Who seeks treatment where? Suicidal behaviours and Health Care: Evidence from a Community Survey

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Table

Table 1. Individual characteristics associated with seeking treatment following a suicide attempt†

		No (n=142)	One source (n=133) ‡			Two or more sources (n=124) ‡		
		%	%	OR	CI	%	OR	CI
Gender	Male	*43.66*	*41.35*	0.91	0.56-1.47	*24.19*	0.41***	0.24-0.69
	Female	*55.63*	*57.89*	1		*75.81*	1	
Age	18-24	*7.75*	*7.52*	0.76	0.23-2.51	*8.87*	1.11	0.33-3.80
	25-34	*23.94*	*20.3*	0.66	0.25-1.76	*16.94*	0.69	0.24-1.97
	35-44	*25.35*	*22.56*	0.69	0.26-1.83	*25*	0.96	0.34-2.65
	45-54	*23.94*	*22.56*	0.74	0.28-1.94	*20.97*	0.85	0.3-2.39
	55-64	*3.52*	*13.53*	1.36	0.44-4.22	*12.9*	1.62	0.49-5.28
	65-74	*7.04*	*3.76*	0.83	0.19-3.72	*5.65*	1.56	0.36-6.69
	75+	*0.7*	*9.02*	1		*7.26*	1	
Relation-ship status	Married/de facto	*40.14*	*39.1*	1.22	0.7-2.13	*45.16*	1.59	0.9-2.8
	Separated	*5.63*	*11.28*	2.52**	0.97-6.49	*8.06*	2.02	0.73-5.63
	Divorced	*12.68*	*15.79*	1.57	0.74-3.31	*12.9*	1.44	0.65-3.19
	Widowed	*2.82*	*0.75*	0.34	0.04-3.11	*5.65*	2.83	0.77-10.4
	Never Married	*38.73*	*30.83*	1		*27.42*	1	
Employ-ment	Unemployed	*26.76*	*6.02*	0.97	0.39-2.45	*32.26*	1.28	0.52-3.17
	Not able/ill	*58.45*	*48.12*	1.73	0.57-5.23	*43.55*	2.82	0.98-8.07
	Not in labour force	*8.45*	*6.77*	1.50	0.87-2.58	*8.06*	1.62	0.92-2.83
	Employed	*4.23*	*33.08*	1		*8.87*	1	
Education	University	*2.82*	*6.02*	1.2	0.68-2.12	*3.23*	1.27	0.73-2.21
	Trade	*17.61*	*20.3*	1.4	0.73-2.68	*8.87*	0.53	0.24-1.17
	High school	*28.17*	*27.82*	2.59	0.74-9.06	*33.87*	1.21	0.29-5.04
	Primary school	*49.3*	*40.6*	1		*46.77*	1	
Lifetime plans	Yes	*60.56*	*63.16*	1.23	0.74-2.02	*66.94*	1.41	0.84-2.36
	No	*38.03*	*32.33*	1		*29.84*	1	
Intent	Very serious	*45.07*	*41.35*	0.63	0.31-1.27	*42.74*	0.48	0.23-0.99
	Serious	*19.72*	*18.05*	0.63	0.35-1.12	*15.32*	0.58	0.33-1.03
	Cry for help	*23.24*	*33.83*	1		*37.9*	1	
Number of attempts	Many (4+)	*4.93*	*11.28*	1.33	0.79-2.22	*8.06*	1.32	0.78-2.23
	Two to three	*31.69*	*35.34*	2.72**	1.05-7.05	*35.48*	1.93	0.70-5.33
	Once	*62.68*	*52.63*	1		*53.23*	1	
Communi-cated	Yes	*33.1*	*57.14*	2.55***	1.54-4.22	*70.97*	4.95***	2.87-8.53
	No	*57.75*	*39.1*	1		*25*	1	
Drugs	Yes	*49.3*	*70.68*	2.63***	1.49-4.66	*82.26*	3.70***	1.96-6.98
	No	*50.7*	*29.32*			*17.74*	1	
Hanging	Yes	*17.61*	*5.26*	0.57	0.36-0.9	*5.65*	0.66	0.42-1.05
	No	*82.39*	*94.74*			*94.35*	1	
Alcohol	Yes	*9.15*	*12.03*	1.01	0.86-1.19	*10.48*	0.94	0.79-1.11
	No	*90.85*	*87.97*			*89.52*	1	
Other methods	Yes	*12.68*	*14.29*	1.04	0.95-1.14	*9.68*	0.97	0.88-1.08
	No	*87.32*	*85.71*			*90.32*	1	
Past help	Yes	*17.61*	*49.62*	4.40***	2.52-7.67	*66.13*	9.31***	5.19-16.69
	No	*73.94*	*47.37*	1		*29.84*	1	
Physical illness	Yes	*9.86*	*15.79*	1.73	0.84-3.57	*18.55*	2.07**	1.01-4.22
	No	*89.44*	*82.71*	1		*81.45*	1	
Mental illness	Yes	*10.56*	*25.56*	2.98***	1.53-5.77	*28.23*	3.30***	1.70-6.41
	No	*88.73*	*72.18*	1		*71.77*		

** $p<0.05$ *** $p<0.001$ † Reference category is 'no treatment sought' ‡ Note: values may not add up to 100% due to missing values

Table 2. Different sources of treatment for suicide attempters seeking treatment from one source versus two or more sources†

		One % (n=133) ‡	Two or more % (n=124) ‡	OR	CI
GP	Yes	*20.30*	*51.61*	4.02***	2.30-7.03
	No	*71.43*	*45.16*		
Hospital	Yes	*44.36*	*83.87*	6.87***	3.78-12.47
	No	*55.64*	*15.32*		
Mental Health Professional	Yes	*26.32*	*66.13*	5.48***	3.20-9.34
	No	*73.68*	*33.87*		
Phone line	Yes	*9.02*	*20.16*	2.42**	1.15-5.08
	No	*90.98*	*80.65*		

** $p<0.05$ *** $p<0.001$
† Reference category is ‘one treatment sought’
‡ Note: values may not add up to 100% due to missing values

Table 3. Characteristics associated with seeking treatment from Hospital or General Practitioner following suicide attempt†

		Hospital (n= 163) ‡			General Practitioner (n=91) ‡		
		%	OR	CI	*%*	OR	CI
Gender	Male	*28.8*	0.54**	0.35-0.84	*33*	0.87	0.53- 1.43
	Female	*71.2*	1	.	*65.9*	1	
Age groupings	18-24	*8.6*	0.83	0.31-2.24	*6.6*	0.79	0.23-2.69
	25-34	*15.3*	0.47	0.20-1.09	*20.9*	1.18	0.44-3.13
	35-44	*23.9*	0.81	0.36-1.82	*23.1*	1.32	0.51-3.42
	45-54	*20.2*	0.68	0.30-1.54	*26.4*	1.47	0.56-3.82
	55-64	*15.3*	1.54	0.61-3.89	*11*	1.71	0.60-4.88
	65-74	*6.1*	1.52	0.46-5.04	*4.4*	3.86	1.08-13.75
	75+	*9.2*	1		*4.4*	1	
Marital status	Married/de facto	*42.9*	1.31	0.81-2.11	*67*	1.86**	1.04-3.33
	Separated	*8*	1.08	0.49-2.37	*29.7*	1.74	0.71-4.25
	Divorced	*14.1*	1.2	0.63-2.28	*26.4*	1.36	0.61-2.99
	Widowed	*3.7*	2	0.58-6.91	*17.6*	2.65	0.71-9.98
	Never Married	*29.4*	1		*49.5*	1	
Employment	Not working/ill	*8*	1.99	0.86-4.61	*8.8*	1.78	0.71-4.41
	Unemployed	*8.6*	1.61	0.74-3.50	*7.7*	1.15	0.46-2.87
	Not in labour force	*33.7*	1.58	0.99-2.52	*31.9*	1.34	0.77-2.31
	Employed	*42.3*	1		*44*	1	
Education	University	*3.7*	0.83	0.29-2.38	*3.3*	0.82	0.22-3.04
	Trade	*11.7*	0.61	0.33-1.13	*16.5*	1.16	0.58-2.31
	High school	*31.9*	1.1	0.69-1.77	*33*	1.31	0.75-2.27
	Primary school	*45.4*	1		*40.7*	1	
Lifetime plans	Yes	*62*	0.98	0.64-1.51	*47.3*	1.26	0.75-2.12
	No	*33.1*	1		*9.9*	1	0.71-4.25
Intent	Most serious	*46*	2.97***	1.84-4.80	*13.2*	0.67	0.38-1.17
	Serious	*14.7*	1.01	0.56-1.82	*4.4*	0.78	0.41-1.51
	Cry for help	*35*	1		*24.2*	1	
Number of attempts	Many (4+)	*6.7*	0.85	0.39-1.88	*7.7*	0.91	0.37-2.25
	Two or three	*35.6*	1.12	0.77-1.74	*34.1*	0.92	0.55-1.53
	Once	*54.6*	1		*57.1*	1	
Commun-icated	Yes	*65*	2.31***	1.50-3.55	*70.3*	2.32***	1.38-3.88
	No	*30.7*	1		*28.6*	1	
Drugs	Yes	*81.6*	2.44***	1.43-4.18	*69.2*	0.76	0.44-1.32
	No	*18.4*	1		*30.8*	1	
Hanging	Yes	*4.9*	0.43**	0.18-0.99	*4.4*	0.54	0.33-0.89
	No	*95.1*	1		*95.6*	1	
Alcohol	Yes	*10.4*	0.64**	0.32-1.27	*8.8*	0.93	0.79-1.08
	No	*89.6*	1		*91.2*	1	
Other methods	Yes	*11*	0.77**	0.43-1.39	*2.2*	0.93	0.84-1.02
	No	*89*	1		*89*	1	
Number of sources	Two/ three	*63.8*	6.86***	3.78-12.47	*70.3*	4.02***	2.30-7.02
	One source	*36.2*	1		*29.7*	1	
Past help	Yes	*58.3*	2.91***	1.90-4.45	*65.9*	3.15***	1.91-5.21
	No	*37.4*	1		*33*	1	
Physical illness	Yes	*16*	1.19	0.67-2.09	*25.3*	2.46**	1.36-4.45
	No	*84*	1		*74.7*	1	
Mental illness	Yes	*27.6*	1.87	1.14-3.05	*28.6*	1.75**	1.01-3.01
	No	*72.4*	1		*70.3*	1	

** $p<0.05$ *** $p<0.001$† Reference category is ‘no treatment’ from that specific source ‡ Note: values may not add up to 100% due to missing values

Table 4. Characteristics associated with seeking treatment from a mental health professional or telephone help line following a suicide attempt†

		Mental health professional (n=117) ‡			Telephone help-line (n=37) ‡		
		%	OR	CI	%	OR	CI
Gender	Male	*26.5*	0.51**	0.32-0.82	*37.8*	1.04	0.52-2.09
	Female	*73.5*	1	.	*62.2*	1	.
Age groupings	18-24	*7.7*	0.82	0.28-2.41	*13.5*	-	-
	25-34	*17.1*	0.68	0.27-1.68	*24.3*	-	-
	35-44	*24.8*	0.9	0.37-2.14	*27*	-	-
	45-54	*23.1*	0.9	0.37-2.16	*16.2*	-	-
	55-64	*12*	0.95	0.35-2.53	*10.8*	-	-
	65-74	*6*	1.47	0.43-5.00	*2.7*	-	-
	75+	*8.5*	1		*2.7*	-	-
Marital status	Married/de facto	*40.2*	1.08	0.65-1.81	*48.6*	1.32	0.60-2.91
	Separated	*10.3*	1.55	0.69-3.48	*5.4*	0.7	0.15-3.31
	Divorced	*13.7*	1.11	0.55-2.24	*16.2*	1.32	0.46-3.78
	Widowed	*5.1*	2.71	0.82-8.98	*0*	-	-
	Never Married	*29.9*	1		*29.7*	1	
Employment	Not working/ill	*7.7*	1.65	0.69-3.97	*2.7*	0.34	0.04-2.63
	Unemployed	*8.5*	1.4	0.62-3.17	*2.7*	0.27	0.03-2.09
	Not in labour force	*32.5*	1.33	0.81-2.19	*32.4*	0.89	0.42-1.86
	Employed	*43.6*	1		*59.5*	1	
Education	University	*6*	1.75	0.62-4.93	*0*	-	-
	Trade	*12*	0.64	0.33-1.26	*13.5*	0.89	0.31-2.55
	High school	*26.5*	0.79	0.47-1.33	*40.5*	1.5	0.71-3.15
	Primary school	*50.4*	1		*43.2*	1	
Lifetime plans	Yes	*70.9*	1.62**	1.01-2.62	*18.9*	1.42	0.66-3.04
	No	*26.5*	1		*70.3*	1	
Intent	Most serious	*38.5*	1.45	0.89-2.38	*18.9*	0.38**	0.16-0.93
	Serious	*17.9*	1.08	0.59-1.99	*10.8*	0.39	0.13-1.16
	Cry for help	*41*	1		*62.2*	1	
Number of attempts	Many (4+)	*11.1*	2.13	0.98-4.62	*8.1*	1.31	0.36-4.76
	Two or three	*37.6*	1.39	0.87-2.23	*43.2*	1.62	0.79-3.32
	Once	*48.7*	1		*45.9*	1	
Communicated	Yes	*68.4*	2.44***	1.52-3.92	*70.3*	3.17**	1.34-7.51
	No	*28.2*	1		*18.9*	1	
Drugs	Yes	*81.2*	4.02***	1.86-6.09	*75.7*	1.22	0.50-2.98
	No	*18.8*	1		*24.3*	1	
Hanging	Yes	*7.7*	0.02	0.66-1.51	*5.4*	0.76	0.36.1.62
	No	*92.3*	1		*94.6*	1	
Alcohol	Yes	*12.8*	0.3	0.89-1.17	*16.2*	1.07	0.89-1.30
	No	*87.2*	1		*83.8*	1	
Other methods	Yes	*1.7*	0.21	0.92-1.10	*10.8*	0.98	0.85-1.12
	No	*98.3*	1		*89.2*	1	
Number of sources	Two/ three	*70.1*	5.47***	3.20-9.34	*64.9*	2.42**	1.15-5.08
	One source	*29.9*	1		*32.4*	1	
Past help	Yes	*63.2*	3.18***	2.01-5.04	*70.3*	2.70***	1.28-5.72
	No	*33.3*	1		*27.1*	1	
Physical illness	Yes	*13.7*	0.89	0.48-1.66	*16.2*	1.23	0.49-3.11
	No	*86.3*	1		*78.4*	1	
Mental illness	Yes	*27.4*	1.64	0.99-2.71	*24.3*	1.32	0.59-2.93
	No	*72.6*	1		*70.3*	1	

** $p<0.05$ *** $p<0.001$† Reference category is ‘no treatment’ from that specific source ‡ Note: values may not add up to 100% due to missing values

Abstract

Reasons that bring suicide attempters to be in contact or not with health facilities are still insufficiently clarified. Using data from the WHO/SUPRE-MISS community survey, this study tried to shed more light on this problem, and also investigated the type and number of treatments sought by suicide attempters in two major cities of Queensland, Australia. Compared to those who did not attend services (n=142), help-seekers (n=257) had significantly greater odds of overdosing with medications, communicating suicidal thoughts, and reporting a history of psychological problems, previous attempts and help-seeking behaviour. Those who sought multiple services were more likely to be female and suffer also from physical illness. Non help-seekers were more frequently males, with no history of having previously sought help or communicated their intent to anyone. They also appeared at greater risk of using more lethal methods (hanging) and less likely to express mental health concerns at the time of the attempt. These findings underline the need to further understand the relationship between lethality, suicide intent and help-seeking behaviour. Improving motivation to seek treatment after a suicide attempt could substantially impact on suicide prevention success efforts.

Key words: Suicide attempt, help-seeking behaviour, intervention, service utilization, community survey.

Introduction

Occurring up to 23 times as often as fatal suicidal behaviour (De Leo et al., 2005; Mathers et al., 1999), non-fatal suicidal behaviour is a major contributor to the total burden of disease in the Australian population and has resounding social and economic consequences. Not only does the medical treatment and ongoing care of suicidal persons involve considerable costs to community members (Stack, 2007; Yang and Lester, 2007; Yip et al., 2005), but the effects of suicidal behaviour are associated with substantial emotional pain and life disruption for the subjects themselves (Dieserud et al., 2001; Osvath et al., 2004), as well as their family and friends (Cerel et al., 2008; Stack, 2007).

Considering that as many as 75% of persons have contact with treatment services prior to suicide (Fekete et al., 2004; Luoma et al., 2002), individual-level interventions can potentially have the most direct influence on this burden. However, the effectiveness of treating suicidal behaviour at the primary health care level is generally perceived as unsatisfactory, both when rated by suicide attempters (Meadows et al., 2001; Parslow and Jorm, 2001) and when measured in terms of reductions in suicidal behaviours (Mann et al., 2005). Developing greater knowledge of the specific characteristics and needs of suicidal persons has been suggested as a way to enhance current understandings of the relationship between suicidality and its treatment, with the long term goal of improving treatment outcomes (Brook et al., 2006; Pirkis et al., 2000). Evidence suggests, for example, that suicidal persons can be clearly distinguished from the general population of health care users, as they are often burdened by a greater range of both chronic physical and mental health problems (Taylor et al., 2007) and seek treatment from multiple sources (Deisenhammer et al., 2007; Meadows et al., 2001; Parslow and Jorm, 2001; Pirkis et

al., 2001; Taylor et al., 2007). Research also indicates that suicide attempters who actively seek treatment are more likely to be female (Luoma et al., 2002; Meadows et al., 2001) and use methods such as poisoning or drug overdosing (Howson et al., 2008). However, as the majority of this knowledge originates from clinical research, current understandings are mostly restricted to specific treatment samples and consequently cannot provide information on whether differences exist between different modes of treatment, or whether those who seek multiple services differ from those who attend one source of treatment following a suicide attempt.

Another worrisome issue is the limited information about those who avoid treatment following a suicide attempt. Insufficient knowledge means that current understandings have mostly been drawn from studies on suicide deaths, with findings suggesting that, in general, non-help seekers are more likely to be male, employed, living with others, and not particularly prone to express mental health issues (Hamdi et al., 2008).

In the Australian context, information on these aspects is even more limited and sparse. Using data collected in the community survey of the World Health Organization SUPRE-MISS project (De Leo et al., 2005), the present study examined help-seeking behaviour after a suicide attempt, including possible differences between those persons who seek single or multiple treatments. Analysis also sought to ascertain whether there are specific characteristics associated with choosing different care options (e.g. medical, psychological or community support services). While past studies on this issue have mostly been conducted with clinical samples of subjects, the use of a large survey on the general population meant that a wider range of factors associated with treatment and suicidal behaviour were potentially identifiable.

Method

Design and Setting

The World Health Organization SUicide PREvention-Multisite Intervention Study on Suicidal Behaviour (SUPRE-MISS) was conducted in Europe, Africa, Latin America, Asia and Australia in 2001 and 2002. As part of this study, a large scale community survey was conducted by the Australian Institute for Suicide Research and Prevention in both Brisbane (currently the third largest city in Australia) and the Gold Coast (a nearby costal city). The first part of the survey involved a telephone interview – through CATI facilities - with 11,572 participants representative of the general population [for more details on methodology refer to De Leo et al., (2005)]. From this initial sample, in-depth questionnaires were sent to subjects who indicated they had experienced suicidal ideation and behaviour in the course of their life. There were 1,311 surveys returned from this, corresponding to a response rate of 76.3% of those who reported some form of suicidality in the telephone interview.

Survey instrument

The community survey was partly based on the material developed for the European Parasuicide Study Interview Schedule (De Leo et al., 2002a; De Leo et al., 2002b) and refined by a WHO working group. Considerable attention was paid to developing, translating and piloting this survey in order to make it appropriate to the ten participating research locations of the WHO/SUPRE-MISS (Bertolote et al., 2005). Although this covered a wide range of questions, those most pertinent to the current investigation concerned socio-demographic details, history of suicidal behaviour, physical and mental health and contacts with health services. The format of the survey included dichotomous (‘yes’/’no’) questions and scaled options that

required the participant to choose from a number of alternatives. For example, description of intent (at the time of the most recent attempt) was assessed by asking the participant to indicate from the following: a) 'The attempt was a cry for help and I did not want to die'; b) 'It was a serious attempt but I knew the method was not foolproof' and; c) 'It was a serious attempt and it was chance that I did not die'. Suicidal behaviour was assessed by asking: 1) 'Have you ever seriously thought about committing suicide?' 2) 'Have you ever made a plan for committing suicide?', and; 3) 'Have you ever attempted suicide?'. If the participant indicated they had actively engaged in suicidal behaviours, further questions regarded if and where they had sought help for the most recent attempt: 'Did you seek any help?' and 'Where did you seek help? (e.g. hospital, General Practitioner, psychiatrist, other health care worker and help line)'.

Statistical analysis

Variables chosen to test for differences between those who did and did not seek treatment following a suicide attempt were: gender, age, relationship status, employment status, highest level of education attained, whether the participant had made plans for suicide during their lifetime, suicide intent, number of attempts made, suicide ideation/plans communicated to friends or family, past professional help for suicidal ideation/plans and self reported physical or psychological problems prior to the last suicide attempt. Eight major suicide method categories were used in analysis: drug overdose, hanging, firearms, vehicle accident/crash, alcohol overdose, poisonous gases (i.e. carbon monoxide poisoning), cutting/stabbing with sharp objects, and other methods. The 'other methods' category comprises of methods with a low sample size and included drowning, jumping from a height, lying in front of a moving object, and exposure to fire.

Statistical analysis was performed using SPSS, version 16. The independent contribution of individual variables was first investigated using multinomial logistic regression. Predictor variables were then tested for significance in an overall model using backward stepwise inclusion. Logistic regression was employed to examine the differences in the characteristics of persons seeking treatment from four separate service providers following a suicide attempt (General Practitioners (GPs), hospitals, mental health professionals, and telephone support lines). Due to a small sample size in the group using telephone help-lines, odds ratios and confidence intervals were not calculated for some variables.

Results

The age range of the subjects who indicated they had engaged in suicidal behaviours (suicide attempt only) in their lifetime (n=399) was 18 to 83 years, with a mean of 43.04 and a standard deviation of 13.59 years. Within this group, 133 participants indicated that they sought treatment from one agency (55 males, 77 females and 1 unknown gender), 124 had sought treatment from two or more agencies (30 males and 94 females), and 142 subjects indicated that they had not sought any treatment (62 males, 79 females and 1 unknown gender). Among treatment seekers, four major treatment options were identified: hospitals (n=163), General Practitioners (n=91), mental health professionals (n=117), and telephone help-lines (n=37).

Suicidal behaviours, precipitating factors and help-seeking

As can be seen in Table 1, single treatment-seekers had greater odds of being separated (OR=2.52; CI 0.97-6.49; $p<0.05$), were more likely to have communicated

intent or plans (OR=2.55; CI 1.54-4.22; $p<0.001$) and have made two or three previous attempts (OR=2.72; CI 1.05-7.05; $p<0.05$). Compared to those that did not seek treatment, these persons reported precipitating mental illness (OR=2.98; CI 1.53-5.77; $p<0.001$), had sought professional help for suicide ideation or plans in the past (OR=4.40; CI 2.52-7.67; $p<0.001$), and were more likely to have used drug overdosing as a suicide method (OR=2.63; CI 1.49-4.66; $p<0.001$). Multiple treatment seekers also displayed factors that discriminated them from those receiving no treatment. First, these persons were significantly less likely to be male (OR=0.41; CI 0.24-0.69; $p<0.001$), but were more likely to communicate intent (OR=4.95; CI 2.87-8.53; $p<0.001$). Compared to those who did not seek treatment, these persons had sought past help (OR=9.31; CI 5.19-16.69; $p<0.001$), had greater odds of using drugs as a suicide method (OR=3.70; CI 1.96-6.98; $p<0.001$), and reportedly suffered from both psychological (OR=3.30; CI 1.70- 6.41; $p<0.001$) and physical problems (OR=2.07; CI 1.02-4.22; $p<0.05$) at the time of the attempt.

- Please, insert Table 1 near here-

Table 2 shows the sources sought following a suicide attempt. As can be expected, multiple treatment seekers attended GPs (OR=4.02; CI 2.30-7.03; $p<0.001$), hospitals (OR=6.87; CI 3.78-12.47; $p<0.001$), mental health professionals (OR=5.48; CI 3.20-9.34; $p<0.001$) and telephone help-lines (OR=2.42; CI 1.15-5.08; $p<0.05$) significantly more than those who only attended one intervention. Descriptive analyses suggest that both single (44.36%) and multiple treatment seekers (83.87%) attended hospitals most frequently, while telephone help-lines were utilised the least (9.02% of single and 20.16% of multiple service seekers).

- Please, insert Table 2 near here-

Variables for the final model were tested through main effects analysis, as well as forward and backward logistic regression. The main effects model included all variables and revealed past help ($p<0.001$), overdosing with medications ($p<0.001$) and gender ($p<0.05$) as significant predictors. Variables which did not contribute to the final model (education, age, and illness) were removed, and the model was tested manually, as well as through stepwise (backwards) regression. The final model showed that the best predictors of help-seeking in suicide attempters were: using drugs as a suicide method (OR=4.41; CI 1.97-9.87; $p<0.001$), past professional help (OR=9.30; CI 4.85-17.85; $p<0.001$) and being female (OR=0.53; CI 0.32-1.03; $p<0.05$).

Characteristics associated with treatment from hospitals, GPs, mental health professionals and telephone help-lines.

Demographic characteristics of suicide attempters can be seen in Table 3. This shows that significantly fewer males sought treatment from hospitals (63.42% of the total number of help-seekers, n=163) (OR=0.54; CI 0.35-0.84; $p<0.05$) or mental health professionals (OR=0.51; CI 0.32-0.82; $p<0.05$) following a suicide attempt. The majority of the sample were married, with those seeking treatment from GP (35.4% of total number of those who sought treatment, n=91) being significantly more likely to be so (OR=1.86; CI 1.41-3.33; $p<0.05$).

There were a number of similarities across treatment conditions regarding suicidality and help-seeking behaviour (Table 4). First, help-seekers had significantly higher odds of having communicated their intent to friends or family prior to the suicide attempt (hospitals, mental health professionals and GPs: $p<0.001$; telephone counselling services: $p<0.05$). Across treatment conditions, these persons were also

more likely to have sought past treatment for suicide ideation or plans (hospitals, mental health professionals and GPs: $p<0.001$; telephone counselling services: $p<0.05$) and to have consulted multiple agencies following their initial treatment (hospitals, mental health professionals and GPs: $p<0.001$; telephone counselling services: $p<0.05$). Analysis also indicated some treatment-specific differences, as persons who sought help from hospitals were significantly more likely to report the most serious intent to die (OR=2.97; CI 1.84-4.80; $p<0.001$) and to have used drugs as a suicide method (OR=2.44; CI 1.43-4.18; $p<0.001$). These participants were also less likely to have used hanging (OR=0.43; CI 0.18-0.99; $p<0.05$), alcohol (OR=0.64; CI 0.32-1.27; $p<0.05$), or 'other methods' (OR=0.77; CI 0.43-1.39; $p<0.05$). Those who sought treatment from GPs were significantly more likely to report both physical (OR=2.46; CI 1.36-4.45, $p<0.05$) and psychological problems (OR=1.75; CI 1.01-3.01, $p<0.05$) prior to attempting suicide, while those persons who sought treatment from a mental health service (psychiatrist, psychologist or counsellor) (45.52% of the total number help-seekers, n= 117) were more likely to report a lifetime history of suicide plans (OR=1.62; CI= 1.01-2.62; $p<0.05$) and to have used drugs as a suicide method (OR=4.02; CI 1.86-6.09; $p<0.001$). Those contacting telephone help-line services (14% of all suicide attempters, n= 37) were less likely to report serious intent (OR= 0.38; CI= 0.16- 0.93; $p<0.05$).

-Please insert Table 3 and 4 near here-

Discussion

One of the main findings of this study is the evidence of clear differences between those who sought treatment for a suicide attempt and those who did not. Similar to previous investigations, help-seekers were more likely to suffer from

mental problems (De Leo et al., 1999; Pirkis et al., 2000) and were at greater risk of using drugs as a suicide method. Further, as reported in the past (Deisenhammer et al., 2007; Luoma et al., 2002; Pirkis et al., 2001), treatment-seekers had history of previous help-seeking behaviour and communicated their suicidal ideation prior to the act. There were also some discriminating factors between those who sought a single treatment versus those who attended multiple services, with the former being more likely to have made more than one attempt and be separated, while a significantly greater proportion of the later were female and at greater risk of co-morbid physical and psychological illness. The apparent worse physical and mental health in this sample may indicate that these persons experience significantly greater long-term disability following a suicide attempt compared to those that did not seek treatment.

Opposite to the profile of help-seekers, non-treatment seekers were more likely to be male, and less likely to have communicated their intent or previously sought help. Non-help-seekers were also at greater risk of using hanging as a suicide method and less likely to express mental health concerns at the time of the attempt.

There are several possible explanations for why a relevant number of suicide attempers (36% of the total sample in this experience) choose not to seek help. First, these individuals may not perceive a need for treatment, as persons differ in both their appraisal of suicidal behaviour and whether they require help or support for this (Goldberg and Huxley, 1980; Hamdi et al., 2008; Owens et al., 2003). This may be especially true for males, whom are recognised as less likely to seek treatment for mental illness or suicidality (Canetto and Sakinofsky, 1998b; Hamdi et al., 2008; Parslow and Jorm, 2001). In this research, 42% of the male sample versus 31 % of the female subjects decided not to refer to any health facility after the attempt. Males are more concerned about the social disapproval connected with making a non-fatal

attempt and seeking help for it (Canetto and Sakinofsky, 1998b; Kirkpatrick-Smith et al., 1992). On the other hand, the social stigma attached to suicide and suicidal behavior is well documented (Crisp et al., 2000; Lester, 1997; Pompili et al., 2003) and greatly impacts on prevention and treatment of suicidality, particularly in males for which – in Queensland – the number of deaths due to suicide is 4 times bigger than in females (De Leo et al., 2006). Male suicide attempters often report feelings of failure, shame and self-blame (Wiklander et al., 2003), and may tend to consider attempted suicide (as opposed to completed, 'successful' suicide) as an 'unfinished act' and a shameful expression of 'impaired' masculinity. In the western world, the still prevailing cultural script considers attempted suicide as an acceptable form of behaviour in females but not in male subjects (Canetto and Lester, 1998a). Consequently, shame associated with the attempt may contribute to reluctance in seeking available help and aggravate the perceived discrimination embedded with the stigma for mental illnesses.

For what concerns the differences between suicide attempters seeking help from the four treatment options, the most intriguing result relates to those treated at a hospital, who reported a significantly higher intent to die, despite using one of the least lethal methods (overdosing with medications, which anyway represents the second most popular suicide method in Queensland women). It is possible that in a number of cases these persons may be overemphasising their true level of intent, while actually displaying a 'cry for help' rather than a serious determination. Or, these persons may be experiencing some ambivalence about the wish to die, regardless of the reported intent behind the action (Andriessen, 2006).

In contrast to those seeking treatment from hospitals, those who sought help from a telephone counselling service showed the lowest level of intent. This suggests

that these persons may prefer emotional support rather than medical or psychiatric/psychological intervention for suicidal behaviour (De Leo et al., 1995; De Leo et al., 2002a). While the issue of intent is recognised as important in suicidal behaviour (Haw et al., 2003; Scocco et al., 2000; Suominen et al., 2004), more research on how this relates to subsequent suicidal behaviour in the Australian population is required.

Results regarding those who sought treatment from a GP confirm previous findings that those attending primary health care settings often have co-morbid psychological and physical problems (Goodwin et al., 2003; Taylor et al., 2007). Some researchers have suggested that these people may be more likely to seek medical care for suicidality via physical and mental treatment due to shame or stigma, and consequently tend to under-report their suicidal problems (Iliffe and Manthorpe, 2005). If so, this would underline the importance of public education and awareness campaigns in addressing this issue.

This study has a number of implications for future research. For one, the similarity in the profile of non-treatment seekers to those who actually die by suicide (i.e. being male and using hanging as a method) puts these people at potentially higher risk. Considering this, both research and clinical practice should focus on strategies that can motivate males to utilise treatment services. In particular, investigations should address the specific reasons at the basis of the phenomenon of not seeking help, and the factors that may instead increase the likelihood of looking for treatment after a suicide attempt.

Research also needs to focus on why some persons choose to attend only one facility, limiting interventions to the minimum and disregarding all other options eventually suggested and available to them. In the current experience, this type of

observation is emphasised by the large number of males in the sample with single treatment and the disproportionately small figure in the sample with multiple treatments, where the ratio females versus males is more than three to one. Again, the violation of socially prescribed gender roles might be at the basis of this peculiar behaviour (Möller-Leimkühler, 2002).

Another area of significance is the finding that 'intent' is reported differently across available treatment options. Developing a further understanding of whether self-perceived intent determines the type of service attended, rather than the actual lethality of the method, may be useful in better understanding the clinical needs of subjects seeking treatment.

However, this study also has a number of limitations that may have influenced some of the results. First, the way in which the questionnaire was constructed means that it was difficult to establish a pattern describing the order in which each treatment was sought, and due to this, it was not possible to precisely reconstruct the trajectories for the different options of care. In addition, the questionnaire used in this study did not allow for causal relations to be established, and consequently could only report on associations between variables. The greater proportion of females in the sample of subjects with history of suicidality may also have influenced results, particularly in regards to intent, for which females generally report higher levels compared to men (Harriss et al., 2005; Skogman et al., 2004). Lastly, although community surveys allow anonymity and generally favour honesty of responses, they may also lead to substantial recall bias, as well as to misunderstanding or incorrect interpretation of survey questions (Burless and De Leo, 2001). Missing data and small sample sizes in the treatment subgroups represent a further limitation.

Conclusions

The decision to seek treatment following a suicide attempt is not necessarily indicative of lethality of method or severity of intent. In this sample, non-treatment seekers reported using methods that are potentially more likely to result in death (such as hanging); were communicating less their suicidal intent, and had poorer history of previous help-seeking behaviour. Males were over-represented in this sub-sample. In comparison, those who attend multiple services and hospitals have greater odds of being female and use methods of low lethality. Understanding the reasons behind poor help-seeking behaviour appears of great relevance and deserves specific research efforts. Community surveys can be particularly appropriate for conducting future investigations on this topic, as these are able to provide a realistic approximation of the prevalence of suicidal behaviours outside that seen in clinical settings, and, especially, can capture those people avoiding contact with health facilities. Once identified, these subjects should be targeted by in-depth investigations, able to depict the elements of the social and cultural contexts which inhibit the request for help.

References

Andriessen K (2006) On "Intention" In the definition of suicide. *Suicide Life Threat Behav* 36: 533-539.

Bertolote JM, Fleischmann A, De Leo D, Bolhari J, Botega N, De Silva D, Tran Thi Thanh H, Phillips M, Schlebusch L, Varnik A, Vijayakumar L, Wasserman D (2005) Suicide attempts, plans, and ideation in culturally diverse sites: The WHO SUPRE-MISS community survey. *Psychol Med* 35: 1457-1465.

Brook R, Klap R, Liao D, Wells KB (2006) Mental health care for adults with suicide ideation. *Gen Hosp Psychiat* 28: 271-277.

Burless C, De Leo D (2001) Methodological issues in community surveys of suicide ideators and attempters. *Crisis* 22: 109-124.

Canetto S, Lester D (1998a) Gender, culture, and suicidal behaviour. *Transcult Psychiatry* 35: 163 - 190.

Canetto S, Sakinofsky I (1998b) The gender paradox in suicide. *Suicide Life Threat Behav* 28: 1-23.

Cerel J, Jordan JR, Duberstein PR (2008) The impact of suicide on the family. *Crisis* 29: 38-44.

Crisp AH, Gelder MG, Rix S, Meltzer HI, Rowlands OJ (2000) Stigmatisation of people with mental illnesses. *Brit J Psychiatry* 177: 4-7.

De Leo D, Carollo G, Dello Buono M (1995) Lower suicide rates associated with a tele-help/tele-check service for the elderly at home. *Am J Psychiatry* 152: 632-634.

De Leo D, Cerin E, Spathonis K, Burgis S (2005) Lifetime risk of suicide ideation and attempts in an Australian community: Prevalence, suicidal process, and help-seeking behaviour. *J Affect Disorders* 86: 215-224.

De Leo D, Dello Buono M, Dwyer J (2002a) Suicide among the elderly: The long-term impact of a telephone support and assessment intervention in northern Italy. *Brit J Psychiatry* 181: 226-229.

De Leo D, Klieve H, Milner A (2006) *Suicide in Queensland, 2000-2004*. Brisbane: Australian Institute for Suicide Research and Prevention.

De Leo D, Padoani W, Lonnqvist J, Kerkhof AJ, Bille-Brahe U, Michel K, Salander-Renberg E, Schmidtke A, Wasserman D, Caon F, Scocco P (2002b) Repetition of suicidal behaviour in elderly Europeans: A prospective longitudinal study. *J Affect Disorders* 72: 291-295.

De Leo D, Scocco P, Marietta P, Schmidtke A, Bille-Brahe U, Kerkhof AJ, Lonnqvist J, Crepet P, Salander-Renberg E, Wasserman D, Michel K, Bjerke T (1999) Physical illness and parasuicide: Evidence from the European parasuicide study interview

schedule (EPSIS/WHO-EURO). *Int J Psychiatry in Med* 29: 149-163.

Deisenhammer EA, Huber M, Kemmler G, Weiss EM, Hinterhuber H (2007) Suicide victims' contacts with physicians during the year before death. *Eur Arch Psychiatry Clin Neurosci* 257: 480-485.

Dieserud G, Roysamb E, Ekeberg O, Kraft P (2001) Toward an integrative model of suicide attempt: A cognitive psychological approach. *Suicide Life Threat Behav* 31: 153-168.

Fekete S, Osvath P, Michel K (2004) Contacts with health care facilities prior to suicide attempts. In D De Leo, U Bille-Brahe, A Kerkhof, A Schmidtke (Eds), *Suicidal behaviour: Theories and research findings* (pp 301-312). Gottingham, Germany: Hogrefe & Huber.

Goldberg D, Huxley P (1980) *Mental illness in the community*. London: Tavistock.

Goodwin RD, Kroenke K, Hoven CW, Spitzer RL (2003) Major depression, physical illness, and suicidal ideation in primary care. *Psychosom Med* 65: 501-505.

Hamdi E, Price S, Qassem T, Amin Y, Jones D (2008) Suicides not in contact with mental health services: Risk indicators and determinants of referral. *JMH* 17: 398 – 409.

Harriss L, Hawton K, Zahl D (2005) Value of measuring suicidal intent in the assessment of people attending hospital following self-poisoning or self-injury. *Brit J Psychiatry* 186: 60-66.

Haw C, Hawton K, Houston K, Townsend E (2003) Correlates of relative lethality and suicidal intent among deliberate self-harm patients. *Suicide Life Threat Behav* 33: 353-364.

Howson MA, Yates KM, Hatcher S (2008) Re-presentation and suicide rates in emergency department patients who self-harm. *Emerg Med Australas* 20: 322-327.

Iliffe S, Manthorpe J (2005) The prevention of suicide in later life: A task for gps? *Brit J Gen Pract* 55: 261-262.

Kirkpatrick-Smith J, Bonner RL, Jans F (1992) Gender differences in the psychosocial correlates of suicidal ideation among adolescents. *Suicide Life Threat Behav* 22: 364-373.

Lester D (1997) The role of shame in suicide. *Suicide Life Threat Behav* 27: 352-361.

Luoma JB, Martin CE, Pearson JL (2002) Contact with mental health and primary care providers before suicide: A review of the evidence. *Am J Psychiatry* 159: 909-916.

Mann JJ, Apter A, Bertolote J, Beautrais A, Currier D, Haas A, Hegerl U, Lonnqvist J, Malone K, Marusic A, Mehlum L, Patton G, Phillips M, Rutz W, Rihmer Z,

Schmidtke A, Shaffer D, Silverman M, Takahashi Y, Varnik A, Wasserman D, Yip P, Hendin H (2005) Suicide prevention strategies: A systematic review. *JAMA* 294: 2064-2074.

Mathers C, Vos T, Stevenson C (1999) *The burden of disease and injury in Australia*. Canberra: Australian Institute of Health and Welfare.

Meadows G, Liaw T, Burgess P, Bobevski I, Fossey E (2001) Australian general practice and the meeting of needs for mental health care. *Soc Psych Psych Epid* 36: 595-603.

Möller-Leimkühler AM (2002) Barriers to help-seeking by men: A review of sociocultural and clinical literature with particular reference to depression. *J Affect Disorders* 71: 1-9.

Osvath P, Voros V, Fekete S (2004) Life events and psychopathology in a group of suicide attempters. *Psychopathology* 37: 36-40.

Owens C, Booth N, Briscoe M, Lawrence C, Lloyd K (2003) Suicide outside the care of mental health services: A case-controlled psychological autopsy study. *Crisis* 24: 113-121.

Parslow RA, Jorm AF (2001) Predictors of partially met or unmet need reported by consumers of mental health services: An analysis of data from the Australian national survey of mental health and wellbeing. *Aust NZ J Psychiat* 35: 455-463.

Pirkis J, Burgess P, Dunt D (2000) Suicidal ideation and suicide attempts among Australian adults. *Crisis* 21: 16-25.

Pirkis J, Burgess P, Meadows G, Dunt D (2001) Self-reported needs for care among persons who have suicidal ideation or who have attempted suicide. *Psychiat Serv* 52: 381-383.

Pompili M, Mancinelli I, Tatarelli R (2003) Stigma as a cause of suicide. *Brit J Psychiatry* 183: 173-174.

Scocco P, Marietta P, Tonietto M, Dello Buono M, De Leo D (2000) The role of psychopathology and suicidal intention in predicting suicide risk: A longitudinal study. *Psychopathology* 33: 143-150.

Skogman K, Alsen M, Ojehagen A (2004) Sex differences in risk factors for suicide after attempted suicide-a follow-up study of 1052 suicide attempters. *Soc Psych Psych Epid* 39: 113-120.

Stack S (2007) Societal economic costs and benefits from death: Another look. *Death Stud* 31: 363-372.

Suominen K, Isometsa E, Ostamo A, Lonnqvist J (2004) Level of suicidal intent predicts overall mortality and suicide after attempted suicide: A 12-year follow-up study. *BMC Psychiatry* 4: 11.

Taylor A, Dal Grande E, Gill T, Fisher L, Goldney R (2007) Detecting determinants of suicidal ideation: South Australian surveillance system results. *In J Public Health* 52: 142-152.

Wiklander M, Samuelsson M, Asberg M (2003) Shame reactions after suicide attempt. *Scand J Caring Sci* 17: 293-300.

Yang B, Lester D (2007) Recalculating the economic cost of suicide. *Death Stud* 31: 351-361.

Yip PSF, Liu KY, Law CK, Law YW (2005) Social and economic burden of suicides in Hong Kong SAR: A year of life lost perspective. *Crisis* 26: 156-159.