as a result of increased alcohol use, but this hypothesis was not tested. That the chosen sampling period included both Christmas, New Year and the latter half of the summer holidays is considered a strength as it included periods (Christmas/summer) where arguments for seasonal drinking or self-harm might be made and the omission of these periods may have been viewed as a study weakness.

A further strength of this study is that ED records were used for collection and analysis. Typically, self-harm research uses mental health records for patient admissions and referrals to specialist services. The method of collection used here ensured that non-admitted patients were also included in the study sample, allowing a robust study population for a series of questions concerning hospital care ahead of any admission to the general hospital. It is also the case that, until very recently, it is likely that researchers would not have had electronic medical data storage or a system such as Symphony to help to expedite the data collection process. It is unlikely that the same level of detail or breadth of case data would have been available for collection within the same period of time had the process involved dealing with paper records, due to the complications of access, locality and missing data.

The inclusion of the results of a further analysis of the self-harm patients who also used alcohol adds to the value of this study. Although the total number of adolescents falling in to this group was small (n=6) re-analysing the results with this group removed from the overall self-harm sample added to the rigor of the study.

## **Limitations**

Human error by the omission of relevant information is an obvious consideration in relation to study weaknesses. It appeared that in some of the patients who were admitted to a ward, no CAMHS involvement was noted or planned. An absence of CAMHS involvement with these patients might be regarded as unlikely when one considers the ED protocol and their thorough adherence to CAMHS/NICE protocols, but this speculation was not tested here.

The present study did not have the resources to follow patients through to in-patient admission or CAMHS treatment and record the subsequent outcomes or whether assessment and treatment took place



within the hospital and community as proposed. This process would undoubtedly have added to the rigor and significance of the study.

Similar to difficulties reported by Woolfenden et al. (2002), the lack of detailed medical record information in the case notes for the alcohol intoxication group hampered the collection of detailed psychosocial information and proposed after care. It is also likely that I omitted information from both the self-harm and alcohol groups when one considers the number of records reviewed and my initial unfamiliarity with the databases. These omissions may therefore have impacted the reliability of the study results.

I amended the data extraction tool slightly as the collection period progressed. I streamlined it based on the type of information required in conjunction with my increased familiarisation with the systems. I was able therefore to collect more relevant information in a shorter period of time toward the end of the collection period. A period of time to familiarise myself with the systems and test out the tool before the collection proper began would have been beneficial. However, regular access to a computer terminal in a busy clinical department is difficult to establish and is never guaranteed; for this reason I decided to collect data as soon as I was able to access a computer and I did not therefore have the benefit of a trial period.

A longer study period might have allowed for the collection of greater detail regarding assessment and after care for the patients that were admitted to the wards. However, when viewing the admission statistics (83% for self-harm and 16% for the alcohol group) it is clear that predominantly self-harm patients were admitted to the wards. Further data collection for these patients seems certain only to have increased an already large discrepancy between the groups in relation to what assessment and after care services they are offered.

Due to unfamiliarity with the databases and the labour intensive initial data collection (which returned all ED presentations for a period searched), there is the chance that some relevant cases were missed.

More time to familiarise myself with the systems might have produced a slightly larger sample, even within the same time frame. These difficulties, it should be said, impacted the speed of collection and not the quality of collection, as more data was collected to ensure nothing was missed. This process was time consuming however, and might well have limited the sample size.

During the data collection phase the Symphony system was unavailable to me for a day due to technical issues. This meant that for 20 cases I only had the information provided by WinDip. As described earlier, these systems hold similar information, but Symphony tends to gather more detail and provides a helpful overview in relation to staff plans or impressions regarding psychosocial concerns for patients. This information is held in what is known as the 'health and welfare screen' component of the system. I was therefore unable to gather as much specific psychosocial information or detail on planned after care for 20 of the cases used in the final analysis.

The Leeds Infirmary's ED has a local initiative with a substance misuse service which is innovative and may not be typical of other EDs in the region or the country. The current results might not therefore be generalizable to other ED settings managing acute alcohol intoxication in adolescents. It is also possible that the results for the alcohol group were positively impacted in terms of proposed aftercare due to the ED substance misuse initiative which had already begun (approximately July 2013) by the time I began my data collection in August 2014. It may be that ED attendees with acute alcohol intoxication were offered more alcohol specific treatment than they would be offered elsewhere in the UK. This is obviously a positive development, but may not be typical of Leeds ED practice up to this point and, as noted earlier, might also impact the generalizability of the results.

A further reason potentially preventing generalisability of the alcohol-specific results is the geographical location of Leeds. As a northern city, Leeds is located in the heaviest drinking region in

England. The results from the Leeds Infirmary's ED may show higher numbers of adolescents misusing alcohol than in other parts of England.

## **Implications**

### **Local and National Considerations**

The ED observed for the purposes of this research may be unique in its management of alcohol intoxication in adolescents, as represented by the referral system to the local drug and alcohol misuse service, which is an innovative local initiative between the ED and the misuse service. At the onset of this study the substance misuse service was beginning to make its presence felt within the ED and to distribute information about its services. My understanding of the current provision for alcohol presentation within the ED is that young people attending because of alcohol intoxication are offered information regarding the service, and are encouraged to accept a referral and subsequently attend group sessions in the ED implemented by the substance misuse service. In almost all cases observed, relevant information-sharing and liaison between the paediatric department in the ED and the young person's school nurse also took place. However, I would suggest that asking adolescents to return to the hospital after an ED presentation for alcohol and attend a group may be an unrealistic expectation.

Specialist mental health assessments for young people presenting with alcohol should be standard, as is already the case with presentations for self-harm as recommended by NICE guidance (2004). Such assessment would provide an accurate picture of current psychosocial functioning and motivations for the alcohol use. An overnight admission and further assessment thereafter with a CAMHS clinician might add further to the systemic understanding of each alcohol misusing adolescent and show a level of professional concern befitting of the associated risks. Even where adolescents are deemed medically fit for

discharge subsequent to admission for self-harm, they are not typically permitted to leave the hospital until they have been seen by a CAMHS professional. This is good practice and shows an acknowledgement of the complexities associated with the self-harm group and a holistic focus on both medical and psychological care as advised by NICE (2004).

Adolescents who misuse alcohol warrant at least some of the same joined-up and psychologically informed approach.

During my professional practice in CAMHS over the last decade I do note a disjoint between mental health and substance misuse services, specifically the way these services appear to work separately in South and West Yorkshire's children's services. My experience in this field suggests that substance misuse work is not typically undertaken within CAMHS services and my limited professional mental health experience in the USA (again in children's services) highlighted more joined up working. I realise generalisations cannot be made from these limited experiences and I understand that commissioning, funding streams and local and national policy make this a complicated area, that I may be oversimplifying, but I feel it is a noteworthy discussion point to raise nonetheless. I argue that it is important to ask why these services can't be amalgamated or why professionals within CAMHS can't work with substance misuse issues.

From a British perspective, the aforementioned considerations regarding substance misuse and mental health in young people do not appear to be unique. For example, documents such as The National Treatment Agency (NTA) for Substance Misuse's guidance on commissioning young people's specialist substance misuse services raise important considerations regarding the co-morbidity of mental health and substance misuse difficulties in young people (under 18 years of age). They cite apparent advantages of managing these clinical concerns simultaneously, particularly as evidence suggests that treating both conditions together has better outcomes (Britton & Crompton, 2008). Similar concerns were raised in 2007 by Baroness Massey (Chair of the

chair of the All Parliamentary Group on Children and chair of the NTA) when she introduced the NTA's document on the role of CAMHS and addiction psychiatry in adolescent substance misuse services. She hoped to "encourage substance misuse and CAMHS commissioners to enter into dialogue with practitioners to identify better ways for the two services to work together" (2007, p.3). The NTA document recognised that for young people "substance use and misuse does not occur in a vacuum...children and young people who misuse drugs and alcohol have multiple antecedent and co-occurring mental health problems and disorders" (Aldridge et al., 2007, p.8). Documents like those highlighted above, seem to suggest that these concerns and questions have been raised for some time now. Perhaps with time, a more joined-up or inclusive approach between substance misuse and CAMHS services will help to recognise and manage the complexities associated with the co-morbidity of what are currently seen as two distinct groups of young people.

As our study's patients with alcohol intoxication did not receive specialist support or admission from the ED (as shown in comparable groups elsewhere in other studies), I propose that valuable opportunities are missed for the gathering of important information about these young people. Policy and management in relation to this group seems to lag well behind well-established services for self-harm. These two patient groups should not receive such contrasting care, particularly when, as the research has shown, there appear to be more similarities than differences in their presentations.

The ED in the LGI has implemented strategies for young people presenting with alcohol intoxication, but this appears a localised initiative. Provision should be standard and national funding should reflect the level of concern for this group by ensuring that resources are made available to ED/CAMHS staff at a local and national level. This responsibility should not be left to ED staff and substance misuse agencies already stretched to capacity.

## **Policy Considerations and Recommendations**

### **Cultural/Social Context and Binge Drinking Risks**

From a British perspective alcohol use in adolescence might be perceived to be associated with developmental experience, celebration, entitlement, tradition or reward. By comparison, self-harm, due to the intentional nature of the act and its representation of distress or suffering, might be seen as an overt expression of psychological distress. Currently both of these presentations are treated as quite distinct within EDs, and similarly, treatment for self-harm and alcohol misuse appear to be quite different within the community.

We know that alcohol intoxication can be used as a form of self-medication, self-poisoning, or a coping strategy for psychological distress (Fröjd, Ranta, Kaltiala-Heino & Marttunen, 2011). Due to local perceptions regarding alcohol use (in a heavy drinking region) adolescents using alcohol to cope might be easily overlooked. Broader cultural attitudes toward alcohol may also impact research infrastructure, policy and decision making for this group of vulnerable young people.

Results from the Leeds ED showed that nearly three quarters of acute alcohol presentations occurred on a Friday or Saturday during the study period. This was a significant result when compared to the self-harm group who had a more even distribution for the days of presentation, with slightly over a fifth of self-harm presentations occurring on a Friday or Saturday. Binge drinking adolescents in our alcohol intoxication group are therefore (as per current literature) at a greater risk of intentional or unintentional injury and other detrimental consequences.

We know that social adversity and disadvantage significantly increase the likelihood of mental health problems (Murphy & Fonagy, 2012). This consideration combined with the psychosocial concern of our alcohol intoxication group make it very important to consider the young

people who attended with alcohol intoxication in the Leeds ED an 'at risk' group. Furthermore, if adolescents presenting with alcohol intoxication are also from conflicted family units or disadvantaged social groups, drinking to levels of intoxication that impair consciousness (19% for the alcohol group) might place them at increased levels of vulnerability and immediate risk in these community settings.

Based on the points highlighted above, I would suggest the following in relation to local policy:

### **Local Policy Recommendations**

- Schools-based harm minimisation programmes focusing on binge-drinking risks.
- Social care referrals for socially 'at risk' adolescents who present with alcohol intoxication at the ED.
- Educational programmes for professionals (e.g. school, social care and hospital staff) regarding the dangers of alcohol misuse in young people.

## **Research and Clinical Recommendations**

### **Research Recommendations**

Based on the current research results and a review of the literature, the following are my recommendations for future research:

- If a study similar to the current research is proposed in future I would recommend extracting data from a longer collection period. This would increase sample size and add further precision to the results.
- A longitudinal study to investigate re-presentation rates for adolescents attending EDs with acute alcohol intoxication.
- A qualitative study to investigate what alcohol use means to young people who present at EDs for alcohol misuse.

- A larger sample size might be assisted through a thorough familiarisation with the electronic data systems and a dedicated workstation in the ED.
- Following up members of the alcohol group who were discharged without specialist interventions and assessing their levels of psychosocial functioning and need would help in understanding more about this group.
- An audit of uptake of those in the alcohol group who were referred to substance misuse services would provide a more coherent picture of adolescent engagement in the local alcohol service.
- Further study investigating professional attitudes/knowledge of alcohol risks in young people and perceptions of 'good practice' for alcohol misuse presentation in the ED.
- Psychological investigation of adolescent binge drinking motives either at the time of ED presentation or by follow-up.
- Further research on gender differences in adolescent use of alcohol might serve to enhance our understanding of male alcohol use and investigate whether or not girls in our region present with similar features to the 'infrequent' binge drinking group defined by Chassin et al. (2002).
- A study focusing on CAMHS and inpatient general hospital notes for assessment and after care information would add valuable information, not obtainable with this ED-only study method.
- A study which asks ED staff to collect more detailed information about psychological features of the young people presenting with alcohol intoxication might tell us a lot more about the needs of these young people.



## **Clinical Recommendations Informed by Literature and the Results**

- EDs should notify GPs of alcohol attendances. Some GP surgeries maintain social care risk registers and may be able to cross-reference these cases with their own records and 'flag' them to CAMHS/substance misuse services.
- The use of alcohol workers within the ED. Crawford et al. (2004) showed advantages for the use of alcohol workers (experienced mental health nurses) with adults presenting at EDs with high levels of alcohol use. Alcohol workers for young people within the ED setting may help with more detailed assessments and treatment plans.
- If the child is not admitted to a ward or refuses engagement with an alcohol service or worker, they should be given psycho-educational information on the risks of alcohol. This information should be shared with parents. Where possible a brief psychological assessment should also be undertaken prior to discharge.
- Further assessment by a CAMHS or substance misuse practitioner - in the ED before discharge or as part of a home visit - should be standard clinical practice for young people who present with alcohol intoxication. This would help to establish drinking motives, trigger events and levels of risk including current psychosocial functioning.
- Psychosocial information regarding previous self-harm or mental health difficulties should be gathered in all cases of alcohol-related ED presentations.
- Information regarding alcohol use as part of the act of self-harm should be gathered and recorded in all cases of self-harm presentation, given the risks associated with acute alcohol misuse and suicide.

## **Summary from the Context of the Recommendations**

The findings of the present study have shown a difference between how adolescents presenting with self-harm and adolescents presenting with alcohol intoxication are managed with the ED. This difference is striking given the similarities between the study samples in relation to social concern which raises questions concerning the treatment of the alcohol group. As discussed by Chan et al. (2005) the idea that acute alcohol overdose should be considered a form of self-harm and considered in national guidance for self-harm is supported by the current findings given the social context of the young people in the alcohol group.

We know that the risk of developing mental health concerns is significantly increased by social difficulty and disadvantage (Murphy & Fonagy, 2012) and, for this reason alone, children presenting with acute alcohol intoxication should be properly assessed for psychosocial triggers to their drinking behaviours. This should be done via admission and further assessment or by comprehensive psychosocial assessment prior to discharge. The majority of the alcohol intoxication patients in my study were discharged without ward admission or specialist interventions, while the patients who had self-harmed received a proposed after care plan as per national guidelines in the overwhelming number of cases.

The day of presentation for the alcohol group was mainly over the weekend which is suggestive of binge drinking episodes. Research highlights several risks associated with binge drinking including suicidal ideation, suicide attempts and self-harm (Borges et al., 2000; Smith et al., 2010; Pirkola et al., 1999) and British youth are reported to drink to intoxication more often than their Southern European counterparts (Saunders & Rey, 2010). Furthermore, Leeds is located in the most harmful and hazardous drinking region in England (Patton et al., 2007).

The present research points to a shortfall in care for a large, high risk group of young people who attend hospital as a consequence of alcohol intoxication. How this shortfall will be addressed remains a

funding and policy issue. It is encouraging, however, that on a local level the ED in Leeds has established links with local substance misuse service in attempts to plug this gap in care. Substance misuse and addiction services for children and young people should be part of, or at least be more closely linked with, CAMHS services. Admission of intoxicated adolescents from the ED to a ward for comprehensive and specialist assessment should perhaps become standard practice both locally and nationally. This step would help to gather more valuable information about this complex clinical problem. A case in point is the finding here in which only one in five young people who attended intoxicated were asked about earlier self-harm.

How these young people are viewed in terms of their alcohol use also requires investigation from a cultural perspective as it may be that attitudes toward drinking and what constitutes 'mental ill-health' may be affecting the services offered to these adolescents. These considerations were outside the scope of this study. The purpose of this study was to explore whether, despite public, governmental and local concern over alcohol misuse, anything is done in the ED to help this group from a psychological perspective.

It would seem that an excellent service is being offered to the self-harm group in the ED in Leeds and it is hoped that policy and funding changes might help staff in this department and in wider services to offer the same care to adolescents attending with acute alcohol intoxication. As set out by Viner (2012) "common intervention strategies should be used to prevent or reduce substance use, improve sexual health, reduce injuries and improve mental health, focusing on common risk factors across behaviours/problems" (p.10). A more joined up approach between CAMHS and substance misuse services, or an amalgamation of both, would be a positive step toward more collaborative and systemic working. Admission for assessment for young people presenting with alcohol intoxication in EDs, and cross-agency liaison and working between ED

paediatric staff and CAMHS, would also better serve this important group of young people.

Screening and intervention in the ED for adult users of alcohol has been shown to be effective (Crawford et al., 2004; Noeker, 2011; Schwan, et al., 2012), as have educational interventions (D’Onofrio & Degutis, 2002). Current practice within the LGI employs educative strategies and referral options to alcohol services. How adolescents compare to adults in their uptake of these services is unknown but more detailed mental health assessment at the point of attendance might serve to increase the likelihood of an effective intervention covering both mental health risk and alcohol education. It would also provide a more inclusive service for the young person and not require re-attendance to the ED or a self-referral to an outside agency. EDs are well placed to offer comprehensive and inclusive assessments for young people presenting with alcohol intoxication.

Viner (2012) promotes the idea that novel approaches to adolescent health are required to prevent the adolescent age group from being neglected in adult public health arenas, specifically in tobacco, alcohol and sexual health strategies. He argues that “given evidence that health risk behaviours co-occur in adolescence and that common factors underlie all such health behaviours in adolescence, horizontal approaches focusing on these common factors have great potential to prevent multiple problems” (p.8). Viner (2012) also believes that there is sufficient need for adolescent inpatient healthcare to justify a 18-bed ward in most district general hospitals, with greater activity than this in regional and teaching hospitals (such as the LGI). A ward similar to the one he describes would be an excellent site to deliver the kind of assessment and care this research study suggests is indicated.

## Conclusion

This study has shown that adolescents who presented with self-harm at the Leeds Infirmary's ED over a 6 month period received appropriate care in the significant majority of cases. Young people who presented with acute alcohol intoxication did not receive the same level of proposed after care, admission or specialist assessment as the self-harm group they were compared to, despite similar psychosocial presentations.

The reasons for these findings might be associated with national policy shortfalls associated with differences between mental health and substance misuse treatment capacities and funding streams. Cultural considerations may also add complexity to the debate as to why this group of young people receive such different care when literature suggests similarity and co-morbidity in alcohol and self-harm groups in relation to mental health concerns. These similarities were borne out in the current research, particularly in relation to psychosocial considerations.

These questions as to why young people who misuse alcohol to the point of ED attendance do not receive similar care to young people who self-harm demands further attention and research. The current study confirms a discrepancy in care between the adolescent alcohol and self-harm groups who attended the ED and this was despite the finding that the study groups were similar in psychosocial presentation with the alcohol group of more concern in relation to level of consciousness at presentation. A great deal of missing information for self-harm and mental health history was noted in the alcohol group, as was information regarding previous or current alcohol use in the self-harm group. These findings point to a need for further investigation, and identify locally, a risky group of adolescents who are not receiving the care their psychosocial presentation and binge drinking risks warrant.

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## List of Abbreviations

ED: Emergency Department

LGI: Leeds General Infirmary

AD: Apparently Drunk

DSH: Deliberate Self-Harm

OD/P: Overdose/Poisoning

AOI: Any Other Information

UK: United Kingdom

CAMHS: Child and Adolescent Mental Health Service

NHS: National Health Service

NICE: National Institute for Health and Care Excellence

WHO: World Health Organisation

DH: Department of Health

NTA: National Treatment Agency for Substance Misuse



## Appendix A

### Data Extraction Tool

Data Extraction Tool:

Code:

Gender:

Postcode:

Ethnicity:

Age:

GCS:

Date & Time:

Accompanied by:

[DSH;OD/P;AD]:

Triage Code (Discriminator?):

Assessors: 1)

2)

3)

Harm Context:

Psychosocial History:



ED Action/Plan & Discharge:

A/O/I:

# Appendix B

## Ethics Approval

### Ethics Approval Document



**UNIVERSITY OF LEEDS**

Faculty of Medicine and Health Research Office  
School of Medicine Research Ethics Committee (SoMREC)

Room 10.110, level 10  
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22 July 2014

David Jackson  
Psychologist in Clinical Training  
Department of Health Sciences,  
Charles Thackrah Building,  
101 Clarendon Road,  
Woodhouse  
Leeds, LS2 9LJ

Dear David

Ref no: SoMREC/13/095

**Title: A retrospective case-note comparison of psychosocial presentation and subsequent care in adolescent emergency department attendees for acute alcohol intoxication and self-harm**

Your research application has been reviewed by the School of Medicine Ethics Committee (SoMREC) and we can confirm that ethics approval is granted based on the documentation received at the date of this letter and subject to the following condition(s):

- Please provide written approval from the appropriate manager within your speciality (i.e. your speciality's audit lead) as per the email from Fiona Murphy at the Trust.

Document	Version	Date Submitted
Ethical_Review_Form_V3[1]	1	17/06/14
Ethical Approval Emails	1	17/06/14
signature page	1	17/06/14
SoMREC13095 Reviewer comments	1	09/07/14
Approval from manager	1	21/07/14
Data Extraction Tool210714	1	21/07/14
Ethical_Review_Form_V3[1] (1)210714	2	21/07/14

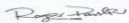
Please notify the committee if you intend to make any amendments to the original research ethics application or documentation. All changes must receive ethics approval prior to implementation. Please contact the Faculty Research Ethics Administrator for further information ([fmhuniethics@leeds.ac.uk](mailto:fmhuniethics@leeds.ac.uk))

Ethics approval does not infer you have the right of access to any member of staff or student or documents and the premises of the University of Leeds. Nor does it imply any right of access to the premises of any other organisation, including clinical areas. The committee takes no responsibility for you gaining access to staff, students and/or premises prior to, during or following your research activities.


Please note: You are expected to keep a record of all your approved documentation, as well as documents such as sample consent forms, and other documents related to the study. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited. It is our policy to remind everyone that it is your responsibility to comply with Health and Safety, Data Protection and any other legal and/or professional guidelines there may be.

We wish you every success with the project.

Yours sincerely



Dr Roger Parslow  
Co-Chair, SoMREC, University of Leeds



Dr John Sanders  
Co-Chair, SoMREC, University of Leeds

(Approval granted by Dr Roger Parslow on behalf of SoMREC Co-Chairs)

SoMRECApproval letter v2\_0

September 2013

## Research Ethics Correspondence

09 Dec 2013 13:58:41 +0000 [09/12/2013 13:58:41 BST]

Anne Gowing <Anne.Gowing@leedsth.nhs.uk> United Kingdom

David Jackson umdaj@leeds.ac.uk

Dear David,

Many apologies for not getting back to you.

Yes, the additional information and a copy of the proposal does help.

We would class your project to be a 'service evaluation' which would mean that you do not need NHS Research Ethics Committee approval for this project. We would class you as a member of the direct care team as you collaborate closely with the clinical team.

Therefore, you do not need to register with the R&D Department here in the Trust and you do not need to gain NHS Research Ethics Committee approval. You should, however, contact the Trust Quality team how will register the study (it does not need approval from them to go ahead) as an evaluation taking place in the Trust.

Please contact Stuart Nicholson, email [stuart.nicholson@leedsth.nhs.uk](mailto:stuart.nicholson@leedsth.nhs.uk)

I hope this is useful,

Kind regards,

Anne

Anne Gowing

Research Governance Manager, Research & Innovation Department

The Leeds Teaching Hospitals NHS Trust

Wed, 18 Dec 2013 09:40:10 +0000 [18/12/2013 09:40:10 BST]

Fiona Murphy <Fiona.Murphy@leedsth.nhs.uk> United Kingdom

umdaj@leeds.ac.uk (David Jackson)

Subject: Re: Research

Hi David,

Further to Anne Gowing's email, you do not need to register you project with our team.

Any project you carry out, be it service evaluation or clinical audit, requires approval from the appropriate manager within your specialty (ie your specialty's audit lead).

There is currently no requirement to record service evaluations on the Trust's Clinical Audit Database. Many people do wish to record their project however, and we have no objection to the Clinical Audit Database being used as the place to do this.

If you were to record this project on the Clinical Audit Database, the electronic approval process would allow the audit lead for your specialty to approve the project. The database can be found at <http://auditaction.leedsth.nhs.uk/login/to/dashboard>

To obtain approval your project needs to be proposed on the database, and your proposal/toolkit (outlining your aims/objectives and proposed methodology) should be uploaded. The details in your proposal/toolkit should enable somebody not involved with the project to replicate it at a later date.

When the proposal/toolkit has been uploaded, the database will generate an e-mail to the audit lead for your sub-specialty, notifying them that a proposal is awaiting their approval. Your audit lead can then approve your project. When your audit lead has approved/not approved your project, the database will generate an e-mail to notify you. When it is complete you can record your findings and recommenced service changes on the database, and upload your presentation/ report.

Please do not hesitate to contact me with any queries.

Best Wishes,

Fiona Murphy

Administration Manager

Quality Governance Team

Leeds Teaching Hospitals NHS Trust

Hello David

Re: Your Service Evaluation in A&E

University ethics application reference: SomREC/13/095

Title: "A retrospective case-note comparison of psychosocial presentation and subsequent care in adolescent emergency department attendees for acute alcohol intoxication and self-harm"

This is to confirm that:

- 1) You are known to me
- 2) You are employed by LTHT as a trainee
- 3) I am fine with the project going ahead and am aware of it

Best wishes

Dr Maggie Bellew

Dr Maggie Bellew

Senior Consultant Clinical Psychologist and Head of Adult Psychology Services

Dept of Plastic, Reconstructive and Hand Surgery

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