

Analysis of psychosocial background factors of suicide attempts

Doctoral theses

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Introduction

According to the World Health Organization, the definition of suicide is the act of deliberately killing oneself. Suicide is a major public health problem worldwide as well as in Europe. In 2012, altogether 804,000 people took their own life (WHO, 2014). There are approximately 150,000 suicides in Europe yearly, and 58,000 in the European Union (WHO, 2008). Suicide rates differ by region, age group, gender, ethnicity and the method of mortality registration. Suicide takes a higher toll on the population of Hungary than on other European countries, as Hungary has one of the highest suicide rates in the world (Rihmer and Fekete, 2012). In 2012, the global suicidal rate was 11.4 (WHO, 2014), while in Hungary it was 23.6. Fortunately, in the year 2013, the rate decreased to 21.2, which meant 2093 completed suicides (KSH, 2014).

Suicidal behaviour is multi-causal and has several risk factors; it can never be explained by only one cause. Primary, secondary and tertiary risk factors can be distinguished, and suicidal behaviour is caused by their common existence (Rihmer and Fekete, 2012):

- A. **Primary factors:** psychiatric diseases, previous suicide attempts, direct or indirect communication of suicidal intent, previous suicide in the family, decreased serotonin activity
- B. **Secondary factors:** psychosocial factors, childhood losses, traumas, aggressive, impulsive personality traits, irritable temperament, isolation (being single or divorced), unemployment, negative life events, and smoking
- C. **Tertiary factors:** demographics: male gender, homosexuality, adolescence and vulnerable periods: spring, early summer, birthday, peri-menstrual periods, and morning hours

Not all suicide attempts have a lethal outcome, but there are only estimations about their number over completed suicides. There are approximately 10-15 times more suicide attempts than lethal ones (Diekstra, 1989; Lonnqvist, 2009), and they increase the risk 50-100

times (Hawton and van Heeringen, 2009). In prior studies, deliberate self-harm was found in at least 40% of suicide victims' anamneses, but estimations of about 66% exist as well. Other prospective studies found that 1-6% of hospitalized deliberate-self harm patients died by suicide within one year, especially when they had an intent to die (Owens, 2002; Rihmer, 2007).

Belonging to an ethnic minority group and having an ethnic identity are risk factors for suicidal behaviour (Wahlbeck, 2009). Globally, there was only one comprehensive epidemiological investigation about the suicidal behaviour of the Roma population; this was conducted in Hungary between 1970 and 1980. In the aforementioned study, the attempted suicide rate among the Romas was found to be almost three times higher than that of the general population (Lester, 2015; Zonda and Lester, 1990).

In his significant book, Béla Buda (1997) emphasizes the role of conflictual relationships and maladaptive reactions in the background of suicidal behaviour (Buda, 1997). In the WHO/EURO Multicentre study, relationship conflicts and losses were more common (70%) in the Hungarian subsample compared to other European countries. The most common motives of the attempts included expression of attachment, to make someone feel remorse, to influence others' opinion and to ease an unbearable situation (Osváth, 2001). Suicidology has different approaches: psychiatric, biological, psychological, sociological, cultural and integrative.

Objectives

The main aim of my dissertation is to explore psychiatric, psychological, sociological and cultural determinants of suicide behaviours in an integrative approach. The main objectives of my research are as follows:

1. To investigate socio-demographic characteristics of suicide attempters: gender, ethnicity, marital status, educational level, employment.

2. To explore gender differences in the choice of method, reported reason, intention and frequency of suicide attempts.
3. To identify risk factors concerning the intent to die and to commit multiple suicide attempts that increase the risk of completed suicide.
4. To explore psychological determinants of suicide attempters using semi-structured interviews: depression, hopelessness, social support, meaning in life, psychiatric diagnoses, self-destructive behaviours, family history of suicide.
5. To explore the relationship between suicide intent categories (Feuerlein, 1971) and psychological determinants.
6. To determine gender differences in the psychological risk factors of interpersonal conflicts.
7. To investigate ethnic differences in the socio-demographic and psychosocial risk factors of recurrent suicidal behaviours among Roma and non-Roma patients.
8. To provide gender and culture specific preventive recommendations tailored for the Hungarian needs.

Methods

This study was part of the OSPI-Europe project (Optimizing Suicide Prevention Programs and their Implementation in Europe) which was carried out between October 1, 2008 and December 31, 2012 (Hegerl et al., 2009).

Sample

The first **database** (N=8,175) included all registered suicide attempters from the four intervention regions (Portugal, Germany, Ireland, Hungary) of the OSPI project's years. The second database included **150 semi-structured interviews** conducted with deliberate self-poisoners. The interviews can supplement the main findings of the OSPI project by giving a broader picture concerning the demographic, psychological and psychosocial characteristics of the suicide attempters.

Measuring instruments

A standardized evaluation form was used in the OSPI program previously developed by the MONSUE (Monitoring Suicidal Behaviour in Europe) project (Schmidtke, 2010). This protocol was used in all intervention regions to evaluate suicidal acts registered in medical records. The evaluation form included the Feuarlein's scale, which differentiates the following suicide intent types: (1) *deliberate self-harm*: strain is reduced by physical pain caused deliberately. (2) *Parasuicide pause*: escape from an unbearable situation, referred as "escape" in this study. (3) *Parasuicide gesture*: manipulative act with no suicidal intent, referred as "manipulative intent" in the dissertation. (4) *Serious intent to die*: the aim is to end one's own life.

Suicidal intents were categorized by two independent investigators, the author of the dissertation and a former student of our institute. Content analysis was conducted based on the circumstances of the attempts listed in medical records.

Potential risk factors for suicide were collected during semi-structured interviews: demographics, psychiatric diagnosis and treatment, self-destructive behaviour, family history of suicide and previous attempts. Open-ended questions about the circumstances of suicide attempts constituted the main part of the interview. Patients also completed the shortened Beck Depression, the Social Support, the Hopelessness and the Meaning in Life questionnaires.

Statistical analysis

Content analysis of medical record texts and interviews was conducted by two independent investigators. The texts were categorized according to previously defined categories. Demographics, suicide methods and intent were analysed with descriptive statistics. Binary logistic regression was performed to identify risk factors in the development of suicidal intents in the different countries. ANOVA was used to evaluate the relationship between different intent-categories and psychological indicators.

Gender and ethnic differences in the precipitating factors, chosen method, suicidal intent and psychiatric characteristics of suicide attempters were investigated by chi-squared tests. Ethnic and gender differences in the psychological determinants were analysed by two-sample t-tests.

ANOVA was used to evaluate the difference between the mean of depression scores of those who indicated interpersonal conflicts in the background of suicide and those who did not. Stepwise linear regression analyses were performed to identify potential socio-demographic and psychological predictors of multiple suicide attempts.

Differences in potential risk factors for first and multiple attempters were investigated by chi-squared and two-sample t-tests in Roma and non-Roma ethnic groups. Odds ratio analysis was used to identify potential risk factors for multiple suicide attempts in both ethnic groups. A p value of <0.05 was considered as statistically significant in this dissertation. The statistical software used for all analyses was SPSS, version 20.0.

Results

Demographic indicators

The gender ratio was 43:57 in the international sample, with a female predominance. The mean age was 37.3 years (SD:16,3), with no gender difference. The interview sample consisted of 150 subjects, 97 female and 53 male patients, the mean age was 40.6 years (SD: 13.5). Most of them were single (32%) and married (27.3%), followed by divorced or separated (28.7%). 40% of the sample considered themselves as a member of Roma minority group. The majority of the sample had a moderate (56.7%) or low educational level (34.7%). Only 8.7% had a university or college degree ($n=13$). 25% of the subjects were employed, while most of them were unemployed (43.3%) or inactive (31.3%).

Characteristics of suicide attempts in the international sample (n=8175)

The method of suicide attempt used by the majority of the patients was drug overdose (87.3%), with a female predominance (male: 58.4% and female: 75.1%; $\chi^2_{(1)}=255.015$; $p<0.001$). 34.6% reported alcohol abuse, mostly men (male: 42.7% and female: 28.4%, $\chi^2_{(1)}=182.757$; $p<0.001$). A *sharp or blunt object* (20.2%) was used by more male than female patients for self-harm (male: 24.1% and female: 17.2%, $\chi^2_{(1)}=59.420$; $p<0.001$). Men were more likely to poison themselves with *chemicals* (male: 3.7% and female: 2.2%, $\chi^2_{(1)}=15.922$; $p<0.001$). *Self-strangulation* was the method in 5.4%, with a male predominance (male: 8.5% and female: 3.1%, $\chi^2_{(1)}=113.119$; $p<0.001$). Some of the patients tried to commit suicide with more than one method (maximum 4), therefore all the methods are included in the data analysis.

Information concerning the suicidal intent was available in 5215 cases (63.7%). Most of the patients committed suicide with *an intention to die* (51.2%), significantly more male patients than female (male: 57.1% and female: 48.6%, $\chi^2_{(1)}=35.743$; $p<0.001$). 1073 subjects had a *manipulative intent* (20.6%) (male: 17.4% and female: 22.8%, $\chi^2_{(1)}=22.617$; $p<0.001$). 14.7% wanted to *escape* from an unbearable situation (male: 13.3% and female: 15.3%, $\chi^2_{(1)}=5.438$; $p=0.020$). 662 people committed *deliberate self-harm* (12.7%) (male: 12.3% and female: 13.0%, $\chi^2_{(1)}=0.516$; $p=0.472$). 40.9% of the sample had at least one previous suicide attempt (male: 38.1% and female: 43.2%, $\chi^2_{(1)}=16.669$; $p<0.001$).

Risk factors for intent to die in the international sample

Entering all potential risk factors, binary logistic regression analysis identified **multiple suicidality** (OR=2.18, CI: 1.2-3.9; $p=0.010$) as a risk factor only in the Hungarian sample. **Older age** (OR=1.02, CI: 1.01-1.04; $p=0.001$), **chemical** (OR=12.2, CI: 2.36-62.73; $p=0.003$) and **drug intoxication** (OR=3.74, CI: 1.55-9.01; $p=0.003$), and **fewer methods used** (OR=2.18, CI: 1.20-3.97; $p=0.016$) were also significant in Hungary. This model explained around 12% of the variance of intent to die.

In Germany, **self-strangulation** (OR=2.29, CI: 1.09-4.82; p=0.029) and **older age** (OR=1.02, CI: 1.01-1.02; p<0.001) were significant risk factors. In Ireland, **male gender** (OR=1.25, CI: 1.00-1.55; p=0.035), older age (OR=1.00, CI: 1.00-1.01; p=0.028), **self-strangulation** (OR=6.55, CI: 4.07-10.55; p<0.001), **self-poisoning by drugs** (OR=1.36, CI: 1.05-1.78; p=0.020) and **alcohol abuse** (OR=2.09, CI: 1.04-2.98; p<0.001) and **fewer methods used** (OR=0.45 CI: 0.34-0.61; p<0.001) were found as significant determinants of intent to die. **Male gender** (OR=1.91 CI: 1.29-2.83; p=0.001), **chemical intoxication** (OR=5.07 CI: 1.71-15.03; p=0.003), **alcohol abuse** (OR=3.75 CI: 1.54-9.09; p=0.003) and **fewer number of methods used** (OR=0.32 CI: 0.15-0.70; p=0.004) were significant risk factors in Portugal.

Characteristics of deliberate self-poisoners (n=150)

Self-poisoning by drugs was the most frequent (87.3%) method (male: 75.5% and female: 93.8%, $\chi^2_{(1)}=10.424$; p<0.001). *Intoxication with alcohol* was used in 32% of the sample, with a male predominance (male: 41.5% and female: 26.8% $\chi^2_{(1)}=3.406$; p=0.065). Significantly more males used *chemicals* for self-poisoning (male: 22.6% and female: 6.2%, $\chi^2_{(1)}=6.257$; p=0.003). There was no gender difference in the number of swallowed medications; they took 48.2 pills (SD: 56.2), with a minimum of 1 and a maximum of 337.

Psychological characteristics of deliberate self-poisoners

74% of the subjects suffered from at least mild depression. In the whole sample, the mean depression score was 22.6 (SD: 14.7) points. While females had a higher level of depression, the difference was not significant compared to males (male: 19.1 and female: 23.6, p=0.076). The majority of the sample had moderate (10.0%) or severe depression (42.0%), without a difference in gender. The mean hopelessness score was 8.6 points (SD: 5.7) and 38.6% of the sample reached 9 points, which indicates suicide risk. The level of social support was 21.3 (SD: 4.7) in the sample, and sense of coherence (or meaning in life) reached

8.7 (SD: 4.0) points. There was no gender difference in the level of hopelessness, social support and meaning in life.

43% of the sample were multiple attempters, with at least one previous hospitalization due to deliberate self-harm. Significantly more women than men (women: 50.0% and men: 30.2%, $\chi^2_{(1)}=5.470$; $p=0.019$) had at least one previous attempt. 85.6% of females impulsively poisoned themselves, whilst this rate was only 65.4% among males ($\chi^2_{(1)}=8.177$; $p=0.004$). One-fifth of the males were disappointed in the outcome of the attempt, whilst this rate was only 7.6% among the females (men: 22.0% and women: 7.6%, $\chi^2_{(1)}=6.061$; $p=0.014$).

Significantly more women than men indicated to have a diagnosed mood disorder (men: 26.4% and women: 56.3%, $\chi^2_{(1)}=10.291$; $p=0.001$). There was no gender difference in the reported diagnosis of alcohol abuse and other psychiatric problems. More than half of the sample is undergoing a mental health treatment, with a female predominance (women: 62.9% and men: 45.3%, $\chi^2_{(1)}=4.325$; $p=0.038$). 66% of the subjects smoked regularly, no gender difference emerged. 20% of the patients consumed alcohol regularly, more men than women (men: 34.0% and women: 12.4%, $\chi^2_{(1)}=9.986$; $p=0.002$).

Reported reason and intent of suicide attempts

Most of the attempters reported interpersonal conflicts as the reason of their suicide (60.7%) (women: 68.0% and men: 47.2%, $\chi^2_{(1)}=6.257$; $p=0.012$). Most of the subjects (45%) reported a *conflict with their partner*. Financial difficulty was indicated in 38.7%, and bereavement in 18% of the cases, whilst 10% indicated the loss of their workplace. 8.6% of the patients made a direct link between physical or mental health problems and suicide, and 8% indicated sleep disturbance. Among family members, conflict with parents and children was a reason in 8% of the sample, in both cases.

Half of the patients wanted to **escape** from an unbearable situation (52%). **Manipulation** or influencing others was the intent in 13.3%,

while 34.7% had an intent to die. There was no gender difference in the motives.

Psychological characteristics of suicidal intent

People who *wanted to die* had the highest level of depression (29.5 points = major depression, SD: 14.0), and hopelessness (13.6 points, SD: 5.1), and the lowest level of meaning in life (5.9 points, SD: 3.6). This is the only group that reached 9 points on the hopelessness scale, which indicates suicide risk. They also had the lowest level of social support in the sample (20.2 points, SD: 4.8). One-way ANOVA identified significant differences between the intent categories in the following psychological factors: depression ($F=13.0$, $p<0.001$), hopelessness ($F=47.8$, $p<0.001$) meaning in life ($F=24.1$, $p<0.001$). The Bonferroni post-hoc test revealed a significant difference between the intent to die category and the two others, but the escape and manipulation categories did not differ significantly.

Interpersonal conflict as a reported precipitating factor

Similarly to former studies, most of the attempters reported interpersonal conflict (60.7%) as the reason for suicide, and their attempts were more commonly impulsive, than others' (35.7% and 67.2%, $\chi^2_{(1)}=7.782$; $p=0.005$). Furthermore, they had an intent to die less frequently (27.5% and 72.5%, $\chi^2_{(1)}=4.393$; $p=0.036$) and were less disappointed that they survived the attempt (38.9% and 63.7%, $\chi^2_{(1)}=4.054$; $p=0.044$). Interpersonal conflict, with a manipulative intent, was the reason for suicide among almost all attempters (95%).

Effects of interpersonal conflict on depression

There was a high prevalence of depressive symptoms in the sample: a mean score of 22.6 (SD=14.7) points. ANOVA revealed the main effects to be gender ($F_{(1,149)}=5.515$, $p=0.020$, $\eta^2 = 0.04$) and interpersonal conflict ($F_{(1,149)}=10.510$, $p=0.001$, $\eta^2 = 0.07$). Among subjects with interpersonal conflicts, the mean of depression scores showed a significant gender difference ($t_{(89)}=2.63$, $p=0.010$, mean=13.8

for men and 21.7 for women). The presence or absence of interpersonal conflicts also had a significant correlation to the mean of depression scores among men ($t_{(51)}=2.89$, $p < 0.010$, 13.8 with and 23.9 without interpersonal conflict) but not among women.

The level of depression among male patients with interpersonal conflicts was significantly lower than that of women, and also compared to men without interpersonal conflicts.

Effects of alcohol consumption on depression

The effects of alcohol consumption and interpersonal conflicts on the level of depression was also investigated. Very few men (15%), but more than half of the women (60 out of 97) reported abstinence. Because of this strong, significant connection between gender and alcohol consumption ($\chi^2_{(1)}=30.241$, $p<0.001$), the relationship between alcohol consumption and depression was investigated with the utilization of ANOVA. Alcohol consumption and interpersonal conflicts were applied as independent variables. Interpersonal conflicts emerged as a significant effect ($F_{(1,149)}=4.065$, $p<0.05$, $\eta^2 = 0.03$), and the main effect of alcohol consumption showed only a tendency ($F_{(1,149)}=2.632$, $p=0.070$, $\eta^2=0.040$). No interaction effect was found. The Bonferroni post hoc test revealed a significant difference between regular drinkers and occasional drinkers in the level of depression (mean difference=9.016, $p=0.022$).

Predictors of multiple suicide attempts

Because of the high rate of multiple attempters (43%) in the sample, binary logistic regression analysis was performed to explore potential socio-demographic and psychological predictors of multiple attempts. Of the potential factors examined, **Roma ethnicity** (OR: 3.57, CI: 1.34-9.50; $p=0.011$) and **mental health treatment** (OR: 5.46, CI: 1.37-21.69; $p=0.016$) were significant predictors of multiple suicide attempts.

Ethnic differences in the demographic and psychological characteristics of deliberate self-poisoners

Since Roma ethnicity was found as one of the most important risk factors of multiple suicidal behaviour, ethnic differences were investigated. Based on the self-reported belongingness ethnicity, subjects were divided into the Romas (n=60) and non-Romas (n=90) groups. Romas were significantly younger (34.8 (SD: 11.1) and 44.59 (SD: 13.5), $t_{(148)}=4.634$; $p<0.001$), had more children (1.77 (SD: 1.6) and 1.18 (SD: 1.2), $t_{(148)}= -2.474$; $p=0.014$), a lower education level and a higher unemployment rate (53.3% and 36.7%, $\chi^2_{(1)}=4,072$; $p=0.044$) than non-Romas. There were no significant differences in the methods and reported reasons between the two ethnic groups. Similarly, there was no statistical difference in the level of depression between the two groups (Roma: 21.1 and non-Roma: 22.6, NS), hopelessness (Roma: 8.1 and non-Roma: 8.9, NS), social support (Roma: 20.7 and non-Roma: 21.8, NS) and meaning in life (Roma: 8.4 and non-Roma: 9.1, NS).

Non-Roma patients planned their attempts five times more often (31.5%) than Romas (6.7%) ($\chi^2_{(1)}=13.064$; $p<0.000$) did. This result implies a high rate (93.3%) of impulsive, unplanned suicidal behaviour among Roma patients. Roma patients reported to have 4.2 times more previous suicide attempts than non-Romas (3.5 and 0.8, $t_{(148)}= -4.025$; $p<0.000$).

An unexpected association between psychiatric diagnoses and ongoing mental health treatment was found. Although Roma patients reported higher rates of ongoing mental health treatment (Roma: 62.2% and non-Roma: 48.3%, $p=0.093$), the rate of diagnosed mood disorders was lower among them (33.3% and 51.1%, $\chi^2_{(1)}=4.618$; $p=0.032$), at least according to the self-report. No significant ethnic difference was found in smoking and alcohol consumption between Romas and non-Romas.

Non-suicidal intent was more common among Romas (Roma: 83.3% and non-Roma: 53.3%, $\chi^2_{(1)}=14.305$; $p<0.001$). Romas wanted to escape from an unbearable situation more often than non-Romas (Roma: 66.7%

and non-Roma: 42.2%, $\chi^2_{(1)}=8.618$; $p=0.003$), and manipulative intent was statistically identical in the two subgroups (17.7% and 11.1%, $\chi^2_{(1)}=0.962$; $p=0.323$).

Comparing first and multiple attempters

To identify potential risk factors of multiple suicide attempts, the differences in psychosocial indicators between first and multiple attempters were investigated in both ethnic groups. Psychological distress among multiple attempters manifested itself in higher levels of depression (Roma: 26.1 and non-Roma: 26.8), and hopelessness (Roma: 10.4 and non-Roma: 10.5, NS) in both ethnic groups. The level of hopelessness reached 9 points that indicates suicidal risk among them. In the Roma group, multiple attempters had significantly more previous suicides in their families (0.2 (SD: 0.4) and 0.9 (SD: 1.1), $t_{(55)}=2.940$; $p=0.005$), and were unemployed for a longer time than first attempters (9.4 months and 35.6 months, $t_{(58)}=2.392$; $p=0.020$). Multiple attempters reported diagnosed mood disorders and ongoing mental health treatment more frequently than first attempters in both ethnic groups. Diagnosed mood disorders were more frequent among non-Romas (Roma: 51.6% and non-Roma: 72.7%, $\chi^2_{(1)}=3,040$; $p=0.001$). Multiple attempter Roma patients had unplanned, impulsive acts more frequently than non-Romas (non-Roma: 57.6% and Roma: 90.3%, $\chi^2_{(1)}=8,787$ $p=0.003$).

Risk factors of multiple suicide attempts in the two subgroups

Potential risk factors of repeated suicidal behaviour were investigated in the Roma subgroup. The analysis found ongoing **mental health treatment** (OR:7.6 CI: 2.4-24.2; $p<0.001$), **diagnosed mood disorder** (OR: 6.6 CI:1.8-23.7; $p=0.002$), **hopelessness above 9 points** (OR: 4.0 CI: 1.2-12.7; $p=0.016$), **major depression** (OR: 3.0 CI: 1.6-8.8; $p=0.035$), **smoking** (OR: 5.4 CI: 1.5-19.7; $p=0.006$), **family history of suicide** (OR:4.9 CI: 1.4-16.5; $p=0.007$) and **long-term unemployment** (OR: 4.6 CI: 1.4-14.6; $p=0.007$) as significant risk factors.

Out of these factors in the non-Roma subgroup only **major depression** (OR: 3.1 CI: 1.2-7.6; p=0.012), **hopelessness** (OR: 4.4 CI: 1.7-11.3; p=0.041), **mental health treatment** (OR: 8.3 CI: 2.5-26.9; p<0.001), and **diagnosed mood disorder** (OR: 4.4 CI: 1.7-11.3; p=0.001) were significant. Smoking, family history of suicide, and long term unemployment were found to be risk factors for multiple suicide attempts in the Roma subgroup only.

Conclusions

Based on the results of the present study, my conclusions are as follows:

1. Certain demographic indicators (male gender, isolation, low educational level, Roma ethnicity, unemployment) increase the risk of suicidal behaviour.
2. Intent to die is more common among men, which is confirmed by more violent methods, a more often verbalized wish to die, disappointment about survival and higher rates of unplanned attempts.
3. Patients with intent to die have a higher level of depression, hopelessness and a lower level of sense of coherence compared to the other two categories with no intention to die. This result draws attention to an increased suicidal risk in this subgroup. In the Hungarian sample, previous suicide attempts were found as a significant risk factor for serious intent to die. Despite its importance, information about preceding suicidal acts was found only less than half of the suicide attempters in the context of clinical practice.
4. As precipitating factors, subjects reported interpersonal and financial problems most frequently. These factors were found as risk factors of escaping from an unbearable situation. This result identifies this intent category as a maladaptive problem-solving mechanism in the development of deliberate self-poisoning.
5. Male patients indicating interpersonal conflict had a significantly lower level of depression than any other subgroup in the sample. This data shows that a lack of adequate conflict-solving skills may be a more significant influencing factor in such acts than depression.

6. In the Hungarian sample, half of the women and one-third of the men were multiple attempters, which was found as a significant risk factor for the intent to die. Roma ethnicity and mental health treatment were found as risk factors for multiple suicidal attempt behaviours.
7. Compared to the non-Romas, four times more previous suicide attempts and significantly different suicidal intents draw the attention to the dissimilar cultural characteristics of Roma patients. The importance of intrafamilial relationship models underlines this observation as well.
8. Although there were no significant gender and ethnic differences in the level of depression, the rate of diagnosed mood disorder was significantly lower among Romas than non-Romas, and among male than female patients. Mood disorder was found as a risk factor for multiple suicide attempts.

Recommendation for suicide prevention:

1. ***Screening and treating mental health problems*** should be more stressed in the national suicide prevention programs, with a special focus on mood disorder and hopelessness. This demand is especially urgent in the case of Romas and men.
2. ***Information about previous suicide acts*** – as they are risk factors for suicidal intent – should be part of the anamnesis recording of high risk groups.
3. ***Recognizing suicidal intent/motivation*** and the acute crisis care of patients with intent to die should be more pronounced in suicide intervention.
4. ***Improving conflict-management skills*** should be more stressed in suicide prevention. Programs focusing on preventing depression could evade a group of suicide attempters who do not suffer from depression. Suicidal behaviour in this group of attempters can be perceived as an inadequate coping strategy.
5. Primary and secondary suicide prevention programs should take into consideration the ***special needs of minority groups***, which may be the cause of their diverse suicidal behaviours.
6. Higher rate of undiagnosed and untreated depression among Roma patients and increased deficiency in their problem-solving skills should be an important part of their suicide prevention.

Intrafamilial relationships could be a central part of more effective health promotion and suicide prevention.

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