

History of Deliberate Self-Harm in Clients Attending Two London-based Drug Treatment and Testing Orders (DTTO) Services

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Abstract: This study aims to describe the socio-demographic characteristics of clients attending Croydon & Lambeth, Southwark and Lewisham (LSL) Drug Treatment and Testing Orders Services (DTTO) who have a history of Deliberate Self-Harm (DSH), and to illustrate the correlation between DSH and substance misuse in this client group. In addition, the study will explore the co-morbidity of DSH with depression or impulsivity in this client group. Sixty consecutive clients attending the Croydon and LSL DTTO Services were recruited and assessed for DSH. A self-report semi-structured questionnaire, in three parts, was used. In addition two standardised questionnaires: The Beck Depression Inventory Scale (BDI) and the Barratt Impulsiveness Scale (BIS-11) were used. The result showed that the study group (n=60) was predominantly male (Male 53: Female 7), unemployed and with no qualifications. The majority of the clients were referred to the DTTO service for shoplifting. This study revealed that the following substances (in descending order) were used: Cocaine/Crack, Heroin, Alcohol, Cannabis, Benzodiazepines and other substance. Of 60 clients, 39 had a history of DSH. Substance use was the main factor implicated in DSH. The study also showed that heroin users who deliberately self-harm are 9 times more likely to be alcohol users. The DSH clients scored higher in the severe impulsive category compared with the non-DSH group. However, there was no significant predictor for DSH in relation to demographic factors, type and route of substance use and impulsive or depression.

Keyword: Deliberate Self-Harm, Substance Use, Impulsivity & Depression

1. INTRODUCTION

Deliberate Self-Harm (DSH) has become a serious public and major health problem, which has increased in size during the last fifty years. The real number of persons engaging in any form of DSH is unknown; nonetheless, a reasonable estimate is that rates are around 400 per 100,000 populations per annum [17]. Probably much greater than the figures that are presently available, because in many cases DSH are not recorded as such, while for most DSH no contact is established with services [17].

1.1 Definition of Deliberate Self-Harm

Other terms can be used to describe Deliberate Self-Harm including Deliberate Self Poisoning, Self-Inflicted Violence, Self-Cutting, Self-Injury, Self-Abuse, Self-Mutilation, Attempted Suicide or Parasuicide [12]. Favazza & Conterio (1988) consider the behaviour to be a deliberate destruction or alteration of body tissue without conscious suicidal intent. Solomon & Farrand (1996) stated that DSH is the act of attempting to alter a mood state by inflicting physical harm serious enough to cause tissue damage to one's own body. The act is not a conscious attempt at suicide. It is often described as a maladaptive behaviour symptomatic of disturbance and dysfunction. Anderson (1999) described DSH, as an act, which resembles suicide and that, may be fatal, but the person intended to live rather than die.

1.2 Demographics characteristics of Deliberate Self-Harm

DSH is a significant and costly health problem and it is increasing, particularly among younger ages [26]. Data from Oxford, UK, showed an increase of approximately 28% in both sexes in the numbers of DSH patients between the periods 1985-1986 and 1994-1995, with an increase of approximately 50% of repeated DSH in both sexes [17]. Characteristics of DSH among alcohol abuser include being male, older age, divorced, separated or widowed, living alone and being unemployed [15]. The experience of overdose is common 38% cases in a recent study by Powis *et al.* (1999) and over 80% of subjects who had overdosed had done so in presence of someone else, but only 27% reported ambulances having been called. Women were more likely to overdose than men and alcohol and polydrug use were associated with overdosing [28]. The mean age of DSH population is in the early 30s for both sexes, the peak age for presentation being 15-24 years for women and 25-34 years for men [7].

1.3 Deliberate Self-Harm co-morbid with other psychiatric disorders

Individuals who exhibit DSH have been described as immature young people with unstable background and multiple social problems [14]. DSH is associated with axis II disorders, borderline personality disorder (BPD) and antisocial personality disorder. BPD is highly associated with DSH behaviour and this is shown in a numbers of studies [3]; [29]; [5]; [6]. Casillas (2002) documented the strong relationship between DSH and impulsivity, which plays a significant role in cluster B personality disorder and substance use disorders. Substance abuse disorders occur more commonly in DSH groups than non-DSH group. Report from Birmingham has confirmed that the association between alcohol related problems and DSH remains a strong one [24]. Substance abuse disorders and co-morbid depression are also associated with DSH, and this combination is associated with high level of suicidal intention. Dhossche *et al.* (2000) advises any individuals presenting with DSH should be carefully assessed for co-morbidity of substance abuse. DSH is associated with drug dependant especially heroin intravenously rather than oral use [21]. Depression is very common among people who DSH. Many studies have reported significant rates of depressive illness in individuals with DSH. Suominen *et al.* (1996) and Haw *et al.* (2002) found that DSH is associated with co-morbidity with respect to depression and alcohol abuse or dependence. Co-morbidity of DSH with depression and personality disorder also very common, co-morbidity with alcohol abuse or personality disorder and poor compliance with treatment have been shown to complicate the management in many depressed DSH patients [16]. There is a link between substance abuse and impulsivity. Brandy *et al.* (1998) documented that impulsive and aggressive individuals have a higher rate of substance abuse than the general population. It is, however, had to know whether DSH is related to substance abuse, or is due to other factors (e.g. concomitant antisocial personality disorder (ASPD) or aggression), Moeller *et al.* (2002) studied the increased impulsivity in cocaine dependent subjects, and found out that increased impulsivity in cocaine dependence is not solely due to concomitant antisocial personality disorder and aggression, because increased impulsivity in cocaine dependent subjects was both observed with and without ASPD and aggression.

1.4 Deliberate Self-Harm and the Crime

The rate of DSH among prisoners is much higher than among the general population [22]. Prison sitting may influence the methods of DSH chosen. Ireland (2000), reported that the majority of males offenders with DSH did so by cutting, hanging and strangulation. Many studies reported that the rate of DSH is higher during the early periods of custody [23]. DSH was found in offenders with borderline personality disorders, substance abuse and high level of impulsivity [9]. The prisoners deliberately injure themselves because they cannot cope with life in jail. Some prisons recorded hundreds of incidents [9].

1.5 Research Objectives

1. To obtain information on socio-demographic characteristics of clients attending the Croydon & Lambeth, Southwark and Lewisham (LSL) Drug Treatment & Testing Orders Services (DTTO) that have a history of Deliberate Self-Harm (DSH).
2. To investigate the relationship between DSH and substance misuse.

1.6 Research Hypothesis

1. Few differences were hypothesised with respect to type, route of substance use and DSH.

2. Finally, the study explored the co-morbidity of DSH with depression/impulsivity, with the hypothesis that impulsivity was more likely to be observed in the DSH group.

2. RESEARCH METHODOLOGY

2.1 Research Design

This study used survey design in and carried out a cross-sectional research, using quantitative techniques to achieve its stated objectives. The use of cross-sectional dimension allowed the researcher to collect data from the participants at a point in time with the intention of getting fair representation of the population. The quantitative technique enabled the researcher to use questionnaires to seek for information to achieve the research objectives.

2.2 Research Setting

The study was carried out in an outpatient Croydon & LSL DTTO service, which is run by Croydon & LSL Probation service and the Maudsley Hospital Addictions Directorate. The Drug Treatment and Testing Orders (DTTO) that was chosen as the research setting is a new community sentence, aimed at breaking the link between drug use and crime. It is a structured order for people who have history of offending related to their substance misuse.

2.3 Research Sample

For the purpose of this study, a total of sixty (60) participants were selected from the target population. The size of sample was decided based on a power calculation (using test of significance 0.05, standard deviation of 1.3 and power of 80%) after discussion with Ms Rebecca Welwyn, Bio-statistics IOP (Institute of Psychiatry), and is based upon the Nomogram [20]. And participation to the study was entirely voluntary.

2.4 Research Instrument

A self-report semi-structured questionnaire comprising three parts was developed for the study. The first part included demographic characteristics of the participants. The second part obtained data on substance misuse and the third part dealt with the history of DSH in the sample. In addition, the clients filled out two standardised questionnaires, the Beck Depression Inventory Scale (BDI) [2] and the Barratt Impulsiveness Scale (BIS-11) [27]. The Beck Depression Inventory (BDI) is a self-administered 21 item self-report scale. Each item has series of four statements, describing symptoms of depression along an ordinal continuum from absent or mild to severe. A total 21 symptoms are included Respondents are requested to rate the intensity of these symptoms on a scale from 0 to 3. The Barratt Impulsiveness Scale (BIS-11) is a 30-item self-report questionnaire divided into three subscales: attentional (inattention and cognitive instability), motor (motor impulsiveness and lack of perseverance), and non-planning (lack of self-control and intolerance of cognitive complexity (Barratt & Patton, 1983) and it has been designed to measure impulsiveness on a 4-point scale (1=Rarely/Never, 2=Occasionally, 3=Often, 4=Almost Always/Always).

2.5 Research Procedure

Questionnaire administration was employed to collect the required data. The researcher first sought ethical approval of the study by the appropriate NHS Trust Committee for purpose of the study. After the permission from the ethical committee was granted; the researcher contacted the consultant of the Croydon & LSL DTTO services and the DTTO manager either by telephone or by e-mail. The aim of the study and any procedures were discussed and permission for carrying out the study in these places was requested. The questionnaires were delivered by hand to respondents who agreed to participate in the study.

2.6 Statistical Analysis

Standard statistical tests had used to analyse the obtained data: Chi-square and Logistic regression tests to assess difference in proportions. These methods are considered the best measures to evaluate statistically the relationships between different variables even in the small samples. Values of $P < 0.05$ were considered as statistically significant. All statistical tests based on the STATA statistical software package (Windows, version 6) which has complete statistical, graphical and data-management capabilities.

3. RESULT

3.1 Demographic Characteristic

The total number of subjects recruited in this study was 60 subjects, 53 males and 7 females (M: F = 7.6:1). Their ages ranged from 20-50 years and the mean age was 33.9 years (standard deviation of 7.2). The study population was predominantly white male, single (n= 40, 66.7%), with no qualifications (n=37, 61.7%) and unemployed (n=57, 95.0%). Moreover, 17 (28.3%) lived in Council estates, 12 (20.0%) in rented flats, 11(18.3%) in hostels, 8 (13.3%) had their own houses and 12 (20.0%) called other category which included (1) Supported Housing, (1) Housing Trust, (1) Staying with friends, (1) Staying with mother and (8) No Fixed abode. Of the 60 clients, 39 had a history of DSH, 34 males and 5 females (M: F= 7:1). Their ages ranged from 21 to 50 years [Mean age =34.5 years \pm SD = 7.1 years]. Due to the wide range of ages, they were divided into two groups, under and above the age of 35 years. Questions an ethnic background revealed that the sample was mainly white clients (n=24, 61.5%) followed by black (n=9, 23.1%). Clients from Middle East (n=4, 10.3%) and mixed ethnic ancestry (Black &White) (n=2, 5.1%) were grouped together and called Others. The highest qualification was the University degree. And the mean age of leaving school with a history of DSH & non- DSH was 15.2 years.

3.2 DTTO Offenders

The majority of the clients were funding their substance use by shoplifting and they were ordered for DTTO due to shoplifting (n=33, 55.0%), other reasons for DTTO were 13 burglary, 3 theft, 2 deception, 1 fraud, 1 failing to appear to DTTO service and 7 not specified. And 58/60 (96.7%) of the sample reported a history of imprisonment in the past. Out of 33/60 (55.0%) shoplifters, 21(63.6%) offenders were with a history DSH.

3.3 Substance Use

The majority of clients reported a history of alcohol consumption. Both groups reported a history of early age of consumption as early as 7 years old. There were 8 clients in each group who did not report a history of drinking alcohol, which is unexpected finding. The majority of the clients in both groups were using heroin (n=34, 87.2% and n=16, 76.2%, respectively) in a daily basis. Out of both groups 27 (45.0%) clients gave a history of using heroin one-day prior to filling the questionnaire. Thirty (50.0%) clients were smoking/chasing the heroin and 20 (33.3%) were injecting it. Most of the clients in both groups were using Cocaine powder or Crack Cocaine (smoking/snorting). However, 13/60 (21.7%) were injecting it. Twenty (33.3%) clients were spending more than £100 in typical day use. From total 49 (81.7%) who were using cannabis, only 7 (11.7%) clients were spending more than £20 daily on cannabis. Only 24/60 (40.0%) clients were using Benzodiazepines and 6/24 (25.0%) users were using more than 40 mg in a daily basis, (Table 6). Other substance included 6 Lysergic acid diethylamide (LSD)/Ecstasy, 3 Amphetamines, 1 Barbiturate and 1Opium. The preferred substance among the above was the Heroin for both groups. Other substance, included, 2 Amphetamine, 1 Opium and 1 Benzodiazepines.

3.4 Relationship between DSH & non-DSH and the other variable measured

In order to take into account a variety of variables that might be associated with DSH, and to define their interaction, Chi-square test statistical model was performed. Each demographic factor was collapsed in to 2 or 3 categories according to higher number of each one for the purpose of the analysis. Fisher's exact p-value was used and the significant level was <0.05. The result of the analysis in this study indicated that none of the demographic factors were found to be significant predictors for DSH. It was also found that there was no association between DSH and the type of substance use, client's age at first use and the route of the administration, when each substances examined independently from each other, (all gave p >0.05). In contrast, there was a significant association between DSH and preferred substance use, which showed heroin as positive most preferred substance (p = 0.025), (Table 1).

Table 1: Relationship between DSH & non-DSH and preferred substance use

Preferred substance use	DSH (39)	Non-DSH (21)	Chi 2	P-value
Preferred substance use				
Cannabis	1	5	11.095	0.025
Crack	9	5		
Heroin	14	9		
Crack/Heroin	8	2		
Other	7	0		

Bold font indicates significant relationship.

df =4

3.5 Co-morbidity of the DSH & non-DSH with Impulsiveness and Depression

This study showed that there were no significant correlations between DSH and BIS-11 and BDI. However, DSH clients scored higher in the severe impulsive category than the non-DSH clients. Furthermore, there was no significant association between severe impulsive category and severe depression category, as p-value was 0.605. It should be added that the multivariable (Impulsive & Depression) were measured together by using logistic regression test and it did not show any significant association with DSH.

3.6 Use of Heroin in DSH & non-DSH

Ever used of Heroin in DSH group was further examined separately with some variables of the questionnaire that it was expected to be associated more than the others. To measure the association of different variable (Using of Alcohol, using of Crack/Cocaine, using of Cannabis, using of Benzodiazepines, using of Other drugs, length of DTTO and pervious time in prison) recorded in participated clients in relation of using heroin (as a main factor) in the DSH group, logistic regression was performed. None it showed to be associated of using heroin in DSH group expect of alcohol use which it showed that heroin users who deliberately self-harm themselves are also 9 times more likely to be alcohol users. These variables were chosen by the investigator to be compared to Heroin in self-reported DSH, because either it was expected an association to be found between them and it was of particular interest their association to be explored. And to find out the relationship of heroin and alcohol users in the non-DSH group, logistic regression performed again, and it did not show any significant association (Table 2).

Table 2: Relationship of Heroin and Alcohol users for DSH & non-DSH groups

	Odds Ratio	P-value	95% Confidence Interval
Ever used of Alcohol (DSH)			
Yes	8.7	0.036	1.148 - 65.932
No			
Ever used of Alcohol (Non-DSH)			
Yes	1.1	0.920	0.142 - 8.680
No			

Bold font: indicates significant association.

4. DISCUSSION

Of the 60 clients approached, 39 had a history of DSH, and the other 21 clients didn't. A reason for this may be because the study predominately involved male population and most studies show a correlation between females and DSH. Some studies show that DSH especially "cutting" was common in the male prison population. A DTTO sample is likely to include less DSH. Clients may have underestimated their DSH as this issue is a sensitive one and they might also have wanted to save time when they knew that they would escape the part III of the questionnaire if they gave no history of DSH.

4.1 Substance use and the Deliberate Self-Harm

An unexpected finding of this study was that 16 of the clients had no history of ever having used alcohol. It seems that they did not see their alcohol use as a problem so they didn't answer that question. Another interesting finding was that none had put alcohol as a preferred substance; multiple substance users always preferred illicit drugs to alcohol.

The study showed that (n=27, 45.0%) of heroin users and (n=23, 38.3%) of cocaine/crack users gave a history of using the above substance one day prior of filling the questionnaire, although that was surprising. However, it is not to downsize the DTTO service in its aims and goals because abstinence from drugs does not necessarily make a successful DTTO. A successful DTTO is to make positive lifestyle changes, stop offending, start looking after their self, re-establish relationships with family member or stay in a long term relationship, which can lead to a permanent employment, better housing situation and moving gradually away from offending behaviour and developing more pro-social activities and returning to a normal lifestyle as a society would expect one to do or enter into. The result of the study also showed that (n=30, 50.0%) of heroin users were smoking/chasing it and less number of clients (n=20, 33.3%) were injecting it, and a similar finding with cocaine/crack users (n=42, 70.0) were smoking/snorting it and only (n=13, 21.7%) were injecting it. This may indicate that the ones who used to take high-risk behaviour by injecting changed to lower risk behaviour by smoking. Any reduction in drug use, change in route of administration of drugs, reduction in typical amount spent on drugs, or a change in the source of funding the drugs other than crime (through benefits or legitimate means) would all play a major role in crime reduction on long term basis and would be considered a success for DTTO service. Current study revealed that more than 50% of DSH episodes occurred under the influence of alcohol and illicit drug use. This insures the strong link between the DSH and substance use as other studies have documented [33]; [28]; [8]; [15]. The main finding of this small-scale pilot study indicates that the preferred substance of abuse (Heroin) was significantly associated with DSH. However, this study did not indicate any association in the type or the route of administration of the drugs with DSH as other studies have previously shown. When question about most preferred drug was asked, heroin comes on top. But when asked in detail about drug habit, no single drug was found in statistically significant manner. It just shows the unreliability of self-reporting. In this incidence, the leading question forced the client to make a preference but his/her own detailed description drug use did not reveal statistically significant drug of choice.

4.2 Impulsivity and the Deliberate Self-Harm

DSH clients scored higher in high level of impulsivity, which was in ascendance with other studies [34]; [18]. On the contrary, DSH clients scored higher in mild depressions category, which means that the DSH acts are more to be impulsive than to be depressive, although the statistical analysis didn't show any significant association. It is important to remember that the relationship, which is not statistically significant, can be clinically significant and vice versa. Impulsiveness is an inheritable personality trait, associated with serotonin function [30]. The exact type of impulse/aggression behaviour shown in response to irritation depends on levels of serotonin. If they are normal, irritation might be expressed by screaming, throwing things. However, if the serotonin level is low, impulse/aggression increases and responses to irritation lead to DSH, suicide or attack on other [10]. Evans *at el.* (2000) reported the significant relationship between impulsiveness and tryptophanhydroxylase (TPH) genotype in males' genders. Biological/neurochemistry is one of the etiologies of the DSH. However, no one has all the pieces of the puzzle, and it's naïve to think that DSH behaviour is solely environmentally controlled or only the result of biological mechanism. Any behaviour is determined by both environment and biological factors.

4.3 Heroin use in Deliberate Self-Harm group verses other factors

It was of a particular interest to point out the existence of an underlying factor that is associated with heroin use (as a main factor) in DSH group. Because heroin; can be regarded as manifest of self-destructive behaviour. There was a gratuitous finding that heroin users who deliberately self-harm are also 9 times more likely to be alcohol users. How alcohol mediates its effect, is a topic for further study. It may be cause or effect of this combination (Heroin use and DSH). The fact that statistical analysis didn't demonstrate a strong relationship with other factors; might be a result of the small sample. Apparently, this study does not attempt to report any strong relationships. On the opposite side, it just gives an idea of the variables that might be involved in this correlation. Forensic populations are widely recognised to have high levels of psychiatric disturbances [13]. And this study revealed that.

5. CONCLUSION

The finding from this study indicated that the preferred substance use (Heroin) is the main predictor for DSH. And among heroin users who deliberately self-harm, there was a 9 times higher chance to be alcohol users. DSH clients are more impulsive than non-DSH clients. The evidence for clear links between substance use, crime, impulsivity and DSH is well explored in this study. And it is important that these disorders are identified and treated. Finally, this small study can be viewed as an initial attempt to address an issue that has never before been researched in this subject population, indicating the direction that future studies can take. It could include: 1. Comparison between this sample and a sample from a different geographical location of DTTO. 2. Comparison between this study and DSH in the prison population. 3. Comparison between this study and DSH in non-drug using populations.

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REFERENCES

- [1] Anderson, M. (1999) Waiting for the harm: deliberate self-harm and suicide in young people. a review of the literature. *Journal of Psychiatry and Mental Health Nursing*. 6, 91-100.
- [2] Beck, A.T., Ward, C.H., Mendelson, M., Mock, J., and et al. (1961) An inventory for measuring depression. *Archives of General Psychiatry*. 4, 561-571.
- [3] Boyce, P., Oakley-Browne, M. A. and Hatcher, S. (2001) The problem of Deliberate self-harm. Review Article. *Current opinion psychiatry*. 14, 107-111.
- [4] Brady, K.T., Myrick, H., and McElroy, S. (1998) The relationship between substance use disorders, impulse control disorders, and pathological aggression. *The American Journal on Addiction/ American Academy of psychiatrists in Alcoholism and addictions*. 7, 221-230.
- [5] Brown, M.Z., Comtois, K.A., and Linehan, M.M. (2002) Reasons for Suicide Attempts and Non-suicidal Self-Injury in Women With Borderline Personality Disorder. *Journal of abnormal Psychology*. 111, 198-202.
- [6] Casillas, A. (2002) Dependency, Impulsivity, and Self-Harm: Traits Hypothesized to understand the associated between Cluster B Personality and Substance use disorders. *Journal of Personality Disorders*. 16, 424-436.
- [7] Charlton, J. (1995) Trends and patters in suicide in England and Wales. *International Journal of Epiidiomology*. 24, 45-52.

- [8] Dhossche, D.M., Meloukheia, A.M., and Chakravorty, S. (2000) The Association of suicide Attempts and Comorbid Depression and Substance Abuse in Psychiatric Consultation Patients. *General Hospital Psychiatry*. 22, 281-288.
- [9] Dolan, M. (2001) Relationship between 5-HT function and impulsivity and aggression in male offenders with personality disorders. *The British Journal of Psychiatry*. 178, 352-359.
- [10] Evans, J., Reeves, B., Platt, H., Leibenau, A. et al. (2000) Impulsiveness, serotonin genes and repetition of deliberate self-harm (DSH). *Psychological Medicine*. 30, 1327-1334.
- [11] Favazza, A.R. (1996) *Bodies Under Siege: Self-mutilation and Body Modification in Culture and Psychiatry* (2nd edition). Baltimore, MD: John Hopkins University Press.p.150-162.
- [12] Favazza, A.R. and Conterio, K. (1988) The plight of chronic self-mutilators. *Community Mental Health Journal*. 24, 22-30.
- [13] Fishbein, D.H. and Reuland, M. (1994) Psychological Correlates of Frequency and Type of Drug Use among Jail Inmates. *Addictive behaviour*, 19, 583-598.
- [14] Harrington, R. (2001) Depression, suicide and deliberate self-harm in adolescence. *British Medical Bulletin*. 57, 47-60.
- [15] Haw, C., Houston, K., Townsend, E., and Hawton, K. (2001) Deliberate Self-Harm Patients with Alcohol Disorders: Characteristics, Treatment, and Outcome. *Crisis*.22, 93-101.
- [16] Haw, C., Houston, K., Townsend, E. and Hawton, K. (2002) Deliberate self-harm patients with depressive disorders: treatment and outcome. *Journal of Affective Disorders*. 70, 57-65.
- [17] Hawton, K., Fagg, J., Simkin, S., Townsend, E. et al. (1997) Trends in deliberate self-harm in Oxford, 1985-1995: Implication for clinical services and the prevention of suicide. *British Journal of Psychiatry*. 171, 556-560.
- [18] Holdsworth, N., Belshaw, D. and Murray, S. (2001) Developing A&E nursing responses to people who deliberately self-harm: the provision and evaluation of a series of reflective workshops. *Journal of Psychiatric and Mental Health Nursing*.8, 449-458.
- [19] Ireland, J.L. (2000) A descriptive analysis of self-harm reports among a sample of incarcerated adolescent males. *Journal of Adolescence*. 23, 605-613.
- [20] Gore and Altman. (1982). *Statistical in Practice*. *British Medical Association*. London. p.7.
- [21] Gossop, M.R., Cobb, J.P. and Connell, P.H. (1975) Self-Destructive Behaviour in Oral and Intravenous Drug-Dependent Groups. *British Journal of Psychiatry*.126, 266-269.
- [22] Liebling, A. (1993) Suicide attempts in male prisons. *New Law Journal*. May, 649-650.
- [23] Loucks, N. (1998) HMPI Corton Vale: Research into drugs and alcohol, violence and bullying, suicides and self-injury, and backgrounds of abuse. *Scottish Prison Service Occasional Papers*, 1/98.
- [24] Merrill, J., Milner, G., Owens, J., Vale, A. et al. (1992) Alcohol and attempted suicide. *British Journal of Addiction*. 87, 83-89.
- [25] Moeller, F.G., Dougherty, D.M., Barratt, E. S., Oderinde, et al. (2002) Increased impulsivity in cocaine dependent subjects independent of antisocial personality disorder and aggression. *Drug and Alcohol Dependence*. 68, 105-111.
- [26] O'Sullivan, M., Lawlor, M., Corcoran,P., and Kellehar, MJ. (1999) The cost of hospital care in the year before and after parasuicide. *Crisis*. 20, 178-183.

- [27] Patton, J. H., Stanford, M.S., and Barratt, E.S. (1995) Factors Structure of the Barratt Impulsivness Scale. *Journal of Clinical Psychology*. 51, 768-774.
- [28] Powis, B., Strang, J., Griffiths, P., Tylor, C., et al. (1999) Self-reported overdose among injecting drug users in London: extent and nature of the problem. *Addiction*. 94, 471-478.
- [29] Sansone, R.A., Gaither, G. A., and Songer D.A. (2002) Self-Harm Behaviors Across the Life Cycle: A pilot Study of Inpatients With Borderline Personality Disorder. *Comprehensive Psychiatry*. 43, 215-218.
- [30] Schalling, D., Asberg, M.,Edman, G., and Levander, S. (1984) Impulsivity, nonconformity and sensation seeking as related to biological markers for vulnerability. *Clinical Neuropharmacology* 7(supp 1), 746-747.
- [31] Solomon, V., and Farrand, J. (1996) Why don't you do it properly? Young women who self-injury. *Journal of Adolescence*.19, 111-119.
- [32] Suominen, K., Henriksson, M., Soukas, J., Isometsa, E., et al. (1996) mental disorders and comorbidity in attempted suicide. *Acta Psychiatrica Scandinavica*. 94, 234-240.
- [33] Wylie, K., House, A., Storer, D., Raistrick, D., et al. (1996) Deliberate Self-Harm and Substance Dependence: The Management of Patients Seen in the General Hospital. *The Journal of Mental Health Administration*. 2, 246-252.
- [34] Zaidan Z.A., Burke, D.T., Dorvlo, A.S., Al-Naamani, A., et al. (2002) Deliberate self-poisoning in Oman. *Tropical Medical and International Health*. 6, 549-556.