

## Characteristics of groups after the suicide attempt. Cluster analysis of National Comorbidity Survey (NCS) 1990–1992

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### Summary

**Aim.** Identification of specific groups with increased risk of suicidal behaviors.

**Method.** Latent class analysis, (LCA) data from the National Comorbidity Survey (NCS) 1990-1992, conducted in the representative sample of 5977 Americans of age 15–54 years.

**Results.** Seven clusters of persons were identified: (C1) young adults with at least 5 psychiatric diagnoses in lifetime, with severe anxiety, somatic illnesses and low income; (C2) alcohol dependent with depressive mood, and with at least 4 psychiatric diagnoses in lifetime; (C3) persons without mental disorders and persons with one or two mental disorders, in fourth decade of life; (C4) nearly only women suffering from depression with other comorbid mental disorders, often with anxiety disorders; (C5) young persons with variety of mental disorders, and with abuse of alcohol and other psychoactive substances, with suicidal attempt in past, currently not in relationship; (C6) nearly only men, in fourth decade of life, abusing alcohol and drugs, with depressive mood; majority of them with dissocial personality disorder and with at least three psychiatric diagnoses; (C7) young persons without mental disorders or with 1 or 2 mental disorders, strongly emotionally dependent.

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This paper presents the results of analyzes from master thesis done by Tymoteusz Wołodźko in College of Social Psychology in Warsaw, written under the guidance of prof. Andrzej Kokoszka.

Work was not sponsored.

**Conclusions.** Cluster analysis allowed to identify and describe relatively well 7 groups of persons with increased risk of suicidal behavior.

**Key words:** suicide, mental disorders, comorbidity

## Introduction

Even though we have a wide knowledge on suicide, preventing them is hard and they are one of the leading causes of death [1, 2]. Despite discovering multiple risk factors, unfortunately we are not able to predict suicide [3, 4]. As the authors of the American Psychiatric Association's publication [1] notice: „statistical rarity of suicide also makes it impossible to predict on the basis of risk factors either alone or in combination”. In this context attempts are made to describe the diagnosis-specific risk factors [2, 5]. The other trend in this area is cluster analysis research. Their goal is to distinguish empirically the specific groups of people committing suicide [6-10]. These research were diverse in respect of populations from which the data originated, methodology used and statistical methods employed. The review of research conducted in years 1963–1993 has only allowed to distinguish groups with „mild”, „moderately severe” and „severe” suicide risk [11]. Systematic review of cluster analyses concerning suicide risk factors published after the year 1993 allowed us to distinguish five groups with seriously increased risk of suicidal behaviors: (1) with very severe mental disorders, (2) without identified mental disorders or with mental disorders that are not severe, (3) with personality disorders and with a tendency to see causes of their problems as independent of them (tendency to externalize), (4) socially withdrawn with personality disorders and a tendency to avoid contacts with the source of stress and (5) depressive [12]. The research described had various limitations, e.g. the non-representativeness of the samples and a small number of participants. Considering this, the data provided by the Substance Abuse & Mental Health Data Archive (<http://www.hcp.med.harvard.edu/ncs/>) from epidemiological research – National Comorbidity Survey (NCS, 1990–1992) gives the opportunity to use the data in cluster analysis. They relate to a representative sample of the population and psychiatric diagnoses were assessed with a structured psychiatric interview. The published analyses of the NCS data allowed to establish the prevalence of a lifetime suicidal ideation (13.5%), planning (3.9%) and attempts (4.6%), in the US population and the corresponding risk factors [13]. The risk factors for suicidal ideation were neuroticism, self-criticism and hopelessness, while self-criticism and hopelessness were risk factors for suicide attempts [14]. The research was repeated after 10 years (NCS-2, 2000–2002) with a response rate of 87.6% of the respondents from the first research. It enabled us to validate to what extent the data gathered in the first research permit us to predict later suicidal ideation, plans, gestures and attempts [15]. The research has shown that 35% of persons who were suicidal ideators in the first NCS survey, still remained ideators, similarly, 21.2% still planned suicide and 10.8% still made suicidal gestures and 15.4% make suicidal attempts. The ideators from the first NCS survey were less likely to plan (OR = 0,4) and make suicidal attempts (OR = 0,2) in the second one. The connection

between earlier suicidal gestures and the later ones was statistically significant (OR = 8,8). Nearly all diagnoses according to DSM-III-R made during the first research were significant predictors of suicidal ideation in the second study (OR = 1,0–2,1). However, only diagnoses of affective disorders, general anxiety disorder, alcohol dependence and antisocial personality disorder in adulthood, were predictors of later suicide planning. Neither of the diagnoses was connected to suicidal gestures or attempts. Another research has shown that the number of suicidal ideation, plans, gestures and attempts did not diminish, even though a larger amount of persons who have made the suicidal gestures and attempts, received mental health treatment in the period between the two NCS waves [16]. All these results refer to suicide risk factors in general, while previously discussed cluster analyses suggest that it could be more appropriate to predict suicide in the context of specific risk groups.

The aim of this work is to separate distinct clusters of persons who have attempted suicide ineffectively, based on diagnoses and sociodemographic data, what will help us to identify the sets of features of groups with severe risk of suicidal gestures that would be possible to include in clinical practice.

While the research was conducted on American population, results can be interesting for polish reader. The research population was chosen because analogous research on big and representative sample conducted in Poland does not exist.

### Method

Data from the National Comorbidity Survey were used in the research. NCS is a research conducted in the years 1990–1992, on a representative group of 5977 US citizens aged 15–54 and it was aimed to examine the prevalence of mental disorder by DSM-III-R and their correlates. The NCS methodology was widely covered in Kessler et al. publications [13, 17, 18].

The participants of this research were persons who responded positively to the question if they have ever attempted to commit a suicide. There were 366 such persons, that is 4.6% of all the NCS participants [18]. Various sociodemographic variables (age, sex, income, education, marital status) were covered by the research. The participants answered questions on their previous experiences and their life situation. Among the questions referring to the circumstances of the recent suicide attempt there was question if it was planned and request to choose which of the statements describes best their attempt: (a) „I made a serious attempt to kill myself and it was only accident that I did not succeed”, (b) „I tried to kill myself, but knew the method was not foolproof”, (c) „My attempt was a cry for help. I did not intend to die”, the answers to this question were an indicator of the lethality of the attempt [18]. The answers to the questions on the suicide attempts and the depression symptoms shown by mother and father were recoded into variables regarding both parents.

Diagnoses according to DSM-III-R were generated from a modified version of the structured clinical interview Composite International Diagnostic Interview (CIDI). They apply to a lifetime prevalence and were defined without diagnostic hie-

rarchy rules<sup>1</sup>. Lifetime occurrence of such subclinical symptoms as: depressive mood, anxiety, manic mood, and irritation, were included in the analysis. The interviewees were asked if they have been suffering from at least one of the somatic disorders listed. Other variables were: subjective rating of somatic and mental health and the rating of their mental health compared to other people. Four variables were coded applying to the occurrence of at least one of the situations: (a) consultation with a doctor, (b) with other specialist, (c) taking prescription drugs, or (d) hospitalization due to psychiatric symptoms.

Multiple psychological variables were measured. Since the psychometric properties of the scales used were estimated on NCS data and described by their authors, they will not be described here in detail. Among the variables impulsiveness/aggressiveness can be found, as it is an important predictor of suicide [1]. The indicator of this variable was getting into physical fight in which one of the parties needed medical attention during the last 12 months. Emotional distress index is a scale measuring symptoms of experienced distress [19]. Social support and negative aspects of interpersonal relations with spouse, relatives and friends were measured on six positivity and negativity scales [20]. Three out of five Big Five dimensions: (a) neuroticism, (b) introversion (vs extraversion) and (c) openness to experience, were measured according to the scale of adjectives [14, 21, 22]. Interpersonal dependence was measured on three scales: (a) emotional reliance on another person, (b) lack of social self-confidence and (c) assertion of autonomy [22]. Self-criticism and hopelessness scales were also included [14]. The scoring in these scales was reversed, so that higher scores reflect higher intensity of these dimensions. Items concerning the subjective rating of physical and mental health and the hopelessness, were recoded into dichotomic variables, referring to the occurrence of excessively increased levels of these variables (i.e. at least one standard deviation above the average for the group after a suicide attempt) [14].

For the statistical calculations R-statistical software with poLCA library was used. The primary statistical method applied was latent class analysis (LCA), a method similar to factor analysis but designed for categorical data. In LCA included 20 selected variables, therein demographic data and mental disorders diagnoses. (drawing 1). Models of one to twelve classes were tested and each one of them was fitted ten times with different initial parameters. The best model was chosen according to Akaike Information Criterion and afterwards it was fitted fifty times with different initial parameters.<sup>2</sup> The final model was verified by comparing obtained clusters on the basis of variables not used in LCA.

<sup>1</sup> i.e. DSM-III-R criteria that rule out comorbidity of some of the disorders were not employed.

<sup>2</sup> For more information about this method and package poLCA polish reader will find, among others, in the book: Gatnar E. Walesiak M. (ed.) *Analiza danych jakościowych i symbolicznych z wykorzystaniem programu R* (2011) and in the book: Pokropek A. (ed.) *Analiza cech ukrytych w psychologii, socjologii i badaniach edukacyjnych. Teoria i zastosowanie* (book in preparation).

## Results

The best fitting LCA model proved to be the one of 7-classes, maximum log-likelihood = -4020,13;  $df = 185$ ;  $G2 = 3748,30$ ;  $\chi^2 = 730150,10$ . The probabilities of belonging to clusters are illustrated on drawing 1. Particular clusters differed significantly in multiple variables, however, all of them had high percentages of diagnosed depression (34.92–100%) and PTSD (27.20–67.74%). No significant differences were found between clusters in the description of the recent suicide attempt according to its lethality and in the general rating of physical and mental health compared to others.

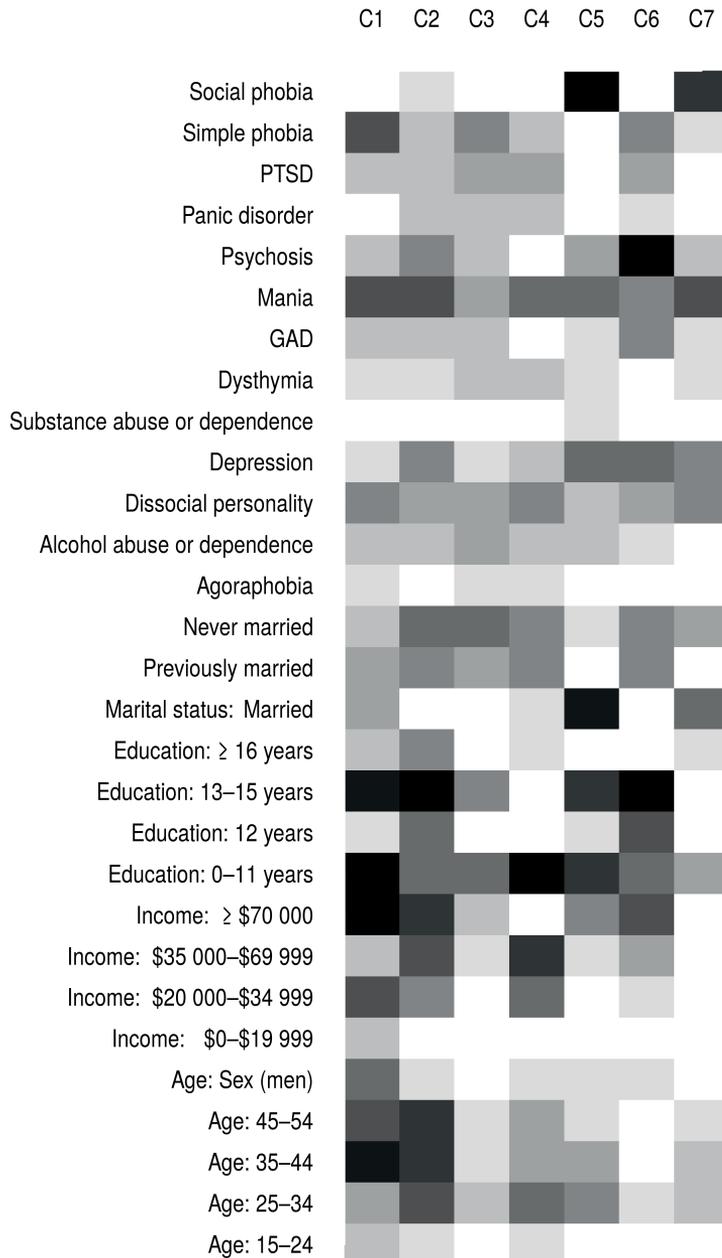
Below, we present a concise and simplified characteristic of observed groups:

Young adults with at least 5 psychiatric diagnoses in lifetime, with severe anxiety, somatic illnesses and low income (C1)

Most of the persons are aged 25–34 years (65.22%), have low income (65.22%) and had a somatic illness (82.61%). Individuals from this group feel severe hopelessness and are highly self-critical, emotionally dependent and neurotic. They are highly distressed and in the past have survived a number of traumatic events (four events on average). Their relationships with the loved ones are negatively marked. All members of this group had symptoms of at least five mental disorders in their lifetime (eight on average, maximum 11). All of them were depressed, abused substances and the great majority abused alcohol (82.61%), had social phobia (82.61%) and other anxiety disorders (65–70%). It is also the greatest group suffering from psychoses (26.1%). Nearly everyone in this group has experienced a strong anxiety (91.3%). Most of the persons in this group were hospitalized because of psychiatric symptoms (65.2%) and consulted mental health specialists (82.6%). Two-thirds of recent suicide attempts in this group were planned (60.9%).

Alcohol dependent with depressive mood, and with at least 4 psychiatric diagnoses in lifetime.(C2)

More than a half of the persons in this group had low income (58.1%). These persons are highly hopeless, strongly self-critical, neurotic and emotionally dependent. Most of them had a somatic illness (67.74%). These persons were severely distressed and had survived a traumatic event in the past (three events on average). Their relations with the loved ones have been negatively marked. All persons in this group had symptoms of at least four mental disorders in their lifetime (8 on average, maximum 10). All of them were alcohol dependent, most of them suffered from simple phobia (77.4%), social phobia (77.4%), substance dependence (74.2%), suffered from dysthymia (67.5%) or depression (61.3%) and PTSD (67.5%). All of them had depressive moods and most of them had feelings of strong irritation (83.9%). However, less than half of them considers their mental health as worse compared to others (38.5%). The vast majority consulted mental health specialist (70.97%) or have taken prescription drugs because of psychiatric symptoms (74.2%) and half of them has



Drawing 1. **Variables not included in latent class analysis**

The darker the color, the higher is probability of being classified to certain cluster.

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been hospitalized psychiatrically (48.4%). The vast majority of recent suicide attempts in this group were planned (71.2%).

Persons without mental disorders and persons with one or two mental disorders, in fourth decade of life (C3)

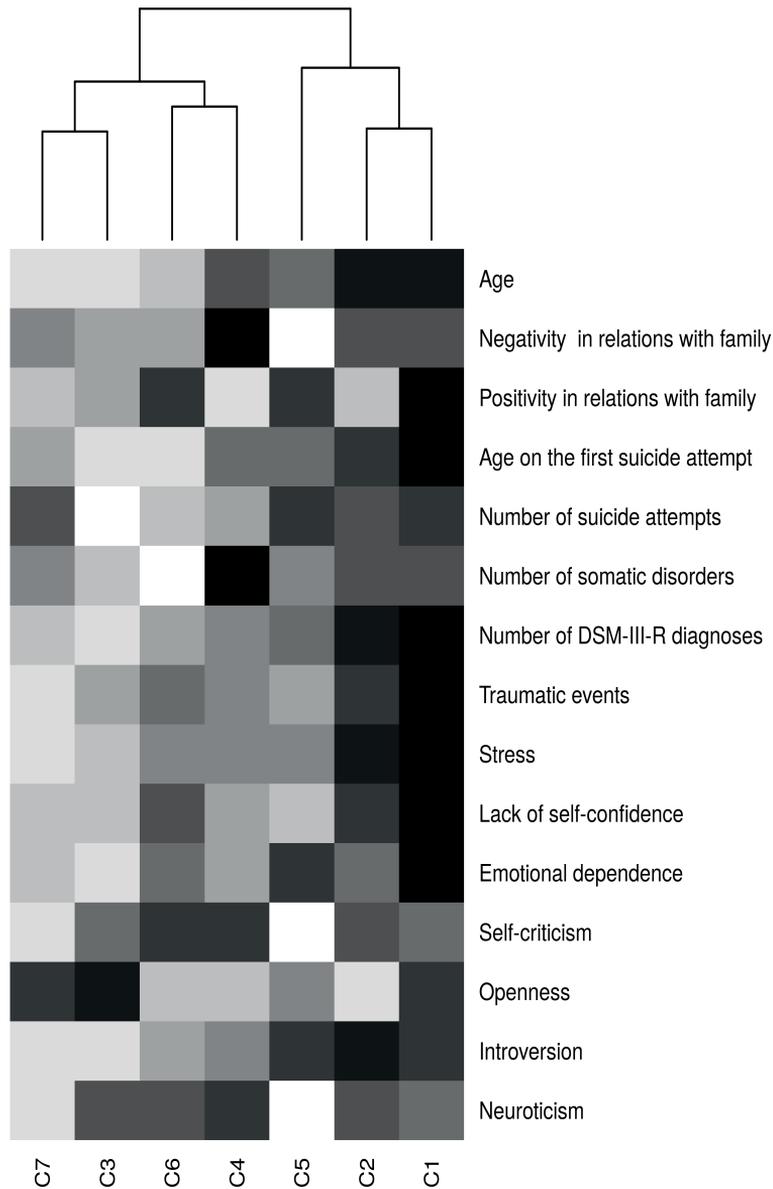
These persons are aged between 30. and 40. years. They show little self-confidence and most of them had depressive moods in lifetime (80%). This group has relatively good mental health comparing to different groups. Many of its members did not have any mental disorders (9.6%), had one (25.6%) or two disorders (18.4%). Half of them were depressed (52%), a few less were abusing alcohol or were alcohol dependent (43.2%), one-fifth abused substances (20.8%), and one out of three persons in this group had PTSD (27.2%). In this group no one had symptoms of mania or dissocial personality.

Nearly only women suffering from depression with other comorbid mental disorders, often with anxiety disorders (C4)

This group contained nearly only women (94%) aged over 25 years. They feel severely hopeless and are self-critical, highly neurotic and introvert. All of them were depressed, most had dysthymia (84%), more than half had GAD (56%) and PTSD (52%). It is the second group with the highest percentage of psychoses (12%) and no one in this group abused substances (including alcohol). Members of this group had symptoms of at least three (90%) or two (10%) mental disorders.

Young persons with a variety of mental disorders, with abuse of alcohol and other psychoactive substances, with suicidal attempt in past, currently not in a relationship (C5)

This group consists of young persons (from 15 to 25 years, on average 20 years old). Most of them had never been in a serious relationship (83%). These persons are severely hopeless, highly neurotic, emotionally dependent, self-critical and distressed. Their relations with the loved ones have been negatively marked. Most persons in this group had lifetime prevalence of at least three mental disorders (80.9%), including a great majority being alcohol dependent (83%) and having depression (72.3%), many persons abused substances (48.9%) and had PTSD (44.7%). The first suicide attempt was made in this group at young age (the average age of 16 years). There were persons who had more than one suicide attempt (up to 7) in this group.



**Drawing 2. Comparison of clusters based on variables not included in LCA**

All variables presented on the drawing, excluding number of suicidal attempts, differentiate clusters in statistically significant way based on ANOVA test ( $p < 0,05$ ). Clustering algorithm was employed for visualization. The darker the color, the higher level of variable. Color intensity is relative by rows, so it reflects differences between clusters.

Nearly only men, in the fourth decade of life, abusing alcohol and drugs, with depressive mood; majority of them with dissocial personality disorder and with at least three psychiatric diagnoses (C6)

This group consists of nearly exclusively men (92.6%) aged between 30 and 40 years, only one person aged 25 was found in this group. Only two persons from this group had high income. The vast majority had symptoms of at least three mental disorders in their lifetime (92.6%), including dissocial personality (70.4%), alcohol abuse (96.3%) and substance abuse (77.8%) and half of them were depressed (51.95%), no one had social phobia and it was a group with the smallest percentage of PTSD symptoms (18.5%). Nearly everyone in this group had depressive moods (92.6%). Most of them consulted mental health specialists (81.5%) and were psychiatrically hospitalized (65.4%). More than a half of this group planned their recent suicide attempt (59.3%).

Young persons without mental disorders or with 1 or 2 mental disorders, strongly emotionally dependent (C7)

It is a group containing mostly young persons (79.4% is 15–24 years old, average age is 24 years). They are highly emotionally dependent. It is one of the two groups with good mental health, most did not have symptoms of mental disorders (25.4%), or had symptoms of one (25.4%) or two (28.6%). One in three persons in this group had depression (34.9%), social phobia (31.8%) or PTSD (28.6%), there were very few persons who had dissocial personality (1.6%) or who were abusing alcohol (1.6%). No one in this group abused substances, had mania nor panic disorder.

The clusters differed based on variables not included in latent class analysis (drawing 2, table 1). The statistically significant differences were observed based on: neuroticism,  $F(6; 355) = 6,08; p < 0,001$ ; introversion,  $F(6; 348) = 3,95; p < 0,001$ ; openness to experience,  $F(6; 352) = 2,21; p = 0,04$ ; self-criticism,  $F(6; 348) = 7,63; p < 0,001$ ; emotional dependence,  $F(6; 353) = 4,4; p < 0,001$ ; lack of self-confidence,  $F(6; 353) = 3,31; p < 0,001$ ; positive and negative aspects on relations with family,  $F(6; 355) = 2,38; p = 0,03$ ; and  $F(6; 354) = 3,60; p < 0,001$ ; emotional distress,  $F(6; 353) = 9,00; p < 0,001$ ; number of traumatic experiences,  $F(6; 104,2) = 4,83; p < 0,001$ ; number of mental disorders,  $F(6; 359) = 103,79; p < 0,001$ ; number of somatic disorders,  $F(6; 104,56) = 2,33; p = 0,04$ ; age of first suicidal attempt  $F(6; 97,95) = 20,31; p < 0,001$ ; and the number of suicidal attempts was approaching statistical significance,  $F(6; 103,41) = 2,05; p = 0,07$ .

Table 1. Latent class analysis results of NCS data on persons after the suicide attempt: Probability of belonging to different classes

	C1	C2	C3	C4	C5	C6	C7
n (%)	23 (6.28)	31 (8.47)	125 (34.15)	50 (13.66)	47 (12.84)	27 (7.38)	63 (17.21)

table continued on the next page

		C1	C2	C3	C4	C5	C6	C7
Age:	15–24	0.00	0.17	0.00	0.10	0.97	0.04	0.74
	25–34	0.62	0.29	0.44	0.25	0.03	0.41	0.15
	35–44	0.28	0.27	0.33	0.35	0.00	0.37	0.05
	45–54	0.10	0.27	0.23	0.30	0.00	0.18	0.07
Sex (men)		0.29	0.43	0.24	0.06	0.37	0.91	0.24
Income:	\$0–\$19 999	0.62	0.61	0.37	0.59	0.59	0.44	0.64
	\$20 000–\$34 999	0.24	0.29	0.30	0.10	0.16	0.48	0.17
	\$35 000–\$69 999	0.14	0.11	0.24	0.28	0.12	0.09	0.19
	≥ \$70 000	0.00	0.00	0.09	0.03	0.13	0.00	0.00
Education:	0–11 years	0.13	0.41	0.12	0.21	0.51	0.53	0.45
	12 years	0.45	0.34	0.39	0.43	0.25	0.35	0.41
	13–15 years	0.25	0.24	0.34	0.23	0.25	0.12	0.09
	≥ 16 years	0.18	0.00	0.14	0.14	0.00	0.00	0.05
Marital status:	Married	0.30	0.57	0.55	0.43	0.11	0.42	0.37
	Previously married	0.32	0.43	0.37	0.44	0.05	0.48	0.07
	Never married	0.38	0.00	0.08	0.14	0.83	0.10	0.56
Agoraphobia		0.24	0.44	0.07	0.18	0.03	0.06	0.19
Alcohol abuse or dependence		0.82	1.00	0.42	0.00	0.79	0.96	0.04
Dissocial personality		0.15	0.55	0.00	0.02	0.19	0.65	0.02
Depression		1.00	0.60	0.52	1.00	0.73	0.52	0.36
Substance abuse or dependence		1.00	0.73	0.21	0.00	0.49	0.68	0.01
Dysthymia		0.25	0.66	0.14	0.78	0.17	0.32	0.05
GAD		0.66	0.45	0.10	0.55	0.04	0.17	0.04
Mania		0.30	0.00	0.00	0.04	0.02	0.07	0.00
Psychosis		0.59	0.15	0.08	0.17	0.16	0.14	0.00
Panic disorder		0.68	0.74	0.16	0.36	0.17	0.07	0.16
PTSD		0.81	0.76	0.15	0.33	0.35	0.00	0.30
Simple phobia		0.38	0.67	0.27	0.55	0.43	0.17	0.29
Social phobia		0.22	0.12	0.01	0.12	0.02	0.04	0.07

## Discussion

This research has shown a great diversity in persons attempting suicide.

In two clusters (C1 and C2) persons with severe mental disorders were found. These groups correspond with the group with the most severe mental disorders that can be found in the literature [7]. Their features of personality, e.g. introversion, low self-confidence, emotional dependence and strong self-criticism contribute to their difficulties with interpersonal relationships [9]. It is probable that they have strong mood fluctuations because of their inner conflict between emotional dependence and abandonment anxiety, which in consequence leads them to social withdrawal [7, 8]. Considering elevated results on personality scales and a great number of dissocial behaviors, per analogy to Engström et al. results (cluster 3) [9], we can suspect this cluster to include a greater number of persons with personality disorders. Greater number of dissocial behaviors makes C2 cluster more similar to negativistic-avoidant-schizoid cluster in Ellis et al. research [8], which is specific because of greater social withdrawal and conflictuality. Whereas C1 cluster can be closer to avoidant-dependent-schizoid cluster, a profile typical for psychiatric inpatients and connected to strong ambivalence in social interactions resulting from the feeling of inadequacy, emotional dependence and, at the same time, expectation of rejection.

Two other clusters (C3 and C7) contained persons having the best mental health and they together made half of all the participants of this research. All the persons with no diagnosis of mental disorder and 90% of those who had one mental disorder were found here. These persons consider their mental health as good and rarely contact mental health specialists because of their symptoms, which is similar to O'Connor et al. results [6]. What is interesting, the two groups contain mostly women and a similar result can be found in another research [10]. It is possible that distress or psychological crisis caused their suicide attempt, but as for now it is the most mysterious group. Lack of risk factors in this group could possibly make their suicidal risk to be underestimated.

Two other clusters (C5 and C7) were similar to each other because of the youngest age of their members, youngest age at the first suicide attempt and high scores on emotional dependence scale. In those clusters 90% of their members are aged 15–24 years. Earlier research on suicidal adolescents has shown that they differ from non-suicidal teens on their attachment patterns. It is more common for them to manifest anxious, preoccupied-entangled and preoccupied attachment styles [23, 24]. These styles are characterized by dependence on others' approval and rejection anxiety, resulting from a negative self-image and these are the features similar to those covered by emotional dependence scale. Moreover, in clusters C5 and C6 many lonely persons can be found, so their social situation may also reflect their greatest fears of the lack of acceptance and social rejection.

Results of this research have also shown diagnosis-specific characteristics of suicide attempts [2, 5].

In cluster C4 introverted women, with little self-confidence, depression and dysthymia can be found. This group has already been described in the literature [9]. In this group the depressive mood was long-lasting, what is consistent with the findings on

the lack of remission of depression as a risk factor for suicide [25]. Cluster C5 is consistent with suicide risk profile of alcohol dependent persons [26]. Apart from addiction, they are also depressed and many of them may be aggressive and impulsive: they have manic moods, are irritated. This is the biggest group of persons who was in physical fights in the past year. In this group the distress level is high. Cluster C6 reflects risk profile for persons with dissocial personality disorder [2, 5]. In this context of dissocial behaviors we can consider their extraversion, self-confidence and emotional independence as a specific personality profile characterized by having negativistic view of others and consequent confrontal behaviors [7, 8].

Results presented above also shed light on the different characteristics of suicide in both sexes. Cluster C4 consists almost exclusively of women and clusters C1, C3 and C7 are dominated by them. In all these clusters together half of the women in the study can be found. What these clusters have in common are diagnoses of depression and, however in a smaller degree, anxiety disorders. On the other hand, cluster C6 consists almost exclusively of men and C2 is dominated by them. One-third of all the men in the research was in these two clusters. Members of these clusters in most cases were addicted, had dissocial personality and were depressed. Previous research has shown that depression is more often found in women committing suicides while addiction and dissocial personality in men [25]. However while these clusters differ in size, the raw frequencies can be misleading.

If we compare the clusters resulting from NCS data analysis with the groups from literature review [12], we can find some similarities between them. Clusters C1 and C2 are similar to persons with very severe mental disorders group, C3 and C7 – without diagnosed mental disorders or with less severe mental disorders, C6 – with personality disorders and the tendency to see causes of own problems as independent of them (tendency to externalize), C4 – depressive persons. In this research the socially withdrawn with personality disorders and tendency to avoid contacts with the source of distress group was not found. This can be explained by the fact that this group emerged only in the research where multiphasic personality inventories were used as a basis for cluster analyses.

The single risk factors or groups of risk factors that were identified before have pivotal role in epidemiological and prophylaxis research, however their influence on clinical practice with a certain patient is limited. Memorizing clustered risk factors to employ them in daily clinical routine is troublesome. In this case it is fundamental to assess the root of suffering, helplessness, lack of hope for change and their relation to their causes [27]. However, in clinical decision making with suicidal person, it could be helpful to get acquainted with the regularities described in this article. Co-occurrence of the risk factors identified in this research could be employed as a ground for decision about hospitalization of the patient.

## Conclusions

Only depression and post-traumatic stress disorder were found in varying degrees in every cluster. Based on the clusters discovered we can speak rather of a variety

of specific risk groups: (C1) young adults with at least 5 psychiatric diagnoses in lifetime, with severe anxiety, somatic illnesses and low income; (C2) alcohol dependent with depressive mood, and with at least 4 psychiatric diagnoses in lifetime; (C3) persons without mental disorders and persons with one or two mental disorders, in fourth decade of life; (C4) nearly only women suffering from depression with other comorbid mental disorders, often with anxiety disorders; (C5) young persons with variety of mental disorders, with abuse of alcohol and other psychoactive substances, with suicidal attempt in past, currently not in relationship; (C6) nearly only men, in fourth decade of life, abusing alcohol and drugs, with depressive mood; majority of them with dissocial personality disorder, with at least three psychiatric diagnoses; (C7) young persons without mental disorders or with 1 or 2 mental disorders, strongly emotionally dependent.

Comparison of the results of the literature review covering the cluster analysis of suicide risk factors indicated that four out of five groups mentioned in the review emerged in this research. The only group mentioned in review that did not emerge in the cluster analysis was the group of socially withdrawn persons. The reason could be that tools measuring specific features to this group were not applied in the research.

It is important to notice, that based on these and previous results we can conclude that persons attempting suicide are not a homogenous group. Focusing on general suicide risk factors can lead to underestimating suicidal risk in persons who do not present typical risk profile.

The analysis described in this article is based on a rather small group of respondents who took part in epidemiological research that was designed for different aims than identification of suicidal risk factors. Similar analysis on a larger group of people, using the tools aimed at suicide risk factors, may allow to obtain the results of even greater practical importance.

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