Factors associated with deliberate self-harm method among patients in a tertiary hospital in South Africa

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Declaration

I, Deirdre Ilse Pieterse, hereby declare that the work on which this dissertation is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, or is to be submitted for another degree in this or any other university. This work has not been published prior to registration of the MPhil in Liaison Mental Health.

I empower the university to reproduce for the purpose of research either the whole or any portion of the contents in any manner whatsoever.

Chapter 1

I developed the research question with input from my supervisors Prof Jackie Hoare and Dr Kerry-Ann Louw, and the principal investigator of the main study, Dr Jason Bantjes. I wrote the research protocol, presented it in the Department of Psychiatry and Mental Health at UCT and applied for ethical approval from the Human Research Ethics Committee at the University of Cape Town.

Chapter 2

After obtaining the data from the principal investigator, I performed the initial cleaning and coding of the database. Michelle Henry assisted with the data analysis and initial presentation of the results. I wrote the first full draft of the manuscript. All authors read and approved the manuscript. I managed all revisions.

Signature: Signed by candidate

Date: 06/08/2018

Abstract

Background

Hospital-based research provides important insight into the burden of suicide behaviour and methods used in deliberate self-harm (DSH). The information on methods used in DSH may be useful to plan suicide-related intervention and prevention programmes. We aimed to investigate the socio-demographic and clinical factors associated with the methods used in DSH at a tertiary hospital in Cape Town, South Africa.

Methods

Socio-demographic, clinical and treatment data were collected from 238 consecutive DSH patients who presented for emergency department treatment at the hospital. Univariate analyses and a logistic regression model were used to explore the associations between these variables and violent and non-violent method of DSH.

Results

Self-poisoning was the most common method of self-harm (80.3%, *n*=191). Prescription medication was the most common form of self-poison (57.6%, *n*=137) while a large number of patients used the non-prescription medication paracetamol (40.9%, *n*=54). In the bivariate regression analysis, male gender, stating that the reason for DSH was to escape a situation and history of substance use were associated with violent method of DSH.

Conclusion

This study contributes to emerging literature on methods used in DSH in South Africa. There is an urgent need to improve monitoring of prescription medication commonly used in DSH. More research on the source of prescription medication and its relationship to DSH is needed. Limiting the quantity and reviewing the packaging of paracetamol available in supermarkets may be effective strategies of means restriction that could be adopted in South Africa. This study underscores the need for increased collaboration between the Department of Social Development and the Department of Health in providing substance use interventions to high-risk population groups.

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Most importantly, I would like to thank all the patients who shared a snapshot of their often difficult lives with us. We hope that this research will enable us to improve mental health care in a meaningful way.

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Appendix A

Abbreviations

DSH= Deliberate self-harm

NIMSS= National Injury Mortality Surveillance System

NSAID= Non-steroidal anti-inflammatory drug

SA= South Africa

SAJP= South African Journal of Psychiatry

SAMJ= South African Medical Journal

SASH= South African Stress and Health Study

SSRI= Selective Serotonin Reuptake Inhibitor

UCT= University of Cape Town

UK= United Kingdom

USA= United States of America

WHO= World Health Organization

Factors associated with deliberate self-harm method among patients in a tertiary hospital in South Africa

1.1 Introduction

Over 800 000 people worldwide die by suicide every year, making it one of the leading causes of death internationally (World Health Organization, 2018a). The World Health Organization (WHO) reports that that suicide occurs in approximately 10.7 per 100 000 persons per year (World Health Organization, 2018b).

In South Africa (SA) suicide rates are increasing and suicide is considered to be a serious public health concern (Schlebusch, 2012). Since the start of the century, the National Injury Mortality Surveillance System (NIMSS) has reported on unnatural deaths in SA. NIMSS data suggest that completed suicides account for approximately 9.6% of unnatural deaths in SA, yielding an annual prevalence rate of 13.25 per 100 000 (Bantjes & Kagee, 2013). NIMSS provides some epidemiological data about completed suicide but there is a paucity of useful information about the prevalence and correlates of non-fatal suicidal behaviour in SA (Joe, Stein, Seedat, Herman, & Williams, 2008). No national or international surveillance exists for the primary purpose of estimating and monitoring suicidal behaviour or deliberate self-harm (DSH). Consequently, we know little about the incidence and burden of DSH in SA and the clinical and socio-demographic factors associated with individuals who engage in this behaviour. International evidence suggests that limiting access to lethal means ('means restriction') has been successful in reducing suicide rates (du Roscoat & Beck, 2013; Yip et al., 2012). The same may be valid for DSH. If we better understand the methods of DSH we may be able to implement public health strategies to reduce the morbidity and mortality associated with DSH. Furthermore, we may be able to reduce the burden on the health care system by reducing medical service utilisation.

This study aims to investigate the socio-demographic and clinical factors associated with the methods used in DSH at a tertiary hospital in Cape Town, SA.

Definition of key concepts

Researchers recognise the confusing and often contradictory definitions of suicide and suicide behaviour in the literature (Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007). Inadequate definitions in suicide research often limit the generalisability of findings. The term suicidal behaviour has a broader meaning than suicide and encompasses a range of emotions, cognitions, and actions, all of which are characterised by a conscious desire to die (Bantjes & Kagee, 2013). A distinction is also made between 'deliberate self-harm with intent to die' (i.e. attempted suicide) and other forms of repetitive self-harm (such as cutting, self-mutilation and hitting) which is self-inflicted, habitual and is carried out without any conscious intention to die. Deliberate self-harm with intent to die is a form of suicidal behaviour. 'Deliberate self-harm' is also referred to as 'suicide attempts' in the literature. The focus of this study is deliberate self-harm regardless of intent to die (hereafter referred to as DSH). This study uses the WHO definition of DSH: "an act with nonfatal 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)

Rationale for the study

Consistent with worldwide data, non-fatal suicidal behaviour in SA far outnumbers completed suicides with rates reported between 8:1 and 20:1 depending on the sample population and geographical area (Naidoo & Schlebusch, 2014). In 2008, the South African Stress and Health (SASH) survey reported that the risk for attempted suicide is highest in the 18 to 34 years age group and that Coloured people had the highest lifetime prevalence for suicide attempts (Joe et al., 2008). In addition, attempted suicide was associated with female gender, unemployment and a lower level of education.

Attempted suicide has major socio-economic implications. Research from Cape Town, SA showed that suicide attempts are the most common psychiatric presentation to emergency services, placing a significant burden on hospital-based services (Wilson, Flisher, & Welman, 2005). Research from Brazil indicates that the direct hospital costs and indirect cost of attempted suicide were significantly higher than that of acute

coronary syndrome over the same period (Sgobin, Traballi, Botega, & Coelho, 2015). In Bangladesh, cost related to self-poison with agricultural substances was estimated at three times the monthly cost of an essential items basket of US$ 40.75 per person per month (Verma, Paul, Ghose, Eddleston, & Konradsen, 2017). The cost of medicine, transport and services estimated in the study excluded loss of current and future income and highlights the financial burden on patients and families due to self-poison. Despite the known worldwide burden of DSH and suicidal behaviour, few standard hospital-based protocols exist to manage patients who present with DSH in the emergency room (WHO, 2016).

Patients who present to an emergency department with DSH have an increased risk of repetition of self-harm and suicide in the months following their presentation (Olfson et al., 2017). These patients represent a group at high risk of suicide and therefore in need of intervention as part of a comprehensive suicide prevention programme. Furthermore, the WHO states that knowledge of the most commonly used suicide methods in a sub-population is important in order to implement specific suicide prevention strategies (World Health Organization, 2018a). Hospital-based research provides important insight into the burden of suicide behaviour and methods used in DSH. The information on methods used in DSH may be useful to plan suicide-related intervention and prevention programmes.

1.2 Literature review

A review of the literature was conducted to:

1. Determine what data already exist regarding methods used in DSH in South Africa.
2. Review international research on methods used in DSH.
3. Explore the factors associated with methods used in DSH.

Literature search strategy and quality criteria

A literature search was conducted. Three databases were searched: Pubmed, Scopus and PsychInfo, using the following search terms:

Self-Injurious Behaviour[Mesh]) AND method[Title/Abstract]
Deliberate self-harm AND method

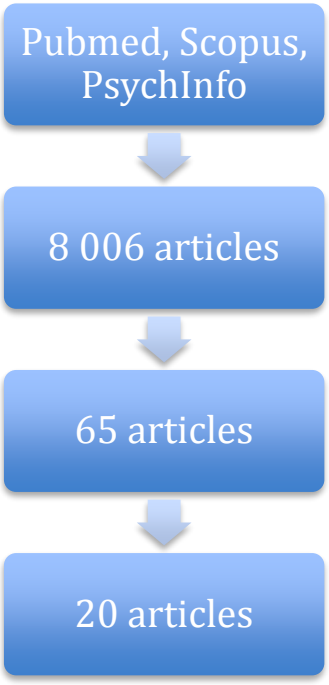
Relevance was defined as research focussed on methods of DSH among patients in the hospital setting. In order to find locally relevant research, further articles were obtained by searching local journals. The *South African Medical Journal* (SAMJ) and the *South African Journal of Psychiatry* (SAJP) were searched for articles published in the last 15 years using the terms 'suicide' and 'deliberate self-harm'. All South African studies on DSH in the hospital setting were included.
See search strategy in Figure 1.
Inclusion criteria:

1. Human subjects
2. English language
3. Articles published in peer-reviewed journals
4. Review or original articles covering DSH.
5. Studies that reported methods of DSH and the factors associated with these methods conducted in hospital settings.
6. The review focused on articles published in the past 10 years (2007-2017). Articles published earlier were included if they were deemed to be of historical importance or if they presented data not replicated in later studies.

Exclusion criteria:

1. Not in English
2. Articles published in non-peer reviewed journals, books or electronic media
3. Opinion pieces without literature review

Figure 1. Flowchart of search strategy



Step 1: Review of titles and abstracts for duplicates, relevance and inclusion and exclusion criteria. (8 006 articles to 65 articles)

Step 2: Review of articles to ensure relevance
+
Inclusion of local journals SAMJ and SAJP (65 articles to 20 articles)

Summary of the literature

The WHO reports that around the world 30% of all completed suicides are due to pesticide self-poisoning, occurring most frequently in rural agricultural areas (World Health Organization, 2018a). In SA, studies have consistently shown that common methods of completed suicide are hanging, firearms and poisoning (Bantjes & Kagee, 2013; Naidoo & Schlebusch, 2014; Scribante, Blumenthal, Saayman, & Roos, 2004). The gender difference between men and women's preferred method of completed suicide is well described. Globally and in SA, men tend to use more violent methods of suicide such as firearms or hanging while women are more likely to choose self-poisoning (Ajdacic-Gross et al., 2008).

DSH methods in international literature

Ting et al. (2012) examined the trends in United States of America (USA) emergency department visits for attempted suicide and self-inflicted injury over a 16-year period. During this study period, there was an average of 420 000 annual emergency department visits for DSH. Self-poisoning was the most common method of self-harm (67%) followed by cutting or piercing of the skin (21%). Similar to the research on completed suicide, women tend to use less violent forms of DSH (self-poisoning). More than half (54%) of the patients seen had a psychiatric diagnosis and 34% of DSH patients were admitted to hospital for further medical or psychiatric management.

A 3-year study period of emergency department visits in a general hospital in Sweden showed that 1 679 patients were treated for DSH (Bilen et al., 2011). In keeping with the USA literature, the most common method of DSH was self-poisoning (86%) with prescription benzodiazepines the most common drug used. Although self-injury accounted for only 12% of the methods used, female gender, self-injury and self-injury requiring surgical intervention were all associated with repeat admission for DSH in the follow-up period.

Researchers from the United Kingdom (UK) conducted a multi-centre study of DSH that included hospitals in three large cities in England (Hawton et al., 2007). During the 18-month study period, 7 344 patients presented in the three areas with 63% of patients being under 35 years of age. The most common method of DSH was self-poisoning (81%) in all areas. Paracetamol (31%) was the most common medication used, with benzodiazepines (14%) second most common in all the centres. In 55% of the self-harm acts, alcohol was used during the act or within 6 hours leading up to the act of DSH. The authors note that alcohol can increase the occurrence of DSH and that alcohol intensifies the medical complications of the act.

Although the correlates and risk factors of DSH have been described in international literature, the factors associated with the methods used in DSH have not been extensively examined. In addition, a systemic understanding of how method of DSH contributes to medical intervention is still lacking. In one study of methods of DSH in the state of Colorado, USA, the authors examined the relationship between method used in suicide attempt and method used in eventual suicide (Jamison & Bol, 2016). In their study of suicide victims, a past history of a suicide attempt increased risk of suicide by self-poison rather than suicide by firearm. This finding again highlights the evidence for

limiting access to lethal means as an effective method of suicide prevention, especially in patients with previous suicide attempts.

Haw et al. (2015) examined suicidal intent and method of DSH and, consistent with their hypothesis, found that patients using highly lethal methods (gunshots, hanging) had higher suicidal intent score than patients who used self-poison or self-cutting. The authors recommend that more lethal methods of DSH should prompt closer follow-up of these patients who present to the emergency room.

Methods of DSH in South Africa

As in recent international literature, the factors associated with method of DSH have not been extensively studied in SA. The five South African hospital-based studies identified by the literature search are summarised in Table 1. These studies are not comparable with regard to study period, source of data, definition of deliberate self-harm, study population or type of variables examined. The methodological differences across studies make it difficult to generalise findings or make unequivocal statements about method of DSH in SA. In addition, little is known about method of DSH and its relationship with medical intervention and level of hospital admission.

Table 1. General hospital-based studies on deliberate self-harm in South Africa

Study	Location and study type	Study period and population	Study population	Most common method of DSH
Du Toit 2008 (Du Toit et al., 2008)	Regional hospital (level 2)[a], Free State Province Retrospective folder review	12 months *N*=258	Patients referred to and seen by clinical psychologist	1. Prescription medication 66% 2. Unknown 13% 3. Household chemicals 12%
Favara 2013 (Favara, 2013)	Regional hospital (level 2), Eastern Cape Retrospective folder review	5 years *N*=419	DSH admissions to critical care unit	1. Agricultural poison 55% 2. Unknown 18% 3. Paracetamol 11%

Moosa 2005 (Moosa, Jeenah, Pillay, Vorster, & Liebenberg, 2005)	Tertiary hospital (level 3)[b], Gauteng Prospective patient interviews	3 months *N*=43	All patients treated in emergency ward	Not stated
Nakin 2007 (Nakin, Joubert, Pretorius, & Van Vuuren, 2007)	Two district hospitals (level 1)[c], KwaZulu-Natal Province Retrospective patient interviews	10 months *N*=59	Patients admitted after attempted suicide	1. Household poison 49% 2. Prescribed medication 44% 3. Other 3%
Raubenheimer 2015 (Raubenheimer & Jenkins, 2015)	Regional hospital (level 2), Western Cape Prospective patient interviews	5 months *N*=39	Patients seen in Emergency Centre after attempted suicide	1. Prescription medication 33% 2. Other 31% 3. Patient unsure 31%

[a] Regional hospitals are level 2 facilities that provide care requiring the intervention of specialists and general practitioners.
[b] Tertiary hospitals are level 3 facilities providing specialist and subspecialist care.
[c] District hospitals are level 1 facilities offering a range of in- and outpatient care by general practitioners

In keeping with most international data, self-poisoning is the most common method of DSH across all studies. Notably in the two studies serving an urban area (Du Toit et al., 2008; Raubenheimer & Jenkins, 2015), the most common form of self-poisoning occurred via prescription medication while in more rural areas (Favara, 2013; Nakin et al., 2007), household or agricultural poisoning were more common.

Conclusion

It is not clear what factors determine an individual's decision about method of DSH although acceptability and sociocultural norms have been offered as reasonable explanations (Ajdacic-Gross et al., 2008). Large population-based studies have shown that more violent methods of attempted suicide, e.g. hanging, firearms or jumping from

a height, are associated with greater risk of future completed suicide (Wilcox, 2011). Examining correlates of method of DSH could therefore aid in profiling this group at high risk of completed suicide.

Overall there have been very few studies highlighting the correlates of methods used in DSH and even fewer in SA. Limiting access to lethal means of suicide is a well-described successful method of suicide prevention (du Roscoat & Beck, 2013). International literature shows that both the restriction of agricultural poison and limitation of prescription medication have been seen to decrease suicide rate (Chang et al., 2012; Hawton et al., 2011).
Further research is required to produce a more complete picture of the socio-demographic and clinical factors that are associated with individuals' choice of DSH in SA. This information can be used to plan suicide intervention programmes in the emergency department setting and used to inform public health policy on suicide prevention.

Aim of the study

The aim of the study is to investigate the socio-demographic and clinical factors associated with the methods used in DSH at a tertiary hospital in Cape Town, SA.

Objectives

1. To describe the methods of DSH in patients treated at a tertiary hospital in Cape Town, SA.
2. To determine the clinical and socio-demographic factors associated with DSH methods in this population.
3. To determine if there is a relationship between method of DSH and the level of medical intervention required in this population.

1.3 Ethical considerations

The larger study, of which this project formed a part, was approved by the Human Research Ethics Committee of the University of Cape Town (UCT) Faculty of Health Sciences (HREC/REF 645/2013) and the Stellenbosch University Health Research Ethics Committee (N13/05/074). Ethical approval for this study was obtained from the Human Research Ethics Committee of the Faculty of Health Sciences at UCT (HREC/REF 687/2016 see appendix B).
The protocol was presented in the Department of Psychiatry and Mental Health at UCT. Institutional permission to conduct this study in the hospital was obtained from both the Department of Health and the relevant hospital authorities (see appendix C).

Informed consent

Patients were not interviewed for this study and data collection was done via folder review. Explicit informed consent was not obtained for this quantitative aspect of the larger study.

Confidentiality

Patients' names were not recorded and all details that could lead to the identification of individuals were removed. Each participant was assigned a research number to de-identify the data. Data was stored electronically on a password-protected computer. Dr J Bantjes was responsible for anonymising and storing data.

The study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013), The Department of Health: Ethics in Health Research: Principles Structures and Processes (Department of Health, 2006) and the Handbook for Good Clinical Research Practice (World Health Organization, 2002).

1.4 Author Guidelines

The journal chosen for submission of this manuscript is *Crisis - The Journal of Crisis Intervention and Suicide Prevention*. This journal is listed in the citation index of the Institute for Scientific Information (ISI). *Crisis* is a quarterly peer-reviewed journal with

an impact factor of 1.440. The journal publishes original articles on suicide and suicide prevention for clinicians, mental health care workers and researchers. *Crisis* has previously published research profiling suicide attempts and completed suicide in Mozambique and regularly publishes literature from lower middle-income countries (Wagenaar et al., 2016). This journal was chosen because it covers a broad range of literature on suicide behaviour and publishes potentially 'life-saving information for all involved in crisis intervention and suicide prevention'. The content of this manuscript is appropriate for the readers of *Crisis* and adds to the local and international literature on suicide prevention. The maximum allowed word count is 4 000 excluding references, tables and abstract. See Instructions to Authors (Appendix E) for more information.

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Chapter 2: Publication-ready manuscript

2.1 Title: Factors associated with deliberate self-harm method among patients in a tertiary hospital in South Africa

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2.2 Abstract

Background

The information on methods used in deliberate self-harm (DSH) may be useful to plan suicide prevention programmes.

Aims

We aimed to investigate the socio-demographic and clinical factors associated with methods used in DSH at a tertiary hospital in South Africa.

Method

Data were collected from 238 consecutive DSH patients who presented for emergency department treatment at the hospital. A bivariate logistic regression model was used to explore the associations between these variables and violent and non-violent methods of DSH.

Results

Self-poisoning was the most common method of self-harm (80.3%, *n*=191). Prescription medication was the most common form of self-poison (57.6%, *n*=137) while a large number of patients used non-prescription paracetamol (40.9%, *n*=54). In the bivariate regression analysis, male gender, stating that the reason for DSH was to escape a situation and history of substance use were associated with violent method of DSH.

Limitations

We had no information on the source of prescription medication used in DSH.

Conclusion

This study underscores the need for substance use interventions in the health care setting and improved monitoring of prescription medication commonly used in DSH.

2.3 Keywords: deliberate self-harm, non-fatal suicide, general hospital, mental health

2.4 Background

Over 800 000 people worldwide die by suicide every year, making it one of the leading causes of death internationally (World Health Organization, 2018a). The World Health Organization (WHO) reports that suicide occurs in approximately 10.7 per 100 000 persons per year (World Health Organization, 2018b).

In South Africa (SA) suicide rates are increasing and suicide is considered to be a serious public health concern (Schlebusch, 2012). Since the start of the century, the National Injury Mortality Surveillance System (NIMSS) has reported on unnatural deaths in SA. NIMSS data suggest that completed suicides account for approximately 9.6% of completed suicide in SA, yielding an annual prevalence rate of 13.25 per 100 000 (Bantjes & Kagee, 2013). NIMSS provides some epidemiological data about completed suicide but there is a paucity of data about the prevalence and correlates of non-fatal suicidal behaviour in SA (Joe, Stein, Seedat, Herman, & Williams, 2008). No national or international surveillance exists for the primary purpose of estimating and monitoring non-fatal suicidal behaviour, including deliberate self-harm (DSH). Consequently, we know little about the incidence and burden of DSH in SA and the clinical and socio-demographic factors associated with individuals who engage in this behaviour.

International evidence suggests that limiting access to lethal means ('means restriction') has been successful in reducing suicide rates (Yip et al., 2012). Furthermore, the WHO states that knowledge of the most commonly used suicide methods in a sub-population is important in order to implement specific suicide prevention strategies (World Health Organization, 2018a). The same may be valid for DSH. If we better understand the methods of DSH we may be able to implement public health strategies to reduce the morbidity and mortality associated with DSH and reduce the burden on the health care system by reducing medical service utilisation. Hospital-based research provides important insight into the burden of suicide behaviour and methods used in DSH. The information on methods used in DSH may be useful to plan suicide-related intervention and prevention programmes.

Around the world 30% of all completed suicides are due to pesticide self-poisoning, occurring most frequently in rural agricultural areas (World Health Organization, 2018a). In SA, studies have consistently shown that common methods of completed

suicide are hanging, firearms and poisoning (Bantjes & Kagee, 2013; Naidoo & Schlebusch, 2014; Scribante, Blumenthal, Saayman, & Roos, 2004). In the last 15 years, five descriptive general hospital-based studies have documented DSH in urban and rural hospitals in SA (Du Toit et al., 2008; Favara, 2013; Moosa, Jeenah, Pillay, Vorster, & Liebenberg, 2005; Nakin, Joubert, Pretorius, & Van Vuuren, 2007; Raubenheimer & Jenkins, 2015). The studies are not comparable with regard to study period, source of data, definition of DSH, population and type of variables examined. The methodological differences across studies make it difficult to generalise findings or make unequivocal statements about method of DSH in SA. In keeping with most international data, self-poisoning is the most common method of DSH across all studies. Notably in the two studies serving an urban area (Du Toit et al., 2008; Raubenheimer & Jenkins, 2015), the most common form of self-poisoning utilised prescription medication while in more rural areas (Favara, 2013; Nakin et al., 2007), household or agricultural poisoning were more common.

Although the correlates and risk factors of DSH have been described in international literature, the factors associated with methods in DSH have not been extensively examined. A systematic understanding of how method of DSH contributes to medical intervention is still lacking. In addition, it is not clear what factors determine an individual's decision about method of DSH although acceptability and sociocultural norms have been offered as reasonable explanations (Ajdacic-Gross et al., 2008). Globally there have been very few published studies highlighting the correlates of methods used in DSH and even fewer in SA.

This study aimed to investigate the socio-demographic and clinical factors associated with methods used DSH in patients presenting to a tertiary hospital in Cape Town, SA. Furthermore, the study aimed to determine the relationship between method of DSH and medical assessment and intervention received, and the level of medical intervention required in this population.

2.5 Methodology

This study is a descriptive, cross-sectional study nested in a larger study investigating the problem of DSH at a large, tertiary hospital in Cape Town, SA. The larger study

aimed to describe and critically review how resources are allocated within the hospital to address this problem and to document meaningful epidemiological and qualitative data about the incidence and correlates of DSH.

Research setting and participants

Data were collected from all DSH patients who presented for emergency department treatment between 16 June 2014 and 29 March 2015. The study hospital is an 893-bed, tertiary care, government-funded academic hospital (Western Cape Government, 2014) providing tertiary health care to four of the eight sub-districts in the Cape Town Metropole and serving an estimated 1.7 million people (Department of Health Western Cape, 2007). In addition, the hospital provides a regional health care service to the areas immediately surrounding the hospital and tertiary care to the Southern Cape Region. The majority of patients are referred from a regional or district hospital if they require tertiary care, meaning that the hospital manages more complex patients.
The hospital has a 24-hour psychiatry service and 40 inpatient beds dedicated to psychiatry. The hospital is affiliated to a university and integrates education, research and clinical services.

Participant inclusion criteria

There was no specific age restriction for the present study. The hospital serves patients older than 12 years. All DSH patients, regardless of intention, who presented to the emergency department following an act of DSH were included. DSH was defined using the WHO/ Euro Multicentre intervention study on parasuicide definition: "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 recognised therapeutic dosage, and which is aimed at realising changes which the subject desired via the actual or expected physical consequences" (Platt et al., 1992).

Measures

A data capture sheet was designed to collect information on variables shown in the literature to be relevant to the aims of this study. Socio-demographic variables as well as clinical features related to act of DSH and hospital-based management were recorded (see Appendix D for full list of variables). Prescription medication was defined using the Medicines Control Council definition as "a substance which can only be obtained on the prescription of an authorised prescriber" (Hela, 2014).

Data collection procedures

The main study made use of consecutive sampling. Patient records were reviewed and data collected for consecutive presentations of DSH to the emergency unit during the study period.

Ethical considerations

Ethical approval for this study was obtained from the university Human Research Ethics Committee (HREC/REF 687/2016). Institutional permission to conduct this study in the hospital was obtained from both the Western Cape Department of Health and the relevant hospital authorities. Anonymity was assured by assigning research numbers to each participant. Patients were not interviewed for this study and data collection was done via folder review. Explicit informed consent was not obtained for this quantitative aspect of the larger study.

Data analysis

Descriptive statistics provided epidemiological information about the methods of DSH and the characteristics of DSH patients who presented for treatment at the hospital. Chi-square tests of association were conducted to determine which socio-demographic and clinical variables were associated with the specified method of DSH. The variables that were found to be significantly associated with the specific method of DSH were entered into the logistic regression analysis.

A bivariate logistic regression analysis was used to determine which factors (demographic, clinical and treatment variables) were associated with the use of a

violent method (damage to bodily tissue) and non-violent method (self-poison) of DSH. All analyses were conducted using SPSS (Version 24) and the significance level was set at $\alpha = .05$.

Finally, a series of independent sample *t*-tests were used to determine if there was a relationship between method of DSH and medical assessment and intervention received, and the level of medical intervention required. 'Method of DSH' was dichotomised into violent (damage to bodily tissue) and non-violent (self-poison). Level of medical admission was defined by the following categories: admission to intensive care unit (ICU), admission to long-stay medical or surgical ward, admission to short-stay medical ward, admission to emergency psychiatric ward and total number of days spent in hospital. Medical intervention and assessment was defined by whether or not a patient received a medical intervention, assessment by psychologist or assessment by a trainee psychiatrist (psychiatry registrar).

2.6 Results

Sample

Data were collected from 238 consecutive individuals presenting with self-harm during the study period. Over this time there were 270 presentations of DSH (i.e. approx. 29 presentations per month), of whom 32 were excluded either because they died as a result of their injuries (5 patients), they had already been included in the study sample on a previous presentation during the study period (9 patients), they left prior to data being captured (1 patient), or their files were missing (17 patients). Nine of the 238 patients presented more than once during the study period, and their first presentation was used for data capture.

Demographic characteristics of sample

The description of the sample is shown in Table 1. The mean age of the sample was 31.5 (standard deviation (SD) 13.9) years and ranged from 13 to 82 years. It is noteworthy that more than a third (37.4%, $n = 89$) of the total sample reported previous suicide attempts.

Table 1. Description of sample and method of self-harm (*N*=238)

Socio-demographic and clinical description of the sample	*n*	%
Gender		
Male	96	40.3
Female	142	59.7
Race		
Black	82	34.5
Asian	8	3.4
Coloured	103	43.3
White	33	13.9
Not known	12	5.0
Home language		
Afrikaans	49	20.6
English	135	56.7
isiXhosa	47	19.7
isiZulu	2	0.8
Not known	5	2.1
Relationship status		
Married	42	17.6
In a relationship	4	1.7
Single	171	71.8
Divorced	14	5.9
Widowed	6	2.5
Not known	1	0.4
Number of dependents		
No dependants	155	65.1
Dependants	80	33.6
Not known	43	1.3
Completed level of education		
Primary school	100	42.0
Secondary school	100	42.0
Tertiary education	38	16.0
Employment status		
Employed	51	21.4
Student	46	19.3
Unemployed	130	54.6
Retired	6	2.5
Not known	5	2.1
Socio-economic status		
Low to moderate income (R0 to R76 800)[1]	131	55
High income (R76801 to R2457601)	85	35.7
Not known	22	9.2
Current psychiatric diagnosis		
Yes	143	60.1
No	66	27.7
Not known	29	12.2

History of previous suicidal self-injury		
Previous attempt	89	37.4
No previous attempt	69	29.0
Not known	80	33.6
Method of deliberate self-harm		
Self-poison	191	80.3
Prescription medication only	79	33.2
Non-prescription medication only	38	16.0
Ingestion or inhalation of poison	19	7.9
Prescription + non-prescription medication	49	20.6
Prescription medication + ingestion/inhalation	1	0.4
Non-prescription medication + ingestion/inhalation	4	1.7
All 3 self-poison methods	1	0.4
Damage bodily tissue	34	14.3
Laceration	13	5.5
Hanging	13	5.5
Laceration + Hanging	1	0.4
Asphyxiation	0	0
Immolation	0	0
Jumped off a height	4	1.7
Jumped in front of train	3	1.3
Self-poison and damage bodily tissue	8	3.3
Not known	5	2.1

1. As per Statistics South Africa Census 2011

Method of self-harm

The methods of DSH are provided in Table 1. Self-poisoning was the most common method reported in this sample (80.3%, *n*=191). Among patients who reported self-poisoning, prescription medications were most commonly used (57.6%, *n*=137). Of the prescription medication, other medication unknown or not specified by the patient (23.5%, *n*=52), tricyclic antidepressants (12.7%, *n*=28), anti-hypertensive agents (12.7%, *n*=28) and benzodiazepines (10.9%, *n*=25) were most commonly used (see Appendix A, Table 5). Paracetamol (40.9%, *n*=54), anti-histamines (12.9%, *n*=17), other non-prescription medication unknown or not specified by the patient (12.8%, *n*=18) and non-steroidal anti-inflammatory drugs (9.1%, *n*=12) were the most common non-prescription medications used in DSH. Nineteen (7.9%) patients reported ingestion or inhalation of poison. Notably, 20% (*n*=48) of patients used both prescription and non-prescription medication while only 1 patient used all three self-poison methods. Thirty-four patients (14.3%) used damage to bodily tissue as a method of DSH. Attempted hanging and laceration to the skin were the most common violent methods

of DSH (5.5%, *n*=13 respectively). No cases of self-immolation or attempted asphyxiation were seen during the study period.

Substance use

A total of 20.2% (*n*=48) patients reported substance use at the time of the attempt. Polysubstance use at the time of the attempt was reported by 18.8% (*n*=9) of patients. Alcohol (65.5%, *n*=38 instances of alcohol use) was the most commonly used substance, while methamphetamine (13.8%, *n*=8), cocaine (6.9%, *n*=4), cannabis (5.2%, *n*=3), heroin (5.2%, *n*=3), methylenedioxymethamphetamine (ecstasy), and opiates (1.7%, *n*=1 each) use were also reported. A total of 37.4% (*n*=89) of patients reported a history of a substance use disorder.

Stated intention and reason for self-harm

The majority of the sample did not express an intention to die (66%, *n*=157). Approximately a third of the sample (34%, *n*=81) reported that they engaged in the self-harm with at least some intent to die (see Appendix A, Table 6). A total of 87.8% (*n*=209) of the sample reported that their self-harm was intentional (non-accidental). Almost one quarter of the sample (22.3%, *n*=53) reported that the self-harm was impulsive. Among the total sample, the most common intentions were to communicate something, e.g. distress; (34.5%, *n*=82), to die (34%, *n*=81), to regulate the behaviour of someone else (23.1%, *n*=55), an impulsive act (22.3%, *n*=53), or to escape a situation (20.6%, *n*=49). Family conflict (36.6%) and relationship (friendship, marital, or romantic) issues (31.1%) were the most common stated reasons for DSH. Other stated reasons were psychiatric illness (15.1%) and financial concerns (19.7%).

Severity of injuries and clinical management of patients

Of the total sample, 15.5% were assessed as having a moderate to severe brain injury (Glasgow Coma Scale < 13) upon arrival at the hospital. The range of medical interventions which patients required and health professional assessments received are provided in Table 2. Two-thirds of the sample received a medical intervention, and in 71.8% of the sample, psychotropic medication was initiated after assessment by a trainee psychiatrist.

Table 2: Medical intervention and assessment received

Medical intervention or assessment	*n*	%
Received medical intervention		
No	87	36.6
Yes	151	63.4
Type of medical intervention received		
Intra-venous medical treatment	128	53.8
Activated charcoal	30	12.6
Intubation & ventilation	30	12.6
Surgical procedure	11	4.6
Dialysis	9	3.8
Sutured	9	3.8
Oral medical treatment	3	1.26
Urinary catheter inserted	3	1.3
Physiotherapy & Occupational therapy intervention	1	0.4
Assessment by trainee psychiatrist		
Yes	171	71.8
No	61	25.6
Not known	6	2.5
Social worker assessment or intervention		
Yes	73	30.7
No	162	68.1
Not known	3	1.3
Psychologist assessment or intervention		
Yes	23	9.7
No	211	88.7
Not known	4	1.7

Level of hospital admission required by patients and their length of stay in the hospital is provided in Table 3. Of the total sample, 84 patients were seen in the emergency department (ED) and discharged, and 90 were admitted to an emergency psychiatric unit (EPU). The 150 patients who were admitted spent a total of 1 186 days in hospital (mean = 6.71 days, SD = 9.31).

Table 3: Level of admission required and length of stay in hospital

Level of hospital admission	Total number patients	%	Total number days	Average length of stay, mean (SD)
Treated in casualty and discharged	84	35.3	-	-
Admitted to short-stay medical unit	64	26.9	176	2.75 (1.66)
Admitted to Intensive Care Unit or high care	17	7.1	85	5.00 (3.94)
Admitted to long-stay medical or surgical ward	17	7.1	316	11.71 (19.41)
Admitted to emergency psychiatric unit	90	37.8	588	5.73 (5.13)

Significant variables (see Appendix D for a full list of variables) found in the univariate analyses were entered into a logistic regression model (see Table 4 for Unadjusted coefficients). A bivariate logistic regression model was constructed to assess the association between specific variables (socio-demographic, clinical and treatment) and method of DSH (violent or non-violent).

The bivariate regression model was significant, $\chi^2(5, N = 199) = 42.938$, $p < .001$, Nagelkerke $R^2 = .335$. This model accurately predicted use of violent or non-violent DSH method 87% of the time. However, in the final step of the regression model, the following variables were no longer significant: patients who stated that their psychiatric illness was the reason for DSH (see Table 6 in Appendix A, $p = .262$) and patients with a current diagnosis of a psychotic disorder. These variables were therefore removed from the model. The new final regression was significant, $\chi^2(3, N = 225) = 38.348$, $p < .001$, with Nagelkerke $R^2 = .274$. This model accurately predicted use of violent or non-violent DSH method 87% of the time. Male gender, wanting to escape a situation, and a history of substance abuse meant it more likely for someone to use a violent method of DSH (see Table 4). Males were 6.2 times more likely to use a violent method of DSH compared to females. Patients whose intention was escape a situation were 3.4 times more likely to use a violent method of DSH compared to patients who expressed other intentions. Finally, patients with a history of substance abuse were 3.3 times more likely to use a violent method of DSH compared to patients with no prior history of substance abuse.

Table 4: The unadjusted and final regression coefficients

	Unadjusted			**Adjusted**			
Predictors of DSH method	χ^2	*p*	*V*	Wald	Odds Ratio	*p*	95% CI
Gender	28.972	<.001	.356	14.687	6.198	<.001	2.438-15.755
Intention to escape situation stated as reason for self-harm	4.037	.045	.133	6.394	3.432	.011	1.320-8.926
Psychiatric illness stated as reason for DSH	9.983	.002	.209				
Current diagnosis of psychotic disorder	23.157	<.001	.339				
History substance abuse	20.857	<.001	.302	7.710	3.288	.005	1.419-7.617
Constant	-	-	-	56.290	0.027	<.001	-

The study also aimed to determine if there is a relationship between method of DSH and medical intervention (see Table 2) and the level of hospital admission required (see Table 3) in this population. 'Method of DSH' was dichotomised into violent and non-violent. The eight patients who used both violent and non-violent methods of DSH were excluded from the analyses. There were no significant differences in level of medical and psychiatric intervention or level of hospital admission between the two groups (all *p*'s > .091).

2.7 Discussion

Self-poison was the most common method of DSH seen at the hospital over the study period. Prescription medication was the most prevalent form of self-poison while a significant number of patients used the non-prescription medication paracetamol. Our study provides detail on violent methods of DSH in this sample population. In the bivariate regression analysis, male gender, stating that the reason for DSH was to escape a situation and history of substance use were associated with violent method of DSH. Finally, the study did not find a significant association between method of DSH and medical or psychiatric intervention or level of hospital admission.

The main finding is consistent with local and international literature: self-poison with possible fatal consequences remains the most common form of DSH worldwide (Bilen et

al., 2011; Du Toit et al., 2008; Hawton et al., 2007; Nakin et al., 2007). In East London, SA, self-poison accounted for 17 to 26% of all admissions to critical care, placing a significant burden on hospital services (Favara, 2013). Self-poison was the most common form of DSH at emergency departments over a 16-year period in the USA (Ting, Sullivan, Boudreaux, Miller, & Camargo, 2012). During the study period, there was an average of 420 000 annual emergency department visits for DSH. Despite the known worldwide burden of self-poison and DSH, few standard hospital-based, mental health intervention protocols exist to manage patients who present with DSH in the emergency room (WHO, 2016).

The higher prevalence of prescription medication in this sample further supports the idea that ingestion of agricultural poison as method of DSH is less common in urban areas of South Africa (Du Toit et al., 2008; Raubenheimer & Jenkins, 2015). It is interesting to note that tricyclic antidepressants, anti-hypertensive agents and benzodiazepines were the most frequently used medications known to the patient. This finding matches those found by Raubenheimer and Jenkins (2015) in their study of DSH at George Provincial Hospital in SA. Benzodiazepines and anti-depressants are consistently reported as highly prevalent substances used in DSH worldwide(Aguilera et al., 2016; Bilen et al., 2011; Hawton et al., 2007). This study replicates this finding in the South African context and it has important implications for public health intervention regarding medicine control. Paracetamol remains readily available in unlimited quantities in supermarkets and pharmacies in SA, and consistent with local studies a significant number of patients used paracetamol as a method of DSH (Du Toit et al., 2008; Favara, 2013). In the United Kingdom (UK) a decrease in the frequency of paracetamol overdoses was observed when the tablets became available exclusively in blister pack form (Turvill, Burroughs, & Moore, 2000). Since most acts of DSH are impulsive, it is proposed that limiting the quantity of tablets and increasing the time needed to ingest a toxic dose may allow time for reflection and perhaps a change of mind. This method of 'means restriction' has now become a recognized strategy for suicide prevention (Zalsman et al., 2016).

Violent methods of DSH have largely been under-reported in hospital-based studies in SA and our study adds to this growing body of literature. In agreement with data showing that hanging is the most prevalent method of fatal suicide in SA (Bantjes &

Kagee, 2013), attempted hanging was the one of the most common methods of violent DSH seen in this sample. Our study found no incidents involving firearms and a relatively small number of patients who jumped from a height. This result may be explained by the high mortality associated with these methods. Although only 11% of patients in our study used both violent and non-violent methods of DSH, Haw et al. (2015) reported that this group has a higher suicidal intent and clinicians should be mindful of this when planning care and follow-up of this sub-group of patients.

The gender difference in choice of DSH method is in keeping with the South African data on fatal suicides. Men tend to use more violent methods of suicide such as hanging while women are more likely to choose self-poisoning (Ajdacic-Gross et al., 2008). In a study based in the UK, violent method of DSH was associated with high suicidal intent (Haw et al., 2015) and researchers from both the USA and Norway have reported that patients who used a violent method are more likely to attempt and complete suicide in future (Fedyszyn, Erlangsen, Hjorthøj, Madsen, & Nordentoft, 2016; Olfson et al., 2017). These associations, along with the fact that men make up almost 80% of fatal suicides in SA, make men who present to hospital following a violent act of DSH a particularly high-risk group. We found no significant associations between method of DSH and other socio-demographic factors such as age, employment or socio-demographic status. Further studies in other settings in SA are recommended to adequately explore these associations.

Our finding that history of substance use is associated with violent method of DSH adds to the literature on the strong relationship between substance use and subsequent DSH. Harmful use of alcohol is historically a well-known risk factor for DSH and recent research continues to confirm this association in both hospital- and general population-based studies (Arias et al., 2016; Fekadu et al., 2016; Poorolajal, Haghtalab, Farhadi, & Darvishi, 2016). One hospital-based study from Mississippi, USA reported that alcohol and other depressants of the central nervous system in particular were associated with risk of suicide in contrast to use of stimulants of the central nervous system (Bagge & Borges, 2017). The emergency room consultation presents a unique opportunity to intervene and provide feedback on harmful substance use and prevention of future acts of DSH.

Previous hospital-based research in SA has identified relationship difficulties, financial distress and distress at home as common reasons for DSH (Ani, Ross, & Campbell, 2017; Du Toit et al., 2008; Raubenheimer & Jenkins, 2015). Our finding that patients who stated that they wanted to escape a situation were more likely to use a violent method of DSH adds to this growing body of literature exploring the reasons for and associations of DSH.

This study did not find a significant association between method of DSH and medical or psychiatric intervention or level of hospital admission. Although recent research has found association between younger age, higher burden of challenges reported by parents and suicide plan and admission, reasons for hospital admission following DSH remain unclear (Arias et al., 2017; Hughes, Anderson, Wiblin, & Asarnow, 2017). Further studies into the factors associated with admission to psychiatric care may assist with emergency department interventions and hospital protocol development.

This study has several limitations. Firstly, the study was conducted in one tertiary hospital in the Western Cape which limits the generalisability of our findings on suicide behaviour to other South African communities. However, this study adds to the literature on methods used in DSH in SA and hospitals provide a unique opportunity to study this high-risk and understudied population. Secondly, we did not gather information on the source of the prescription medication used in DSH. This information could be valuable to guide public health interventions and make recommendations to the local Medicines Control Council. Finally, the cross-sectional design of the study limits our ability to comment on the direction of the associations in the regression analysis.

2.8 Conclusion

This study contributes to emerging literature on methods used in DSH in SA. It is of concern that self-poison and specifically prescription medication were highly prevalent methods of DSH in this population. There is an urgent need for more research on the source of prescription medication and its relationship to DSH. Limiting the quantity and reviewing the packaging of paracetamol available in supermarkets are effective strategies of means restriction that should be adopted in the South African context. This

study underscores the need for increased collaboration between the Department of Social Development and the Department of Health in providing substance use interventions to high-risk population groups.

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Appendix A: Additional tables

Table 5: Prescription and non-prescription medication taken by patients

Medication type	*n*	**%**
Prescription	221	**-**
Other prescription medication unknown/not specified by the patient Benzodiazepines	52	23.5
Tricyclic antidepressants	28	12.7
Anti-hypertensives	28	12.7
Benzodiazepines	25	11.3
Analgesic medication	23	10.4
SSRI[1]	18	8.1
Anti-epileptic medication	14	6.3
Anti-psychotics	13	5.9
Oral hypoglycaemic agents	10	4.5
Antibiotics	10	4.5
Non-prescription	141	-
Paracetamol	54	38.3
Other medication unknown/ not specified by the patient	18	12.8
Antihistamine	17	12.0
NSAID[2]	12	8.5
Paracetamol & codeine prep	10	7.1
Vitamin compound	10	7.1
Iron tablets	9	6.4
Aspirin	6	4.2
Illicit substance	5	3.5

1. Selective serotonin reuptake inhibitor
2. Non-steriodal anti-inflammatory drug

Table 6: Description of stated intention and reason for deliberate self-harm

Stated intention and reason for deliberate self-harm	*n*	%
Suicidal vs non-suicidal self-injury		
Suicidal self-injury	81	34.03
Non-suicidal self-injury	157	65.97
Stated intention		
To regulate the behaviour of someone else	55	23.1
To regulate emotional state	24	10.1
To escape a situation	49	20.6
To communicate something (e.g. distress)	82	34.5
Impulsive act	53	22.3
Mistake	14	5.9
Chronic physical pain/illness	3	1.3
Not known	15	6.3
Accidental vs intentional self-injury		
Accidental (i.e. mistake)	14	5.9
Intentional	209	87.8
Not known	15	6.3
Stated reason		
Financial concerns	47	19.7
Friendship/marital/romantic relationship issues	74	31.1
Family conflict	87	36.6
Social issues (i.e. isolation, friendship problems, legal issues)	12	5.0
Medical illness	18	7.6
Psychiatric illness	36	15.1
Bereavement	10	4.2
Academic concerns (exam or performance at school/university)	15	6.3
Unplanned pregnancy	3	1.3
Mistake	3	1.3
Other	43	18.1
Not known	26	10.9

Appendix B: Ethics approval letter

UNIVERSITY OF CAPE TOWN
Faculty of Health Sciences
Human Research Ethics Committee

Room E52-24 Old Main Building
Groote Schuur Hospital
Observatory 7925
Telephone [021] 404 7682 • **Facsimile** [021] 406 6411
Email: nosi.tsamo@uct.ac.za
Website: www.health.uct.ac.za/fhs/research/humanethics/forms

28 September 2016

HREC REF: 687/2016

Prof J Hoare
Psychiatry & Mental Health
J- Block
GSH

Dear Prof Hoare

PROJECT TITLE: FACTORS ASSOCIATED WITH DELIBERATE SELF-HARM METHOD AMONG PATIENTS IN A TERTIARY HOSPITAL IN SOUTH AFRICA (MPhil-candidate-D Pieterse)

Thank you for submitting your study to the Faculty of Health Sciences Human Research Ethics Committee for review.

It is a pleasure to inform you that the HREC has **formally approved** the proof of concept for phase 1 of the above-mentioned study.

Approval is granted for one year until the 30th September 2017.

Please submit a progress form, using the standardised Annual Report Form if the study continues beyond the approval period. Please submit a Standard Closure form if the study is completed within the approval period.
(Forms can be found on our website: www.health.uct.ac.za/fhs/research/humanethics/forms)

We acknowledge that the student Dr D Pieterse will be involved in this study.

Please note that for all studies approved by the HREC, the principal investigator **must** obtain appropriate institutional approval before the research may occur.

Please quote the HREC REF in all your correspondence.

Please note that the ongoing ethical conduct of the study remains the responsibility of the principal investigator.

Yours sincerely

PROFESSOR M BLOCKMAN
CHAIRPERSON, FHS HUMAN RESEARCH ETHICS COMMITTEE
Federal Wide Assurance Number: FWA00001637.
Institutional Review Board (IRB) number: IRB00001938

Appendix C: Hospital approval letter

Western Cape Government
Health

GROOTE SCHUUR HOSPITAL

Enquiries: Dr Bernadette Eick
E-mail : Bernadette.Eick@westerncape.gov.za

Professor J. Hoare
Psychiatry
J-BLOCK

E-mail: deidre.pieterse@gmail.com / jackie.hoare@uct.ac.za

Dear

RESEARCH PROJECT: Factors Associated With Deliberate Self-Harm Method Amongst Patients In A Tertiary Hospital In South Africa (Mphil Candidate D. Pieterse)

Your recent letter to the hospital refers.

You are hereby granted permission to proceed with your research which is valid until **30 September 2017.**

Please note the following:

a) Your research may not interfere with normal patient care.
b) Hospital staff may not be asked to assist with the research.
c) No additional costs to the hospital should be incurred i.e. Lab, consumables or stationary.
d) **No patient folders may be removed from the premises or be inaccessible.**
e) Please provide the research assistant/field worker with a copy of this letter as verification of approval.
f) Confidentiality must be maintained at all times.
g) Should you at any time require photographs of your subjects, please obtain the necessary indemnity forms from our Public Relations Office (E45 OMB or ext. 2187/2188).
h) Should you require additional research time beyond the stipulated expiry date, please apply for an extension.
i) Please discuss the study with the HOD before commencing.
j) Please introduce yourself to the person in charge of an area before commencing.
k) On completion of your research, please forward any recommendations/findings that can be beneficial to use to take further action that may inform redevelopment of future policy / review guidelines.
l) Kindly submit a copy of the publication or report to this office on completion of the research.

I would like to wish you every success with the project.

Yours sincerely

DR BERNADETTE EICK
CHIEF OPERATIONAL OFFICER
Date: 4 April 2017

C.C. Mr L. Naidoo, Dr T. Numanoglu, Professor D. Stein

G46 Management Suite, Old Main Building,
Observatory 7925

Tel: +27 21 404 6288 fax: +27 21 404 6125

Private Bag X,
Observatory, 7935

www.capegateway.go.v.za

Appendix D: Data collection sheet

DSH data capture form

Patient identifier:

Sex:

Male	Female

Age:

Ethnicity:

Black	Asian	Coloured	White	Unknown

Home language:

Afrikaans	isiXhosa	English	Other (Specify)

Nationality:

South African	Other

Religion

Christian	Islam	Hindu	Catholic	Other	Not known

Marital status:

Single	Married	Separated	Divorced	Widowed

Number of dependents (children):

Completed level of education:

Primary schooling	Secondary schooling	Tertiary Education (Under graduate qualification)	Post graduate qualification

Employment status:

Unemployed	Employed

Living circumstances:

Income level (SES):

Method of DSH:

		Quantity:
Prescription medication	Benzodiazepines	
	Barbiturates	
	Tricyclics	
	Anti-psychotics	
	SSRIs	
	Analgesics	
	anti-hypertensives	
	iron tablets	
	antiepileptics,	
	antibiotics	
	oral hypoglycemic agents	
	Unknown	
	Other meds (specify)	
Non-prescription medication	**Aspirin**	
	Paracetamol	
	Other meds (specify)	

Ingestion or inhalation of poison	**Organophosphate**	
	Rat poison	
	Corrosive substance (Acid)	
	Bleach	
	Carbon monoxide	
	Other (specify)	
Gun shot		Site of wound(s):
Laceration		Site of wound(s):
Immolation		
Hanging		
Asphyxiation		

Severity of the act:

		Duration of admission
Level of admission	Seen in casualty and discharged	
	Admitted to C13 (short stay medical unit)	
	Admitted to another medical unit	
	Admitted to high care	
	Admitted to ICU	

Level of intervention	None
	Sutured
	Activated charcoal
	Oral medical treatment
	IV medical treatment
	Intubation and ventilation
	Dialysis
	Surgical procedure

GCS on admission	

Stated intention:

To Die	
To regulate the behaviour of someone else	
To regulate emotional state	
To escape a situation	
Implosive act	
To communicate something (eg. distress)	
Mistake	
Not known	
Other (specify)	

Stated reason for the attempt:

Financial concerns	
Marital / romantic relationship issues	
Family conflict	
Medical illness	
Psychiatric illness	

Bereavement	
Academic concerns (exams or performance at school/university)	
Other (specify)	
Not known	

Previous attempts:

Not known	
No previous attempts	
One previous attempt	
Multiple (2 or more) previous attempts	

History of psychiatric illness (Has the patient received a psychiatric Dx prior to this act of DSH?):

Unipolar mood disorder	
Bi-polar mood disorder	
Anxiety Disorder	
Personality Disorder	
Psychotic Illness (Schizophrenia)	
Substance dependence	
Post-Traumatic Stress Disorder	
Adjustment disorder	
No psychiatric Dx	
Not known	
Other (specify)	

Current Psychiatric Dx (On assessment following the act of DSH):

Unipolar mood disorder	
Bi-polar mood disorder	
Anxiety Disorder	
Personality Disorder	
Psychotic Illness (Schizophrenia)	
Substance dependence	
Post-Traumatic Stress Disorder	
Adjustment disorder	
No psychiatric Dx	
Not known	
Other (specify)	

Receiving psychiatric treatment prior to admission:

Yes	No	Not-known

Receiving psychological treatment (psychotherapy) prior to admission:

Yes	No	Not-known

Medical Dx not related to the incident of DSH:

HIV status:

HV+	HIV-	Not-known

Evidence of alcohol/drug intoxication during the act of DSH:

Yes	Alcohol	
	Cannabis	
	Methaqualone (Mandrax)	
	Cocaine	
	Methamphetamine (Tik)	
	Heroin	
	Solvents	
	Other (specify)	
No		
Not know		

History of substance abuse:

Alcohol abuse	
Cannabis Abuse	
Benzodiazepines	
Methaqualone (Mandrax)	
Cocaine Abuse	
Methamphetamine (Tik) Abuse	
Heroin	
Solvents	
MDMA (Ecstasy)	
Flunitrazipam (Rohypnol)	
Ketamine	
Wellconal (Pinks)	

Psychiatric Plan:

Assessed by psychiatric registrar	Yes	No

Psychotropic meds initiated	No
	Yes (specify)

Psychotropic meds adjusted	No
	Yes (specify)

Input from psychologist	No
	Yes (specify)

Input from social worker	No
	Yes (specify)

Discharged	Discharged without follow up	
	Discharged with follow up at community clinic	
	Discharged follow up at DCAP	
	Discharged with follow-up with drug/alcohol rehab	
	Discharged with follow up in J2	psychiatry
		psychology
	Discharged with referral made to therapeutic unit	G22
		VBH ward 1
		LGH ward 15

Admission	C23 (emergency unity)	voluntary	assisted	involuntary
	G22 (therapeutic unit)	voluntary	assisted	involuntary

Record of follow:

No record of follow up	
Record of follow up	
Not known	

Appendix E: Instruction to Authors

hogrefe

Instructions to Authors

Crisis: The Journal of Crisis Intervention and Suicide Prevention

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Aims and Scope of *Crisis – The Journal of Crisis Intervention and Suicide Prevention*

Crisis – The Journal of Crisis Intervention and Suicide Prevention is an international periodical that publishes original articles on suicidology and crisis intervention. Papers presenting basic research as well as practical experience in the field are welcome. *Crisis* also publishes potentially life-saving information for all those involved in crisis intervention and suicide prevention, making it important reading for clinicians, counselors, hotlines, and crisis intervention centers.

Crisis – The Journal of Crisis Intervention and Suicide Prevention publishes the following types of articles

Research Trends

Papers for this section may be up to 4,000 words (excluding references).

Short Reports

Papers for this section may be up to 1,500 words (excluding references).

Clinical Insights

These are clinically oriented papers and may be up to 4,000 words (excluding references).

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Manuscript Format

Manuscripts should be prepared according to the *Publication Manual of the American Psychological Association* (6th ed.) as regards both style and presentation. In particular, statistical and mathematical copy as well as references and their text citations, should conform to the *Publication Manual*.

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A structured Abstract (maximum length 200 words) should be divided into the following sections: Background, Aims, Method, Results, Limitations (only for Short Reports and Research Trends), Conclusion. A maximum of 5 keywords should be given after the abstract.

Figures and tables should be numbered using Arabic numerals. Each table and figure must be cited in the text and should be accompanied by a legend. Please submit tables and figures via Editorial Manager as separate files. Figures must be supplied in a form suitable for reproduction: preferably high-resolution bitmaps (e.g., jpg, 300 dpi) or as vector graphics files. Figures will normally be reproduced in

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Authors should follow the guidelines of the APA Manual regarding style and nomenclature. It is recommended that authors who are not native speakers of English have their papers checked and corrected by a native-speaker colleague before submission. Standard US American spelling and punctuation as given in *Webster's New Collegiate Dictionary* should be followed.

Please make sure to avoid stigmatizing language concerning suicidal behavior by using neutral terms. Here are some examples:

Stigmatizing Language	Neutral Language
to commit / complete suicide	to die by suicide; to end his/her life
a successful suicide / attempt	a fatal suicide attempt
an unsuccessful suicide	a non-fatal suicide attempt
a failed attempt	a non-fatal suicide attempt
suicide victims	those who died by suicide

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