

PERSONALITY AND PSYCHOTIC SYMPTOMS AS PREDICTORS OF SELF-HARM AND ATTEMPTED SUICIDE

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SUMMARY

Background: Nonfatal suicidal behaviours (NSB), including suicide ideation, suicide plan and suicide attempt, constitute a serious problem for public healthcare services. Suicide gesture (SG) which refers to self-injurious behaviour with no intent to die, differs from NSB in a variety of important ways. The aim of this study was to investigate demographic and clinical characteristics of NSB and SG to examine whether self-injurers with intent to die differ significantly from self-injurers without such intent.

Methods: All admissions for NSB and SG to the Psychiatric Inpatient Unit of University / General Hospital Santa Maria della Misericordia, Perugia, Umbria, Italy, from January 2015 to June 2015 were included in a medical record review. Basic descriptive statistics and distributional properties of all variables were first examined. Bivariate analyses were performed using Chi-square tests for group comparisons and t-test for independent samples used when appropriated.

Results: The study sample included 38 patients. Of these 23 had committed NSB (13.1 %), 15 had committed SG (8.5%). Number of married NSB was significantly higher than the number of married SG ($p=0.08$). We found a significant difference between NSB and SG related to the item of impulse control that was poorer in SG than NSB ($p=0.010$). BPRS items of hostility ($p=0.082$), suspiciousness ($p=0.042$) and excitement ($p=0.02$) were found to be significantly higher in SG than NSB. Borderline personality disorder ($p=0.032$) and Passive-Aggressive personality disorder ($p=0.082$) diagnosed by the means of the SCID-II, were more represented in SG than NSB ($p=0.044$). Schizoid personality disorder was significantly related to NSB ($p=0.042$).

No others significant differences were found.

Conclusions: NSB and SG are different for many psychopathological characteristics. These results confirm the importance of classifying individuals on the basis of the intent to die. Additional research is needed to understand and elucidate psychopathological and clinical characteristics of the different categories of self-injurers to find risk factors specific to suicide attempts.

Key words: hostility - personality disorder - suicidal behaviours - self-injury - suicide gestures

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INTRODUCTION

According to WHO: “There are indications that for each adult who died of suicide there may have been more than 20 others attempting suicide” (WHO 2014). Every year over 800 000 people worldwide die by suicide (WHO 2014).

Nonfatal suicidal behaviours constitute a serious problem for public healthcare services (Alberdi-Sudupe 2011) because they are complex and many risk factors have been reported to be involved in these behaviours (Wilcox 2011). Nonfatal suicidal behaviours and thoughts (NSB) include suicide ideation which refers to “Thoughts of engaging in behaviour intended to end one’s life”, suicide plan which refers to “The formulation of a specific method through which one intends to die” and suicide attempt that is defined as “potentially self-injurious behaviour with a nonfatal outcome, for which there is evidence (either implicit or explicit) that the person intended at some (nonzero) level to kill himself/herself” (Nock 2008; O’Carroll 1996). Demographic risk factors for NSB include being female, young, unmarried, having lower educational attainment

and being unemployed (Nock 2008, Nock 2008, Bertolote 2002). Related to psychiatric factors, the presence of a psychiatric disorder is among the most consistently reported risk factors for suicidal behaviour (Nock 2008, Nock 2008, Mann 1999). Mood, impulse-control, alcohol/substance use, psychotic and personality disorders convey the highest risks for suicide and suicidal behaviour (Nock 2008, Nock 2008, Mann 1999, Hawton 2003).

Some authors have considered that it is important to distinguish between self-injurers with and without intent to die because they differ in significant ways (Nock 2006). Self-injurious behaviour in which “There is no intent to die but to give the appearance of a suicide attempt in order to communicate with others” has been defined as a suicide gesture (O’Carroll 1996, Nock 2006, Garcia-Nieto 2014). Demographic and clinical differences between NSB and suicide gestures (SG) have been investigated in literature. SG in general has been found to be more common between women (Nock 2006). In another study patients who attempted suicide were more likely to be older in age and to be diagnosed with bipolar disorder and/or narcissistic personality disorder. Patients who committed SG were more likely

to be diagnosed with borderline personality disorder, antisocial personality disorder and or histrionic personality disorder (Garcia-Nieto 2014).

The aim of this study was to investigate demographic and clinical characteristics of NSB and SG to examine whether self-injurers with intent to die differ significantly from self injurers without such intent. Considering previous studies in this area we expected to find several differences between two groups specifically in gender, marital status, age and years of education for demographic characteristics and in diagnosis, personality and psychopathological aspects for clinical characteristics.

METHODS

Setting and sample

The present study included all admissions for NSB and SG to the Psychiatric Inpatient Unit of University / General Hospital Santa Maria della Misericordia, Perugia, Umbria, Italy, from January 2015 to June 2015. The unit provides 17 beds for a catchment area corresponding to an entire Local Health District (ASL 1 dell'Umbria).

The unit is a locked ward providing crisis stabilization, intensive evaluation, and care for psychiatrically, medically, and psychosocially complex cases.

Procedures

The study design was a medical record review of patients' charts during their hospitalization. Patients were not assessed directly. Basic demographic, socioeconomic, psychosocial, clinical data and PANSS, BPRS and SCID-II scores were extracted from the medical charts. Variables were collected systematically using a structured data collection instrument. All patients gave informed consent for the use of personal and clinical data for research purposes during the hospitalization.

PANSS

The positive and negative syndrome scale (PANSS) (Kay et al. 1987) is a widely used 30-items scale for measuring symptom severity of psychotic patients. PANSS is composed of three scales (positive symptoms, negative symptoms, and general psychopathology), and a total score.

The patient is rated from 1 to 7 on 30 different symptoms based on a clinical interview requiring 45 to 50 minutes to administer (Kay 1987).

BPRS

The Brief Psychiatric Rating Scale (BPRS) is a widely used instrument for assessing the positive, negative, and affective symptoms of individuals who have psychotic disorders. The BPRS consists of 18

Table 1. Sociodemographic and Clinical Correlates of Nonfatal Suicidal Behaviours versus Suicide Gestures Status, Bivariate Tests, n=38

Variable	NSB (n=23)	SG (n=15)	Test Statistics
Male gender (22/38; 57.8%)	12 (54.5%)	10 (45.5%)	$\chi^2=0.78$, df=1, p=0.38
Age, in years	45.9±16.1	37.8±9.4	t=1.9, df=35.7, p=0.61
Marital Status			
Currently married (14/38; 36.8%)	11 (78.6%)	3 (21.4%)	
Not married	12 (50.0%)	12 (50.0)	$\chi^2=3.02$, df=1, p=0.08
Years of education	12.5±3.2	11.21±2.3	t=1.4, df=33.3, p=0.17
Occupied (15/38; 39.5%)	11 (73.3%)	4 (26.7%)	$\chi^2=1.70$, df=1, p=0.19
Admission			
Voluntarily (36/38; 94.7%)	21 (58.3%)	15 (41.7%)	$\chi^2=1.38$, df=1, p=0.24
Involuntarily	2 (100%)	0 (0%)	
Therapy before Admission			
Yes (27/38; 71.1%)	18 (66.7%)	9 (33.3%)	$\chi^2=1.47$, df=1, p=0.225
No	5 (45.5%)	6 (54.5)	
Previous suicide attempts (17/38; 44.7%)	11 (64.7%)	6 (35.3%)	$\chi^2=0.23$, df=1, p=0.635
Discharge diagnosis			
Mood disorder	2 (66.7%)	1 (33.3%)	$\chi^2=8.73$, df=9, p=0.463
Schizophrenia and other psychotic disorders	2 (50%)	2 (50%)	
Substance related disorders	0 (0%)	2 (100%)	
Personality disorders	8 (61.5%)	5 (38.5%)	
Adjustment disorders	3 (75.0%)	1 (25.0%)	
Anxiety disorders	1 (100%)	0 (0%)	
Mood and Substance disorders	0 (0%)	1 (100%)	
Mood and Personality disorders	3 (100%)	0 (0%)	
Substance related and personality disorders	3 (50%)	3 (50%)	
Schizophrenia and other disorders	1 (100%)	0 (0%)	
Length of stay	17.5±23.0	10.6±6.8	t=51.12, df=36, p=0.269

symptom constructs and takes 20-30 minutes for the interview and scoring. The rater should enter a number ranging from 1 (not present) to 7 (extremely severe). 0 is entered if the item is not assessed (Lukoff 1986).

SCID II

The Structured Clinical Interview for DSM IV axis II disorders (SCID-II) is a self-administered questionnaire which evaluate the Axis II personality disorders-PDs according to the DSM IV. The diagnostic tool is composed of 120 dichotomous items divided into twelve sections, referred to the 12 PDs. Positive responses to items are followed by a clinical interview with the aim to attribute a score (on a 4-point scale) on the basis of the stability and pervasiveness of behaviors, feelings, and thoughts inquired by the item (First 1995)

Analyses

Basic descriptive statistics and distributional properties of all variables were first examined. Bivariate analyses were performed using Chi-square tests for group comparisons and t-test for independent samples

used when appropriated. Results were considered statistically significant for $p < 0.1$.

IBM SPSS 21.0 software was used for all statistical tests.

RESULTS

Prevalence of suicide Attempts and Suicide Gestures

A total of 176 patients were admitted to the Psychiatric Inpatient Unit of University / General Hospital Santa Maria della Misericordia, Perugia, Umbria, Italy, between January 2015 to June 2015. Of these 38 (21.6%) were admitted for NSB and SG.

Specifically 23 had committed NSB (13.1%), 15 had committed SG (8.5%).

Socio-demographic characteristics

Socio-demographic characteristics of the patients are presented in Table 1.

Table 2. PANSS medium scores of Nonfatal Suicidal Behaviours versus Suicide Gestures Status. T-Student Tests, n=31

Variable	NSB (n=18)	SG (n=13)	t	t- Test df	p
Delusions	1.6±1.1	1.3±0.6	0.703	29	0.488
Conceptual disorganisation	1.7±0.8	1.7±1.0	-0.076	29	0.940
Hallucinatory behaviour	1.2±0.7	1.4±0.9	-0.563	29	0.578
Excitement	1.3±0.6	1.8±0.9	-2.004	18.963	0.060
Grandiosity	1.5±0.9	1.5±0.9	-0.122	29	0.904
Suspiciousness/persecution	2.6±1.3	3.0±1.5	-0.891	29	0.380
Hostility	1.9±1.3	2.4±1.5	-0.855	29	0.400
Blunted affect	3.3±1.5	3.0±1.6	0.598	29	0.554
Emotional withdrawal	3.2±1.4	2.6±1.3	1.220	29	0.232
Poor rapport	2.3±1.4	2.0±1.1	0.609	29	0.548
Passive/apathetic social withdrawal	2.7±1.5	2.6±1.3	0.206	29	0.838
Difficulty in abstract thinking	2.5±0.4	2.6±1.5	-0.221	29	0.827
Lack of spontaneity & flow of conversation	2.6±1.3	2.5±1.6	0.139	29	0.890
Stereotyped thinking	2.2±1.0	2.0±1.0	0.447	29	0.659
Somatic concern	3.0±1.6	2.7±1.1	0.594	29	0.557
Anxiety	4.4±1.2	4.2±0.8	0.552	29	0.585
Guilt feelings	4.0±1.4	3.8±1.7	0.273	29	0.787
Tension	2.5±1.1	2.9±1.2	-1.023	29	0.315
Mannerisms & posturing	1.4±.6	1.5±0.8	-0.292	29	0.772
Depression	5.0±1.6	4.7±1.5	0.541	29	0.593
Motor retardation	2.7±1.8	2.7±1.9	0.045	29	0.965
Uncooperativeness	1.5±0.6	2.1±1.4	-1.407	15.492	0.179
Unusual thought content	1.9±1.1	2.0±1.2	-0.139	29	0.890
Disorientation	1.0±0.0	1.1±0.3	-1.000	12.000	0.337
Poor attention	1.9±1.1	1.6±0.8	0.954	29	0.348
Lack of judgement & insight	2.9±1.2	3.4±1.4	-1.049	29	0.303
Disturbance of volition	2.3±1.0	2.4±1.3	-0.261	29	0.796
Poor impulse control	2.9±1.3	4.3±1.5	-2.752	29	0.010
Preoccupation	4.0±1.6	3.9±1.0	0.154	29	0.879
Active social avoidance	2.2±1.4	2.0±1.0	0.501	29	0.620

The study sample included 38 psychiatric inpatients, 22 were male (57.8%). The age of the patients was between 23 and 85 (mean age NSB 45.9; mean age SG 37.8). 15 patients were employed (39.5%), 23 were unemployed (60.5%). Related to years of education, they were between 8 and 18 years (mean education NSB 12.5, mean education SG 11.21). About marital status 14 patients were married (36.8%): 11 NSB (78.6%) and 3 SG (21.4%).

Number of married NSB was significantly higher than the number of married SG ($p=0.08$).

There were no other significant differences between two groups regarding sociodemographic characteristics.

Clinical features

Clinical characteristics of the patients are presented in Table 1.

Type of admission: 2 patients were involuntary admitted (5.2%), the others were voluntary admitted (94.7%).

Pre-admission pharmacological treatment: 27 patients took a pharmacological treatment before the admission (71.1%).

Previous suicide attempts: 21 patients had not ever attempted suicide before the admission (55.3%).

More detailed information regarding clinical feature can be found in Table 1.

There were no significant differences between the two groups regarding type of admission, pre-admission pharmacological treatment, history of previous suicide attempts and discharge diagnosis.

Positive and Negative Syndrome Scale (PANSS)

PANSS medium scores are presented in Table 2.

We found a significant difference between NSB and SG related to impulse control that was poorer in SG than NSB ($p=0.010$).

Brief Psychiatric Rating Scale (BPRS)

BPRS medium scores are presented in Table 3.

The items of hostility ($p=0.082$), suspiciousness ($p=0.042$) and excitement ($p=0.02$) were found to be significantly higher in SG than NSB.

Structured Clinical Interview for DSM IV axis II disorders (SCID II)

SCID II medium scores are presented in Table 4.

Borderline personality disorder ($p=0.032$) and Passive-Aggressive personality disorder ($p=0.082$) diagnosed by the means of the SCID-II, were more represented in SG than NSB ($p=0.044$). Schizoid personality disorder was significantly related to NSB ($p=0.042$).

Table 3. BPRS mean scores of Nonfatal Suicidal Behaviours versus Suicide Gesture Status. T-Student Tests. $n=31$

Variable	NSB (n=18)	SG (n=13)	t	t- Test df	p
Somatic Concern	2.3±1.4	2.7±1.0	-0.840	33	0.407
Anxiety	4.4±1.4	4.3±1.3	0.152	32	0.880
Depression	4.5±1.7	4.2±1.5	0.483	33	0.632
Suicidality	3.9±2.4	4.0±2.7	-0.154	33	0.878
Guilt	3.4±1.7	3.8±1.8	-0.661	33	0.513
Hostility	1.8±1.1	2.8±2.1	-1.796	33	0.082
Elevated Mood	1.3±0.8	1.7±0.9	-1.266	33	0.214
Grandiosity	1.3±0.6	1.6±1.2	-1.116	33	0.273
Suspiciousness	1.9±1.1	3.2±1.9	-2.205	16.721	0.042
Hallucinations	1.0±0.4	1.3±1.2	-1.046	13.443	0.314
Unusual thought content	1.7±1.2	1.8±1.0	-0.301	33	0.765
Bizarre behaviour	1.4±0.9	1.5±0.7	-0.340	33	0.736
Self-neglect	1.5±1.0	1.6±1.3	-0.305	33	0.762
Disorientation	1.1±0.7	1.1±0.3	0.070	33	0.945
Conceptual disorganisation	1.4±0.7	1.5±0.7	-0.711	33	0.482
Blunted affect	3.0±1.6	2.7±1.7	0.460	33	0.649
Emotional withdrawal	2.3±1.5	2.3±1.7	-0.065	33	0.949
Motor retardation	2.5±1.8	2.2±1.7	0.443	33	0.661
Tension	2.3±1.3	2.3±0.9	-0.087	33	0.931
Unco-operativeness	1.5±1.0	1.8±1.1	-0.932	33	0.358
Excitement	1.1±0.6	1.8±0.9	-2.568	17.613	0.020
Distractibility	1.9±1.1	1.8±1.1	0.045	33	0.964
Motor hyperactivity	1.4±1.0	1.2±0.6	0.692	33	0.494
Mannerisms and posturing	1.3±0.7	1.2±0.8	0.459	33	0.649

Table 4. SCID-II mean scores of Nonfatal Suicidal Behaviours versus Suicide Gesture Status. T-Student Tests, n=31

Variable	NSB (n=19)	SG (n=12)	t	t- Test df	p
Avoidant Personality Disorder (PD)	1.7±1.5	1.8±1.4	-0.024	29	0.981
Dependent PD	2.7±1.9	3.1±1.2	-0.578	29	0.568
Obsessive-Compulsive PD	3.7±2.7	3.1±1.7	0.692	29	0.495
Passive-Aggressive PD	3.7±2.0	4.8±1.3	-1.804	28.966	0.082
Depressive PD	3.7±2.3	4.1±1.9	-0.436	29	0.666
Paranoid PD	2.2±1.9	2.3±1.3	-0.063	29	0.950
Schizotypal PD	2.4±2.5	1.6±1.9	0.932	29	0.359
Schizoid PD	2.4±1.2	1.5±.9	2.131	29	0.042
Histrionic PD	2.3±1.3	2.7±2.2	-0.570	15.673	0.577
Narcissistic PD	4.5±2.9	4.1±1.9	0.414	29	0.682
Borderline PD	5.5±3.8	8.8±4.3	-2.202	29	0.036
Antisocial PD	2.1±2.9	2.6±1.9	-0.506	29	0.617

DISCUSSION

In this study we compared demographic and clinical characteristics of NSB and SG in a sample of patients admitted to a psychiatric inpatient unit of an Italian hospital.

The sample included 38 patients admitted for NSB or SG and hospitalized in a six months period of time. Our hypotheses were partially confirmed by the analyses.

Related to demographic characteristics, we found that NSB and SG were different only for marital status; in our sample more NSB were married than SG.

To our knowledge this result has not been confirmed in literature; typically marriage is considered a protective factor for suicide independently from age (Rendall 2011).

Related to the Positive and negative syndrome scale (PANSS) and the Brief Psychiatric Rating Scale (BPRS) we found different levels of impulse control, suspiciousness, hostility and excitement between the two groups, these symptoms were more represented in SG than NSB.

Some of the predisposing factors for suicidal behavior lie in structure of personality, and suspiciousness may be considered one of them (Brezo 2006). Suspiciousness is defined as a marked fear of being harmed by other people; it may be an important suicide risk factor to consider, especially in people in ultra-high risk (UHR) of developing psychosis (Hutton 2011), or in patients with schizophrenia (Hawton 2005). To our knowledge, however, no study has been published that assessed the relationship between suspiciousness and self-harm.

Related to hostile traits, they have been associated with NSSI in different studies (Gvion 2011). High scores on measures of aggression, impulsivity and hostility are significantly associated with SG. (Marzano 2011). Patients with a history of SG have significantly greater levels of hostility and intrapunitive aggression (Sampson 2004). Sampson and colleagues also suggest that deliberate self-harm correlates with disturbed

aggression, and that high intrapunitive hostility scores may be manifested as increased rates of self-harm. The inability to manage distress is especially problematic when distress is accompanied by (or made up of) feelings of rage, cruelty and self-hatred. SG are communicating rage and hostility to themselves and others in ways that often leave them frustrated and hopeless (Adshead 2010). Moreover, Sakinofsky and Roberts found that SG who resolved their difficulties repeated self-harm within three-month follow-up at the same rate as those who had not resolved problems. The repeaters had a history of more frequent episodes, beginning younger and experienced greater feelings of externally directed hostility. The non-resolver-repeaters had become more internally hostile than the resolver-repeaters (Sakinofsky 1990).

In our sample the suicide gesture group showed significantly higher scores in the BPRS excitement item. This finding is consistent with a previous study (Huber 2012) indicating that suicidality was predicted by BPRS excited component in a first-episode psychosis sample. In their study, Huber and colleagues constructed the BPRS excited component as containing the items 'excitement', 'hostility', and 'uncooperativeness'. Somewhat counter intuitively we didn't find significant differences in the PANSS excitement item scores between the two groups of suicide gestures patients and attempters.

Borderline personality disorder and Passive-Aggressive personality disorder diagnosed by the means of the SCID-II, resulted to be significantly related to SG; instead Schizoid personality disorder was related to NSB. Regarding Borderline Personality Disorder (BPD), Favazza and colleagues proposed a diagnosis that they called "Repetitive Self-mutilation Syndrome" (Favazza 1990) that has been found to be more represented in Personality Disorders, mainly Borderline (See comment in PubMed Commons Zlotnick 1999), Antisocial (Taiminen 1998) and Histrionic PD (Herpertz 1995). This syndrome is characterized by high inner tension before the self-injury, sense of physical and psychological relief and satisfaction during and after the self-

injury in contrast to the preoccupation of physical damage, pervasive depressed and anxious mood, impulsivity and the incapability to resist to the impulsive act. The single items give different contributions to the development of self-harm. In fact, Rihmer and Benazzi (Rihmer 2010) underlined that impulsivity is a strong independent predictor of suicidality; furthermore, Gratz and colleagues reported that improvements in emotion dysregulation in BPD predicted further improvements in deliberate self-harm (Gratz 2015) maybe because it will reduce the self-harm urges that are seen to be related to self-disgust (Abdul-Hamid 2014). As for the sense of relief and satisfaction after the self-injury, Carpenter and Trull (Carpenter 2015) observed that the combination of BPD features and history of non suicidal self injury is linked to a pain paradox, that is a relative absence of acute pain in contrast to overrepresented chronic pain.

Ferrara and colleagues studied a group of adolescent inpatients and confirmed the strong link between Borderline Personality Disorder and SG. Furthermore they found a clinically significant representation of the other Cluster B Personality Disorders (Histrionic and Narcissistic) and Passive aggressive personality disorder underlining similarities between these disorders such as anxious, theatrical and dysphoric traits (Ferrara 2000).

Also Joiner and colleagues studied a sample of suicide attempters and ideators and found that passive-aggressive symptoms were the only ones to show unique associations with suicidal ideation and hopelessness so they proposed to include passive-aggressive personality disorder in Personality Disorder diagnostic category (Joiner 2002).

Finally considering the relationship between Schizoid Personality disorder and NSB, we found three studies that partially confirmed this result. Ellis and colleagues, using a sample of suicide attempters and suicide ideators, found four personality clusters that correspond roughly to Schizoid, Antisocial, Dependent and Histrionic-Narcissistic subtypes (Ellis 1996). Similarly Rudd and colleagues analyzed a sample of patients that had attempted suicide and found three clusters: Negativistic-Avoidant with schizoid and borderline features, Dependent/Self-Defeating and Antisocial with borderline features (Rudd 2000). Ortigo and colleagues identified a Hostile-Isolated subtype of suicide attempters that contained social outsiders who lack relationships, are critical towards others and are competitive. This subtype was similar to the Schizoid group for social isolation and angry/resentful attitude (Ortigo 2009).

Our study has some methodological limitations. The first limitation is related to the size of the group that is small, this fact can reduce the statistical power of our findings; however our results add information to previous reports and can be useful for further studies. Second, we used a clinical criterion to assess intent to die; this data can create inaccuracies although all the

patients have been assessed by senior psychiatrists of the ward. Furthermore previous studies have used retrospective self-report questionnaires so the responses may have been affected by individual bias.

Our study confirms the existence of different subpopulations of self-injurers and the importance to classifying individuals on the basis of the intent to die. Additional research is needed to understand and elucidate psychopathological and clinical characteristics of the different categories of self-injurers to find risk factors specific to suicide attempts.

Acknowledgements:

Ethical approval

We believe that this study did not warrant formal ethical approval as it qualifies as an audit aimed at quality assurance and evaluation. In all parts of this audit we strive to respect the confidentiality and anonymity of our patients and to avoid harm to our patients.

Conflict of interest: None to declare.

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