RESEARCH

Psychosocial and Psychiatric Factors Associated with Expected Fatality during Suicide Attempt in Men and Women

Психосоциальные и психиатрические факторы, связанные с ожидаемым летальным исходом у молодых мужчин и женщин во время суицидальной попытки

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Original research

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ABSTRACT

BACKGROUND: Differential factors that influence intention and subjectively perceived fatality during non-fatal suicidal acts amongst men and women have rarely been explored in the extant literature. Exploring these factors may help to understand how they influence medical outcomes and may also be used in a post-crisis counselling. This study aims to assess factors influencing intent in relation to expected fatality during suicidal acts in men and women.

METHOD: In the current study, 433 individuals who attempted suicide (age 24.89±0.98 years, male/female ratio=1.29) were surveyed using the WHO-5 Well-Being Index, Beck Depression Inventory, Beck Suicide Intent Scale, Plutchik Feelings and Acts of Violence Scale, and Spielberger State/Trait Anger Scale. Life stress was evaluated as an accumulation of negative life events, whilst psychiatric disorders were assessed using CIDI 2.1 inventory.

RESULTS: It was found that the higher expected fatality was associated with higher suicide intention scores, whereas the medical severity of attempts and violent/non-violent attempts distribution did not differ between groups. Although there was no difference in suicide intent scores and medical severity between men and women, men demonstrated a 2.4–3.5 times higher proportion of violent attempts, depending on the group. Higher perceived fatality was associated with lower general well-being, higher depression and violence, hopelessness, and total life stress in men, whereas among women higher perceived fatality was only associated with total life stress. Moreover, in men and women, higher intent and expected fatality was associated with a differential set of negative life events that occurred during childhood. The prevalence of mental health disturbances in the entire sample was about 50% and equally distributed among men and women. However, addictions prevailed among men, while neurotic and stress-related disorders were more common among women. Among those who expected more fatality the number of people with diagnoses and comorbidity was higher, especially in men.

CONCLUSION: There is a difference in risk factors for expected fatality and intent in men and women attempting suicide, which may not necessarily result in severe medical outcomes but may help during the post-crisis counseling of suicide attempters. Expected fatality deserves more attention as a component of general intent. An in-depth study of this phenomenon may help to understand motives of men and women attempting suicide and help prevent future suicidal attempts.

АННОТАЦИЯ

ВВЕДЕНИЕ: Факторы, влияющие на намеренность суицидального акта и ожидание летального исхода у мужчин и женщин в момент суицидальной попытки недостаточно изучены. Их изучение позволит лучше понять, насколько они влияют на исход попытки, а также как они могут быть использованы при посткризисном консультировании с целью превенции повторных попыток и завершенного суицида. Целью работы было изучение намеренности в связи с ожидаемым летальным исходом во время суицидальной попытки у мужчин и женщин.

МЕТОДЫ: Были опрошены 433 человека после попытки суицида (возраст 24,89±0,98 года, соотношение мужчин и женщин=1,29). Использованы индекс благополучия WHO-5, шкала депрессии и шкала намеренности суицидальных действий Бека, шкала оценки насильственных действий Плутчика и шкала характеристик гнева Спилбергера. Стресс оценивали по накоплению негативных событий жизни, психиатрический статус определяли с помощью опросника CIDI 2.1.

РЕЗУЛЬТАТЫ: Чем более вероятным представлялся летальный исход, тем больше баллов по шкале намеренности набирали респонденты, однако при этом нарастания степени тяжести медицинских последствий попытки и доли попыток, совершенных более насильственными способами (X70–X84) не наблюдалось. Значимых отличий в степени намеренности и тяжести попыток между мужчинами и женщинами внутри групп не выявлено. В то же время, среди мужчин доля насильственных способов была в 2,4–3,5 выше в зависимости от группы. У мужчин ожидание летального исхода было ассоциировано со сниженным психологическим благополучием, высокими баллами депрессии и склонности к насильственным действиям, а также с общим уровнем жизненного стресса, в то время как у женщин — только с уровнем стресса. Кроме того, у мужчин и женщин ожидание летального исхода было связано с различным набором негативных стрессовых событий жизни, с которыми им пришлось столкнуться в детском возрасте. Примерно 50% мужчин и женщин имели тот или иной психиатрический диагноз, но среди мужчин преобладали аддикции, а среди женщин — невротические и постстрессовые расстройства. Среди тех, кто считал летальный исход более вероятным, доля лиц с диагнозами и степень коморбидности была выше, среди мужчин значимо.

ЗАКЛЮЧЕНИЕ: Выявлены различающиеся факторы субъективно ожидаемой летальности и намеренности у молодых мужчин и женщин при совершении суицидальной попытки, которые не обязательно приводят к более тяжелым медицинским последствиям, но которые могут быть использованы при посткризисном консультировании. Субъективное ожидание летального исхода в момент попытки как компонент намеренности суицидального акта заслуживает большего внимания, как в плане лучшего понимания психологии мужчин и женщин при совершении попытки, так и с позиций превенции повторных попыток и завершенного суицида.

Keywords: *suicide attempt; intention; expected fatality; early negative life events; psychosocial factors; psychiatric status*
Ключевые слова: *суицидальная попытка; намеренность; оценка вероятности летального исхода; ранние события жизни; психосоциальные факторы; психиатрический статус*

INTRODUCTION

Differences in suicidal behavior based on sex (known as the gender paradox in suicide [1–3]) are discussed in the context of the influence of different risk factors on men and women; they include the biological (estrogen's and androgen's role), the psychosocial (life stress), the cultural (gender roles), the psychopathological (anxiety, depression, alcohol consumption) and the psychiatric (mental health disorders) [4–7]. A recent meta-analysis of 67 studies has identified female- and male-specific risk factors for suicide attempts (SA). Female-specific risk factors include eating disorders, post-traumatic stress disorder, bipolar disorder, being a victim of dating violence, depressive symptoms, interpersonal problems,

and previous abortion; whereas male-specific risk factors comprised of disruptive behavior/conduct problems, hopelessness, parental separation/divorce, a friend's suicidal behavior, and easy access to means of suicide [8]. However, the overwhelming majority of studies included in this analysis were from the USA, Canada, and Western European countries, while only four studies were from China and one from Brazil [8]. Slavonic countries populations have barely been explored in this sense.

Another factor that is poorly described in the existing literature is the differences in the intention to die and perceived fatality during a suicidal act among men and women. Intent refers to the desire to end one's life and includes the person's acknowledgement of the risk and the means to achieve the desired outcome [9]. According to the most widely used definition, SA is "a potentially self-injurious behavior, associated with at least some intent to die as a result of the act" [10]. Intent is presumably correlated with the consequences of self-harm (i.e., medical severity or even lethality of the attempt), but personal understanding of the lethal potential of different methods may change the results dramatically. Moreover, cultural preferences and beliefs influencing the prevalence of methods of self-harm among men and women in the given population, as well as the situational availability of means and organizational capacities of urgent medical aid, may have an impact [11, 12].

In confirmation, some studies find a correlation between the intention to die and the medical severity (medical lethality) of an attempt, while others do not [13]. For instance, Brown et al. (2004) reported a modest correlation between intent and lethality among 180 low-income middle-aged individuals from an urban area who attempted suicide [11]. However, a higher level of suicidal intent was associated with attempts that are more lethal only for those individuals who had "more accurate expectations about the likelihood of dying from their attempts" [11]. In a Chinese study, a different pattern was observed: medically severe suicide attempts in patients living in rural areas were associated with a low intent to die, possibly due to the role of impulsivity [14]. Differences in intent between men and women remain unclear due to heterogeneity in the results — some studies find no difference, while others find a slight predominance of this indicator in men [13–15]. Specific traumatizing events experienced by men and women are rarely evaluated while investigating factors that may influence intent. However, this may give knowledge about gender-specific risk factors and psychological background depending on early life adversities. Furthermore, although the expectation of a fatal outcome has been discussed as a component of intent in various research articles, it has not been defined as a possible independent factor, especially in the context of the gender paradox in suicide.

We have built the whole study around the question "What did you think were the chances that you would die as a result of your act?", which is a component of the suicidal intent. We have hypothesized that the question that focuses on the probability of dying or expected fatality (EF) may have a special meaning to a person who is planning or performing self-harm. Despite using different self-reported measures of intent during the last few decades, the possible special role of EF has not previously been defined. Moreover, studies show discrepancies between circumstantial and subjective measures of such questionnaires and between different questions of the subjective part, for instance, the purpose of the attempt, an expectation of death, the desire to live or die, etc [16]. Therefore, the central aim of the study was to assess factors influencing intent in relation to the expected fatality (EF) during the suicidal act in men and women.

The aim will be achieved by addressing the following objectives:

1) To evaluate whether higher EF is associated with the higher intention to die and may lead to more severe medical outcomes.
2) To assess whether general life stress and certain specific negative life events that happened in the period of personality development, as well as depressive symptoms, hopelessness, anger, and propensity for violence, may act as gender-specific risk factors for higher EF.
3) To evaluate whether the psychiatric status of the attempter may influence EF and intent in men and women.

METHODS

The study analyses data that were accumulated by the GISS genetic project. Within this project, 1200 trio families of Slavonic origin (proband and both parents) from different cities in Ukraine were assessed via psychometric instruments and genotyped between 2001 and 2009.

Sampling and recruitment

The sampling strategy of the GISS project was intended to allow the collection of a culturally and ethnically homogenous sample of suicide attempters with highly verified SA that would be, at the same time, diverse in terms of methods and medical outcomes to ensure non-selective naturalistic representation of suicidal behavior in the current population. For this purpose, suicide attempters of Slavonic origin were approached by trained interviewers (clinical psychologists and psychiatrists) in different settings, i.e., medical hospitals, ambulance services, emergency departments of general hospitals, and psychoneurological care units in different cities of Ukraine, and were included in the study.

The recruitment process for the current study was based on the results of detailed questioning about early life adversities, which provided sufficient data for the analysis. Records of the first 446 consecutively recruited suicide attempters were used for the purposes of this study. The sample size was determined according to the number of cases required for stratification into three groups and accounting for possible drop-out rate (5–10%) after quality control.

Inclusion criteria

Participants were eligible if: a) they have attempted suicide and were 16 years old and over; b) the medical severity of SA was scored as two or over according to the Medical Damage Scale [17, 18]; and c) an informed consent form was signed by all members of the family.

Procedure

Patients were interviewed according to the GISS study protocol, which included questions regarding last (index) and previous suicide attempt(s), family suicide history, physical health, negative life events, as well as several psychometric tests, as described previously [19].

The following psychometric instruments were used:

1) Medical Damage Scale (MDS) — to evaluate the lethality of the attempt with a rating from 0 (no damage) to 8 (lethal) adjusted to each different method of self-harm [17, 18].
2) Beck's Suicide Intention Scale (BSIS) — to evaluate intention during a suicidal act [17].
3) Negative Life Events questionnaire — to evaluate life stress in different periods of life based on the WHO Multicentre Study of Parasuicide protocol [20], with some additions [19].
4) WHO-5 Well-Being Index — to evaluate general well-being.
5) Beck Depression Inventory (BDI) [21] — to evaluate symptoms of depression.
6) Four questions from the Beck Hopelessness Scale [22] previously found to be critical to a dichotomy evaluation of a person as experiencing hopelessness or otherwise [23].
7) Plutchik Feelings and Acts of Violence Scale (PFAV) [24] — to assess proneness to violence and violent actions.
8) Spielberger State/Trait Anger Scale (STAS) [25] — to evaluate anger.
9) WHO composite CIDI 2.1 inventory [26] — for evaluation of main psychiatric diagnoses.

All instruments were either validated Russian versions or were double-translated into Russian by a team of psychologists and psychiatrists proficient in English.

The central instrument of the study was BSIS, which has a long story of application in various clinical studies [16]. This instrument consists of two parts, which address two broad domains: 1) preparatory measures, and 2) subjective feelings and intentions [16]. The first domain evaluates measures taken by an individual including isolation, timing, precautions against discovery or, conversely, acting in favor of discovery, such as communicating before the attempt with a possible rescue and leaving pathways to rescue open, etc. The second domain is dedicated to the aims, goals, perceptions, and anticipations during self-harm, which are subjectively proclaimed by respondents, including the alleged purpose of the attempt, expectations of fatality, and attitudes towards living or dying, etc. Among the BSIS items, the question formulated such as "What did you think the chances that you would die as a result of your act were?" with the answer options: "1 = thought that death was unlikely or did not think about it"; "2 = thought that death was possible but not probable"; and "3 = thought that death was probable or certain"; "4 = other, specify" warrants special attention. This question is directly aimed at evaluating expected fatality (expectation of death) during the suicidal act.

Data analysis

The analysis was performed in two steps: 1) focusing on the age differences, general BSIS score and sub-scores, medical severity, and violent vs. non-violent methods of attempts ratio; and 2) focusing on the associations between

perceived fatality and psycho-social variables, as well as NLEs experienced by the attempters. This part also included an analysis of the psychiatric status in relation to EF.

Statistical methods included descriptive statistics and post hoc Tukey multiple comparisons analysis. For associations with interval variables, Kendall's tau-b (τ_b) coefficient and its p-value were calculated; for alternative variables, the Somers' D coefficient with asymptotic standard error (ASE) was used, and its p-value calculated via T-test. When necessary, the chi-squared test was used. The Statistical Package for the Social Sciences (SPSS) for Windows, version 17.0, was utilized.

Research governance

The study was approved by the Ethical Committee of Karolinska Institute, Stockholm, Sweden (Dnr 97–188), and confirmed by the Ministry of Public Health of Ukraine [19].

RESULTS

Overall, 446 probands (mean age 24.89±0.98 years) from consecutively recruited family trios were included, 251 of whom were males (56.27%, age 24.80±0.76 years) and 195 were females (43.72%, age 25.01±1.18 years). From the whole sample, 433 participants were included in the study. Based on the response to the BSIS question, "What did you think the chances that you would die as a result of your act were?" the final sample was split into three subgroups: 1) those, who responded that "death was unlikely or did not think about it" — 159 people; 2) those, who responded that "death was possible but not probable" — 92 people; and 3) those, who responded that "death was probable or certain" — 182 people. Thus, the distribution between groups was 36.7% : 21.3% : 42.0%. The general male/female ratio in the studied sample was 1.29, while in the subgroups it fluctuated from 1.15 to 1.33, and was higher in group 3 than in groups 1 and 2 (Figure 1).

It is important to note that 13 participants were not included for the final sample: six participants chose an answer "4 = other reason" for the abovementioned BSIS question and have claimed that they were driven by voices that urged them to self-harm and seven participants did not complete this part of the questionnaire.

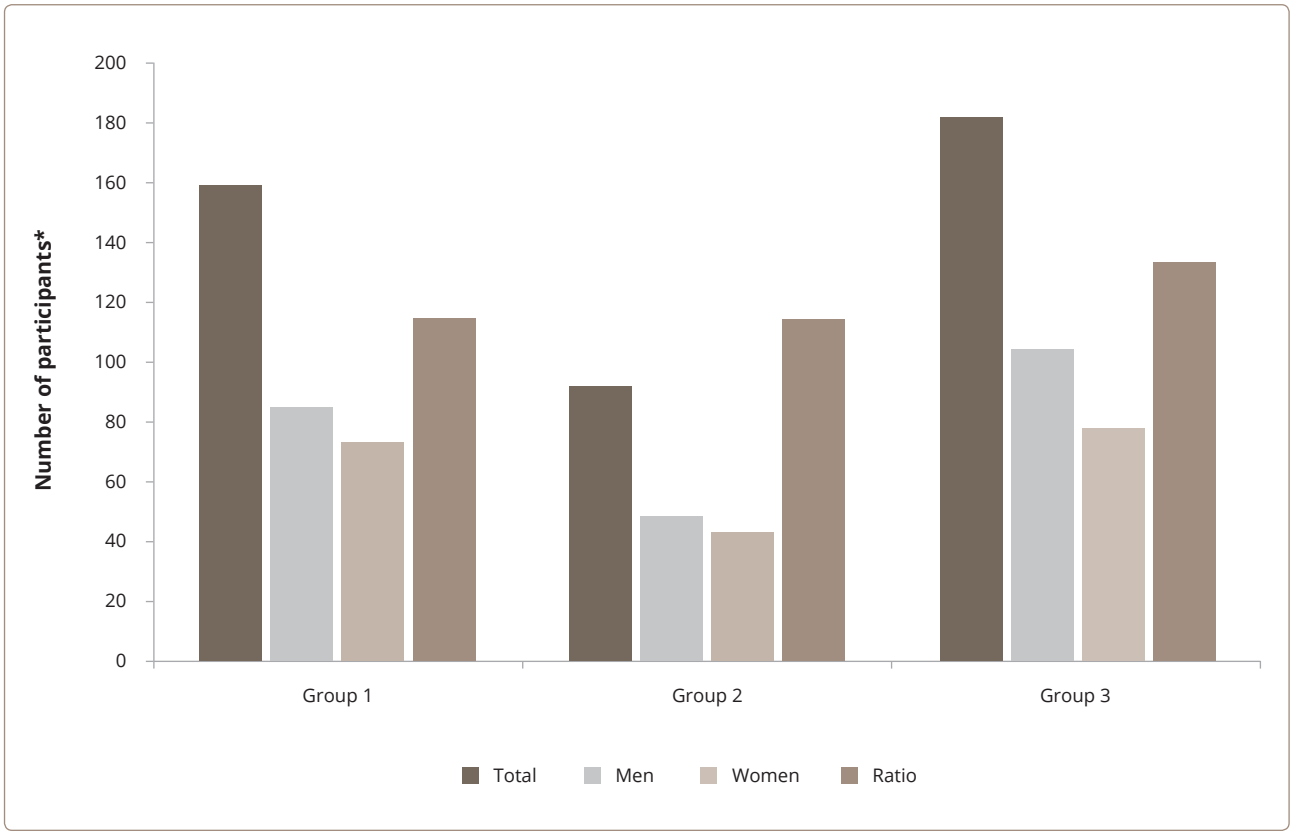

Figure 1. Studied groups — gender distribution.

Note: * M : F ratio is multiplied by 100 to adjust scaling.

The results of the current study will be presented as follows. Firstly, we will look at the differences between the studied groups in terms of demography, suicidal intent, medical severity, and violent/non-violent attempts distributions. This will be followed by the analysis of associations of EF with such parameters as general well-being, severity of symptoms of depression, violence and anger, as well as with total life stress. In the next part, the associations between EF and stressful events under the age of 18 will be explored. The final part will be dedicated to the differences in psychiatric status between groups.

When comparing differences between studied groups in terms of demography, we noted that there was a slight difference in terms of age. In particular, those who imagined that death was probable or certain tended to be older than those who thought that death was unlikely (males — 12.4% older, p <0.05, females — 4.8% older, p >0.05) (Table 1).

Another clear tendency was that general, objective, and subjective BSIS scores increased from Group 1 to Group 3. The difference is significant between Groups 1–2, 1–3, and 2–3 (p <0.05). However, there were no significant differences in BSIS scores between men and women in all three groups. The medical severity of the SA in all three groups did not differ either. To evaluate the proportion of violent vs. non-violent methods of self-harm in men and women, we have summed all cases of self-intoxication (X60–X69), referred to as non-violent, and all other cases where hanging, strangulation, self-cutting, submersion, falling from high places and under moving transport, as well as using firearms, etc. (X70–X84), referred to as violent. As reported in Table 1, the proportion of violent and non-violent cases differed significantly between males and females. The violent methods constituted 60–62% in males, whereas this proportion in females was 18–25%. However, the distribution of methods was identical in all three groups (Table 1).

Further analysis focused on patients' psychosocial characteristics in all three groups (Table 2).

As can be seen, in males there was a negative association with the subjective well-being (τ_b=-0.107; p=0.037) and positive association with depression (τ_b=0.123; p=0.015), hopelessness (D=0.169; p=0.014), and with violence index (τ_b=0.113; p=0.031). In females, a progression of expected fatality also tended to be associated with hopelessness, but the association was insignificant. Furthermore, there was a strong and significant positive association with total life stress score (SUMLE), both in males and females (Table 2). It should be noted that there was no association with the previous SA either in males or females.

In men and women, a higher intention to die and higher expected fatality were associated with different NLEs under the age of 18 (Table 3).

In men, there was only one strong and significant association with "being neglected or left alone by a caring adult" (D=0.297; p=0.001). In women there were associations with "sexual harassment" (weak, on the edge of significance, D=0.160; p=0,065) and "physical attack and assault" (significant, D=0.183; p=0.05). Notably, in women, two other significant associations with "hatred towards one of one's parents" (D=0.169; p=0.038) and "failure to achieve an important goal in life" (D=0.187; p=0.017) were defined.

Table 1. Differences between studied groups in demography, suicide intent, medical severity (M±SD) and the distribution of violent/non-violent attempts (%)

Indicator	Group 1		Group 2		Group 3		Significance between groups*
	M1 (85)	F1 (74)	M2 (50)	F2 (42)	M3 (104)	F3 (78)	
Age	22.96±5.77	24.20±7.55	23.88±6.75	25.28±10.07	25.75±6.87	25.34±8.68	M1<M3
BSIS total score	18.08±3.28	17.72±2.87	19.74±3.11	20.08±3.34	23.58±3.14	23.74±3.07	M1<M2<M3; F1<F2<F3
BSIS preparatory	11.22±2.53	11.27±2.35	12.34±2.56	12.53±2.76	13.72±2.66	13.78±2.51	M1<M2<M3; F1<F2<F3
BSIS subjective	6.89±1.83	6.42±1.50	7.40±1.47	7.55±1.50	9.86±1.21	9.95±1.48	M1<M3; F<F2<F3
MDS	3.21±1.20	3.11±1.03	3.06±1.19	3.41±0.83	3.22±1.22	3.25±1.07	
Violent/ Non-violent	62.0/38.0	25.4/74.6	60.0/40.0	24.4/75.6	62.4/37.6	17.8/82.2	

Note: * Group 1 — "death was unlikely or did not think about it"; Group 2 — "death was possible but not probable"; Group 3 — "death was probable or certain". Significant (p <0.05) differences between the means were confirmed by Tukey pairwise comparisons.

Table 2. Associations between the subjective expectations of the fatality of the suicide attempt and psychosocial characteristics of the patients in relation to gender

Indicator	Gender groups			
	Men		Women	
Kendal's τ_b coefficients and significance	**τ_b**	***p***	**τ_b**	***p***
WHO general well-being	-0.107*	0.037	-0.078	0.175
Beck Depression Scale	0.123*	0.015	0.091	0.109
Violence (PFAV)	0.113*	0.031	0.062	0.297
Angry temperament	0.007	0.901	0.013	0.825
Angry reactivity	0.003	0.957	-0.005	0.937
Total anger	0.001	0.984	0.014	0.812
Total stress (SUMLE)	0.119*	0.018	0.192*	0.001
Somers' D coefficients and significance	**D**	***p***	**D**	***p***
Previous suicide attempt	0.066	0.402	-0.048	0.550
Hopelessness (yes/no)	0.169*	0.014	0.142	0.072

Note: Significant associations (p <0.05).

Table 3. Negative life events until 18 y.o. associated with the expectation of the fatality during suicide attempt in young men and women

Indicator	Gender groups			
	Men		Women	
Life events until 18 y.o.	**D**	***p***	**D**	***p***
Being raped	0.143	0.467	0.097	0.354
Sexual harassment	-0.058	0.743	0.160	0.065
Serious physical attack or assault	0.065	0.416	**0.183***	**0.050**
Separation from parents for a year or more	0.215	0.065	-0.043	0.731
Being brought up by others than parents	0.108	0.428	-0.049	0.727
Divorce of the parents	-0.038	0.721	-0.107	0.340
Parents being away from home for a long time	0.225	0.101	0.127	0.242
Taking care for brothers and sisters for a long time	-0.057	0.622	0.191	0.060
Feeling that parents do not love him/her	0.073	0.352	0.138	0.081
Parents having serious financial problems	0.005	0.939	0.008	0.919
Being neglected or left alone by caring adult	**0.297***	**0.001**	0.146	0.111
Parents having serious relationship problems	0.029	0.688	0.087	0.277
Hatred to one of the parents	0.011	0.883	**0.169***	**0.038**
Suffering from physical illness leading to incapacity	-0.018	0.850	-0.142	0.250
Staying at home or in the hospital for a long time	-0.037	0.693	0.093	0.389
Staying in the psychiatric hospital for 3 months or more	-0.095	0.523	0.179	0.278
Failure to achieve an important goal	-0.067	0.349	**0.187***	**0.017**
Being convicted for a criminal offence	0.134	0.213	-0.295	0.210
Been sentenced to jail or other correctional institution	0.120	0.388	-0.347	0.277
Being a victim of a crime	-0.153	0.167	0.139	0.187

Note: Significant associations, Somers' D coefficient.

Psychiatric diagnoses in the general sample were registered in 51.8% of cases (52.2% among men and 51.3% among women). At the same time, clear differences in the distribution of diagnoses between genders were observed. Among men, the most prevalent (33.3% of all cases) were substance abuse disorders (F10–F19). These were followed by an almost equal representation (26–27% each) of affective (F30–F39) disorders and neurotic/stress-related/somatoform disorders (F40–F49). Schizophrenia, schizotypal, and delusional disorders (F20–F29) in the male sample comprised 12%, while eating disorders (F50) were detected in 1% of cases. In women, the most prevalent (45.8%) issues were neurotic and stress-related disorders, followed by affective disorders (34.3%), and addictions (17.9%), while schizophrenia and eating disorders were found to be 1% each.

In the group of those who believed that "death was unlikely, or did not think about it", 53.2% of men and 51.1% of women had any diagnosis with comorbidity of 1.81 and 1.68 diagnoses per person, respectively. In the group of those who "believed that death was probable but unlikely" 46.0% of men and 47.5% of women were diagnosed with some form of disorder. Comorbidity in this group was 1.69 among men and 2.21 among women. In those who believed that "death was probable or certain" the proportion of diagnoses was higher (65.3% among men and 57.9% among women), with comorbidities of 2.03 in men and 2.20 in women. The differences between groups were studied via the chi-squared test. The differences between groups 1 and 2, and 1 and 3 were insignificant (p >0.05); but when comparing groups 2 and 3, the differences were significant in men (p <0.05).

DISCUSSION

Summary of the main findings

EF at the moment of self-harm is growing in parallel with general intent. Subjectively reported intent does not differ in men and women attempters. In men and in women, EF and intent are not associated with previous SA. However, EF has some distinct sex-based features. In men it is associated with different measures of poor mental health (lowered general well-being, symptoms of depression, negative expectation about the future expressed in hopelessness, and being prone to violence). In women, EF is associated mostly with life stress, where this association is stronger than in men. The prevalence of psychiatric disorders in men and women attempting suicide was equal, but had clear distinctions in terms of the distribution of diagnoses. Addictions were strongly prevalent among men, whereas neurotic and stress-related disorders were dominant among women. Notably, increased EF and intent were only associated with higher psychiatric morbidity in men, which coincides with other signs of poor mental health in them. Both in men and in women, EF is associated with general life stress measured as the accumulation of negative life events. At the same time, it is remarkable that EF in men and in women is associated with a different set of childhood (before 18 y.o.) adversities and negative feelings. In particular, in men it is determined by parental neglect (being left alone by a caring adult), while in women associations were found with physical violence against them and frustrated hopes (failure to achieve an important goal).

Strengths and Limitations

The main strength is that we have performed this study using a carefully assembled and well-characterized sample of suicide attempters, taking into account a variety of medical (SA medical severity), psychosocial, and cultural characteristics. Suicide attempters were identified in different types of medical care units, including both psychiatric/psychoneurological, and non-psychiatric institutions (such as toxicological resuscitation units, ambulance services, and emergency departments of general hospitals). Their suicide attempts were confirmed by medical staff and parents. This provided a naturalistic representation of a variety of suicide methods, psychiatric diagnoses, and stressful life events inherent to the local culture. Moreover, involvement of the whole family and supportive interviewing ensured better contact with respondents, which was important while answering sensitive questions. As a result, we have linked not only general life stress, but also specific negative events and frustrations that occurred during childhood with suicidal intent and subjectively perceived fatality. Moreover, we have identified differences between men and women regarding stressful events that occurred during childhood and their relevance to higher intent and EF. This is a valuable step towards a better understanding of the differential risk factors of suicide attempts in men and women. This also acts as a basis

for further psychological studies of deep underlying psychological mechanisms of suicidal behavior.

There are also several limitations to the present study. Firstly, the sample may be skewed due to the fact only those suicide attempters whose parents were available were recruited in the study. Therefore, the findings might not be generalizable to all suicide attempters admitted to emergency departments. Another weakness is a recall bias, which is rather typical to all retrospective studies.

Comparison with the existing literature

In the group of patients who reported that "death was probable or certain", patients were older, which is consistent with other authors' findings [27]. However, despite an increased intention to die, the medical severity of the SA in all three groups did not differ. Thus, our results support studies that find no or only a very mild correlation between suicidal intent measured by BSIS and the medical severity of the attempt [14, 27, 28]. Within the groups, we did not find any differences between men and women, either in intent or in the medical severity of attempts. Therefore, our study is consistent with those that do not find any gender-related difference in intent during a suicidal act [14, 15, 29]. This means that women may have the same intent to die as men, which implies that the choice of the method may be the main factor affecting the subsequent lethality.

Studies suggest that females survive suicide attempts more frequently than males because they typically use less lethal means, and further that their outcomes are less lethal compared to males even when using an identical method [30, 31]. In our sample, the proportion of more violent and potentially lethal methods (all methods except poisonings, including self-cutting, hanging and suffocation, using firearms, smoke vapors and gases, etc., coded X70–X84 according to ICD 10) in men was 1.5–1.7 times higher than in women. In women, in contrast, non-violent (i.e., self-poisonings with different medicines and other toxic substances) occurred 2.9–4.6 times more often. Interestingly, in men, this distribution was the same in all three groups, while in women the proportion of less violent methods increased progressively from group 1 to 3 (from 2.93 to 4.62 times). This gives the impression that the greater the intention driving the women and the greater the EF they claim, the more strongly they stick to traditional "female" types of methods of suicide.

When considering selected psychosocial variables that may influence intent and EF, we identified several differences between men and women. Men appeared to be influenced more by depressive emotions, low general well-being, and pessimism (hopelessness). As previously described in a recent study, the role of hopelessness as a mediating factor between life stress and severe suicide attempts is particularly prominent amongst men [32]. Moreover, the fact that in men we find associations with more factors than in women may partly explain their higher risk of suicide as they seem to be influenced by a more diverse set of determinants. Other studies provide evidence that poor well-being is generally associated with higher suicidal intent, depression, hopelessness [33], and life stress [34]. In our sample, life stress was strongly associated with intent and EF in both men and women. However, studies suggest that men may develop more chronic and severe emotional responses to life stress due to their higher tendency to not recognize or respond to their own negative emotions or distress [35].

In this respect, analysis of gender-specific life events that happened to a person prior to the age of 18 seems to be particularly important. In our study, higher EF in men was strongly associated with separation from parents for a year or more (strong but insignificant) and being neglected or left alone by a caring adult (strong and highly significant). This may indicate that poor or dysfunctional parent-child interrelations and a lack of parental warmth during childhood for males could be transformed into a higher intent and EF during a suicidal crisis. In women, the strongest associations were found with quite a different set of events, including failure to achieve an important goal, serious physical attack or assault, and hatred of one of their parents (all of the same strength, and significant). The strong association with physical attack, assault and hatred for one of their parents may be an indication of serious problems and conflicts within the family [36]. It results in physical and emotional abuse, which are often found in suicide attempters [36]. Nevertheless, association with the failure to achieve an important goal indicates that frustration is a serious risk factor of the higher intent and EF during a suicidal crisis in women.

As to the psychiatric disorders, our findings suggest that a higher proportion of patients with psychiatric diagnoses

and comorbidities are inherent to the group with the highest EF and intent. This is consistent with other studies that point out that a higher rate of psychopathologies and diagnosed psychiatric disorders predicts higher suicide intent [27, 28, 37]. It is important to note that in our sample this tendency was significant only among male suicide attempters. Although CIDI 2.1 allows only a limited number of disorders to be assessed, it helps to reveal major differences between men and women in this respect. In particular, it points out that addictions were more prevalent among men, while neurotic and stress-related disorders were more common among women. This is consistent with other studies of the same population [38] and further contributes to the understanding of differential risk factors for higher intent and EF in men and women. In particular, it confirms one of the suggestions regarding possible reasons for the gender suicide paradox (i.e., representation of easier-to-treat disorders among women) [3].

The interpersonal-psychological theory recently developed by T. Joiner [39] proposes that differences between the sexes with regard to suicide are the result of differences in acquired capability for suicide, which is supposed to consist of two components: fearlessness about death, and physical pain insensitivity [39, 40]. Higher acquired capability for suicide among men makes it more likely that men will kill themselves when suicide is being considered. Thwarted belongingness and perceived burdensomeness are also factors contributing to Joiner's theory and suicide risk factors for men, while stoicism and sensation-seeking are considered to be mediating factors [40]. Expected fatality, in this sense, is of special interest as a factor that may be related to these feelings.

Relations between measured intent, severity of attempts, and the choice of method amongst men and women are either fully denied [41] or admitted and acknowledged [8, 10]. Such conflicting results may be caused by the differences in conceptualization and assessment of the intent [28, 32, 42]. However, in longitudinal studies, high BSIS scores predict higher overall mortality rates and death by suicide, indicating that intent is an important factor [43]. All this determines the importance of further research in this field with an emphasis on expected fatality, especially with due consideration for some of the novel models of suicide that have recently begun to emerge.

Implications for research and practice

Our findings carry a number of implications for future research. Firstly, suicidal intent and expected fatality could be included in the set of variables alongside thwarted belongingness and fearlessness about death in men and women. Secondly, gender-specific risk factors for suicide attempts and completed suicide with regard to intent and EF may need to be studied further. Thirdly, exploring risk factors for high intent and expected fatality in men and women, including specific life events during early life and family patterns, seems necessary as this may help to understand the nature of vulnerabilities to stressful factors in the early social environment. From a practical perspective, such knowledge may provide valuable insights for a consultant or a therapist dealing with a suicidal person. Questioning regarding EF could be useful while briefly evaluating the seriousness of suicidal intent amongst suicide attempters in the clinical setting. It may serve a useful instrument for first contact with suicide attempters, such as by paramedics, policemen, or rescuers. In this sense, it may facilitate effective and timely medical aid and may help to prevent future suicide attempts and completed suicides.

CONCLUSION

Our findings suggest that there is a difference in risk factors for high expected fatality and intent in men and women attempting suicide. These factors may not necessarily lead to severe medical outcomes but may help during post-crisis counseling of suicide attempters. Motives and perceptions, and especially EF during a suicide attempt in men and women appeared to be associated with a different set of objective psychosocial characteristics and psychiatric disorders. This helps to better understand the nature and determinants of intrapsychic conflict and ambivalent thinking at the peak of a suicidal crisis. Therefore, expected fatality deserves more attention as a component of general intent as an in-depth study of this phenomenon may help to prevent future suicidal attempts and suicides. Further studies are needed to better characterize expected fatality, especially in relation to such factors as fearlessness about death and pain insensitivity.

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