

# **Deliberate self-harm in urban Uganda - a case-control study**

A thesis submitted for the Doctorate degree at the Faculty of Social Sciences  
and Technology Management, Norwegian University of Science and Technology.

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## **CONTENTS**

Lists of Maps	4
Dedications	5
ACKNOWLEDGEMENTS	6
LIST OF PAPERS	7
ABSTRACT	8
INTRODUCTION	9
Background	10
The situation of health services in Uganda	10
The situation of mental health in Uganda	11
Kampala the capital of Uganda	14
The Baganda Tribe	16
Cultural attitudes towards suicidal behaviour	17
DESCRIPTION & DEFINITION	22
A THEORY FOR DELIBERATE SELF-HARM	24
LITERATURE REVIEW	34
Socio-demographics	35
Negative life events in Deliberate self-harm	39
Psychological factors in Deliberate self-harm	42
Repetition of Deliberate self-harm	46
AIM OF PRESENT THESIS	49
General objectives of the study	50
Specific objectives of the study	50
METHODOLOGY	51
Introduction	51
Study site	52
Samples	53
Procedures	55
Research instruments	57
Translation & Back translation	61
Ethical consideration	61
Statistical analysis	62
RESULTS	63
DISCUSSION	66
Methodological Concerns	66
Ethical concerns	69
Emerging picture of DSH in urban Uganda and its implications for clinical work and future research	72
REFERENCE	84

**List of Maps**

Map of Uganda showing the location of Kampala .....13

Map of Kampala district showing the administrative divisions  
and the location of the study hospitals .....14

Map of Uganda showing the different ethnic groupings .....16

## **Dedication**

To my loving wife Joy Turyahabwa Kinyanda for the patience, encouragement and support. And to children; Phillip, Paul and Patience for helping me keep a perspective of things.

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Kampala, June, 2006

Eugene Kinyanda

## LIST OF PAPERS

- I. Kinyanda E, Hjelmeland H, & Musisi S (2004) Deliberate self-harm as seen in Kampala, Uganda: A case-control study. *Social Psychiatry and Psychiatric Epidemiology*, 39:318-325.
- II. Kinyanda E, Hjelmeland H, & Musisi S (2005) Negative life events associated with deliberate self-harm in an African population in Uganda. *Crisis*, 26(1): 4-11.
- III. Kinyanda E, Hjelmeland H, & Musisi S (2005) Psychological factors in deliberate self-harm as seen in an urban African population in Uganda: A case-control study. *Suicide and Life Threatening Behaviour*, 35(4): 468-477.
- IV. Kinyanda E, Hjelmeland H, Musisi S, Kigozi F, & Walugembe J (2005) Repetition of deliberate self-harm as seen in Uganda. *Archives of Suicide Research*, 9(4):333-344.

## ABSTRACT

*Background:* Deliberate self-harm (DSH) is both a personal problem and a public health problem not only in the West but also in sub-Saharan Africa including Uganda. Generally however, there is an absence of suicide interventions on the continent and linked to this problem an absence of recent studies on suicidal behaviour from Africa. To partly address these shortcomings, this present project examined the demographic, social and psychological characteristics of deliberate self-harm in the urban environment of Uganda.

*Methods of the study:* One hundred cases of deliberate self-harm attending three general hospitals in the Ugandan capital of Kampala were compared with 300 non-DSH in-patient controls from the participating hospitals. Both the cases and controls were interviewed using a Luganda translated version of the modified European Parasuicide Interview Schedule I (EPSIS I; Kerkhof et al. 1989). Two study samples were constituted where sample 1 were the cases and sample 2 the controls. For purposes of DSH repetition part of the study, sample 1 was split into the 'suicide repeaters' and the 'non-repeaters'. Data on; socio-demographics, methods of DSH, precipitating factors of present act of DSH, life events, psychological factors and DSH repetition was collected.

*Analysis:* The statistical package SPSS 8.0 was used both at data entry and analysis. Analysis involved the generation of frequencies, means and mean rank scores and cross-tabulations using Pearson's Chi-square test, Fischer's Exact test and the independent t-test. Multivariate analysis using logistical regression was used to determine the independent effect of various variables in suitably specified models. The level of significance was set at 0.05.

*Results:* Results revealed that DSH in urban Uganda in a hospital based population was predominantly a problem for male (63%), adolescents and young adults (50%). The predominant method of DSH used was by organophosphate poisoning (45%). The main psychiatric diagnoses associated with DSH in this population were; adjustment disorder (35%), acute stress reaction (18%) and depression (23%).

Disturbed interpersonal relationships (with a partner/lover, parent(s) or children) were a precipitant in 65% of the DSH cases. The number of negative life events in; Childhood (categories of parents, significant others, and personal), Later in life (category of partner), and Last year (category personal and the total number of life events) were significantly associated with DSH in this study. The psychological factors found to be associated with DSH were; global psychological distress, hopelessness and state anger but not depression, trait anger nor alcohol abuse. Suicidal intent was found to be independently correlated with both depression and hopelessness.

Twenty five percent of the DSH cases in this study were repeaters with the socio-demographic factors associated with repetition of DSH including; being single, having children and staying alone or with parents. Other factors found to be associated with DSH repetition were; the number of negative life events in childhood and in the last year, global psychological distress and trait anger but not depression, hopelessness nor state anger.

*Conclusion:* The picture of DSH in urban Uganda is similar to a great extent to that observed elsewhere on the African continent and in the West. There are however important differences particularly with the picture of DSH as seen in the West.



## **INTRODUCTION**

### **Background**

Suicidal behaviour is not only a global and personal problem but it is also a major public health problem (WHO, 2003). A study of suicidal behaviour and in particular deliberate self-harm (DSH) is therefore important for a number of reasons. Firstly, DSH is responsible for a heavy public health burden. Secondly, it is also one of the major risk factors for completed suicide and it is estimated that 10 – 14% of those who carry out DSH eventually end their lives by suicide (Hawton and Fagg, 1998; Diekstra et al., 1993). Thirdly, DSH is also associated with mental disorders, with a diagnosis of a mood disorder made in two thirds of all cases of DSH seen in the West (Lonnqvist, 2000). Lastly, DSH in its own right is potentially fatal and calls on the time and resources of acute admission facilities in hospitals and hence is a serious health concern.

In mainly rural and war torn Northern and Eastern Uganda, a large proportionate community study that interviewed 4,660 respondents reported a life-time prevalence of deliberate self-harm of 13.5% (Kinyanda, 2004). A recently undertaken community study of suicidal ideation a known risk factor for DSH, compared the life-time prevalence of suicidal ideation in the North-Western district of Adjumani with the non-war affected rural district of Bugiri in Central Uganda (Ovuga, Boardman and Wasserman, 2005). In the war affected district of Adjumani, the lifetime experience of suicide ideation was 46.6% while in Bugiri it was 20.8% with comparable figures from the West being 9% - 65%, the wide variation partly attributed to the differences in case definition for suicidal ideation (ibid).

On the whole however, still too few studies have been undertaken on DSH in Uganda and sub-Saharan Africa in general. The few studies that have been undertaken on the continent are mostly old, are of a descriptive nature and did not use standardized case

definitions and assessment tools for DSH and its associated risk factors. This has made it difficult to carry out inter-regional and international comparison of study results.

It was therefore imperative that a project investigating suicidal behaviour in an African population in Uganda be undertaken that addressed these shortcomings.

This thesis examines the results of such a project undertaken among an in-patient deliberate self-harm population in urban Uganda.

### **The situation of health services in Uganda**

Uganda has a population of 24.6 million people with an annual growth rate of 3.3% considered to be one of the highest in the world (Uganda Bureau of Statistics, 2002). Poverty among the population remains high with an annual GNP per capita of US\$250 with 35% of the population not able to meet their basic needs, namely food, shelter, clothing, health, education and transport (ADB, 2005; Ministry of Finance, Planning and Economic Development, 2003). As a result, the health situation in the country is poor as illustrated by some of the health indices for 2002 such as the infant mortality rate (IMR) of 97 per 1000 live births (comparable figure for Norway is 4 per 1000 live births) and a maternal mortality rate (MMR) of 506 per 100,000 live births (comparable figures for Norway are 9 per 100,000; UNEP, 2002). The life expectancy in the country is very low at 41.7/43.7 (M/F) years (comparable figure for Norway is 81.1 (F) years; UNEP, 2002). The nutritional status is poor with 38% of children under 5 years of age stunted and 25% under weight for age (AMREF, 2000).

According to the National Health Policy (1999), poverty is recognized to be the main underlying cause of the poor health situation in the country (Ministry of Health, 1999). The per capita health expenditure is in the range of US\$ 7-12 with only US\$3.95 attributed to government and donor spending, the balance coming from individual out of pocket payments (ibid). The minimum per capita expenditure on health recommended by the WHO for developing countries is US\$12. Other factors associated with the poor health situation include, the low level of literacy, high prevalence of communicable diseases, the emergency of diseases of lifestyle, inadequate provision and inequitable

distribution of social services and amenities and the general level of underdevelopment of service infrastructure. According to the health service inventory done by the Ministry of Health of Uganda in 2000 only 49% of the population lives within a radius of 5 km from a health facility with wide disparity among districts ranging between 8.9% to 99.3% (Ministry of Finance, Planning and Economic Development, 2001). Most of the health units in rural areas are short of qualified staff, equipment and supplies and are in a dilapidated state. The National Health Policy (1999) also recognizes that apart from the heavy burden of infectious disease, Uganda is also simultaneously experiencing a marked upsurge in the occurrence of non-communicable diseases such as mental health problems.

### **Situation of mental health in Uganda**

The situation of mental health in Uganda is similar to that of the health sector in general. As estimated by the WHO, mental illness is responsible for a heavy social burden with mental and behavioural disorders accounting for 12% of the global burden of disease (WHO, 2001b). The magnitude of mental illness (as assessed by the level of significant mental distress) in sub-Saharan Africa has consistently been reported to be higher than that in Western societies (Orley and Wing, 1979; Broadhead, 1994). Orley and Wing (1979) reported a prevalence of significant mental distress of 20% in Kyaddondo county in Central Uganda, a figure half of that reported in South London where similar methodology was used (Orley and Wing, 1979). In more recent studies, Bolton and colleagues (2003) in the HIV/AIDS affected districts of Rakai and Masaka reported a prevalence of current depression of 21% while Kinyanda (2004) in mainly war torn Northern and Eastern Uganda obtained a figure of 29.3% for moderate to severe depressive symptomatology, not much different from earlier figures by Orley and Wings (1979).

Recent data from WHO (2004) indicates that Uganda at 19.47 litres of alcohol consumed per capita has the highest rate in the world. This high rate of consumption is bound to be associated with a heavy burden of psychiatric and psycho-social problems. In the recently undertaken study in mainly war torn North and Eastern Uganda, parental addiction to alcohol in childhood was reported by 13.1% of the respondents and in the

same study 2.3% of the respondents had alcohol psychological dependence problems (C.A.G.E. positive; Kinyanda, 2004).

This trend observed both for depression and alcohol dependency appears to hold even for suicidal behaviour. Hjelmeland and colleagues (2006) in a cross-cultural comparison of students attitudes to suicide in both Norway and Uganda reported that, 6% of the Ugandan students as compared to 1.5% of the Norwegian students had experienced suicide within their family. In the same study, 17% of the Ugandan students as compared to 8% of the Norwegian students reported having experienced deliberate self-harm within their family (ibid).

The huge psychosocial problems facing the country in form of massive poverty, high alcohol consumption, the HIV/AIDS epidemic, and war traumatisation appears to be behind this huge burden of psychiatric and psychological problems.

### **HIV/AIDS and mental health**

The HIV/AIDS epidemic that has been raving in this country since the early 1980's to date, according to the results of the 2004-05 population based sero-survey currently infects 6.9% of the adult population in Uganda (Ministry of Health, 2006). This HIV epidemic has also spawned a secondary epidemic of 1.9 million HIV orphans and their associated psychosocial problems including child headed households.

HIV/AIDS on an individual level is known to be associated with a number of psychiatric complications with up to 90% of all HIV/AIDS infected persons believed to develop a psychiatric disorder in the course of this illness (Howlett et al, 1994). The range of psychiatric disorders associated with HIV/AIDS infection includes, depression, adjustment disorders, psychosis, deliria, dementia and anxiety disorders (Lykestsos et al, 1996; Kinyanda,1998; Musisi, Kinyanda, Nakasujja, 2000b; Musisi and Kinyanda, 2002).

### **War and mental health**

More than half of the 70 districts in Uganda, mainly in the central, northern, eastern and south – western parts of the country have been involved in war in the recent past. This combined with almost 2 million people currently living under deplorable circumstances

in overcrowded, unsafe internally displaced persons camps means that a considerable proportion of the population in the country has been war traumatized (Ministry of Finance, Planning and Economic Development, 2001; Ministry of Health of Uganda / WHO / UNICEF/ WFP /UNFPA /IRC,2005). This war trauma has led to various psychiatric and psychological disorders including post traumatic stress disorder, depression, anxiety disorders, alcohol abuse and suicidal behaviour (Musisi et al, 2000; Kinyanda & Musisi, 2001).

In 1999, in recognition of the high disease burden attributed to mental illness the Government of Uganda included mental health in the Uganda National Minimum Health Care Package (UNMHCP)– the package of interventions that address the major causes of the burden of disease and the cardinal reference in determining the allocation of public funds and other essential inputs (Ministry of Health,1999). For mental health, this policy statement says that, “ To address the heavy and increasing burden of mental illness in the country, Government will promote and support a basic Primary Mental Health Programme supported by appropriate referral services at the regional and national levels ” (ibid).

This policy affirmation in the context of the Primary Health Care (PHC) strategy has meant that all health units in the country and all primary care workers should provide some elements of mental health care. The reality has however been different with the development of mental health services in the country having been slow and beset with many problems. Prominent among these problems has been; the still high levels of stigma to mental illness by the community, lack of skills in the management of mental illnesses by many of the earlier trained health workers, low stocks and irregular supply of mental health drugs and the paucity of mental health specialists (Kinyanda, 2004). In addition mental health has been accorded low priority in the planning and budgetary process and there is lack of data on the sub – sector (ibid). Lastly, todate Uganda has no national policy on suicide prevention.

The next section is going to look at Kampala city the capital city of Uganda and the site of this research project.

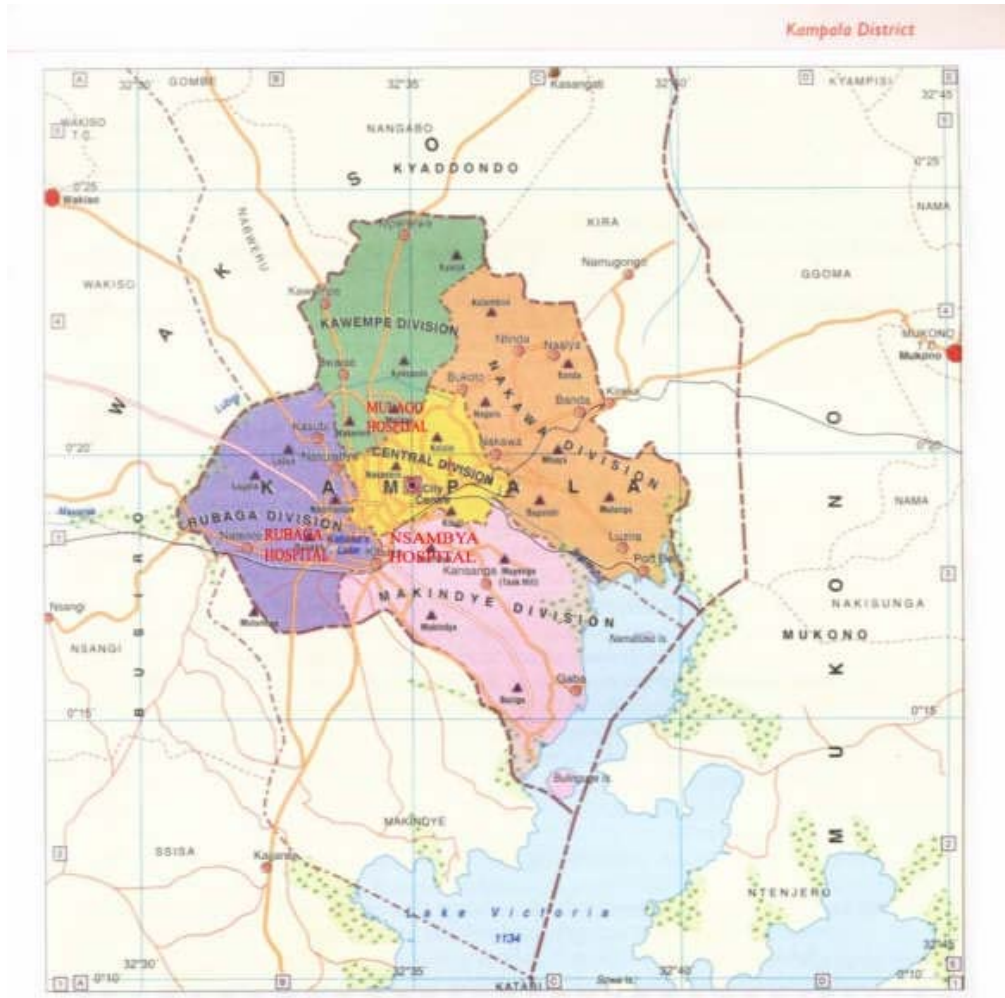
### **Kampala the capital city of Uganda**

The study was carried out in Kampala District, the capital city of Uganda (Map 1).



**Map 1:** Map of Uganda showing the location of Kampala the capital city

Kampala district has a resident population of 1.2 million people although the population swells up to about 2 million people during the day (Uganda Bureau of statistics, 2002). This district borders Mukono in the East and is surrounded by Wakiso district for the greater part (Map 2). Kampala is the only urban district in the country and is made up of 6 divisions namely, Kawempe, Nakawa, Kyambogo, Makindye, Rubaga, and Kampala Central (Map 2).



**Map 2:** Map of Kampala showing the various divisions and the location of the hospitals of Rubaga, Mulago and Nsambya.

The main economic activities in the district are commerce, industry and agriculture. It is mainly inhabited by the Baganda the predominant tribe occupying central and southern Uganda. It is also inhabited by many other ethnic groups of Uganda it being the capital city of the Country.

On health services, the two National Referral Hospitals Mulago Hospital (1,780 bed general hospital ) and Butabika Hospital (850 bed psychiatric hospital) are located in this district. The district is also served by other hospitals and health centres that are run

by the ministry of health, the urban authority, religious institutions, private and profit organizations.

### **The Baganda tribe**

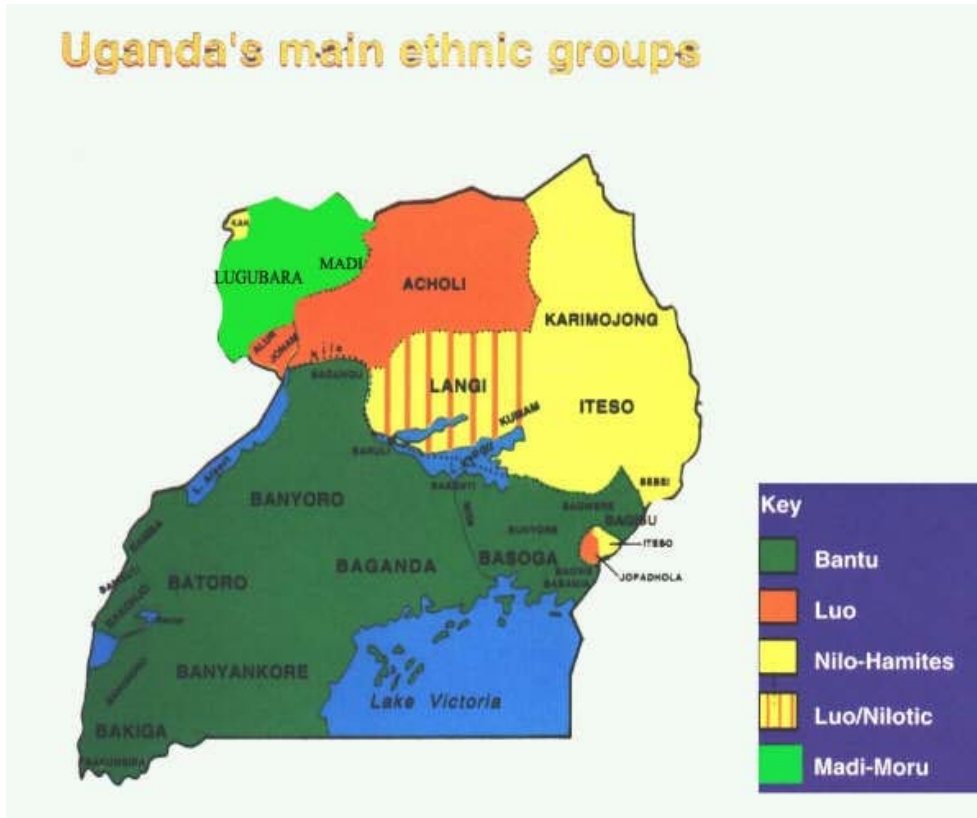
The Baganda tribe is the main ethnic group that inhabits the city of Kampala. It was also the ethnic group to which the majority (56%) of the respondents in this study belonged to.

The Baganda are the largest single ethnic group in Uganda and predominantly inhabit the central and southern districts of Kampala, Kiboga, Mpigi, Mukono, Masaka, Kalagala, Rakai and Mubende (Map 3). They are a Bantu speaking people and their language is called Luganda.

The Bantu of whom the Baganda are part, are a group of people who speak related languages (Nzita and Niwampa, 2005). The Bantu speaking groups are said to have originated from somewhere in the Congo region of Central Africa and then spread to Southern and Eastern Africa. Bantu languages are now currently spoken over a wide swath of Africa stretching from Southern margins of Sudan to the Cape of Good Hope in South Africa.

The Baganda belong to the cluster of Bantu peoples who inhabit the region around lakes Victoria, Albert, Edward and Tanganyika in East–Central Africa and consequently are known as the ‘Interlacustine Bantu’. The interlacustine Bantu do not only share a common language but also their cultural and social organisation. They share common patterns of values and beliefs with regards to the natural and supernatural worlds and have common institutional forms. They all regard a hierarchical form of society with its division of man into such categories as ‘rulers’, ‘chief’, ‘prince’ and ‘peasant’ although modernization is eroding and turning upside down some of these structures. They all share a similar pattern of gods and spirits who both control human affairs and may be manipulated by men for personal or group ends.





**Map 3:** Shows the different ethnic groups in Uganda

### **Cultural attitudes towards suicidal behaviour**

There are broad similarities in cultural attitudes towards suicide among the Bantu speaking groups in Uganda including the Baganda (Orley, 1970; Fallers and Fallers, 1960; Beattie, 1960). Recent data from the country seems to suggest that there are similarities in cultural attitudes towards suicidal behaviour across the 3 main language groupings namely, the Bantu speaking group, the Luo speaking group, and the Nilo-Hamites (Map 3; Kinyanda, 2004).

Among the Baganda who are part of the Bantu speaking group, suicide was considered a most terrible act (Orley, 1970). The Baganda then believed that chronic illnesses such as epilepsy and leprosy; and becoming angry as a result of a quarrel could lead one to suicide. For a person to commit suicide, the Baganda then believed that some form of

spirit must be responsible for making a person kill him or herself. They also regarded the body of a suicide person with fear, treating suicide in a sense as contagious. No body from the same clan as the deceased could touch the body of a suicide victim as it was believed that the ghost of the deceased may enter the clan member and also induce him or her to commit suicide (ibid).

Suicide traditionally among the Baganda used to occur by hanging and the body had to be cut down by a person from the clan that a sister was married into (ideally a sister's son). The body then used to be beaten, a custom said to have been introduced by the English police in the colonial era, a practice still carried out to date in some parts of the country (Fallers and Fallers, 1960; Orley, 1970; Kinyanda, 2004). The body used to be buried in the bush as opposed to the normal custom of burying near the homestead. The body would be buried in a shallow grave, preferably on the day of death or alternatively it used to be covered with dried leaves and burnt. All these were signs of disrespect and indicated the haste involved as opposed to the normal burial procedure that took a few days (Orley, 1970). Formerly, no one inherited from the suicide since that person would be tempted to commit suicide, but a banana tree would be planted in front of the house, left there over night, and then taken the next day and thrown to the bush. This tree would then be said to have symbolically inherited from the deceased and mourners would then cut their hair signifying the end of mourning (ibid).

Anecdotal evidence from clinical practice in urban Buganda (Kampala) and evidence from the recently undertaken study in mainly rural northern and eastern Uganda but which also included Mubende a rural district in Buganda, seem to suggest that the attitude to suicide among the Baganda today, is much more varied depending on one's religious beliefs, educational attainment and whether one stays in the urban or rural area (Kinyanda, 2004). Those who have embraced the modern religions of Christianity and Islam and the Western values largely through the western style educational system and are mainly found in the urban areas, have largely abandoned this very negative ostracizing attitude and embraced a more understanding and accepting attitude. Those who have largely held onto their traditional religious beliefs, have attained a minimal or

no formal western style education and are largely based in the rural areas, still hold onto the traditional view to suicide.

### **Cultural attitudes towards suicidal behaviour among other interlaucaustrine Bantu**

Similar attitudes and practices to those that used to be held by the Baganda were reported among the neighbouring Bantu ethnic groups of the Basoga and the Banyoro (Fallers and Fallers, 1960; Beattie, 1960). In traditional Busoga, like in Buganda, the body of a suicide was punished by being burnt, along with the tree or hut where the hanging had taken place or by being buried at cross – roads or in a waste land. No funeral feast used to be held and no heir used to be chosen (Fallers and Fallers, 1960). The Basoga then regarded suicide as always wrong although as observed by Fallers and Fallers (1960), it occurred in substantial numbers in this ethnic group.

Among the Banyoro, one of the intercaulaustrine Bantu groups found in Western Uganda, there was recognized then a type of suicide not mentioned among the other Bantu ethnic groups, namely ‘vengeance suicide’. In vengeance suicide a person usually from a disadvantaged social status (young female) who on feeling wronged by a socially more privileged person (usually an adult male) would commit suicide in order to exert revenge on this person. It was believed that upon death, the spirit of the aggrieved person could be set free from the constraints of the cultural norms and could then exert punishment on an aggressor (Beattie, 1960).

### **Cultural attitudes to suicidal behaviour among various other ethnic groups in**

#### **Uganda**

Recently undertaken work by Kinyanda (2004) in a number of largely rural districts of Uganda that cut across the main tribal groupings of Bantu, Luo and Nilo-Hamite indicated broad similarities and a few differences in how suicide behaviour was still regarded in this country. Focus group discussions from different districts representing the different ethnic groups in the country often gave the same negative attitude towards suicide with these attitudes cutting across the main tribal groupings.

Focus group discussions in the district of Bushenyi (found in South – Western Uganda and predominantly inhabited by the Banyankole -a Bantu ethnic group) did not regard suicide as serious problems in their community. In this district, one focus group of elderly females (50 years and above) said that even for those who suffered from chronic illnesses (such as HIV/AIDS and mental illness), they were able to endure these illnesses until they died naturally. Following from the above attitude, suicide victims in this district were said to be treated harshly. The body of the suicide was often said to first be punished and the family where the deceased belonged considered to consist of social misfits. About a person who had engaged in deliberate self-harm, one focus group of females (aged between 18-24 years) from this district said that such a person could not be allowed to inherit property because he / she could kill him/herself and leave the property neglected (ibid).

A similar attitude was elicited from focus groups from the other districts in the country with the exception of Adjumani district as exemplified by the following quotations.

*“It is a norm here that once a person commits suicide, prayers are not held during the burial and is regarded as an outcast.”*

(Focus group discussion by elderly females in Katakwi district in North- Eastern Uganda - Nilo-Hamite ethnic group)

*“The deceased from suicide is not buried normally... no prayers take place, the corpse is just dumped.”*

(Focus group discussion by young females Bugiri district in central Uganda – Bantu ethnic group).

*“A person who commits suicide is buried like a dog, few people attend his burial without prayers.”*

(Focus group discussion of young females in Apac district in Northern Uganda – Luo ethnic group).

The attitude to suicide in Adjumani, a district in North-Western Uganda mainly inhabited by the Madi from the Luo tribal grouping was the exception among the 14 districts in that study (ibid). The attitude of the community in that district as elicited from focus group discussions of various age groups was generally more tolerant and understanding of suicidal behaviour as illustrated by the following findings. On the extent of the problem of suicide, a focus group discussion of 18 – 25 years old male respondents said that suicidal acts were quite common in their community in the recent past, and were mainly due to mental illness arising from loss of jobs and suffering from AIDS. On the attitude towards suicide victims and their families in this district, one focus group discussion said that they were generally not discriminated against but were instead counseled and given support during the funeral arrangements (ibid).

From that study, the general community attitudes towards suicide and DSH could not be explained by the ethnic group to which respondents belonged to. The more tolerant and supportive attitude towards suicide and DSH victims and their families observed in Adjumani district but not in the other districts could probably be explained by the greater prevalence of these two problems in this district. In that study (Kinyanda, 2004), Adjumani posted the highest rate of suicide as reported over a 12 month period from police records. In addition, in a more recent study that compared the rates of suicidal ideation in Adjumani and Bugiri districts, Ovuga and colleagues (2005) observed significantly higher rates in the former district as compared to the later.

The higher rates of suicide and DSH in Adjumani district could probably be explained by two factors namely; the 1979 war that badly affected the entire district and the harsh environment that has made agriculture difficult. The district of Adjumani suffered significant war traumatisation following the 1979 war that ousted the late dictator Idi Amin when the entire population of the district (mother district of Idi Amin) had to go into exile into Southern Sudan for fear of reprisals from the Tanzanian army led invasion that ousted Idi Amin. The population of Adjumani remained in exile until 1986 when there was a regime change. Since their return from exile the population continues to

be plagued by insecurity and poor weather which has often led to crop failures among this predominantly peasant farmer population. These two factors have greatly impoverished the population in this district creating a general feeling of hopelessness hence promoting suicidal behaviour.

It therefore appears that the more tolerant attitude towards suicide and DSH now prevalent in Adjumani has been formed more by the more frequent occurrence of these two behaviour in this community than any other factor.

In conclusion, while the overall attitude towards suicide in most of the country is still predominantly formed by traditional cultural and religious beliefs, more recent social phenomenon such as war (in the rural areas) and possibly westernisation (in the urban centers) are beginning to affect these beliefs and attitudes.

The next section will examine the description and definitions of deliberate self-harm.

#### **DESCRIPTION AND DEFINITION:**

Various terms including attempted suicide, parasuicide and deliberate self-harm have been used to describe a behaviour that is characterized by people inflicting acute harm upon themselves, poison or injure themselves or try to do so with non-fatal outcome. Common to these behaviours is that they occur in conditions of emotional turmoil.

These different terms used to describe this behaviour have each come up for criticism. Attempted suicide was declared to be unsatisfactory by Krietman and colleagues (1969) who stated that, this term was highly unsatisfactory because the majority of patients so designated are not in fact attempting suicide. They also considered terms such as deliberate self-poisoning, harm or self-injury as unsatisfactory because they neglect the real association that exists between attempted suicide and completed suicide. Krietman and colleagues (1970) then suggested the term parasuicide as referring to, “any act deliberately undertaken by a patient which mimics the act of suicide but which does not result in a fatal outcome.” The term parasuicide has also been criticized on two accounts, firstly, it implies suicidal intention which in fact may be absent and secondly, it never completely took off in clinical practice often being described by making reference to attempted suicide.

Diekstra (1989) preferred the term deliberate self-harm because just as Kreitman and colleagues (1969) have already stated, the term suicide attempt was in his opinion misleading as the majority of such acts are not intended to be fatal. He further states that, “to die is just one among many other motives for such an attempt”. Diekista (1989) then offers three categories of motives for this behaviour. Firstly, cessation (death, stopping conscious experience now and for ever). Secondly, interruption (to interrupt conscious experience for a while) and thirdly appeal (to mobilize or charge others). He also states that most such behaviours are motivated by a combination of interruption and appeal. He concludes by suggesting that this behaviour can be viewed as a form of coping behaviour that might or might not be appropriate under the given circumstances (ibid).

For purposes of this study, the term deliberate self-harm was used to describe this behaviour. Deliberate self-harm was taken to be equivalent to parasuicide and attempted suicide and was defined using the WHO/European study on parasuicide’s definition for parasuicide (although the term parasuicide was later abandoned) as, “*An Act with non-fatal outcome in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm or deliberately ingests a substance in excess of the prescribed or generally recognized therapeutic dosage and which is aimed at realizing changes which the subject desired via the actual or expected physical consequences*” (Platt et al 1992).

All the above definitions and descriptions of deliberate self-harm were conceived in the context of the Western culture and as Hollan (1990) observes, deliberate self-harm is a complete social behaviour with rich meanings and interactions that are deeply rooted in culturally patterned forms of thought and emotional behaviour. It is therefore doubtful if the above definitions of DSH are applicable to non-western cultural settings such as in Africa. The answer to this question is difficult to come by as only a limited number of studies have been undertaken on this behaviour in Africa.

However for such a culturally sensitive behaviour there is therefore an urgent need to develop culturally appropriate definitions of suicidal behaviour including deliberate self-harm in the African cultural context.

The next section discusses a possible theoretical framework for considering deliberate self-harm in this project.

### **A THEORY FOR DELIBERATE SELF-HARM**

There is currently no indigenous African theory to explain deliberate self-harm (DSH) and as a result, most authors who have written on the subject from this continent have often had to borrow theories from the West to explain this behaviour in their environments. Although most of these authors from Africa have used the terms motives and intentions inconsistently, their use is reported as is given by these authors. Mengech and Dhadphale (1984) in explaining the motives for DSH among a clinical population from Nairobi, Kenya said that it could best be explained by Shneidman's (1985) "interruption" and Stengel's (1964) "cry for help". Ndosu and Waziri (1997) in Dar es Salaam, Tanzania said that that Stengel's (1964) "cry for help" theory explained the motives of two-fifth of their clinical sample of DSH patients. A third of Ndosu and Waziri's (1997) patients expressed a genuine death wish with the rest either silent or equivocal about their suicidal intentions. Schlebusch and Wessel (1988) in South Africa on the motivation for DSH among an in-patient general hospital population mentioned that the motive for the DSH act was neither to die nor to inflict serious physical self-harm, but rather to change a psychologically unpleasant life situation or to further subsequent life plans.

This next section is going to consider in more detail the theories of Stengel (1964) and Shneidman (1985) which have been advanced to explain the motives of deliberate self-harm patients in various African settings. This section will also consider the more recent and comprehensive stress-diathesis theory for suicide which seems to be equally applicable to deliberate self-harm, first advanced by Mann and colleagues (1998) and later elaborated by Wasserman (2001). One obvious criticism of using these theories to



explain deliberate self-harm behaviour in an African setting is that all these theories were developed to explain suicidal behaviour in a Western cultural context. This raises questions about their applicability to the non-western cultural situation in Uganda.

The above three theories were tested out on two case series by Sefa-Dedah and Canetto (1992) and by Ebigho and colleagues (1987) drawn from Africa using a methodology similar to that used by both Leenaars (1988) and Lester (1998) who tested out the then most popular theories of suicide in the West onto the lives of famous suicides using biographies and diaries as their case material. The case series against which these theories are going to be tested includes 2 cases reported by Sefa-Dedah and Canetto (1992); Ms. A (who took an overdose of diazepam following repeated rejection of her choice of spouses by the parents) and Ms. B (who ingested kerosene following long standing marital problems and problems with her mother-in-law) both these cases were from Ghana. The second series of 3 cases from Nigeria were reported by Ebigho and colleagues (1987) – P.O. (who ingested battery acid following loss of his job and subsequently a life of severe economic problems); S.I. (who also ingested battery acid following repeated failure to get admitted to the University) and P.N. (who ingested battery acid but with no obvious stressor reported proximal to the DSH event). The first case in this later series E.O. was not considered in this discussion because he later died due to the injuries which makes him a case of completed suicide.

Finally, a comment is made on an attempt to test the stress-diathesis model on the data derived from this project using the statistical program of LISREL (Joreskog & Sorbom, 1995).

### **Stengel's (1964) theory of suicidal behaviour**

Stengel defines deliberate self-harm as, “Any act of self-damage inflicted with self-destructive intention, however, vague and ambiguous”. Stengel (1964) in putting forward a psychodynamic explanation of DSH suggests that it has the following components; appeal effect, grief-like reactions on others, uncertainty of outcome, cathartic effect and self-punishment.

### **Appeal Effect**

Warning of suicidal intention is almost invariably given by those who carry out DSH according to Stengel (1964). DSH acts as an alarm signal of an appeal for help even though no such appeal may have been consciously intended. The appeal effect of the DSH act often leads to a change in the person's life situation. This according to Stengel (1964) is probably one of the reasons why DSH is only rarely repeated immediately. The appeal effect of a DSH act on relatives and friends is derived from the guilty feelings it creates in them, even if they do not feel directly responsible for it. The guilty feelings experienced by others in this situation have been regarded as reactions to conscious or unconscious death-wishes towards the person who tried to take his life.

### **Grief-like reaction on others**

The psychological effects of DSH on those close to the person who tried to take his life have a relationship to grief reactions. People close to the person who carries out DSH and society in general try to behave as they would have had the outcome been fatal. This appears to be an important motive for the helpful reactions that follows DSH. These reactions may be short-lived and abortive but they are almost invariably present. They seem to be common in all cultures (ibid).

Stengel (1964) states that such response from the environment is a predictable effect of every DSH act and that is why DSH acts as an appeal, as 'a cry for help'. The wish to appeal for help is only conscious in a minority of DSH patients but all of them have a potential appeal effect. It can be assumed that such a predictable response from the environment in case of survival might play a part in the motivation of most DSH acts. To appeal in DSH is usually for nothing specific but just for help. It says no more and no less than, "Do something for me" even though everything possible may have been done (ibid).

### **Uncertainty of Outcome**

Uncertainty of outcome from the point of view of the person committing the act is a common feature of most DSH acts. That is why they have been likened to a gamble with

life which has come off. Few DSH acts are carefully planned. Their outcome depends not only on the balance between the life-preserving and self-destructive tendencies within the individual but also on a variety of unknown factors such as the potency of the poison taken and the possibility of intervention from the environment, its timing, efficacy etc. Uncertainty of outcome characterizes premeditated DSH as well as impulsive suicidal acts. Even the impulsive suicidal acts are usually preceded by previous suicidal thoughts.

### **Cathartic Effect**

The release of aggressive impulses directed against the self in an emotional outburst may have a beneficial cathartic effect on a person's mental state, i.e. may relieve pent-up tension and thus restore emotional equilibrium at least temporarily. This is possibly one of the reasons why some people feel much improved following DSH and why they do not contemplate repeating it.

### **Self-punishment**

In the complex motivation of a suicidal act the urge for self-punishment is supposed to play a part. DSH is sometimes experienced as a gratification of this urge and may thus contribute to a release of emotional tension.

### **A Consideration of Stengel (1964) theory in the light of the cases from sub-Saharan Africa**

An attempt by E.K.<sup>1</sup> to draw themes akin to Stengel's (1964) 6 pillars of his theory from the case material by Ebigho and colleagues' (1987) and Sefa-Dedeh and Canetto's (1992) reveals the following:-

The appeal effect is most demonstrated in the DSH case of Ms.B (Sefa-Dedeh and Canetto, 1992 p. 304), Ms.B having failed to resolve a family crisis at a meeting called at her suggestion that involved the main protagonist, rushed out of the meeting and ingested kerosene. It can be hypothesized that she was by this act of ingesting kerosene making a desperate appeal for help. This action of Ms.B was also “a cry for help” – help to

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<sup>1</sup> E.K. refers to Eugene Kinyanda the author of this thesis

restore tranquility in her family and to dispel the rumour about her sexual infidelity made unjustly against her. The act of ingesting kerosene by a 35 year woman who probably had witnessed or heard about its lethal effects was an act of gambling with her life – an act with “an uncertain outcome”. This act by Ms. B certainly elicited helping behaviour from the persons who she had called to help resolve her problems. This helping behaviour has been reported by Stengel (1964) to be underlied by a sub-conscious grief like reactions in significant others of the DSH person.

What does not appear to come out of Ms. B’s case is whether this act had a self-punishment motive to it or whether it had a cathartic effect on her. In the story of S.I. (Ebigbo et al, 1987 p. 381) the act of ingesting battery acid appears to have had a cathartic effect on him, he appeared now ready to start life again yet there was no obvious change in his life circumstances. In this story too, it was difficult to conceive DSH as self punishment.

In the story of Ms. A (Sefa-Dedah and Canetto, 1992, p. 303) the underlying aggression in this account is almost palpable. Ms. A is quoted as using statements such as “becoming pregnant to get revenge” reported to have had a fight with the younger brother, to have been involved in a bitter family quarrel and to have wished to have been dead. In the 5 cases of DSH quoted in these two articles Ms. A probably came closest to Stengel (1964)’s description of use of DSH as self-punishment.

### **Shneidman (1985) theory of parasuicide (DSH)**

Shneidman (1985) has put together 10 common characteristics to describe (parasuicide) deliberate self-harm. These are:-

- (1) The common stimulus of DSH is psychological pain. The quality of this pain is that it is severe, endurable if the individual feels that he is truly not alone and can evoke some response in a significant other. If those efforts fail, then the pain may seem unendurable and the person may become suicidal.
- (2) The common stressor in DSH is frustrated psychological needs. The nature and intensity of the unfulfillment has not been empirically determined.

- (3) The common purpose in DSH is to evoke a response. DSH is evocative and is enacted on an interpersonal stage. The target of the evocation in DSH can be a specific “other” or it can be generalized “others” even society or the world in general.
- (4) The common goal of DSH is to re-order the life space and in the process to decrease discomfort with the goal of changing life.
- (5) The common emotion in DSH is more disconnectedness and disenfranchisement. In DSH, the person who undertakes DSH may be more perturbed than the suicidal one who has after all already made a decision which will allow him to solve his most pressing problems.
- (6) The common internal attitude in DSH is in a sense, trivalent. These tripartite pulls are among life, suffering and death; not only between life and death but also with suffering (in life) as a middle term.
- (7) The common cognitive state in DSH is rather an obsessional quality with some ruminative planfulness.
- (8) The common interpersonal act in DSH is the communication of a state of unhappiness and in general a call to rescue and a plea for nurturance. It is meant to evoke helping behaviour from others.
- (9) The common action in DSH is communication itself, with the not so latent content of importuning the other person. Shneidman on therapeutic principle discourages the use of such words as coercion, manipulation and blackmail in describing the common action in DSH. He states that such words only add a pejorative tune to the discussion without even-handedly describing what is going on.
- (10) The common consistency in DSH is with the individual’s life-long behaviour patterns in “comparable” life situations. It is difficult to say exactly what these are but in a very general way the DSH person in moments of crisis tends to throw himself on the mercy of the court (of society, of significant others). Whereas the suicidal person would throw himself out of the window – some precipitous, often irrevocable act. The inner consistencies within a life as related to DSH resonate to certain subtleties of habitually unconscious ways of coping under great duress (ibid).

## **A Consideration of Shneidman (1985) theory in the light of the cases from sub-Saharan Africa**

Similarly, an attempt by E.K<sup>1</sup>. to draw themes akin to Shneidman's 10 common characteristics of deliberate self-harm in the 5 case series of both Ebigbo and colleagues (1987) and Sefa-Dedah and Canetto (1992) reveals the following:-

Unendurable psychological pain arising from frustrated psychological needs could be seen in all 5 cases reported in the above series. Pain could be seen to arise from the; severe economic hardship with no end in sight (case of P.O. in Ebigbo et al, 1987, p. 380); repeated frustrated attempts to get a university education (case of S.I. Ebigbo et al, 1987, p. 381); repeated failed attempts to get one's partner accepted by parents (case of Ms. A; Sefa-Dedah, 1992, p. 303 and unresolved family conflict (case of Ms. B, Sefa-Dedah, 1992 p. 304).

The evocative purpose of the DSH event could be seen in the case of Ms. B (Sefa-Dedah and Canetto, 1992 pg. 304) who desired to seek a resolution of the family conflict which was plaguing her life. The goal to re-order one's life space in DSH could be seen in the case of Ms. A who by her DSH act seemed to force a meeting between her parents and the partner they did not like. Ms. B (Sefa-Dedah and Canetto, 1992) displayed Shneidman's disconnectedness and disenfranchisement when after the DSH act complained that if her dead mother had been alive, the mother-in-law who had raised her as an orphan could not have treated her that badly.

The tripartite pull of Shneidman where one experiences the pull of life, suffering and death simultaneously in DSH was evident in most of the cases in this series. In most of the cases a history of long suffering could be elicited due to a multiplicity of factors ranging from economic hardships, frustrated academic goals, rejection of one's partner and family conflict. The pull to death could be seen in the use of a method of DSH that certainly has been known to be lethal in the past. The pull to life could be seen in the timing of the DSH act which was usually in the presence of potential helper(s) whether close friend(s) or family member(s).

Although most of the cases of DSH in these series appeared to have been carried out impulsively, a degree of planfulness could not be ruled out. This is because in the heat of carrying out the DSH act, the cases appeared to have no problem in selecting the agent to use. The communication of unhappiness and call to rescue with a plea to nurturance and the evocation of helping behaviour in significant others appeared to be the automatic response in all the cases.

The tendency to throw one's self to the court of society or significant others is illustrated by the case of S.I who having failed several times to gain entrance into the university ingested acid. His frustration did not appear to be directed at anyone in particular but at society in general. He appeared to be saying to society, here I am with this problem that seems not to go away, what can you do for me?

### **Stress-vulnerability Model for the Suicide**

Mann and colleagues (1998) and later Wasserman (2001) have suggested a comprehensive stress-diathesis model for suicide (which has been extended in this thesis to also try and explain deliberate self-harm in this project) that includes genetic make-up as well as acquired susceptibility contributing to a person's constitutional predisposition or diathesis. In this model, early traumatic life experiences, chronic illness (especially of the central nervous system), chronic alcohol and substance all play a part in the development of this diathesis (ibid). According to proponents of this theory, a diathesis for suicidal behaviour is held to be the crucial determinant of whether suicidality is manifested under the influence of stress as an acute psychiatric or somatic illness, severe abuse of alcohol and drugs, pressing social problems or family crises. Whether people take their lives and it is also hypothesized that whether they indulge in deliberate self-harm in such situations is thus explained with reference to variations in diathesis (ibid).

## **Consideration of the Stress-vulnerability Model in the light of the cases from sub-Saharan Africa**

On the basis of the theory suggested by Mann and colleagues (1998) and later elaborated by Wasserman (2001), it is suggested that a diathesis is the critical factor of whether suicide, and I am suggesting that deliberate self-harm, is manifested under the influence of stress. The diathesis according to proponents of this theory includes both genetical and acquired susceptibility which together constitutes a person's constitutional predisposition. An examination of the cases given by Ebigbo and colleagues (1987) and Sefa-Dedah and Canetto (1992) in the light of this theory reveals the following: All these cases have known factors that could constitute acquired susceptibility to suicidal behaviour. The early childhood factors reported in these cases that are known to be associated with suicidal behaviour included early orphan hood, polygamous family background, poverty and early separation from parents. Also in conformity with this theory, a stress proximal to the DSH act could be identified in nearly all the cases of this series. The stresses reported in these cases included; mental problems, severe financial hardships, frustrated academic goals and rejection of one's partner.

The case series reported the story of P.N. (Ebigbo et al, 1987 p. 381) which could not readily be explained by either Stengel (1964) nor Shneidman's (1985) theories. This was the case of a 19 year old boy who appeared well adjusted in school with no obvious stressor proximal to the DSH act and yet he went ahead to ingested battery acid. This case puts both Stengel (1964) and Shneidman's (1985) theories at loss of how to explain the motive for deliberate self-harm. The stress-diathesis model however is able to offer insights into why P.N. may have ingested battery acid. The stress-diathesis model which states that a diathesis is the critical factor of whether suicide and it is also hypothesized that whether deliberate self-harm is manifested under the influence of stress is able to provide an explanation for this case. The stress-diathesis model however still calls for a stressor which acts on the diathesis something which was not evident from the story of P.N. Although P.N. appeared to have no obvious stressor proximal to the DSH act, his



early childhood experience which was characterized by life in a polygamous family of 4 wives and 20 children, living under conditions of poverty where the parents would not even afford his tertiary education made him susceptible to suicidal behaviour later in life. As predicted by the stress-diathesis model this acquired susceptibility in childhood appears to have been the key determinants in predisposing him to DSH.

In conclusion, although key elements of all the three theories of Stengel (1964), Shneidman (1985) and Mann and colleagues (1998)/Wasserman (2001) could be shown in the case series from the African cultural context, the stress-diathesis model of Mann and colleagues (1998)/Wasserman (2001) best explained all the cases in the series.

However, when an attempt was made to test a stress diathesis model using LISREL structural equation techniques (Joreskog & Sorbom, 1995) onto the data of the present project, the estimation indices obtained were too small (Chi square =86.05; df=18; p-value =0.000; RMSEA=0.097) indicating a poor fit of the model to the data (Kinyanda, 2003). An attempt was made to modify the model but still the estimation indices obtained indicated that there was a poor fit between the model and the data (Chi-square = 56.49;df =15; p-value= 0.000; RMSEA= 0.083). The failure of fit between the model and the data of this project could probably be explained by two reasons. Firstly, the stress-diathesis model developed for suicide may not be applicable to deliberate self-harm. This prospect is highly unlikely for as has been shown above, the stress diathesis model provided a good theoretical frame for explaining the cases of deliberate self-harm in Ebigbo and colleagues (1987) and Sefa-Dedah and Canetto (1992) case series. Another more likely explanation is that some of the constructed variables that were used to measure the latent variables of this model were a poor match for them. An example of this could be the use of the variables ‘individual related life events in childhood’ and ‘the parent related life events in childhood’ to represent the much broader latent variable ‘vulnerability’. But given that this method of analysis was considered *a posteriori* after the study had been done not much could be done to improve this match (ibid).

In conclusion, the failure for the stress- diathesis model to fit the data collected for this project was probably due to the inability to construct good measurement variables for the latent variables of the stress-diathesis model.

The next section examines literature review on the subject of deliberate self-harm.

## **LITERATURE REVIEW**

Literature review was done on the subject of deliberate self-harm to provide a background for the consideration of this subject in the African environment in Uganda. Information mainly from the WHO/Euro multicentre study on parasuicide was reviewed representing the picture of deliberate self-harm from the West from which culture the main data collection tool of this project, the EPSIS I (one of the data collection tools of the WHO/Euro multicentre study on parasuicide), was derived. Literature also from the WHO- SUPRE-MISS study representing the picture of deliberate self-harm mainly from the developing world was overviewed. Lastly, a broad overview of all the studies on deliberate self-harm from the African continent was also carried out. The literature review section will be considered under the following headings; socio-demographic factors, negative life events, psychological factors and repetition of deliberate self-harm.

### **Socio-Demographics**

The socio-demographic characteristics of deliberate self-harm (DSH) will be discussed under the following sub-heading; gender, age, and other socio-demographic factors.

#### **Gender**

In the Western world, deliberate self-harm (DSH) is more prevalent among females than males except in Finland (Kerkhof, 2000). According to the WHO/Euro multicentre study on parasuicide, with the exception of Finland, DSH was more common in females than males with a female to male ratio that varied between 1:5:1 to 3:1 (Kerkhof, 2000). Among developing countries, the recently undertaken WHO Multisite intervention study on suicidal behaviours (SUPRE-MISS) recorded more female cases than male cases of DSH in all the eight culturally diverse countries with the proportion of females ranging

from 51.3% (in Chennai, India) to 71.2% (in Durban, South Africa; Fleischmann et al, 2005).

From the few studies that have been carried out on the African continent, the emerging picture is that DSH is more common in females than males in Southern and Eastern Africa with a female to male ratio lowest in Nairobi, Kenya at 1.1:1 to the highest in Harare, Zimbabwe of 5:1 (Bosch, Schlebusch, Wessels, 1987; Minnaar, Schlebusch, Levin, 1979; Mengech and Dhadphale, 1984; Ndosi and Waziri, 1997; Pillay, Wassenaar, Kramers, 2001; Mhlongo and Peltzer, 1991; Gelfand, 1979). On the other hand more male than female cases of DSH have been reported in the more Northern situated countries of Egypt (male to female ratio of 1.6:1) and Nigeria (male to female ratio of 1.2:1) and the horn of Africa state of Ethiopia (male to female ratio of 1.2:1; Abede, 1991; Okasha and Lotaif, 1979; Eferakeya, 1984). In an attempt to explain the male preponderance observed in Egypt, Okasha and Lotaif (1979) have suggested that this may be due to the under-reporting of female cases of DSH. They suggest that this is because DSH is highly stigmatizing in that culture with the result that it will damage the marriage prospects of single females and is also an insult to a man's honour if carried out by his wife (ibid).

This suggested explanation seems to be supported by data from Ethiopia where although the male preponderance was observed in a clinical population, more female than male cases of DSH were reported in two large community surveys in both rural and urban Ethiopia (Abede, 1991; Alem et al, 1999; Kebede and Alem, 1999). However the picture seems more complex as this continued male preponderance has been reported in a large adolescent community survey in Addis Ababa, Ethiopia and in a large community survey in the mainly war torn Northern and Eastern Uganda (Kebede and Ketsela, 1993; Kinyanda, 2004).

### **Age**

On age, DSH in the Western world is over-represented among young women in the 15 – 24 age group (Kerkhof, 2000). According to the WHO/Euro multicentre study on parasuicide, highest average rates of DSH among females were found in the age group of

15 – 24 years followed by the 25 – 34 years age group and the 35 – 44 year age group in that order (Ibid). For males, in that study the highest average rate were found among the 25 – 34 year olds followed by the 35 – 44 year olds (ibid). As earlier observed by Kreitman (1978) in the West, among women, teenagers have the highest rate of all while men show their highest rates during their twenties. Kreitman (1978) further observed that throughout the adult life span males in the West have consistently lower rates of DSH than females with this difference however, disappearing after the age of 45 years (ibid).

Data from the developing world also indicates that DSH is predominantly a problem of the young adult (Fleischman et al, 2005). In the recently undertaken WHO multisite intervention study on suicidal behaviours (SUPRE-MISS), the median age for DSH among females ranged from 21 years (Duban, South Africa) to 30 years (Campinas, Brazil and Yun-cheng, China) while for males it was from 23 years (Keraj, Ivan) to 33 years (Yun chang, China; ibid). The general pattern observed in the West of an earlier peak among females than males was not reported in the SUPRE-MISS study and in fact at two sites Campinas, Brazil and Tallinn, Estonia the median age of female DSH cases was higher than for males (ibid).

On the African continent, most of the studies of DSH attendees at emergency care units indicate that approximately three quarters of them were in the age groups of 15 – 30 years with the proportion that was less than 20 years constituting about a third of the total number of cases (Bosch, Schlebusch, & Wessels, 1987; Minnaar, Schlebusch, Levin, 1979; Mengech and Dhadphale, 1984; Ndosi and Waziri, 1997; Abede, 1991; Eferakeya, 1984).

However, Okasha and Lotaif (1974) in Egypt (peak 15 – 44 years) and Pillay and colleagues (2001) in South Africa (peak 22 – 48 years) observed an extended peak on age. In the few studies that reported a differential average age for the different gender, the average age for females ranged between 22.8 years (Dar es Salaam, Tanzania) to 23.6 years (Cape Town, South Africa) while that for males was approximately 25 years both in Dar es Salaam, Tanzania and Cape town, South Africa, a figure slightly higher than that for females (Ndosi and Waziri, 1997; Wilson and Wormald, 1995).

### **Other Socio-demographic factors**

On marital status in the West, the singles and divorced people are over-represented among the DSH population (Kerkhof, 2000). Rates for different marital status groups show that divorced are most at risk for DSH despite their relatively greater age (Kreitman, 1978). Single men of all age groups have also been shown to have higher rates than married men (ibid). In the multicultural WHO SUPRE- MISS study, male DSH patients were more likely to be single than married and while among females the married and singles were reported to be in equal proportions (Fleischmann et al, 2005). In the West, compared with the general population, those with low levels of education, the unemployed or disabled and the socio-economically deprived were significantly over-represented among DSH cases (Kerkhof, 2000). In the multicultural WHO SUPRE-MISS study, the majority of DSH cases also had a low educational attainment but yet the majority were in some form of full time or part-time employment (Fleischmann et al, 2005).

On the African continent, no studies have been undertaken to generate standardized population based rates nor made use of case –control study designs. This has made the reporting on risk factors such as marital status, employment status and socio-economic status difficult. From the hospital based studies on DSH, the majority of studies from the African continent report an over-representation of the singles, (Durban, South Africa- Minnaar, Schlebusch, Levin, 1979; Dar-es-Salaam, Tanzania- Ndosu and Waziri, 1997; Cairo, Egypt-Okasha and Lotaif, 1979; Durban, South Africa-Pillay, Wassenaar, Kramers, 2001; Addis Ababa, Ethiopia-Abede, 1991; Northern Province, South Africa-Mhlongo and Peltzer, 1999). On educational attainment, students in one series of studies constituted about half the DSH cases (Cairo, Egypt-Okasha and Lotaif, 1979; Northern Province, South Africa-Mhlongo and Peltzer, 1999; Benin City, Nigeria-Eferakeya, 1984), while in another set of studies the unemployed constituted about half the cases (Cape Town, South Africa-Wilson and Wormald, 1995; Dar-es-Salaam, Tanzania- Ndosu

and Waziri, 1997). Low socio-economic status has been observed to characterise DSH in some studies (Cape Town, South Africa-Wilson and Wormald, 1995; Dar-es-Salaam, Tanzania- Ndosu and Waziri, 1997; Cairo, Egypt-Okasha and Lotaif, 1979; Addis Ababa, Ethiopia-Abede, 1991; Eferakeya).

### **Methods of DSH**

Methods used in DSH in the West are mostly non-violent with for example the WHO/Euro multicentre study on parasuicide reporting that 64% of the males and 80% of the females used self-poisoning with medications (Kerkhof, 2000). In that same study, cutting, mostly wrist –cutting, was employed in 17% of the males and 9% of the females (ibid). In that same study, differences between countries in the use of particular methods was observed with pesticides and other agricultural poisons used by 19% of the males and 15% of the females in Szeged, Hungary while in Sør-Trøndelag , Norway, relatively high percentages of individuals took an alcohol overdose (6% males and 5% females; ibid).

In the multicultural WHO SUPRE-MISS study, self poisoning (ingestion of pesticides or medications) which accounted for 69-98% of all cases was the predominant method of DSH seen at all the study sites far exceeding the other methods (Fleischmann et al, 2005). In Yuncheng, China pesticide ingestion was the most frequently reported method among both males and females while in Colombo, Sri Lanka and Chennai, India it was the most commonly used method among women (ibid). In the above study, a combination of methods was rarely applied with one exception in Tallinn, Estonia where 10.7% of the DSH cases combined self-poisoning by alcohol with another method (ibid).

On the African continent, the predominant method of DSH consisted of self-poisoning with either medications (benzodiazepines, tranquilisers, analgesics and antimalarials) or the use of poisons (organophosphates, kerosene, and battery acid; Wilson and Wormald, 1995; Bosch and Schlebusch, 1987; Minnaar and Schlebusch, Levin, 1979; Mengech and Dhadphale, 1984; Ndosu and Waziri, 1997; Okasha and Lotaif, 1979; Pillay, Wassenaar, Kramers, 2001; Mhlong and Peltzer, 1999; Eferakeya, 1984; Edwards et al, 1981;

Mhlongo and Peltzer, 1999). On the African continent there were however a few exceptions to the above pattern, in both rural and urban Ethiopia hanging was the most frequently used method of DSH among men (Alem et al, 1999; Kebede and Alem, 1999).

The next section looks at negative life events associated with deliberate self-harm.

### **Negative life events in deliberate self-harm**

Deliberate self-harm results from the complex interaction between the biological, psychosocial, cultural and environmental systems of an individual. One of the psychosocial factors associated with DSH is the burden of negative life events. Most of the work in this area has been carried out in the West and has considered the childhood sphere, the marital relationship and the immediate precipitants of DSH.

In the West, the childhood negative life events that have been reported to be associated with deliberate self-harm include; parental loss (through death, separation/divorce, absence), sexual abuse, emotional abuse, physical abuse, battered mother, substance abuse in the home, having a mentally ill household member, poor economic circumstance, poor parental relationship, paternal unemployment and family dysfunction (Adam et al, 1982; Boudewyn and Liem, 1995; Lipschitz et al, 1999; Joffe et al, 1988; Dube et al, 2001; Beautrais et al, 1996; Garfinkel et al, 1982; Silverman et al, 1996; Dieserud et al, 2002). Research in this area seems to suggest that the suicidal trend associated with the above factors is prominent where they result in long term disruption of family life including leading to emotional neglect (Lipschitz et al, 1999; Adam et al, 1982).

Little work has been done in this area in sub-Saharan Africa. Williams and Buchan (1981) in former Salisbury now present day Harare, Zimbabwe noted that the background of adolescent DSH persons was characterized by a high degree of turmoil, rejection and inconsistency. Kinyanda (2004) in mainly war torn Northern and Eastern Uganda observed that DSH was significantly associated with the total number of parent related negative life events.

Other childhood negative life events reported from the African region to be associated with DSH includes, school and academic problems especially the frustration and shame resulting from failure in examination, problems with parents, boyfriend/girlfriend problems and teenage pregnancy (Ndosi and Waziri, 1997; Edwards et al, 1981; Pillay and Wassenaar, 1997; Eferakeya, 1984; Bosch and Schlebusch, 1987; Odejide et al, 1986 and Minnaar, Schlebusch, Levin, 1979). Pillay and Wassenaar (1997) in a case-control study in South Africa comparing adolescent DSH cases with non-suicidal medical patient controls, observed that significantly more suicidal subjects than controls experienced family conflict, problems at school and problems with boy/girl friends during the preceding 6 months. They also observed that suicidal subjects expressed significantly lower levels of family satisfaction than controls supporting the hypothesis that suicidal adolescents are dissatisfied with their family functioning and use suicidal behaviour as a means of communicating their distress (ibid).

Arcel and colleagues (1992) in the West, on the types of marital relationships associated with DSH noted that they are characterized by: high levels of psychological and physical violence; and very poor relationship as concerns communication, intimacy, concern, recreation, sharing of everyday activities and social and private life. They further observed that these relationships were perceived as burdensome and humiliating creating feelings of shame in the human (ibid). Failure to change these relationships and inability to leave because of financial and emotional dependence according to Arcel and colleagues (1992) led these women to perceive deliberate self-harm as their only escape route. Stephens (1985) on the relationship between female DSH patients and their husbands, boyfriends or lovers found that they were characterized by 4 major themes. These themes were: smothering love (unrealistic expectations of the love relationships – described themselves as unable to exist without their partners); demanded demonstrations of love affection from their husbands or boyfriends (were very often disappointed when relationships did not measure up to expectations); sexual infidelity; and battering and denial of affections. From Africa, the following characteristics of the marital relationship have been reported to be associated with DSH; disharmony between husband and wife,



infidelity in either partners, sexual problems, loss of partner, quarrels with spouse or in-laws (William and Buchan, 1981; Eferakeya, 1984; Okasha and Lotaif, 1979; Minnaar, Schlebush, Levin, 1979; Mengech and Dhadphale, 1984; Ndosu and Waziri, 1997; Edwards et al, 1981).

Other negative life events that have been associated with DSH in the West include; somatic illness, death of someone close, psychiatric illness, financial problems, and drug abuse (Hjelmeland and Bjerke, 1996; Garfinkel, Froese and Hood, 1982). In Africa, the other negative life events related to deliberate self harm can be grouped under 3 sub-headings, namely, financial and job-related factors, interpersonal problems and illness factors. Among the financial and job related factors associated with DSH are the following; financial difficulties, acute financial problems, unemployment, harsh economic conditions, job dissatisfaction, work problems, poverty and legal problems (Pillay, Wassenaar, Kramers, 2001; Bosch and Schlebush, 1987; Odejide et al, 1986; Mhlongo and Piltzer, 1999; Okasha and Lotaif, 1979; Ovuga, Buga and Guwatudde, 1995; Minnaar, Schlebush, Levin, 1979; Ndosu and Waziri, 1997; Edwards et al, 1981; Pillay, 1987; Alem, Kebede, Jacobsson, 1999).

On interpersonal problems associated with DSH in Africa, the following factors are mentioned; social isolation, intra-familial friction between parents and adolescents, domestic problems/arguments, acculturative pressures (Indian community in South Africa), quarrels among siblings, death in family, gender identity or peer group conflict (Pillay, Wassenaar, Kramers, 2001; Bosch and Schlebush, 1987; Odejide et al, 1986; Mhlongo and Piltzer, 1999; Ovuga, Buga and Guwatudde, 1995; Wassenaar et al, 1998; Minnaar, Schlebush, Levin, 1979; Wilson and Wormald, 1995; Mengech and Dhadphale, 1984; Ndosu and Waziri, 1997; Edwards et al, 1981; Pillay, 1987; Alem, Kebede, Jacobsson, 1999). Lastly, illness factors associated with DSH include; recurrent mental illness, physical illness especially those associated with gross emaciation such as HIV/AIDS and pulmonary tuberculosis, AIDS phobia and substance abuse (Ndosu and Waziri, 1997; Pillay, 1987; Eferakeya, 1984; Mhlongo and Peltzer, 1999; Bosch and Schlebush, 1987; Odejide et al, 1986).

The next section examines the psychological factors that have reported to be associated with deliberate self-harm.

### **Psychological factors in deliberate self-harm**

Research largely carried out in the West has identified a number of psychological factors that are associated with deliberate self-harm (DSH). These include; psychological distress, alcohol abuse, depression, hopelessness, suicidal intent, and anger among others (Williams and Pollock, 2000; Minkoff et al, 1973; Wetzel, 1976; Wetzel et al, 1980; Dyer and Kreetman, 1984; Weishaar and Beck, 1992; Dori and Overholser, 1999; Goldney et al, 1997; Horesh et al, 1997; Cautin, Overholser and Goetz, 2001; Lonqvist, 2000; Dieserud et al, 2001).

The next section examines one theory that has tried to link up a number of these psychological factors.

### **Beck's theory of Suicide**

Beck, based on his clinical work, observed that when depressed patients believe that there is no solution to serious life-problems, they view suicide as the only way out (Beck, 1967). Beck and colleagues (1975) then went on to describe a theory in which depression and hopelessness were viewed as causal factors in suicidal behaviour. In this theory greater depression and hopelessness are associated with greater suicidal potential with hopelessness acting as a cognitive mediator of the relative between depression and suicidal intent (ibid).

In the West, this theory has been tested and confirmed in a number of settings including; general hospital referred DSH patients (Dyer and Kreitman, 1984; Wetzel, 1976; Dieserud et al, 2001), in-patient psychiatric population (Wenzel et al, 1980; Chiles et al, 1989); and among terminally ill cancer patients (Chochinor et al, 1998). Even in the West, Beck's theory has not always applied to all situations. The relationship between suicide intent, depression and hopelessness has been shown to be affected by demographic, cultural, and psychological characteristics of the study subjects. In

depressed adults whereas hopelessness is more useful than depression in explaining the severity of suicidal behaviour, its role in depressed adolescents and children remains unclear (Dori and Overholser, 1999).

Cole (1989) in a study among high school students, observed that unlike research with adults where hopelessness retained statistical significance to suicidal behaviour even after depression was controlled for, among adolescents when depression was controlled for, hopelessness became unrelated to suicidal behaviour for boys and only modestly related among girls. Thus although depressive symptoms can predict suicide behaviour during childhood and adolescence, hopelessness has not always been useful in distinguishing between depressed DSH patients and non-DSH depressed patients (Dori and Overholser, 1999). That hopelessness is not a reliable indicator of suicidal risk in youth is probably because of the possible developmental difficulties in conceptualizing the future clearly among the youth and children (Dori and Overholser, 1999).

On the impact of culture on Beck's theory, Chiles and colleagues (1989) in a comparative study between a Western sample of DSH patients from the USA and a sample from China noted that whereas the previously specified relation between suicide intent, depression and hopelessness held in their American sample, it did not apply to their Chinese sample. In the Chinese DSH sample, a relationship between suicide intent and depression was observed but not between suicide intent and hopelessness (ibid).

In interpreting their findings, Chiles and colleagues (1989) were of the opinion that the connection between hopelessness and suicide intent may not have been valid for their Chinese sample possibly because hopelessness is buffered by cultural and moral experiences and beliefs. They held that the Chinese perspective on "the way life is" may involve a more enduring attitude towards personal loss or privation, lack of individual control, aversive events and a subjugation of individual needs to the needs of one's immediate community. It is only with the advent of major affective disturbance and somatic concerns that a Chinese person perceives the situation to be a "problem" requiring more extreme problem-solving behaviour (ibid). In a non-Western sample of

DSH patients of Puerto Rican origin, Fernandez-Pol (1986) noted that they had a low index of depression and a significant use of drugs of abuse and alcohol. In interpreting these findings, Fernandez-Pol (1980) observed that Puerto Rican patients rarely report depression as such but instead showed a tendency to express psychological distress in somatic terms (ibid). Fernandez-Pol's (1980) findings go further to reinforce the importance of cultural factors in the cognitive formulation and perceptions of suicidal behaviour.

### **Social Desirability**

Lastly, it has been suggested that social desirability may confound the relationship between suicide intent and hopelessness. In the initial study among a general population sample of the impact of social desirability on the relationship between hopelessness and suicidal behaviour, Linehan and Nielsen (1981) found that the Beck's Hopelessness Scale was negatively correlated with the Edwards Social Desirability Scale. Further, when they partialled out social desirability from hopelessness its predictive capacity of suicidal behaviour/ideation was eliminated (ibid). More significantly, they also observed that the magnitude of this effect increased for persons reporting a previous history of serious suicidal ideation or DSH (Ibid). Linehan and Nielsen (1983) reporting on data from a sample of psychiatric inpatients observed a similar trend to that of the original study with the exception that the strength of the relationship between hopelessness and social desirability was somewhat diminished for psychiatric patients reporting serious suicidal ideation or actual DSH.

Petrie and Chamberlain (1983) conducted a similar study to examine the relationship between hopelessness and social desirability as variables in the prediction of suicidal potentials using Beck's Hopelessness Scale (measure for hopelessness), the Crowne-Marlowe Scale (Social Desirability Scale) and the Zung Depression Scale (from which the criterion measure of suicidal potential was obtained). Results from this study indicated that although the hopelessness scale correlated negatively with the social desirability scale, hopelessness remained significantly correlated with the self-reports of DSH and suicidal ideation when this relationship was partialled out. This led Petrie and

Chamberlain (1983) to conclude that the relationship between self-reported hopelessness and social desirability in a clinical sample made no difference with respect to the assessment of suicidal or DSH behaviour.

Strosahl and colleagues (1984) in investigating the clinical utility of social desirability in suicide risk assessment obtained results similar to those of Linehan and Nielsen (1981). To explain the discrepancy between both their findings and those of Linehan and Nielsen (1981) on one hand and those of Petrie and Chamberlain (1983) on the other, Strosahl and colleagues (1984) have suggested that the latter's measure of social desirability (the Crowne – Marlowe SD Scale) was not really a measure of social desirability but a measure of the tendency to lie or engage in deliberate image manipulation.

### **Anger as a factor in Suicidal risk**

Research on suicidal risk has suggested that aggression, anger, rage, hostility, vengeance feelings and violence are important contributors to the suicidal risk (Horesh et al, 1997; Goldney et al, 1997). Spielberger and colleagues (1985) on a discussion of the similarities between many of these variables have suggested that the common core feeling is anger. Williams and Pollock (2000) on the anger and hostility shown by suicidal people have said that it is generally more intropunitive and covert with high levels of guilt and depression.

Although anger has been shown to be associated with deliberate self-harm, this association has been found to be dependent on the anger construct considered. Cautin and colleagues (2001) in a study of adolescent psychiatric in-patients observed that internalized anger was associated with depression, hopelessness and more serious deliberate self-harm acts while externalized anger was associated with alcohol abuse. Goldney and colleagues (1997) in a study of students did not find any association between trait anger and the later development of suicidal ideation and deliberate self-harm.

Research into these psychological factors in Africa has at best been minimal with the little research that has been done on the continent being of a largely descriptive nature with minimal use of standardized psychological assessment instruments. In a community study in rural Ethiopia, lifetime DSH was significantly associated with psychological distress and a history of problem drinking while among Ethiopian high school students, previous deliberate self-harm was reported to be associated with hopelessness, current suicidal ideation and heavy alcohol intake (Alem et al, 1999; Kebede and Ketsela, 1993). Schlebusch and colleagues (1988) in a study in Durban, South Africa reported a positive association between hopelessness and suicidal behaviour in low intent DSH patients.

The next section examines repetition of deliberate self-harm and the risk factors associated with it.

### **Repetition of Deliberate Self-Harm**

Repetition of deliberate self-harm (DSH) is an important factor of prediction of increased risk of completed suicide (Kerkhof, 2000). Furthermore, it is important because it is a reflection of persistent or recurrent psychosocial problems in the patient (Hawton et al, 1999). However, the prediction of completed suicide or future DSH event is difficult and inaccurate. This is because patients who carry out recurrent DSH are a heterogeneous group in which suicide behaviour is in constant flux and rarely leads to completed suicide (Sakinofsky, 2000). The most comprehensive effort to date in measuring the prevalence of repetition of deliberate self-harm has been the WHO/Euro multicentre study on parasuicide (Kerkhof et al, 2000). In the repetition – prediction component of that study, about half (54%) had at least one previous deliberate self-harm episode. In the prospective follow-up at one year, data from 8 reporting centres indicated that 30% of the study subjects had repeated at least once while 17% had repeated two or more times (ibid).

Only a few relevant studies have been carried out in Africa. Okasha and Lotaif (1979) in Cairo, Egypt reported that 13% of DSH cases seen at a general hospital setting were repeaters. Alem and colleagues (1999) in a community survey in the Ethiopian capital of

Addis Ababa reported that 39.5% of those who reported DSH were repeaters. In a recently undertaken community survey in mostly war-torn North and Eastern Uganda, Kinyanda (2004) found that 70.7% of those reporting previous DSH were repeaters.

Previous research mainly conducted in the West has shown that the antecedents or risk factors associated with repetition of DSH include demographic, social and psychological/clinical factors. The demographic factors associated with the repetition of DSH include; younger age of first act (25 – 49 years), being divorced, unemployment, low socio-economic class, change of address during the previous 12 months (Sakinofsky, 2000; Krarup et al, 1991; Bagley, 1971). The social factors associated with repetition of DSH include; living alone or with others who were not relatives, having been involved in the past 5 years in violence against another adult, criminality, being a recipient of violence, sexual abuse, alcohol abuse, poor relationship with mother, separation from parents, unhappy childhood, less well integrated families (Kreitman and Casey, 1988; Hjelmeland, 1996; Kotila and Lonquist, 1987; Taylor, Kent, Haws, 1994; Krarup et al, 1991; Sakinofsky, 2000).

The psychological/clinical antecedents of repetition of deliberate self-harm include; poor problem solving, powerlessness, low lethality of previous DSH, previous DSH, a psychiatric history, sociopathy, central nervous system disease, alcohol abuse, normlessness, symptoms of post-traumatic stress disorder, personality disorder, habitual drug abuse, positive family history of both psychiatric disorder and deliberate self-harm, low self-appraisal problem – solving capacity, greater feelings of externally directed hostility, low self-efficacy (Sakinofsky, 2000; Taylor, Kent, Huws, 1994; Kotila and Lonqvist, 1987; Kreitman and Casy, 1988; Dieserud et al, 2003; Hjelmeland, 1996; Sakinofsky and Roberts, 1990).

For special groups the following factors have been reported to be associated with repetition of deliberate self-harm; adolescents (depression; poorer performance at school, hostility, dysphoria, long term stresses; Hawton et al, 1999; Gispert et al, 1987); male repeaters (central nervous system disease, prior suicide attempts, lower age, reduced risk

associated with neuroleptic drug overdose, high consumption of alcohol, less willingness to talk about intention of current episode; Allgulander and Fisher, 1990; Bjerke et al, 1990); female repeaters (lower age at index admission, drunk more alcohol, often lacked regular work, less regular income, been in jail or in contact with the police, reported own psychiatric problems, current serious debt, reported psychiatric problems as main concern at the time of DSH; Hjelmeland, 1996; Kreitman and Casey, 1988; Bjerke et al, 1990; Allgulander et al 1990).

From the above discussion, and in agreement with Sakinofsky (2000) it can be seen that the risk factors and antecedents of repetition of deliberate self-harm were extremely heterogeneous. Sakinofsky (2000) concludes by suggesting that the only collective factor uniting repeaters as a group is their propensity to repeat acts of DSH under the influence of a wide variety of non-specific stresses.

Given the minimal research from the African region that has been conducted in this area, an investigation of the risk factors and antecedents of DSH repetition in this environment it is hoped would foster early detection of persons at risk and enable them access appropriate care.



## **AIM OF THE PRESENT THESIS**

This study was undertaken against a background of a severe paucity of data on suicidal behaviour from the African region. The few studies that have been undertaken on the continent are mostly over 20 years old, mostly of a descriptive nature, with minimal use of standardised assessment instruments. Non-use of standardised assessment instruments has made the comparison of data both within the continent and with the outside difficult, making generalisations difficult.

The present study aimed to overcome many of these shortcomings by; employing a case-control study design and the utilisation of an extensively employed standardised data collection tool, the modified version of the European Parasuicide Study Interview Schedule I (EPSIS I) (Kerkhof et al. 1989). The EPSIS I was modified to suit local conditions by translating it into the predominantly spoken Luganda language and by replacing some of the variables with locally relevant ones. Additional instruments were also included to measure psychological distress (The WHO Self-Report Questionnaire; WHO,1994) and an additional section on war related negative life events was added to capture this aspect of the African experience (Musisi et al, 2000b).

This approach has not been without risks, the use of standardized psychological assessment instruments developed in the West in an African setting raises concerns. Although care was taken to ensure proper semantic translation of the study instrument from the parent English language to the local language spoken in the study area (translated and back translated). Some previous cross-cultural research has shown that some of the items in these scales may lack validity and reliability in the non- parent culture (Zheng & Lin, 1991). This therefore necessitates the need to validate instruments that have not been developed in a given culture before their use in another culture. Although no attempt was specifically made to validate the component instruments in the EPSIS I in the Ugandan local environment, some of the tools used in this study such as the WHO Self-Report Questionnaire – 25 have been used extensively in developing countries, including Africa and has been found to have good validity indices in Uganda and elsewhere in Africa (WHO, 1994; Kebede, Alem, Rashid, 1999; Nakigudde et al,

2005). There is however an urgent need to undertake validation studies of all the component instruments of the EPSIS I in different African settings before it's wholesale adoption as a data collection tool for DSH research on the continent.

### **GENERAL OBJECTIVE OF THE STUDY**

The main objective of undertaking this study was to investigate deliberate self-harm among acute admission patients at three general hospitals in Kampala, Uganda.

### **The specific objectives of the study**

To determine:

- (1) The characteristics of deliberate self-harm patients as seen at three urban hospitals in Uganda (Paper I).
- (2) The negative life-events in early and later life that are associated with deliberate self-harm as seen in urban Uganda (Paper II).
- (3) The psychological factors that are associated with deliberate self-harm as seen in urban Uganda (Paper III).
- (4) The factors associated with repetition of deliberate self-harm as seen in urban Uganda (Paper IV).

A main aim of this study was to make recommendations to inform the future development of suicide intervention in Uganda (Paper I, II, III, IV).

## **METHODOLOGY**

This will be described under the following sub-headings; introduction, study sites, samples, procedures, research instruments, translation and back translation, ethical consideration and statistical analysis.

### **Introduction**

This study was conducted from 2<sup>nd</sup> January to 31<sup>st</sup> October, 2002 with all consecutive cases of deliberate self-harm (age 15 years and above) identified by doctors working in the emergency units of the three biggest hospitals in Kampala (Mulago National Referral hospital, Rubaga Hospital and Nsambya Hospital) identified within the specified study period reported to the Principal Investigator and his team of two research assistants (psychiatric nurses) within 24 hours of admission.

A review of admission records in one of the study hospitals (Mulago National Referral Hospitals) over a 12-month period from 1<sup>st</sup> November 2001 to 31<sup>st</sup> October 2002 was also undertaken after the main study to examine for seasonal variations in the number of cases of DSH.

One hundred and one cases of DSH were seen during this period. However, one of these patients escaped from the hospital midway in the interview and her results were not considered in this study. Of the remaining 100 cases, four (4%) did not have a psychiatric diagnosis reported on them as they left the hospital prematurely before they had undergone a psychiatric evaluation; their results on the other variables were however considered in this study. Also for this study, 300 non-DSH in-patients were recruited as controls from the three study hospitals matched for age and sex were enrolled. Both cases and controls were required to be fluent in Luganda (the predominant local language spoken in the study area and the language into which the study instruments were translated).

## **Study Sites**

The respondents for this study were recruited from three hospitals namely Mulago National Referral Hospital, Rubaga Hospital and Nsambya Hospital (see map 3).

### **Mulago National Referral Hospital**

Mulago is a 1,780 bed hospital located 0.5 km to the north of the city centre. It is one of two National Referral Hospitals in the country, the other being Butabika national referral hospital for psychiatry. It is also the site of Makerere University Medical School. It plays the tripartite roles of being a district hospital for Kampala city, a teaching hospital for Makerere University and a National Referral hospital for the Ministry of Health of Uganda.

As a district hospital for Kampala district, it receives referrals from all the primary health care facilities in the district both government (including local administration) and private. In its role as a teaching hospital for Makerere University Medical School, it offers training facilities for undergraduates, postgraduates in all the major specializations of medicine including a psychiatric department that offers inpatients care, out-patients care, an emergency psychiatric service and a consultation liaison service. The psychiatric service is staffed by psychiatrists, psychologists, social workers, psychiatric nurses and psychiatric clinical officers (with a diploma in psychiatry).

In its role as a teaching hospital, Mulago National Referral hospital is also the site of numerous research projects undertaken by local and international scientists. Mulago National Referral Hospital is also the site of the oldest Nurses Training School in the country and also the site of the School for the Training of Paramedical workers. Lastly Mulago Hospital also serves as a National Referral Hospital for the Ministry of Health. In this role, it gets referrals from all the districts and regional referral hospitals for cases that require specialized assessment and treatment.

Mulago Hospital is a host to a number of consumer initiated psychosocial support organisations including TASO (the biggest HIV/AIDS support organisation in Uganda)

and various other support organisations for persons with sickle cell disease, physical disability and Hospice. For purposes of this study, cases of DSH were recruited mainly from the emergency medical and surgical wards. A few cases were recruited from the ENT (Ear, Nose and Throat) ward, psychiatric ward, surgical and medical wards. The controls were all recruited from the medical and surgical wards.

### **Rubaga Hospital**

Rubaga is a 300 bed hospital located about ¾ km from the city centre in a South-Western direction. It is a Catholic founded missionary hospital that also has a nurses teaching school. It is a pay hospital and as such its clientele are more financially well endowed than those attending Mulago hospital. It offers medical services in the main medical specialists of internal medicine, paediatrics, general surgery and obstetrics and gynaecology. It also has a psychiatric service run by a visiting psychiatrist that includes a once a week outpatient service and a psychiatric liaison service. Rubaga hospital also has psychosocial support service run by consumer organisations for HIV/AIDS victims and hospice.

### **St. Francis Nsambya Hospital**

This is a 361 bed hospital that was also a Catholic founded missionary hospital found 0.5 km away from the city centre located in a South-Eastern direction. Its service structure is similar to that of Rubaga hospital. It is also a paying hospital. Cases and controls for this study were recruited from both the surgical and medical wards of these two hospitals.

### **Samples**

Two study samples were constituted for this research project. These were sample 1 which were the cases and sample 2 the controls. For purposes of paper IV, sample 1 was split into two to comprise of the ‘suicide repeaters’ (those cases who in addition to the current DSH event had carried out at least one previous DSH event) and the ‘non-repeaters’ (those cases whose current DSH event was the first).

## **Cases**

For purposes of this study cases were defined as all consecutive cases of deliberate self-harm (age 15 years and above) identified by doctors working in the emergency units of the three biggest hospitals in Kampala (Mulago National Referral hospital, Rubaga Hospital and Nsambya Hospital) who were reported to the principal investigator and his team of two research assistants (psychiatric nurses) from 2<sup>nd</sup> January to 31<sup>st</sup> October, 2002.

The definition of deliberate self-harm (DSH) used in this study is similar to that used in the WHO/Euro multicentre study of parasuicide (although the term parasuicide was later abandoned):

*“An act with a non-fatal outcome in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm or deliberately ingests a substance in excess of the prescribed or generally recognized therapeutic dosage and which is aimed at realizing changes which the subject desired via the actual or expected physical consequences” (Platt et al 1992).*

## **Controls**

For purposes of this study controls consisted of non-DSH in-patients recruited from the three participating hospitals. The criterium for the selection of the controls was that they had been admitted to the surgical or medical or ENT (for the case of Mulago) wards for non-recurrent conditions such as an uncomplicated hernia. Patients with chronic long standing and/or recurrent conditions such as cancer, HIV/AIDS and known mental illness were excluded as controls. This is because chronic somatic illnesses, and mental illnesses are known risk factors for suicidal behaviour (Hawton, 1987; Stenager and Stenager, 2000). Both the cases and controls were required to be fluent in Luganda (the predominant local language spoken in the study area and the language into which the questionnaire had been translated).

## **Procedures**

Procedures are discussed under recruitment and training of research assistants.

## **Recruitment**

The principal investigator of this study sought permission from the Institutional Review boards of the three participating hospitals. He was required to furnish them with copies of the proposal and to make a formal presentation before a staff meeting at which he had to answer questions raised about the study. After permission had been granted, the principal investigator and his team of research assistants were then introduced to the in-charges of the main points where patients with DSH were expected to be admitted in the participating hospitals.

For the hospitals of Rubaga and Nsambya these admission points included the admission facility, the medical ward and the surgical ward. Notices about this study were posted on the notice boards at each of these points with contact telephone numbers of members of the research team. The study also identified contact persons (usually an intern doctor) in each of these two hospitals. The research team made telephone contact with this person every morning to establish whether there was a person(s) in the hospital who had been newly admitted for DSH.

In Mulago Hospital, the points where patients with DSH could be admitted included; the emergency surgical and medical wards, the medical wards, the surgical wards, the ENT (Ear, Nose, Throat) ward and the psychiatric ward. The hospital administration on approval of the study gave letters of introduction to the research team introducing them to the in-charges of each of these medical wards. Notices about the study and the names and telephones of contact persons were also posted on each of these wards.

Given the size of this hospital and the fact that most cases of DSH were expected to come from this hospital, members of the research team conducted walk-in rounds through the identified wards each morning to identify possible study subjects.

Once a case was identified, an appointment was made to interview this person and three other controls matched for age and sex preferably on the same ward. To select the controls, the ward register was used to identify patients who met the criteria of being controls for the identified DSH case. From all the selected possible controls, three were then randomly selected. The technique that was used to select them included that the identified possible controls had their names written on pieces of paper that were then folded and put in a match box and shaken together. Then three pieces were randomly picked from this group of papers. Once a piece of paper had been picked and the name noted it was folded again and returned to the box before the next piece of paper was picked. The process of shaking them together was repeated before the next piece of paper was drawn. This process was repeated until the three controls had been identified. If a name that had already been identified was selected again. It was returned to box and the process repeated until 3 different names had been selected and these were taken by the research team to be controls for that case. Sometimes the ward where the case was admitted could not furnish the required number of controls. Controls could then have to be identified on the other participating wards of the same hospital.

### **Training of research assistants**

Two research assistants assisted the principal investigator in undertaking this study. The two research assistants selected were psychiatric nurses, one retired and the other still in service. At a one day workshop, they were introduced to the study, its objectives and the data collection tool. The research assistants were required to be conversant with the Luganda language.

The principal investigator went through this questionnaire with the research assistants. Each of the research assistants was then required to interview a patient on the ward using the questionnaire while being observed by the principal investigator and the other research assistant. Each observed interview was then discussed by the research team jointly.



## **Research Instrument**

A structured protocol that was interviewer-administered was used to collect the data. This protocol contained a Luganda version of a modified version of the European Parasuicide Study Interview Schedule I (EPSIS I) (Kerkhof et al. 1989). The EPSIS I was modified to make it more appropriate to the local conditions by including entirely new sections including; the Self-Report Questionnaire – 25 (SRQ-25; for the assessment of general psychological distress; WHO, 1994), a section on war experiences was added to the Life events and history's inventory of the EPSIS I (Kerkhof et al, 1989) to capture this aspect of the social reality of Ugandan life and four additional items among the lists of precipitants of current DSH event. New variables were also included such as; district of birth and current residence, tribe, area of usual residence, housing characteristics, employment status of partner and socio-economic status of respondent, and modifying some of the variables such as highest educational attainment and employment status of respondent and spouse/ guardian.

## **Measures**

Compiled into the modified EPSIS I tool that was used in this study were various measures for the following variables: socio-economic status, methods of DSH, precipitating factors of present act of DSH, life events and history inventories, and various psychological factors.

### Socio-economic status

The socio-economic status was based on Hollingshead's, 1958 classification that was modified by Minde (1975) for his Ugandan classification: Class I were professionals with university education, Class II were senior government officials and owners of large businesses who had a secondary-school education up to senior 4 (11 years), teachers, policemen, clerks, and soldiers, Class III were junior civil servants, primary teachers, policemen, clerks and soldiers, Class IV were craftsmen, farmers owning more than 3 acres of land, the mechanics, and Class V were small plot farmers and unskilled labourers (Minde 1975).

### Methods of DSH

The open-ended sub-section of the module on methods of DSH (Parasuicide) of the EPSIS I (Kerkhof et al 1989) was used to derive a classification of the methods of DSH. This was done by collapsing the items X60-64 into one item that was called medications, breaking up the item X68 into pesticides and other poisons, breaking up the item X78 into cutting with a knife and stabbing, while maintaining the other items on physical methods (X70, X71, X76, X80) as given. This was to capture the distribution of methods of DSH in this environment which emphasized the use of agricultural and industrial poisons more than medications, unlike the ICD-classification in the EPSIS I that seems to emphasize the reverse.

### Precipitating factors of present act of DSH

The precipitating factors of present act of DSH give reasons why people indulge in deliberate self-harm (Kerkhof et al 1989). For the purpose of this study, the items poverty, feelings of shame, sexual problems and unwanted pregnancy were added to the initial ten items given in the EPSIS I as there were shown in a previous study from the region to have been important factors leading up to suicidal behaviour (Fallers and Fallers, 1960). Each of the items on this scale was graded on a 3 point scale depending on its influence on the present deliberate self-harm event as; no influence, minor influence or major influence. For ease of analysis, the category minor influence and major influence were collapsed together to form a derived category 'had an influence'.

### Life events and history inventories

This is the module of the EPSIS I which was used to collect data on negative life events of the study subjects. The original life events and history module in the EPSIS I is divided into 6 sections namely, parent's section, siblings (brothers and sisters) section, partner's section, children's section, personal section, and a section on significant others (other than those categories already mentioned). An additional section on war experiences was added to capture this aspect of the social reality of Ugandan life. The war experiences section, tapped into the physical and psychological experiences of war trauma as seen in Uganda (Musisi et al, 2000; Kinyanda & Musisi, 2001). This

additional section contained 18 items such as experiencing gunshot injuries, bayonet injuries, destruction of property and livestock, military detention, interrogation and war rape.

For each of the items listed under the different sections of this module, the respondent was asked to indicate whether it was experienced in either of three time periods namely, childhood (before the age of 15 years), later in life (between the 15<sup>th</sup> birthday and one year before the interview for this study) and in the last one year (in a 12-month period up to the date of the interview).

### Psychological factors

The psychological scales that were used in this study included the following; the Suicide Intent Scale (SIS; Beck, Schuyler, & Hermen, 1974), Beck's Depression Inventory (BDI; Beck et al, 1961), Self Report Questionnaire-25 (SRQ-25; WHO,1994), Beck's Hopelessness Scale (BHS; Beck et al, 1974), Spielberger's State-Trait Anger Scales (Spielberger, 1988) and the CAGE questionnaire for the assessment of alcohol abuse problems (Ewing, 1984).

#### *Suicide Intent Scale (SIS)*

The Suicide Intent Scale (SIS; Beck, Schuyler, & Herman, 1974) comprises 15 items measuring the level of suicidal intent in deliberate self-harm. The items are scored 0, 1 or 2 yielding a possible range of scores from 0 to 30. The first 8 items consist of questions regarding the objective circumstances of the suicidal act. The remaining 7 items consists of questions regarding the patients' subjective report of intent of the act. The Cronbach  $\alpha$ - coefficient of this scale in this study was 0.93.

#### *Beck Depression Inventory (BDI)*

The Beck Depression Inventory (BDI; Beck et al, 1961) is a 21- item inventory that asks the respondent to indicate which series of statements best described how he or she has felt over the last several days. Responses are scored 0 to 3 yielding a global depression score ranging from 0 to 63. The Cronbach  $\alpha$ -coefficient of this scale in this study was

0.95. During correlational analysis the BDI total scores were used to classify the cases into the depressed group (BDI total scores of  $\geq 11.0$ ) and the non-depressed group (BDI total scores of  $\leq 10.9$ ), cut-off scores that were used by Beck and colleagues (1961).

#### *Beck Hopelessness Scale (BHS)*

The Beck Hopelessness Scale (Beck et al, 1974) is a 20-item true – false questionnaire assessing negative expectations and pessimism about one’s future. Almost one half of the items are reverse scored. Total scores can range from 0 to 20 and are obtained by summing the individual items. The Cronbach  $\alpha$ - coefficient of this scale in this study was 0.80.

#### *Self Report Questionnaire (SRQ-25)*

The Self Report Questionnaire -25 (SRQ 25; WHO,1994) is a 25- item true- false questionnaire that is used to assess mental distress and probable psychosis. Positive rating of an item on this instrument scores 1 while absence of the item scores 0. The possible total score is 0-25. This instrument, initially developed as a screening tool for use in primary care settings by the WHO, has been widely used on the African continent. The Cronbach  $\alpha$ -coefficient of this scale in this study was 0.97.

#### *Spielberger State-Trait Anger Scale*

The State- Trait Anger Scale (Spielberger, 1988) was developed by Spielberger and consists of 2 sections, the state anger section (10 items) and the trait anger section (10 items). Positive items are scored 1 while absence of the item scores 0. The possible total score on each of the two sections is 0 to 10. Each section of this scale (state anger section and the trait anger section) were scored separately in this study. The Cronbach  $\alpha$ -coefficient of the trait anger section was 0.90 while that of the state anger section was 0.94.

#### *The CAGE questionnaire*

The CAGE (Ewing, 1984) is a 4- item screening questionnaire for alcohol abuse problems. CAGE is an acronym derived from four questions:

- (i) Have you ever thought you should **Cut down** on your drinking?
- (ii) Have you ever been **Annoyed** by other people's criticism of your drinking?
- (iii) Have you ever felt **Guilty** about yourself about your drinking?
- (iv) Have you ever had an early morning drink (**Eye opener**) to steady your nerves?

The sensitivity of this instrument has been shown to be high when a cut-off point of 2 or 3 items scored positively out of 4 is used (Ewing, 1984). In this study a cut-off point of 2 items out of 4 was used. The Cronbach  $\alpha$ -coefficient of the C.A.G.E was 1.00.

### **Translation and Back translation**

The modified EPSIS tool was translated into the local Luganda language by a psychiatrist (Musisi Seggane-one of the co-authors of the papers included in the thesis) who is indigenous to the study area and had had considerable working experience in it. To ensure that there was adequate rendering of the content of the study variables into the local language, the Luganda translated version of the EPSIS I was given to a psychologist who was blind to the initial English version of the EPSIS I for back-translation into English. The psychologist was also indigenous to the study area and had had considerable working experience in it. After this exercise, the translating teams met and came to a consensus on those variables where there was disagreement in the translations.

### **Ethical Consideration**

This study obtained ethical clearance from bodies of the three participating hospitals, the Uganda National Council of Science and Technology (UNCST) and the Norwegian ethical committee responsible for research conducted in developing countries where Norwegian researchers are involved (REK West).

Both the cases and controls were required to give informed consent before they could participate in this study. It was made clear to the patients that refusal to participate in this study did not in any way influence their ability to access health services at the study hospitals. They were also told that they could refuse to answer some of the questions or could end the interview at any time should they prefer to do so. The ethical issues are discussed more elaborately in the Discussion section.

## **Statistical Analysis**

The statistical package SPSS 8.0 was used both at data entry and analysis. Analysis involved the generation of frequencies, means and mean rank scores and cross-tabulations using Pearson's Chi-square test, Fischer's Exact test and the independent t-test. Multivariate analysis using logistical regression was also used to assess for the independent effect of the different independent variables in suitably specified models. The level of significance was set at 0.05.

## **RESULTS**

In this section summaries of the papers are reported.

### **Summary of Paper I**

#### Deliberate self-harm as seen in Kampala, Uganda: A case-control study.

The purpose of this study was to investigate deliberate self-harm (DSH) in an African context in Uganda. A case-control study in which 100 cases of DSH and 300 controls matched on age and sex were recruited from three general hospitals in Kampala and subjected to a structured interview using a modified version of the European Parasuicide Study Interview Schedule I. Among the cases, 63% were males, with a male to female ratio of 1.7: 1 and a peak age range of 20-24 years. Higher educational attainment, higher socio-economic class and poor housing were significantly associated with DSH. District of current residence, district of birth, religion, ethnicity, marital status, number of children, current living arrangement, area of usual residence, employment status of respondent and partner were not significantly associated with DSH. Pesticides and medications, mainly antimalarials and diazepam, were the main methods of DSH used. The most commonly reported psychiatric disorders were adjustment disorder, acute stress reactions, and depression. DSH in Uganda appears to predominantly afflict the young. Disturbed interpersonal relationships, poverty and loneliness were important factors in the immediate precipitation of this behaviour. The fact that pesticide poisoning is still the predominantly used method in DSH in this area calls for a review of the legislation that controls the sale and availability of these agricultural chemicals.

### **Summary of Paper II**

#### Negative life events associated with deliberate self-harm in an African population in Uganda.

Negative life-events associated with deliberate self-harm (DSH) were investigated in an African context in Uganda. Patients admitted at three general hospitals in Kampala, Uganda were interviewed using a Luganda version (predominant language in the study area) of the European Parasuicide Study Interview Schedule I with the results of the life events and histories module reported in this paper. The categories of negative life events

in childhood that were significantly associated with DSH included those related to parents, significant others, personal events and the total negative life events load in childhood. For the later life time period the negative life events load in the partner category and the total negative life events in this time period were associated with DSH. In the last year time period the negative life events load related to personal events and the total number of negative life events in this time period were associated with DSH. A statistically significant difference between the cases and controls on the total number of negative life events reported over the entire life time of the respondents was also observed suggesting a dose effect of negative life events on DSH. Gender difference were also observed among the cases.

### **Summary of Paper III**

#### Psychological factors in deliberate self-harm as seen in an urban African population in Uganda: A case- control study

This paper describes the psychological factors associated with deliberate self-harm (DSH) as seen in an African population in Uganda. A case-control study design was employed in which a Luganda version (predominant language in the study area) of the modified European Parasuicide Interview Schedule I (EPSIS I) was used to collect data. The controls were patients admitted to the participating hospitals for non-recurrent medical conditions. Hopelessness, global psychological distress and state anger, but not depression, were significantly associated with deliberate self-harm after controlling for other factors. Both depression and hopelessness were significantly associated with suicidal intent independent of each other. Differences were observed on the psychological factors associated with suicidal intent in the different age/sex groups and in the depressed/ non-depressed group. Interventions for deliberate self-harm in this population should include treatments for hopelessness.

This study further raises questions about the universality of the structural relationship between depression, hopelessness and suicidality.



## **Summary of Paper IV**

### Repetition of Deliberate self-harm as seen in Uganda.

Described is the presentation of repetition of deliberate self-harm (DSH) as seen in an African population in urban Uganda. A Luganda version (local language in study area) of the modified European Parasuicide Interview Schedule I (EPSIS I) was used to collect the data. Results of univariate analyses indicated that repeaters of DSH differed significantly from non-repeaters on several dimensions. The factors included were: more often single, less often had children, staying alone or with their parents, reported sexual problems as a precipitant of current DSH event, more negative life events in childhood, and less negative life events in the last year. Furthermore, a multivariate analysis was conducted resulting in only sexual problems and the psychological factor of trait anger, which retained significance.

## **DISCUSSION**

This section is going to undertake an overview of the present project by examining it from the following perspectives; methodological concerns, ethical concerns and the emerging picture of DSH in urban Uganda and its implications for clinical work and future research.

### **Methodological Concerns**

The use of a standardized psychiatric assessment tool – the European Parasuicide Interview Schedule I (EPSIS I) in the non-western setting of Uganda raises various concerns. As Hjelmeland and colleagues (2006) have recently observed, an instrument developed in the West sometimes does not function as expected in another cultural setting. In a recently undertaken cross-cultural study carried out in both Norway and Uganda, the factor structure of the instrument used to collect data on the attitudes to suicide behaviour (Attitudes Towards Suicide Questionnaire; ATTS, developed in Sweden by Renberg and Jacobsson, 2001, 2003) was observed to have a different factor structure in both countries. The difference in factor structure found between Norway and Uganda according to Hjelmeland and colleagues (2006) could be attributed to at least two possible explanations. The first and more likely explanation is that there may be difference between the two countries in the latent variables that underlie the formation of the attitude responses. This explanation is not far fetched given that suicide is a culturally laden behaviour. The second and less likely possible explanation they give is that the instrument used might not have been valid and reliable in Uganda. They conclude by suggesting that while cross-cultural studies are essential in developing our understanding of suicidal behaviour, there is need for more use of qualitative methodologies including the use of triangulation in order to develop more valid and reliable instruments for cross-cultural research (ibid).

The use of the EPSIS I, a structured quantitative instrument as the data collection tool in this study had a number of advantages. Firstly, use of the EPSIS I the research instrument that was used in the multicentre WHO/Euro study on parasuicide study allowed for the first time the comparison of results from Africa with those from Europe.

Secondly, the EPSIS I being a standardized assessment instrument could help address a major bottleneck facing research on the continent of Africa. This is the previous inability to have intra-regional comparisons of research findings because of the use of a diversity of data collection instruments many of which are non-standardised. Successful use of the EPSIS I in this research project on the continent of Africa has made available a standardized assessment instrument that can be used as the data collection tool for intra-regional research projects on DSH.

### **Practical and theoretical Concerns**

These advantages notwithstanding, use of EPSIS I in the African cultural context of Uganda raised both practical and theoretical questions.

#### Practical Concerns

The EPSIS I was initially designed in English, a language spoken only by a few of the prospective respondents for the Ugandan project. This raised the need to have this instrument translated but there was also concern about what had to be translated – literal translation or a translation approach that tried to convey the underlying psychological content of the questionnaire item. The latter approach was adapted with equivalent idioms to those in the original English version of the EPSIS I constructed in the popular version of the local Luganda language. To ensure that there was adequate rendering of the idioms from English to the local Luganda language the translated Luganda version of the EPSIS I questionnaire was back- translated into English.

Both the persons who undertook the initial translation and the back-translation were indigenous mental health professionals (a psychiatrist and a psychologist). After the exercise, the translating team met and came to a consensus on those variables where there was disagreement in the translation. Although the EPSIS I was designed as a self-report questionnaire, because a large proportion of the respondents had very limited levels of literacy, it was given as an interviewer administered questionnaire in this study. This approach had the advantage that it ensured that there was quality control in the exercise of filling out the questionnaires as a member of the research team always carried out the

interviews of the respondents with this rather long questionnaire. This approach however also had ethical concerns, this is because if the questionnaire had remained self administered the respondent could have remained anonymous. But with the interviewer administered method this was not possible and in addition, this put pressure on the respondent to answer back in a socially desirable manner. It was thought that this could introduce bias in the response to some particularly sensitive questions such as those questions that were perceived as stigmatizing (inquiry into one's HIV serostatus) or those responses that were perceived as suggesting a non repentant attitude to the DSH behaviour (for example admitting to continued experiencing of suicidal ideation). The pressure to respond in a socially desirable way in this study was minimized by explaining to the respondents that the team of research assistants was in no way involved in the medical management of the respondents. The research team also made it clear to the respondents that the information provided was treated confidentially and was not available to the medical team that was managing their medical condition.

Another practical problem that was encountered in this study was with those questionnaire items that required the use of Likert scales such as, when one had to choose from "much", "moderate", "a little", or "none." For such items, it was sometimes difficult to put the underlying concept into local terms particularly for illiterate persons whose daily use of language does not involve thinking in those terms. To overcome this, the number of choices had to sometimes be reduced, like in the above example, reduced to only "much", "a little", or "none."

### Theoretical Questions

Use of the EPSIS I in an African cultural context entails the importation of a psychological assessment tool developed and standardized in a different culture. This raises questions on whether the items and response categories may be irrelevant to the population of study (Aboud, 1998). A second limitation is that the use of a precise quantitative tool developed in another culture runs the risk of 'striping' from consideration the other variables that might have been important in the host culture and could have affected the study findings (Guba and Lincoln, 1994). This raises concerns

about one's ability to make generalizations. This is because strictly speaking the study results can only apply to contextually stripped circumstances as those in the study (Aboud, 1998).

These two concerns were partly addressed in this study by modifications that were made to the EPSIS I for this study. Firstly, a number of scales were included into this instrument that were initially developed in the West but have been extensively used in Africa and found to have good validity indices. For example in the measurement of general psychological distress, the WHO Self-Report Questionnaire – 25 was used, a tool that has been used extensively in developing countries, including Africa (WHO, 1994; Kebede, Alem, Rashid, 1999).

Secondly, open-ended questions were appended to many of the standardized assessment scales such as the following; what made you to attempt to take your life?, which was appended to the precipitating factors of current DSH event scale. There was also an open ended question appended to the classification of methods used in DSH. The international classification system on methods of DSH was found not be to suitable in this socio-cultural context as it puts undue emphasis on medications as a methods of DSH yet poisons are the predominant method of DSH in the socio-cultural environment of the present study. Using the results of the open-ended question on method of DSH, this project was able to reconstruct a more appropriate and relevant classification system that emphasized the use of agricultural and industrial poisons, indicating the utility of this methodology.

### **Ethical concerns of this project**

This research project fortunately was situated in hospital settings where psychiatric care was readily available. All the participating hospitals in this present study had functional psychiatric services. Where the research assistants found DSH patients who had not yet been seen by the psychiatrists, they helped to bring this oversight to the attention of the ward in-charges who then made appropriate consultations. Because the DSH patients were constantly at risk of pre-mature self-discharge, the research assistants whenever

they interacted with the DSH patients interjected messages on the link between the patients problems and DSH, possible sources of professional help and also tried to dispel negative myths about DSH.

Undertaking a suicide study in the African setting of three general hospitals in Uganda brings up a number of ethical issues arising out of the following matters, namely; exhaustion of already traumatized patients, overcrowding on the wards, participating in a research on a still criminal behaviour and low levels of formal education

### **Exhaustion of already traumatized patients**

One of the ethical problem that arose with using the EPSIS I in this study was that the EPSIS I is a large interview schedule that required 2 – 3 hours to be administered. Many patients who had been admitted for DSH were already exhausted by the stressful events leading up to the DSH event and the physical and physiological complications arising out of the methods of DSH used. Being subject to this interview that required concentration was very exhausting both to the patient and the interviewer raises ethical concerns. To minimise this the interview often times had to be broken down into two or even three sessions.

### **Overcrowding on the Wards**

This research project was undertaken on medical and surgical wards of the participating hospitals which often times were overcrowded. This meant that carrying out interviews with these patients at the bedside without being overhead was practically impossible. This problem was overcome by using side rooms and the nurses offices during the day breaks or the very early morning hours before ward rounds could begin. This however, meant that interviews could only be carried out either very early in the mornings, during the lunch break or in the evenings after the official work hours putting additional strain on the research team.

### **Participating in a research on a still criminal behaviour**

Suicidal behaviour is still a criminal behaviour on the Ugandan statute books. This must have created a conflict in the mind of the respondents on how much to collaborate with this present study. This is because it was theoretically possible for the information being collected for the present study to later be used against them in courts of law. This raised the issue of how truthful were the responses obtained in this study. Attempts to allay this anxiety among respondents were made through repeated reassurances of the respondents by the research team that the information they were providing was to be treated with utmost confidentiality and was in no way going to land into the hands of the courts. In addition the laws on suicidal behaviour seems not to be strictly enforced in this country as recently observed in a study that also considered suicidal behaviour in this country (Kinyanda, 2004). In that study which was undertaken in 14 districts of mainly Northern and Eastern Uganda, police records were examined for cases of suicide over a 12 month period (ibid). The overwhelming finding from that study was that all the participating district police stations reported that most of the cases of suicide and DSH in their districts were never reported to the police (ibid).

### **Low levels of formal education**

In the present study, more than three quarters of the respondents, both cases and controls had a low educational attainment. The methodology used in the present study with its basis on the written word and the use of exacting definitions of terms and measurement of feelings, emotions and behaviours was probably alien to most of the respondents in this study. Most of the respondents of this present study come from a tradition of passing on of knowledge that emphasizes oral communication and the use of stories and parables. This present study having been one of the premiere projects on DSH in this socio-cultural environment should have used more ethno-sensitive methodologies such as the use of qualitative approaches. Partly in taking care of this concern most of the different parts of the modified EPSIS I used in this study had open ended sections on them which allowed for the collections of more culturally sensitive narrations.

In conclusion, undertaking a suicide research project in the Ugandan situation raised some ethical issues that were properly taken care of by the research team.

### **Emerging picture of DSH in urban Uganda and its implications for clinical work and future research**

This sub-section will discuss the emerging picture of DSH in urban Uganda and its implications for clinical work and future research. This will be done against the background of the available literature on the subject mainly from the African continent and also from the West. This will be discussed under the following sub-headings; socio-demographic characteristics, methods of DSH, precipitants of DSH, negative life events, psychiatric diagnoses and other psychological factors, and repetition of DSH.

#### **Socio-demographic characteristics**

The emerging picture of DSH as seen at three general hospitals in urban Uganda is that it predominantly affects more males (63%) than females (male to female ratio of 1.7: 1; Paper I). A similar picture has been reported from a large community survey in mainly rural Northern and Eastern Uganda where a male to female ratio of 1.4: 1 was reported (Kinyanda, 2004). Elsewhere in Africa a similar picture has been observed in the more northern situated African countries of Egypt and Nigeria and from the horn of Africa state of Ethiopia (Okasha and Lotaif, 1979; Eferakeya, 1984; Abede, 1991). In the West this male preponderance has only been observed in Finland (Kerkhof, 2000). Okasha and Lotaif (1979) in an attempt to explain the inversion of the usual female preponderance observed in some African countries have suggested that it may be an artifact arising out of the fact that female DSH cases experience more stigma than their male counterparts. As a result of this differentially felt stigma, families will tend to hide away more of their female DSH relatives than male DSH relatives from the public eye at hospitals. If this explanation is true, then health planners in those African countries including Uganda which have a reversal of the usual female preponderance of DSH need to put in place interventions that will get female DSH cases from near certain death in hiding into modern health care. This is particularly urgent in countries such as Uganda where the preferred method of DSH is the use of the highly lethal organophosphate poisons.



This therefore calls for community based studies which will consider that portion of DSH cases who do not seek treatment for DSH at big Western style medical facilities (size of which is not known in this environment). Such studies should investigate the other possible reasons for none use of modern health facilities that may include; financial problems, stigma, underlying cultural beliefs about the causation of suicidal behaviour and the negative reception by health workers at the health facilities for this particular condition. The results of these studies could make useful input to the future development of suicide interventions in this environment.

In the present study, half (50%) of the DSH cases recorded at general hospitals were under the age of 25 years with a peak in the 20-24 years age group (Paper I). No gender differences were observed on age in this study (ibid). The overwhelming picture in most of Africa and in the West conforms to the above pattern that DSH is predominantly a problem of the adolescent and young adult (Bosch, Schlebusch, Wessel, 1987; Minnaar, Schlebusch, Levin, 1979; Mengech & Dhadphale, 1984; Ndosu & Waziri, 1997; Abede, 1991; Eferakeya, 1987; Kerkhof, 2000; Kreitman, 1978). That deliberate self-harm afflicts the young is an important point for suicide prevention in Uganda. In Uganda suicide interventions should be incorporated into all health promotional programs for the adolescent and young adults in this environment. For future suicide research, there is a need for more research into the vulnerability factors for DSH among adolescents and young adults in this environment.

As compared to non-DSH in-patient controls, DSH cases in this study tended to have a higher level of education (medium level) and a higher socio-economic status (socio-economic classes I & II; Paper I). Also observed in this study was that DSH was associated with living in overcrowded single room tenements locally called *Muzigo*. The latter picture has also been observed by Mzezewa and colleagues (2000) in Harare, Zimbabwe where they observed an over-representation of those living in single room tenements (locally called Lodgers) among DSH burn cases. In the West contrary to the picture seen in the present study, DSH has been noted to be over-represented in the lower social economic classes and among those with low education ((Kreitman, 1978). But

similar to the picture reported in this present study, DSH in the West is associated with overcrowding (ibid). On the African continent, no studies have been undertaken to generate standardized population based rates nor made significant use of the case-control study design. This has made the reporting on risk factors such as socio-economic class, highest educational attainment and nature of housing difficult. The emerging picture from this present study is that DSH is a problem of the young educated person who has recently emigrated from the rural area to the urban centre in search of higher educational opportunities and better employment opportunities. This person who will usually be a male given their socialisation in this culture as 'bread earners' will get accommodated in poor overcrowded slums and yet will feel lonely having been cut off from their usual family social support network. This loneliness when associated with the problems of adjusting to life in the urban centre may lead to feelings of hopelessness and later to suicidal behaviour. Given that current projections indicate that Uganda over next few years will undergo significant urbanization (current levels of urbanization stand at only 10%), there is need for urban planners to put in place psychosocial interventions to psychologically cushion and support the new urban arrivals. These interventions should also address suicide risk in this vulnerable group.

### **Methods of DSH**

The most common method of DSH used in urban Uganda was the ingestion of poison (65%) mainly the organophosphate pesticides (45%; Paper I). Medications were used as a method of suicide by 35% of the cases. The most commonly used medications were the psychoactive agent diazepam and the antimalarial drug, chlorquine (ibid). Pesticides were the preferred method among males while medications and the household poisons (cosmetics, kerosene, crushed bottle glass, watch batteries) were the preferred method among females (ibid).

That organophosphates were the predominant method of DSH used in urban Uganda has been reported on before by Cardozo and Mugerwa (1972). It was also reported as the main method of DSH in the recently undertaken community study in rural Northern and Eastern Uganda (Kinyanda, 2004).

Elsewhere in the world, organophosphate poisons are still the main method of DSH in the predominantly agricultural societies both in Asia (Yuncheng, China-Fleischmann et al, 2005; Shandong, Hebei, Henan Provinces, China- Pearson et al, 2002; Galle, Sri Lanka-Hettiarachchi and Kodituwakku, 1989; Madras, India- Ponnudurai, Jeyakar, Saraswathy, 1986) and in Africa (Addis Ababa, Ethiopia-Abede, 1991; Natal Province, South Africa-Pillay, Wassenaar, Kramers, 2000; Nairobi, Kenya- Mengech and Dhadphale, 1984).

The picture on the methods of DSH used in the West is in sharp contrast to that observed in Uganda and other predominantly agricultural societies. In the West, as reported in the WHO/Euro multi-centre study on parasuicide, self poisoning with medications is the preferred method of DSH in both males (64%) and females (80%; Kerkhof, 2000). That the highly lethal organophosphate poisons are still the main method of DSH in Uganda calls for the legislation to control the availability and use of these agents. As it has been shown elsewhere, legislation that made domestic cooking gas less poisonous reduced suicidal death by this method (Kreitman,1976; Lester, 1990).

### **Precipitants of DSH**

Disturbed interpersonal relationships usually with a partner/lover, parent(s) or with children were reported to be a contributory factor in the precipitation of the current DSH event in 65% of the DSH cases in the present study (Paper I). Other contributory factors to precipitation of the current DSH event included, loneliness, mental disorder/symptoms, unemployment, poverty, and feelings of shame. A similar trend to that reported above has been observed in studies carried out elsewhere in Africa. In rural Ethiopia, Alem and colleagues (1999) observed that the most frequently mentioned cause of DSH were family conflict (40.4%) and poverty (20.2%). Pillay and colleagues (2000) in Natal, South Africa reported that the most frequently mentioned recent stressors for DSH were, interpersonal conflict (95.1%) usually with a boy/girlfriend or spouse or parent(s).

The predominant picture on gender differences on precipitation of current DSH event in the West and in some of the African countries is consistent with the socialised roles of the different gender. Hjelmeland and Bjerke (1996) in Sør-Trøndelag, like in most of the

West observed that consistent with the predominant picture in that culture, precipitating events for DSH in women were often located in the private or affliative realm while for men they are usually in the public realm. On the African continent, Alem and colleagues (1999) in Ethiopia observed that family and marital conflict were reported as reason for DSH more often by women than men while poverty was mentioned more often by men than women. Pillay and colleagues (2000) in Natal, South noted in their study that more females reported interpersonal conflicts while more males reported employment difficulties. But in both these African studies the gender differences reported were not tested statistically unlike in the present study.

In the present study more women reported disturbed relationship with partner and unwanted pregnancy in self or partner while more men reported sexual problems (Paper I). The gender differences observed in this study while consistent with the socialised roles for both males and females, in males it tended to conform to the virile but not the economic socially assigned role as observed elsewhere. A similar observation was made by Fallers and Fallers (1960) in a study on suicide in the Busoga region of central Uganda where they reported sexual impotence as a cause of suicide in 12% of the males while sexual problems were not reported as a cause of suicide among females.

In conclusion, DSH in this present study was usually precipitated by inter-relational conflict with spouse/lover, parents, or children. Given the breakdown of the extended family kinship in the urban environment that often provided a mechanism for dealing with interpersonal conflict, there is a need to explore and strengthen alternative mechanism for dealing with interpersonal conflict such as use of the religious leaders and local civil administrations system (the local councils).

### **Negative life events**

On the negative life events that are associated with DSH in the present study, these were found to vary depending on the time period of the life span considered (Paper II). In the childhood period, the number of negative life experiences in the parents, significant others and the personal categories were found to be associated with DSH later in life. The commonly reported childhood negative life events in the parent category included,

separation from parents for at least a year, parents away from home for at least a year, often neglected by caregiver, and being physically and emotionally abused by parents. The commonly reported negative life events in the significant others category included, someone took advantage of me, being emotionally mistreated by someone important to me, and having a long lasting bad relationship. The commonly reported childhood negative life events in the personal category included, failure to achieve an important goal, stayed in psychiatric hospital and experienced loneliness.

Elsewhere in Africa various negative life events in childhood have been reported to be associated with DSH, these include; school and academic problems especially the frustration and shame resulting from failure in examination, problems with parents, boyfriend/girlfriend problems and teenage pregnancy (Ndosi and Waziri, 1997; Edwards et al, 1981; Pillay and Wassenaar, 1997; Eferakeya, 1984; Bosch and Schlebusch, 1987; Odejide et al, 1986 and Minnaar, Schlebusch, Levin, 1979; Pillay and Wassenaar, 1997). Similarly in the West, the childhood negative life events that have been reported to be associated with deliberate self-harm include; parental loss (through death, separation/divorce, absence), sexual abuse, emotional abuse, physical abuse, battered mother, substance abuse in the home, having a mentally ill household member, poor economic circumstance, poor parental relationship, paternal unemployment and family dysfunction (Adam et al, 1982; Boudewyn and Liem, 1995; Lipschitz et al, 1999; Joffe et al, 1988; Dube et al, 2001; Beautrais et al, 1996; Garfinkel et al, 1982; Silverman et al, 1996; Dieserud et al, 2002). Research in this area from the West seems to suggest that the suicidal trend associated with the above factors is prominent where they result in long term disruption of family life including leading to emotional neglect (Lipschitz et al, 1999; Adam et al, 1982).

From this present study, that a negative family environment for a growing-up child appeared to be suicidogenic later in life has implications for suicide prevention. Public health prevention strategies in suicide prevention need to include measures to foster the establishment of a stable, nurturing and emotionally healthy family environment for children. To deal with the personal traumas and frustrations in childhood, there is need to

support and strengthen school based counseling programs and through health education to increase parent awareness of child psychology and the factors affecting it.

In the later life time period, the number of partner related negative experiences were found to be associated with deliberate self-harm in this present study (Paper II). Among the cases of DSH, the commonly reported partner related negative life events in the later life time period were, being emotionally mistreated by partner and partner suffered from physical illness. Elsewhere in Africa, the following characteristics of the marital relationship have been reported to be associated with DSH; disharmony between husband and wife, infidelity in either partners, sexual problems, loss of partner, quarrels with spouse or in-laws (William and Buchan, 1981; Eferakeya, 1984; Okasha and Lotaif, 1979; Minnaar, Schlebush, Levin, 1979; Mengech and Dhadphale, 1984; Ndosi and Waziri, 1997; Edwards et al, 1981).

In the West, Arcel and colleagues (1992) on the types of marital relationships associated with DSH noted that they are characterized by: high levels of psychological and physical violence; and very poor relationship as concerns communication, intimacy, concern, recreation, sharing of everyday activities and social and private life. They further observed that these relationships were perceived as burdensome and humiliating creating feelings of shame in the human (ibid). Failure to change these relationships and inability to leave because of financial and emotional dependence according to Arcel and colleagues (1992) led these women to perceive deliberate self-harm as their only escape route. For the Ugandan situation, the implications of the above findings for suicide prevention are that it calls for setting up mechanisms for dealing with family conflict. This is particularly important in urban centres where traditional systems of dealing with conflict in a family are being eroded. At a clinical level the findings point toward the need to have social investigation and interventions for patients presenting with DSH at health centres in this environment.

In the last year time period, DSH in the present study was found to be associated with the number of negative life events reported in the personal category and the total number of life events reported for that time period (Paper II). The commonly reported negative life

events in the personal category for this time period included; witnessing a serious crime, experienced loneliness, frequently became anxious, and problems with eating. Similar to the findings of this present study, social isolation has been previously reported to be associated with DSH in Nairobi, Kenya (Mengech and Dhadphale, 1984). On the research front, there is need to determine the social significance of each of the different negative life events and to explore for even more culturally important events not included in the lists used in this study. This calls for qualitative studies of the negative factors associated with DSH in the different socio-cultural environments of Uganda.

### **Psychiatric diagnoses and other psychological factors**

In the present study, DSH was mainly associated with the psychiatric disorders secondary to situational factors that were long standing in those with adjustment disorders (35%) or of recent onset in those with a diagnosis of acute stress reaction (18%; Paper I). A similar picture has been reported elsewhere on the African continent. Two teams working independently among different ethnic groups in Natal, South Africa reported that the main psychiatric diagnoses associated with DSH were adjustment disorder (50%, Bosch and Schlebush, 1987) and acute situational reactions (37%, Edwards et al, 1981). Mengech and Dhadphale (1984) in Nairobi, Kenya also reported that the main psychiatric diagnosis among their sample of DSH cases was acute stress reaction (45%). The other psychiatric diagnoses that were reported to be associated with DSH in the Ugandan study were depression (23%) and alcohol dependency syndrome (7%; Paper I). Only on alcohol dependency syndrome was there a statistically significant gender difference (more in males than females). The other psychiatric diagnoses reported to be associated with DSH in Africa include; depressive illnesses, hysterical reactions, personality disorders and schizophrenia (Bosch and Schlebush, 1987; Okasha and Lotaif, 1979; Mengech and Dhadphale, 1987; Edwards et al, 1981).

In contrast to the picture seen in this present study and in Africa in general, Kreitman (1978) on the situation in the West, reports that most of the cases of DSH in the West have a recognizable form of a psychiatric diagnoses which includes; among young women (minor reactive depression, hysterical personality), young men (minor reactive

depression, delinquency), middle aged women (more severe depressive reactions), middle aged men (alcoholism) and in older age groups (masked depressive reactions). Elsewhere in the world, in rural China, in a study carried out among female DSH cases, the majority of them did not have any signs of a formal psychiatric diagnosis (Pearson et al, 2002). In the China study, of those who had a psychiatric diagnoses, 25.2% had major depression, 4.3% schizophrenia and 7.9% had other diagnoses (ibid). This diverse pattern observed on psychiatric diagnoses associated with DSH around the world probably points to the cultural diversity of the presentation of DSH.

It also points to the possibility that in the Ugandan situation and the situation in sub-Saharan Africa in general, interventions aimed at enhancing the coping skills of DSH patients maybe more effective in this environment.

In the present study, the other psychological factors found to be associated with DSH included; global psychological distress, hopelessness and state anger (Paper III). Depressive scores (as measured by the BDI), trait anger and alcohol abuse were found not to be associated with DSH in that study.

Elsewhere in Africa, and similar to the findings of this present study, global psychological distress has been reported to be associated with lifetime DSH in rural Ethiopia (Alem et al, 1999). As has been observed in this present study, Kebede and Ketsela (1993) among Ethiopian high school students and Schlebusch and colleagues (1988) in a study in Durban, South Africa reported a statistically significant association between DSH and hopelessness. Observed in the above two previously mentioned Ethiopian studies but not observed in the present study was a positive association between DSH and excessive alcohol consumption (Alem et al, 1999; Kebede and Ketsela, 1993).

In the West, like in the present study the psychological factors of global psychological distress, hopelessness, suicidal intent and anger have been reported to be associated with DSH (Minkoff et al, 1973; Wetzel,1976; Wetzel et al, 1980; Dyer & Kreitman, 1984; Weishaar & Beck, 1992; Dori & Overholser, 1999; Goldney et al, 1997; Horesh et al, 1997; Cautin, Overholser, & Goetz, 2001; Williams & Pollock,2000; Lönnqvist, 2000, Dieserud et al, 2001). Also observed in the West but not in this present study was a



positive association between DSH and depression (Minkoff et al, 1973; Wetzel,1976; Wetzel et al, 1980; Dyer & Kreitman, 1984; Weishaar & Beck, 1992; Dori & Overhoser, 1999; Williams & Pollock,2000; Lönnqvist, 2000; Dieserud et al, 2001). Similar to Beck's postulation, suicidal intent in this study was found to be correlated with both depression and hopelessness (Beck et al, 1975). But the ordering of the relationship between these three variables in this study was much different from that specified by Beck (ibid). In Beck and colleagues' (1975) theory, depression and hopelessness were viewed as causal factors in suicidal behaviour with greater depression and hopelessness hypothesized to be associated with greater suicidal potential. In this theory, hopelessness was viewed as acting as a cognitive mediator of the relationship between depression and suicidal intent. In the present study in partial contradiction to the relationship specified by Beck and colleagues' (1975) theory, both depression and hopelessness were found to be independently correlated with suicidal intent. Chiles and colleagues (1989) among a Chinese DSH sample also reported a departure from Beck and colleagues' (1975) specified relationship between suicidal ideation, depression and hopelessness which they explained by saying that the expression of hopelessness among the Chinese unlike in the West was buffered by cultural and moral experiences and beliefs.

The findings of this present study and Chiles and colleagues (1989) findings in a Chinese sample put to question the universality of Beck's theory on depression particularly in non-western cultures.

The practical implication of the findings of this present study on the psychological factors associated with DSH is that the clinical treatment for patients with DSH in this population should target the factors of global psychological distress, hopelessness and state anger. Also for clinical practice, the presence of any or a combination of these three psychological states in a patient with an unresolving interpersonal conflict should raise the suspicion for a high risk for suicidal behaviour in the attending clinician. The attending clinician should then go ahead and assess for suicidal risk.

### **Repetition of deliberate self-harm**

In the present study, 25% were DSH repeaters with only a few relevant studies on DSH repetition reported from Africa. The majority of these African studies have only

considered the prevalence of DSH repetition. Most of the studies among hospital based populations of DSH have reported rates of DSH repetition that have varied between 13% in Cairo, Egypt to 23% in Durban, South Africa (Okasha and Lotaif, 1979; Edwards et al, 1981). Rates of suicide repetition from community studies in Africa have varied between 39.5% in the Ethiopian capital of Addis Ababa to 70.7% in a community study in the mostly war-torn northern and eastern Uganda (Alem and colleagues, 1999; Kinyanda, 2004).

The only factors found to be associated with DSH repetition in this present study after controlling for others were having sexual problems and the psychological factor of trait anger. Hawton and colleagues (1999) in a study of DSH repetition among adolescents also reported the association between DSH repetition and trait anger. Previous research in the West has also reported the association between suicide repetition and factors which suggest the presence of underlying stable traits such as sociopathy and other personality disorders and hostility (Kotila and Lonnqvist, 1987; Sakinofsky and Roberts, 1990; Bjerke et al, 1990). In the Ugandan situation, effective interventions for DSH repetition may include the consideration of factors such as untreated depression or unresolved marital conflict for individuals reporting sexual problems. In the Ugandan situation, psychological interventions to address trait anger may also be helpful. However, this study having been a retrospective comparison of repeaters and non-repeaters of DSH has limited value in prediction of repetition. There is therefore a need to undertake prospective follow-up studies to accurately determine the factors that are predictive of DSH repetition and suicide completion.

In conclusion, this project having pioneered the use of the EPSIS I in the African cultural setting of Uganda, has shown that this is a viable method of inquiry in this environment. The picture of DSH emerging from this present study shows many similarities with that in the rest of the world but more so with that in Africa. But to develop a more comprehensive understanding of DSH in this cultural environment, there is need to repeat such studies in several other similar settings. This is important in Africa and Uganda in particular since these African states are each made up of a multitude of ethnic

groups with sometimes significant differences in culture. There is also a need to undertake qualitative studies to get to the meaning(s) of DSH in this cultural environment.

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