



Outreach Psychiatric Emergency Service

Characteristics of Patients With Suicidal Behavior and Subsequent Policy

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Abstract. *Background:* Outreach psychiatric emergency services play an important role in all stages of a suicidal crisis; however, empirical assessment data are scarce. This study describes characteristics of patients assessed by these services and involved in suicidal crises. *Method:* During a 5-year period, detailed information from psychiatric emergency service assessments was recorded; 14,705 assessments were included. Characteristics of patients with/without suicidal behavior and with/without suicide attempts were compared. Outcomes were adjusted for clustering of features within individual patients. *Results:* Suicidal behavior was assessed in 32.2% of patients, of whom 9.2% attempted suicide. Suicidal behavior was most commonly associated with depression or adjustment disorder and these patients were referred to the service by a general practitioner or a general hospital, whereas those who attempted suicide were less likely to be referred by a general practitioner. Those who attempted suicide were more likely to be female and have had a referral by a general hospital. Self-poisoning by medication was the most common method of attempting suicide. *Limitations:* Bias could be due to missed or incomplete assessments. Primary diagnoses were based on clinical observation at the time of the assessment or on the primary diagnosis previously recorded. In addition, suicidal behavior or attempted suicide might have been underestimated. *Conclusions:* Suicidal behavior is commonplace in assessments by psychiatric emergency services. Suicidal patients with/without a suicide attempt differed with respect to demographic features, primary diagnoses, and referring entities, but not with respect to treatment policy. About 40% of the suicidal patients with/without an attempt were admitted following assessment.

Keywords: emergency psychiatry, outreach, suicidal behavior, suicide attempt, acute psychiatry

In 2017, 1,917 people ended their life in The Netherlands, a country of over 17 million inhabitants (Statistics Netherlands, 2018; Centraal Bureau voor de statistiek, 2018). The lifetime Dutch prevalence of suicidal ideation, plan, and attempt was reported to be 8.3%, 3.0%, and 2.2%, respectively (ten Have, Dorsselaer, & de Graaf, 2013).

In The Netherlands, outreach psychiatric emergency services are in charge of responding rapidly to sudden changes in patients' mental health and to loss of control of behavior, including suicidal crises. If serious suicidal behavior is suspected or recognized in society and/or by health-care professionals, assessment by an outreach psychiatric emergency service is necessary. Patients are immediately evaluated on the spot: for example, at home, at the police office, or at the first aid and emergency department of a general hospital. It is up to the clinical judgment of an independent psychiatrist whether or not the person

will be involuntarily transported to a psychiatric emergency facility. Thus, these services encounter serious suicidal behavior and contribute to the prevention of suicide; however, there is a lack of detailed information about their policy and actions (Glick, Berlin, Fishkind, & Zeller, 2008; While et al., 2012).

This study is an extension of a previously published Dutch manuscript that reported approximately one third of all patients encountered by the outreach psychiatric emergency service displayed signs of suicidal behavior and 9.2% were at risk of attempting suicide; more than 40% of all patients with suicidal behavior were admitted (De Winter, De Groot, Van Dassen, Deen, & De Beurs, 2017). The current study also describes the characteristics of patients who were assessed by a 24-hr psychiatric emergency service in The Hague, a Dutch urban catchment area that is representative of a big Dutch city catchment area. The

patient population of psychiatric crisis services seems to be very suitable for research on various aspects of serious suicidal behavior. After all, this is where the risk assessment of recognized suicidal behavior takes place, but, despite this, hardly any research has been done with this population.

Presently, the authors are conducting a study regarding the development of a clinical differentiation model for suicidal behavior in a high-risk population (suicidality differentiation [SUICIDI] study, <https://bit.ly/2U3PBYl>). In this project, suicidal patients will be assessed during psychiatric emergency service taxation (risk assessment). The results of the present study are essential for the SUICIDI study since they further knowledge about the general characteristics of this suicidal high-risk group and the actions taken for clinical follow-up. More data on the current day-to-day practice of the psychiatric emergency service are needed to facilitate better research and to investigate how changes in mental health care affect the policy for identified high-risk suicidal patients in mental health care.

Method

Data Collection

From July 1, 2009 to September 10, 2014, data from all face-to-face assessments by the 24-hr psychiatric emergency service in The Hague and region were gathered prospectively and directly on a daily basis. For the non-face-to-face assessments, no detailed information was gathered.

The identity of all patients was protected by de-identifying and coding the cases. Gender, age, marital status, and ethnicity of patients were recorded in all cases. Ethnicity was defined according to the classification of Statistics Netherlands (2017). The DSM-IV-TR classification (American Psychiatric Association, 2004) was used to establish the primary diagnosis. Also, the referring entity and treatment policy were recorded. Suicidal behavior was identified from the patient records by means of content analysis using the following definition: "Behaviors that include thinking about suicide (or suicide ideation), planning for suicide, attempting suicide and suicide itself." Attempted suicide was established by using the definition: "Any non-fatal suicidal behavior, such as intentional self-poisoning, self-injury or self-harm which may or may not have a fatal intent or outcome" (World Health Organization, 2014, p. 12).

Data Analysis

Descriptive Statistics in SPSS 23.0 was used to calculate descriptive numbers and percentages. Logistic regression models in STATA version 14.0 were used to assess possible associations among the characteristics of patients with suicidal behavior. The same was done with the characteristics of patients who had attempted suicide (Table 2). Suicidal behavior (1 = *yes*, 0 = *no*) and attempted suicide (1 = *yes*, 0 = *no*) were the dependent variables, patient characteristics were the independent variables. Outcomes are presented in Table 2 as odds ratios (ORs) with a 95% confidence interval (CI) and a *p* value. Categorical variables were transformed into dummy variables. From every group of independent variables (gender, ethnicity, marital status, primary diagnosis, referring entity, policy) one category was selected as reference category; a value of *OR* = 1 was allocated to that category. The reference categories were female, Dutch, married, depressive disorder, general practitioner, and admission. Missing values were coded as *unknown*. The percentages unknown for ethnicity, marital status, primary diagnosis, referring entity and policy in the subgroups suicidal behavior and suicide attempt (see Table 1) did not differ from those found in the all-assessments group. Logistic regression analyses of cases including missing values and of cases without missing values (Available Case Analysis) showed similar outcomes. We concluded that there were no systematically missing values for the subgroups.

Assessments are nested among the patients, which accounts for the nested design of this study. The assumption here is that repeated assessments within individual patients are not independent. Results are therefore corrected for clustering of patient characteristics within repeated assessments, which reduces the probability of Type I errors.

Ethical Considerations

Before conducting the study, the authors consulted the Dutch Central Committee on Research Involving Human Subjects (CCMO) under the Dutch Medical Research Involving Human Subjects Act (WMO) regarding whether approval was needed for this study. The identity of all patients was protected by de-identifying and codifying the cases. As this study did not include interaction with patients or interventions and it did not subject patients to procedures that required them to follow rules of behavior, no approval by the ethics committee was considered necessary. The study was approved and financed by the medical directorate of the institute.

Results

There were 21,401 assessments during the recruitment period, of which 14,705 (68.7%) were face-to-face assessments. Overall, 7,969 individuals were involved. Table 1

shows that in all groups, the majority of the assessments were repeated assessments.

Patients were most commonly Dutch and the majority were single. Widowed patients were the least represented. Of all assessments, psychotic disorder was the most repre-

Table 1. Characteristics of patients assessed by the outreach psychiatric emergency service in The Hague from July 2009 to September 2014

	All assessments	Suicidal behavior without attempted suicide	Suicide attempt
	<i>N</i> = 14,705 (100%)	<i>N</i> = 4,741/14,705 (32.2%)	<i>N</i> = 1,364/4,741 (9.2%)
Individual patients (<i>n</i>)	7,969	3,277	1,115
Assessments per patient (min-max <i>n</i>)	1–47	1–46	1–46
Repetitive assessment, <i>n</i> (%)	9,396 (63.9)	2,698 (56.9)	762 (55.9)
Age in years <i>M</i> (<i>SD</i>)	44.0 (16.5)	41.3 (15.1)	39.7 (15.6)
Male gender <i>n</i> (%)	7,901 (53.7)	2,310 (48.7)	591 (43.3)
Ethnicity	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Dutch	8,767 (59.6)	3,087 (65.1)	809 (59.3)
Other Western	1,372 (9.3)	355 (7.5)	110 (8.1)
Moroccan	550 (3.7)	137 (2.9)	40 (2.9)
Dutch Antilles	357 (2.4)	84 (1.8)	30 (2.2)
Turkish	469 (3.2)	157 (3.3)	68 (5.0)
Surinamese	1,352 (9.2)	387 (8.2)	123 (9.1)
Other non-Western	1,141 (7.8)	315 (6.6)	113 (8.3)
Unknown	697 (4.7)	219 (4.6)	71 (5.2)
Marital status	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Married or cohabiting	2,285 (15.5)	832 (17.5)	275 (20.2)
Never married or cohabited	7,058 (48.0)	2,278 (48.0)	614 (45.0)
Broken-up relationship/divorced	1,886 (12.8)	672 (14.2)	184 (13.5)
Widow(er)	505 (3.4)	151 (3.2)	37 (2.7)
Relationship unknown	2,971 (20.2)	808 (17.0)	254 (18.6)
Primary diagnosis	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Depressive disorder	2038 (13.9)	1349 (28.5)	392 (28.7)
Other mood disorder	1092 (7.4)	255 (5.4)	54 (4.0)
Neurotic/anxiety disorder	1,058 (7.2)	444 (9.4)	113 (8.3)
Adjustment disorder	314 (2.1)	171 (3.6)	61 (4.5)
Personality disorder	987 (6.7)	521 (11.0)	176 (12.9)
Psychotic disorder	3,761 (25.6)	492 (10.4)	117 (8.6)
Organic disorder	632 (4.3)	44 (0.9)	10 (0.7)
Alcohol-related disorder	2,154 (14.6)	757 (16.0)	190 (13.9)
Other substance-related disorder	743 (5.1)	179 (3.8)	52 (3.8)
Other/unknown	932 (6.3)	306 (6.5)	100 (7.3)
None/diagnosis deferred	994 (6.8)	223 (4.7)	99 (7.3)
Referring entity	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
General practitioner	3,346 (23.1)	1,633 (34.4)	175 (12.8)
Police	5,737 (39.0)	1,094 (23.1)	257 (18.8)
General hospital	2,478 (16.9)	1,144 (24.1)	789 (57.8)
Mental health service	2,587 (17.6)	720 (15.2)	114 (8.4)
Other/unknown	457 (3.1)	150 (3.2)	29 (2.1)
Policy	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Admission	5,062 (34.4)	2,019 (42.6)	617 (45.2)
Emergency care	4,500 (30.6)	1,713 (36.1)	439 (32.2)
Regular mental health care	1,708 (11.6)	265 (5.6)	56 (4.1)
Referred to other services	1,233 (8.4)	352 (7.4)	124 (9.1)
Abide/no further policy	2,160 (14.7)	372 (7.8)	121 (8.9)
Unknown	42 (0.3)	20 (0.4)	7 (0.5)

Table 2. Characteristics of assessments that encounter suicidal behavior ($n = 4,741$) and attempted suicide ($n = 1,364$). Corrected for clustering of patient characteristics within repetitive assessments

	Suicidal behavior without attempted suicide			Suicide attempt		
	OR	95% CI	<i>p</i>	OR	95% CI	<i>p</i>
Female	1			1		
Male	1.02	0.93–1.14	.584	0.84	0.73–0.98	.022
Age	0.98	0.98–0.99	.000	0.99	0.98–0.99	.000
Ethnicity						
Dutch	1			1		
Other Western	0.69	0.58–0.83	.000	0.75	0.58–0.97	.028
Moroccan	0.62	0.49–0.79	.000	0.67	0.45–0.97	.032
Dutch Antilles	0.72	0.52–0.99	.044	1.05	0.69–1.61	.815
Turkish	0.71	0.55–0.91	.006	1.11	0.78–1.55	.537
Surinamese	0.80	0.67–0.96	.019	1.04	0.78–1.34	.792
Other non-Western	0.74	0.61–0.89	.002	1.01	0.79–1.31	.887
Unknown	0.85	0.69–1.03	.102	0.94	0.69–1.29	.706
Marital status						
Married or cohabitant	1			1		
Never married or cohabited	1.01	0.88–1.17	.800	0.74	0.61–0.91	.003
Broken up relationship (divorced)	1.13	0.95–1.35	.178	0.86	0.67–1.11	.255
Widow(er)	1.19	0.90–1.59	.223	0.88	0.59–1.32	.543
Unknown	0.93	0.78–1.11	.447	0.75	0.58–0.97	.028
Primary diagnosis						
Depressive disorder	1			1		
Other mood disorder	0.17	0.14–0.22	.000	0.24	0.18–0.33	.000
Neurotic/anxiety disorder	0.41	0.34–0.49	.000	0.46	0.36–0.60	.000
Adjustment disorder	0.74	0.58–0.96	.021	0.90	0.65–1.24	.532
Personality disorder	0.70	0.56–0.87	.001	0.75	0.57–0.99	.043
Psychotic disorder	0.09	0.08–0.11	.000	0.15	0.11–0.19	.000
Alcohol-related disorder	0.35	0.29–0.41	.000	0.37	0.30–0.47	.000
Other substance-related disorder	0.19	0.16–0.24	.000	0.31	0.21–0.44	.000
Organic disorder	0.06	0.04–0.08	.000	0.08	0.04–0.16	.000
Other/unknown	0.35	0.29–0.43	.000	0.58	0.44–0.75	.000
None/diagnosis deferred	0.23	0.19–0.28	.000	0.46	0.35–0.61	.000
Referring entity						
General practitioner	1			1		
Police	0.41	0.37–0.47	.000	1.51	1.21–1.89	.000
Mental health care	0.77	0.68–0.88	.000	1.32	1.02–1.71	.033
General hospital	1.01	0.89–1.15	.818	10.8	8.87–13.09	.000
Other/unknown	0.77	0.61–0.97	.029	1.76	1.15–2.68	.008
Policy						
Admission to a psychiatric hospital	1			1		
Emergency care	0.62	0.56–0.68	.000	0.51	0.43–0.59	.000
Regular mental health care	0.30	0.25–0.36	.000	0.26	0.18–0.36	.000
Referred to other services	0.44	0.38–0.52	.000	0.43	0.34–0.55	.000
Abide/no further policy	0.35	0.30–0.40	.000	0.55	0.43–0.69	.000
Unknown	1.33	0.71–2.50	.374	0.88	0.46–1.70	.707

sented primary diagnosis, followed by alcohol abuse and depressive disorder. Adjustment disorder and organic disorder were the least common.

Suicidal behavior was found in 32% of all assessments, in 66% of assessed patients with depressive disorder, in 54% with adjustment disorder, in 59% with personality disorder, and in 13% with psychotic disorder. Most assessments took place after referral by the police (39%) or a general practitioner (23%).

Patient Characteristics and Suicidal Behavior

Table 2 shows that suicidal behavior was most likely among Dutch patients and significant lower for all other ethnic groups, except for patients of an unknown ethnicity. The most common primary diagnosis was depressive disorder. Suicidal patients were most likely referred to the psychiatric emergency service by a general practitioner or the first aid and emergency department of a general hospital. Patients with suicidal behavior were admitted in 43% of the cases.

Characteristics of Patients Who Attempted Suicide

Consultations immediately after suicide attempts were identified in 9.2% of the assessments with suicidal behavior. Patients who attempted suicide were more likely female, single, or with an unknown marital status. Regarding ethnicity, those who attempted suicide were least likely to be Moroccan or of other Western ethnicity. Depressive disorder and adjustment disorder were the most prevalent primary diagnoses. In contrast to the suicidal behavior group, referral by a general practitioner was less likely in the group of those who attempted suicide. Those who attempted suicide were most likely referred to the psychiatric emergency service by a general hospital. Admission to a psychiatric hospital and/or an unknown policy were more likely than other policies.

Suicide Attempt Methods

In more than a half of the cases of suicide attempt, self-poisoning with medication was used as the method (Table 3). Hanging, the most widely used suicide method in The Netherlands among men (Statistics Netherlands, 2018), was third among the suicide attempts in the current sample. Methods for attempting suicide did not differ between males and females.

Table 3. Methods used to attempt suicide

Method	<i>n</i>	%
Self-poisoning with medication	696	51.0%
Cutting	143	10.5%
Hanging	107	7.8%
Railway vehicle or traffic related	53	3.9%
Jumping from a height	41	3.0%
Drowning	30	2.2%
Miscellaneous (asphyxia, firearm, car, forced accident, etc.)	118	8.7%
Self-poisoning, other than medication	40	2.9%
Unknown details	136	10.1%
Total	1,364	100%

Discussion

This study aimed to describe characteristics of patients assessed by outreach psychiatric services and who were involved in suicidal crises. Suicidal behavior was seen in approximately one out of three patients who were assessed by an outreach psychiatric emergency service and was most common among patients with a depressive disorder, comprising two thirds of this group. In more than a quarter of the assessments regarding suicidal behavior, the patient was consulted immediately after a nonfatal suicide attempt. These patients were slightly younger and more likely female compare with suicidal patients without an attempt. There is considerable variation in the methods used to attempt suicide and in the risks between different countries. For example, in The Netherlands, suicide by firearms or pesticides is rare, whereas it is common in countries with easy access to these means (Värnik et al., 2008). A history of attempted suicide is the most reliable predictor of suicide (Ribeiro et al., 2016), and in this study, suicide attempts most often resulted in admission to a psychiatric hospital.

The results show, furthermore, that the presence of an adjustment disorder along with a depressive disorder increases the likelihood of a suicide attempt. Dutch health insurance companies no longer cover treatment of adjustment disorders. Thus, it is challenging to determine the type of care these patients should be referred to and/or how care can be continued. It would be interesting to study the long-term effect of insurance companies' policy on the suicide rate in this group (Spuijbroek, Leezer, De Beurs, & De Winter, 2016).

In this sample, more than 40% of the patients with suicidal ideation and those who attempted suicide were admitted to a psychiatric hospital after assessment by the psychiatry emergency service. However, the effects of ad-

mission on the suicidal behavior, such as whether admission has an iatrogenic effect, are unknown (Large, Smith, Sharma, Nielssen, & Singh, 2011). The high rate of admissions may be the result of regional procedures and/or of the high availability of clinical care (Wierdsma, Driessen, Smeets, & Visser, 2012), but research on this subject is not available. Recently, the Dutch government commissioned the transition of inpatient to outpatient mental health care and, consequently, the availability of clinical care will wane in the following years. Alternatives for admissions such as system interventions and crisis home treatment will play a more important role in future suicide prevention policy (Diamond, Russon, & Levy, 2016). Evidence of the beneficial effects of system interventions and/or crisis home treatment on suicidal behavior is lacking (De Groot, De Winter, Van der Plas, & Kerkhof, 2016). While facing the challenges of dealing with suicidal behavior in the transition of inpatient to outpatient care, it would be of interest to examine the effects on suicide rates in mental health care.

Another finding in this study was that the likelihood of attempted suicide was lower among patients who were single and among those with an unknown marital status. These results do not support previous research reports that showed those who were single, divorced, or widowed were more prone to suicidal behavior and/or attempting suicide than were married or cohabiting people (Roškar et al., 2011). With respect to ethnicity, patients with Moroccan or other Western ethnicity are underrepresented among those who attempted suicide. Fear of stigma in some ethnic groups may have resulted in delayed or refused encounters with mental health care services. Female immigrants in the catchment area more often displayed suicidal behavior and more often attempted suicide compared with females of Dutch origin. Additionally, it was found that young Hindustani people from Suriname more frequently attempted suicide than those with a Creole background (Burger, Van Hemert, Schudel, & Middelkoo, 2009). In this sample, we could not discriminate between Hindustani and Creole individuals. As a consequence, possible differences may not be revealed. More differentiation between ethnic groups may provide a better understanding of regional suicide risk factors.

Suicidal patients are principally referred to the psychiatric emergency service by their general practitioner or a general hospital. General hospitals are the main referring entity for those who attempt suicide, whereas general practitioners are least likely to refer this group. Outcomes suggest that police officers recognize attempted suicide but not suicidal thoughts or plans. The number of referred patients with suicidal behavior (without attempt) by the police may increase if police officers are trained in recognizing suicidal behavior (Isaac et al., 2009).

Limitations

It is unclear whether outcomes are biased by missed or incomplete assessments, but analyzing the cases including missing values with the cases without missing values showed similar outcomes. In addition, it is unknown how many patients already received mental health care prior to the moment of the assessment. Marital status was unknown in about 20% of the assessments for all three groups (Table 1). It is plausible that this created bias, as previous research showed that suicidal behavior is more prevalent among singles and patients with broken-up relationships than among patients who are in a relationship (Hawton & Van Heeringen, 2009). A possible explanation for the contradictory result is that the group with unknown marital status may have included a high number of single and/or divorced patients. Personality disorders are not specified, whereas suicidal behavior is likely among patients with borderline personality disorder. It is possible that in the current study, cases with borderline personality disorder accounted for the heavy statistical weight and consequently resulted in bias. Furthermore, primary diagnoses were based on clinical observation at the time of the assessment or on the primary diagnosis as previously recorded. In addition, suicidal behavior or attempted suicide might have been underestimated (Brown, Currier, Jager-Hyman, & Stanley, 2015). Finally, it is important to find ways to categorize the seriousness of the suicide attempts in the sample. For instance, a suicide attempt with a railway vehicle is generally considered as a severe attempt as the survival rate is low (Van Houwelingen, Kerkhof, & Beersma, 2010). Although patients who lay down on the railway tracks were considered suicidal, it does not always mean that their intention was to actually be run over and/or that there was any real danger of the patient being hit by a railway vehicle.

Although predicting suicide is a difficult task, suicidal behavior and an attempt are risk factors during the remainder of a person's life. It is therefore essential to establish and maintain a therapeutic alliance with suicidal patients. It is important to realize that approximately 40% of individuals presenting with suicidal behavior do not receive treatment (Jacobs, McIntyre, & Charles, 2003) and therefore probably do not encounter a psychiatric emergency service.

Future Directions

Despite the rough measures, we have gained more detailed insight into and clarity regarding what occurs in a psychiatric emergency service when suicidal behavior is being

dealt with. Since 2014, almost all employees of the involved service have been trained in guideline application. It would be of interest to examine whether this has resulted in an increase in the recognition of suicidal behaviors and consequently a more effective policy on this issue. Currently, suicidal patients are often admitted voluntarily, but the future reduction in the number of beds will possibly create a shift to a lower voluntary admission rate and an increase in involuntary admissions (Rhodes & Giles, 2014; Schoevaerts, Bruffearts, Mulder, & Vandenberghe, 2013). It has not been proved that admitting patients can prevent suicide (Huber et al., 2016). In the past couple of years fewer patients have been admitted owing to the reduced number of beds, and the number of admission-prevention teams, which play an important role in the assessment and treatment of suicidal behavior, is growing (Ness, Karlsson, Borg, Biong, & Hesook, 2012). It would be of interest to monitor in what way the reduction in bed numbers will change the way psychiatric emergency services do their work, and whether admission-prevention teams are helpful in preventing suicide. In addition, we plan to conduct research of a high-risk group with suicidal behavior to have a basis for identifying possible alterations in the characteristics and outcome of suicidal behavior after policy changes. Furthermore, this is also a position paper for upcoming research into the differentiation of suicidal behavior among assessed high-risk groups (SUICIDI study). And, finally, we have learned from the limitations of this study and are therefore able to collect more essential details.

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