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Development of a method to classify suicide risk and the level of observation in an acute closed ward

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References
1. Powell, J: *Br J Psychiatry,* 2000
2. Ajdacic-Gross, V: *Acta Psychiatr Scand,* 2009
3. Neuner, T: *Gen Hosp Psychiatry,* 2008
4. De Winter, R.F.P: *Tijdschrift Psychiatrie, 2008*
5. Bohnen, E.M.A. *Master thesis Clinical Psychology, 2008*

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Introduction

- The CCAP (Clinical Centre for Acute Psychiatry) is the largest acute closed ward in the Netherlands.
- Patients, in whom suicidal behaviour is recognised by a mental health worker, and have a high estimated suicide risk, are commonly admitted to an acute closed ward.
- Psychiatric inpatients are known to be highly at risk for committing suicide.[1,2]
- It is important to identify factors that are associated with suicide among in-patients to improve safety for patients as well as for the staff during hospital admission.[3]
- In July 2007 a method ('safety plan') was developed to estimate suicide risk and determine the clinical setting required for suicidal inpatients.
- Every patient receives a 'danger code', which is precisely described in a code manual developed by de Winter.[4] This is summarised below in **Table 1.**
- This danger code is registered and evaluated on a daily basis during the report of the nursing to the medical staff.

Aim of this study

- Description of the safety plan and a preliminary evaluation of the experiences with this method over a 1-year period.
- Presentation of demographic and clinical characteristics of an inpatient population regarding the safety plan.
- Description of the experiences from working with this method among the staff of the CCAP.

Table 2. Distribution of phases

	Number of patients N (%)
Phase 5	**45 (3.5)**
Phase 4	**92 (7.1)**
Phase 3	**760 (59.5)**
Phase 2	**359 (28.0)**
Phase 1	**25 (1.9)**

Table 1. The safety plan, danger codes (phases) that individually classify suicide risk within the CCAP

Phase 5	(red)	Seclusion	**Severely suicidal**
Phase 4	(orange)	Supervision	
Phase 3	(yellow)	Closed, without supervision or freedom	
Phase 2	(green)	Predetermined amount of time outside the unit	
Phase 1	(blue)	Preparation for clinical discharge	**Not suicidal**

Table 3. Differences in demographic and clinical characteristics between two risk groups

	Phase 1-3 N=1144	Phase 4-5 N=137	Significance
Patient characteristics			
Age (M)	**39.8**	**34.8**	**p < .001**
Female gender N (%)	**487 (42.6)**	**83 (60.6)**	**p < .001**
Married/living together N (%)	**343 (30.0)**	**53 (39.0)**	**ns**
Children N (%)	**396 (34.6)**	**50 (36.5)**	**ns**
Unemployed N (%)	**807 (70.5)**	**77 (56.2)**	**p < .001**
First admission at CCAP (< 5 yr) N (%)	**480 (42.0)**	**93 (68.0)**	**p < .001**
Compulsory admission N (%)	**723 (63.2)**	**68 (49.6)**	**p = .007**
Clinical Global Impression (M)	**5.2**	**5.7**	**p < .001**
Global Assessment of Functioning (M)	**30.2**	**23.4**	**p < .001**
ECT-treatment N (%)	**8 (0.7)**	**12 (8.7)**	**p < .001**
Secluded during admission N (%)	**204 (17.8)**	**56 (40.8)**	**p < .001**
Symptoms during admission			
Suicidal N (%)	**272 (23.8)**	**111 (81.0)**	**p < .001**
Self-injurious behaviour N (%)	**65 (5.7)**	**27 (20.0)**	**p < .001**
Manic dysregulation N (%)	**254 (22.2)**	**14 (10.2)**	**p = .001**
Depressive mood N (%)	**311 (27.2)**	**69 (50.4)**	**p < .001**
Psychotic symptoms N (%)	**610 (53.3)**	**77 (56.2)**	**ns**
Alcohol dependence/abuse N (%)	**177 (15.5)**	**5 (3.6)**	**p < .001**
DSM Clusters			
Unipolar depressive disorder N (%)	**180 (15.7)**	**51 (37.2)**	**p < .001**
Bipolar disorder N (%)	**175 (15.3)**	**14 (10.2)**	**ns**
Psychotic disorder N (%)	**453 (39.6)**	**50 (36.5)**	**ns**
Substance abuse/dependence N (%)	**319 (27.9)**	**14 (10.2)**	**p < .001**
Alcohol abuse/dependence N (%)	**212 (18.5)**	**10 (7.3)**	**p = .001**
Anxiety disorder N (%)	**106 (9.3)**	**18 (13.1)**	**ns**
Personality disorder N (%)	**293 (25.6)**	**21 (15.3)**	**p = .007**

Material and methods

- From 1st of January 2009 until the 31th of December 2009, 1283 patients were admitted. For 1281 patients (99.8%) the safety code and complete data were available.
- Patients (n = 137, 10.6%) with phase 4 and 5 (high suicide risk) were compared to patients (n = 1144, 89.4%) with phase 1, 2 and 3 (low suicide risk).
- The most frequently encountered clinical symptoms in acute psychiatry (e.g. depressive mood and suicidal behaviour) were closely monitored for each admitted patient.[5]
- During admission a DSM-IV diagnosis was assigned. Diagnoses were clustered in:
  1) Unipolar depressive disorders; 2) Bipolar disorder; 3) Psychotic disorders; 4) Substance abuse/dependence; 5) Alcohol abuse/dependence; 6) Anxiety disorder and 7) Personality disorders.
- An anonymous questionnaire was sent to the ward staff by www.thesistools.com, 36 staff members responded.
- Data analysis: *Mann-Whitney U*, *t-tests* and *χ2 tests* were used. The Statistical Package for Social Sciences version 17.0 (SPSS 17.0 INC, Chicago) was used for statistical analyses.

Results

Since the introduction of the safety plan in July 2007, 4 patients (2 females) committed suicide during admission (3 inside the clinic and 1 outside during leave). All suicides took place during data collection. One of these patients had been placed in one of the high risk phases (phase 4 and 5) during admission, the other 3 patients had been placed in phase 3 during the inpatient treatment. Ultimately 3 patients committed suicide during phase 3 and 1 during phase 2.

See Tables 2-5 for further information on demographic and clinical characteristics, and for the description of experiences from working with the safety plan among the staff.

Table 4. Level of highest suicidal behaviour during admission

	All patients N=1281 (100%)	High risk group (phase 4-5) N=137 (10.6%)
Suicide N (%)	**4 (0.3)**	**1 (0.7)**
Suicide attempt (lethal intent) N (%)	**41 (3.2)**	**25 (18.2)** [a]
Suicide attempt (non-lethal intent) N (%)	**78 (6.1)**	**33 (24.1)** [a]
Suicidal tendencies N (%)	**82 (6.4)**	**21 (15.3)** [a]
Suicidal thoughts N (%)	**213 (16.6)**	**28 (20.4)**

[a] = p < .001

Table 5. Questionnaire for staff workers (N=36) regarding the safety plan

Question	Answer	N (%)
Do you know exactly what the safety plan contains?	No Yes	0 (0) 36 (100)
Does working with the safety plan make you more aware of the risk of suicide?	Always Often Sometimes Not	10 (28) 15 (41) 7 (19) 4 (11)
Do you experience a team collaboration (with the psychiatrist) when appraising and coding a suicidal patient?	Always Often Sometimes Not	5 (14) 15 (42) 15 (42) 1 (3)
Do you think that the safety plan makes you more capable of preventing suicide?	Always Often Sometimes Not	0 (0) 6 (17) 21(58) 9 (25)
Should we continue working with the safety plan on the CCAP?	No Yes	7 (19) 29 (81)

Conclusion

- The safety plan is used consistently, is clear for patients and staff, but it does not prevent suicide.
- The DSM-IV diagnose related highest to suicidal behaviour on this acute closed ward is unipolar depressive disorder.
- Symptoms related to a high estimated suicide risk are suicidal behaviour, self-injurious behaviour and depressive mood.
- Risk factors for suicide known within the general population differ from those among inpatients with a high estimated suicide risk on an acute ward.

Discussion

- Unfamiliar patients are placed in a higher danger code, probably because the suicidal behaviour is more often seen as acute than as chronically suicidal.
- The results indicate different risk factors to pay attention to in the suicide assessment of patients admitted to an acute closed ward.
- Most patients are allocated to phase 3, probably because of defensive treatment mechanisms.
- Of patients in the high risk group, 21.3% did not show any suicidal behaviour, thus taxation perhaps is partly based on inexplicable psychiatric behaviour (e.g. mutism or hallucinatory behaviour).
- There is a need for the development of a structured taxation for the risk of suicide in the acute setting, such as the safety plan.
- Differentiation between chronically and acutely suicidal patients would contribute to improved risk assessment.

Limitations

- The safety plan is a theoretically, non-empirically based, construct.
- Data on changes of the suicide risk codes over time were not collected.
- There is a lack of instruments for measuring psychopathology and for taxation of the risk of suicide.