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The Prevalence of Suicidal Behaviour and Its Correlation with Certain Sociodemographic Variables in Sivas Province

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ABSTRACT

The prevalence of suicidal behaviour and its correlation with certain sociodemographic variables in Sivas province

Objective: In this study, investigation of suicidal behaviour and its correlation with certain sociodemographic variables in Sivas province in Turkey was aimed.

Methods: The sample group of this research consisted of 1117 individuals in the age range of 18-65, selected by using stratified sampling method. The study was performed in two stages. In the first stage, sociodemographic data form, the Suicide Behaviour Scale, the Suicide Ideation Scale were administrated to the participants who were selected from 500 homes. In the second stage, the Structured Clinical Interview for DSM-IV Axis-I Disorders and the Structured Clinical Interview for DSM-IV Axis-II Disorders and the Suicide Intention Scale were administrated to persons who had suicide attempt history.

Results: While the prevalence of lifetime suicide behaviour was found to be as 2.23%, the prevalence of lifetime suicide planning or attempt was 3.58%, suicide ideation for the last one year 1.43%, lifetime suicide attempt 1.43%, and lifetime suicide intention was 0.62%. Suicidal behaviours were more frequent in involuntary marriages than in voluntary ones. With the increased duration of marriage, both suicide behaviour and suicide ideations were decreasing significantly. The rate of suicide ideation was significantly higher for individuals with alcohol abuse history than the ones without.

Discussion: The rate of suicidal behaviours, suicide ideation, and suicide attempt found in this study were lower than that of found in studies performed in western countries. The possible reasons for this might be the methodological differences of the studies, religious and cultural differences between the countries in which the studies were carried out.

Key words: Suicide behaviour, epidemiology, general population

ÖZET

Sivas il merkezinde intihar davranışının yaygınlığı ve bazı sosyodemografik faktörlerle ilişkisi

Amaç: Bu çalışmada, Sivas il merkezinde intihar davranışının yaygınlığı ve bu davranış ile bazı sosyodemografik değişkenler arasındaki ilişkinin araştırılması amaçlandı.

Yöntem: Çalışmanın örneklemini, tabakalı örnekleme yöntemiyle seçilen 18-65 yaş aralığındaki 1117 birey oluşturdu. Çalışma iki aşamada gerçekleştirildi. İlk aşamada, daha önce saptanan 500 hanedeki 18-65 yaş aralığındaki katılımcılar sosyodemografik bilgi formu, intihar davranış ölçeği ve intihar düşünce ölçeğini doldurdu. İkinci aşamada, görüşmeciler intihar girişimi öyküsü olanlara SCID-I ve SCID-II ölçeklerini uyguladı.

Bulgular: Yaşam boyu intihar davranışının yaygınlık oranı %2.23, yaşam boyu intihar planı veya girişiminin yaygınlık oranı %3.58, son bir yılda intihar düşüncesinin yaygınlık oranı %1.43, yaşam boyu intihar girişiminin yaygınlık oranı %1.43 ve yaşam boyu intihar niyetinin yaygınlık oranı ise %0.62 olarak bulundu. İntihar davranışı istatistiksel olarak istemeden yapılan evliliklerde, isteyerek yapılan evliliklere göre anlamlı şekilde daha fazlaydı. Yine evlilik süresinin artmasıyla birlikte, hem intihar davranışı hem de intihar düşüncesi anlamlı şekilde azalmaktaydı. İntihar düşüncesi oranı alkol kullanım öyküsü olanlarda, olmayanlara göre anlamlı şekilde daha yüksekti.

Tartışma: Bu çalışmada ortaya çıkan intihar davranışı, intihar düşüncesi ve intihar girişimi oranları, batı ülkelerinde yapılan çalışmalarda elde edilen oranlara göre daha düşüktür. Bunun nedenleri arasında, çalışmalar arasındaki yöntemsel farklılıklarla çalışmaların yapıldığı toplumlar arasındaki dini ve kültürel farklılıklar sayılabilir.

Anahtar kelimeler: İntihar davranışı, epidemiyoloji, genel nüfus

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INTRODUCTION

Suicide and suicidal attempts are accepted as an important public health problem both in Turkey and worldwide (1-3). According to World Health Report, recorded annual deaths due to suicide are over 800.000 (2). Prevalence of suicide cases in US are 12/100.000 and it is the 8th most prevalent death among unnatural deaths (1,3).

Most of the suicidal ideas and behaviors vary between less severe and more frequent condition (such as suicidal ideas) and more severe and less frequent condition (such as completed suicide)(4). Suicidal planning follows suicidal idea and this may conclude with death (5). Because completed suicides and suicidal attempts are the main focus of suicide research, there are few studies focusing on suicidal ideas and suicidal plans (5). In general population studies, incidence of suicidal ideas among adults in the previous year was reported 2-11% and life-time prevalence was reported 2.1-24%, one-year incidence of suicidal attempts was reported 0.3-2.6% and life-time prevalence was reported 0.7-10% and lastly incidence of suicidal plans in the last year was reported 1.5-2.7% and life-time prevalence was reported 3.9-13% (6). In a study by Kessler et al. (7), suicidal idea, suicide plan and suicidal attempt rates at least once in a life-time were found 13.5%, 3.9% and 4.6% consecutively.

Strongest determinants of risk factors creating tendency to suicidal behavior were history of suicidal attempt and/or severe mental disorders and the most prevalent causes found in suicide victims were first axis affective disorders and substance use disorders (2). In general population studies, suicidal ideas and attempts were found to correlate with some socio-demographic variables such as young age, female gender, living alone or separated, low educational level and unemployment (6).

In Turkey, information about suicides is provided by State Statistics Institute (DIE). According to DIE data, annual suicide rate in Turkey is 2.5/100.000. However, because all suicidal attempts are not reported officially, accurate number of suicide cases are possibly more (3,8). In a study done in Trabzon province, suicide frequency was found 2.6/100.000 and suicidal attempt frequency was found 31.5/100.000 in 1995 (9,10). Findings from studies done in Turkey on prevalence of suicides showed that prevalence of suicidal attempts are quite low in Turkey however rate of increase is strikingly high (11,12).

There is limited number of studies done in Turkey about prevalence of suicidal behavior with samples representing general population. In this study, we aimed to detect prevalence of suicidal behaviors (suicidal idea, suicidal intent, suicidal plan and suicidal attempt) in Sivas city center. Additionally, relationship between suicidal behaviors and some socio-demographic variables which may be risk factors for these behaviors were also investigated.

MATERIAL AND METHODS

This study was performed in 2005 at Sivas city center which has a population of 225,000 according to 2000 census. People living in rural areas of Sivas province were not included in the study. People who were between 18-65 years old in Sivas city center was 120.000. Targeted population of our study was 120,000 who were 59,220 women and 60,780 men (Table 1).

Table 1: Demographic characteristics of Sivas city center

Sivas City Center Population	225.000
Number of Neighborhoods	600
Number of Households	34.831
Number of Households of the Sample	500
Population 18-65 years of age	120.000
Women (18-65)	59.220
Men (18-65)	60.780
Participants	1117
Women (18-65)	618
Men (18-65)	499

Sivas province is one of the underdeveloped provinces of Turkey which has a long history but low educational level, high unemployment rates and maintaining traditional values. As a consequence, socio-demographic and cultural characteristics of Sivas province do not represent Turkey. There is not any epidemiological study done about suicides in general population sample of Sivas province up to date.

Data Collection Tools

1. Socio-demographic Information Form: In the socio-demographic information form developed by our department, age, gender, marital status, age and style of marriage, educational level, income level, alcohol consumption, family history of any psychiatric disorder or suicidal behavior of the participant were asked.

2. Suicidal Behaviors Questionnaire (SBQ): Validity and reliability study of Suicidal Behaviors Questionnaire which was developed by Linehan et al. in 1981 (13) for Turkey was done by Bayam et al. in 1995 (14). Suicidal behavior concept contains four different aspects. First of them is "suicidal plan and attempt" which examines previous suicidal ideas and attempts of the person and second is related with thinking to terminate his/her own life in the last year. Third aspect examines suicidal threat and investigates whether that person gives any message to his/her environment or family and fourth aspect examines his/her thoughts and intent whether he/she will attempt suicide in the future. Questionnaire consists of four items:

1. item: "Suicide ideation and/or suicide attempt": It is related with life-time suicidal behavior and contains 6 choices. It is scored as Likert type 0-5 points.

2. item: "Suicidal ideation over the past 12 months": It is related with suicidal thoughts in the last one year and contains 5 items. It is scored as Likert type 0-4 points.

3. item: "Threat of suicidal attempt": It consists of two choices. "No" response is scored as 0 and "yes" response is scored as 1.

4. item: "Sel-reported likelihood of suicidal behavior in the future": It is related with suicidal idea and intent in the future. It contains five choices and is scored as Likert type 0-4 points.

Lowest possible score from suicidal behavior questionnaire is 0 and highest possible score is 14 and total score is calculated by arithmetical sum of all scores. Severity of suicidal idea increases by the increasing scores. Also, every item is structured within itself and 4 different aspects of the behavior are evaluated separately.

Test-retest reliability of the questionnaire (r=0.92) was found 0.73 ($p<0.001$) for the whole questionnaire. In the item-test correlation, lowest value was 0.37 and highest value was 0.61. Mean scores from each item between groups which attempted and not attempted suicide were found significantly different ($p<0.001$). Moreover, each item of Suicidal Behaviors Questionnaire was found to be significantly correlated with total scores of Suicidal Intent Scale, Hamilton Depression Scale and Beck Hopelessness Scale (13-14).

3. Suicidal Ideation Scale (SIS): This scale consists of 20 items and developed by Beck in 1973 (15). It consists of 20 items which 15 are scored and 5 are not scored and evaluates person's expectations during suicidal attempt. Each item is scored between 0-2. After adequate information is obtained during the interview, interviewer determines the most appropriate choice in the scale. Total score is between 0 and 30 and arithmetical sum of scores taken from each item makes up the total score. First 9 items give information about facts related with the attempt and events determining the attempt and has a title "objective circumstances related to suicide attempt". Second section has a title "self-report" and contains retrospective evaluation of feelings and thoughts of the patient during the attempt. Third section which contains last 5 questions cannot be scored due to uncertainty of choices during the interview. Validity and reliability study of Suicidal Ideation Scale in a Turkish sample population was done by Dilbaz et al. (16). Test and retest reliability of the scale was found r=0.84, inter-rater reliability was found r=0.99 and Cronbach alpha coefficient was found 0.83.

4. Suicidal Intent Scale (SITS): This scale was developed by Levine et al. in 1989 (17). This questionnaire which aims to determine the severity of suicidal ideation is self-rated by the patient. "No" response was rated 0 and "yes" response was rated 1 and total score is obtained by arithmetical sum of scores received from each item. Scale consists of 17 questions and total score is between 0-17. Higher scores show the presence of suicidal ideation. In the validity and reliability study of the scale done in Turkey, test and retest reliability was found r=0.88, Cronbach alpha coefficient was found 0.84 and lowest and highest item-

test correlation coefficients was found 0.20 and 0.61 consecutively. Validity and reliability of the scale to determine suicidal ideation in Turkey was previously reported (18, 19).

5. DSM-IV Structured Clinical Interview for Axis I Disorders (SCID-I): SCID-I is a semi-structured clinical interview tool developed for the diagnosis of major DSM-IV axis I disorders. Inclusion criteria are being over 18 years old, absence of agitation and severe psychotic symptoms and having adequate cognition to continue structured interview (20). It contains six modules and examines a total of 38 DSM-IV axis I disorders by diagnostic criteria. Interview continues approximately 25- 60 minutes. Validity and reliability study of SCID-I in Turkey was done by Özkürkçügil et al. (21).

6. DSM-III-R Structured Clinical Interview for Personality Disorders (SCID-II): SCID-II examines 12 DSM-III-R personality disorders, one of them temporary (22-24). Original implementation of SCID-II is asking questions which filled as positive in this form or which physician suspected of their presence in the patient after self-rating of the related form about personality disorders by the patient. Beginning from reluctant personality disorder, examines every criterion of dependent, obsessive-compulsive, passive-aggressive, self-defeating, paranoid, schizoid, histrionic, narcissistic, borderline and antisocial personality disorders. Translation study of SCID-II was done by Coşkunol et al. (25). In the validity and reliability study of SCID-II, inter-rater consistency was found to be high both in psychiatric inpatients (k=0,79) and alcohol dependents (k=0.82).

Implementation

Sample

This study was realized in two steps: Stratified sampling method was used. Household population sample set representing Sivas city center which was defined by social scientists was used (26). All neighborhoods in the city were represented in the sample. There are 34,831 households in 600 neighborhoods of the city center.

Five hundred households were selected as sample. Numbers of households at each neighborhood were determined proportionally by the neighborhood population. Households at each neighborhood were selected randomly from records of the electricity company. Additional 100 addresses were also determined to use as substitutes in case of absence at the households.

All neighborhoods were previously classified according to socio-economical level in a 9-level system. These 9 levels were grouped as low, medium and high, consecutively. Main criteria to determine the socio-economical level were distance to city center, characteristics of the buildings and income levels of families.

All households were visited without being previously informed. Participants were selected from 18-65 years old range. At each household, number of people within this age range and at most two visits in one day were done to these people. People at the same age were selected randomly from the same household to substitute people who could not be contacted due to absence at their homes at both visits. Number of people who were visited by this method was 18 (1.61%). Six people did not want to participate in the study without any reason although after explaining about it (0.53%). Participants were informed about the study and told that their identities were not required. All participants of the study volunteered. Informed consent was taken from all participants.

Interviews

Before starting interviews with the study participants, interviewers were informed and trained about the tools to be used in the study. This study was implemented by two psychiatry residents and interns. Interviews were done in houses as private interviews.

Study was realized in two steps: At the first step, socio-demographic form, suicidal behaviors questionnaire, suicidal ideation scale and suicidal intent scale were applied to individuals between 18-65 years of age (n=1117) from 500 households previously

determined. At the second step, SCID-I and SCID-II interviews were applied to ones attempted suicide by face-to-face interview.

Statistical Analyses

Data from our study were loaded to SPSS (version 10.0) software. Analysis of variance, Kruskal-Wallis test, Mann-Whitney U test, Student's t test, chi-square test and correlation analysis were used to analyze the data. At some of the tables, hypotheses about chi-square could not be performed so tables were expressed by percents instead.

RESULTS

Socio-demographic Characteristics

Mean age of the participants was 37.13 ± 13.02. Mean age of marriage of married participants was 20.55 ± 3.66. Six hundred and eighteen participants (55.3%) were women and 870 (77.9%) were married, 490 (43.9%) were primary school graduates and 690 (61.7%) had low income. Family history of mental disorders and suicide were 11.5% and 1.3% consecutively. Number of participants with alcohol abuse was 98 (8.8%). Some of the socio-demographic data of the sample group were given in Table 2 (Table 2).

Table 2: Socio-demographic Characteristics

Characteristic	(n)	%
Age Groups		
18-24	222	19.9
25-34	321	8.7
35-44	235	21.0
45-54	203	18.2
55-65	136	12.2
Gender		
Woman	618	55.3
Man	499	44.7
Marital Status		
Married	870	77.9
Single	189	16.8
Separated/Divorced/Widow	58	5.3
Educational Level		
Illiterate	68	6.1
Can read & write	47	4.2
Primary School	490	43.9
High School	382	34.2
University	130	11.6
Income Level		
Low	185	16.6
Medium	690	61.7
High	242	21.7

Suicidal Behavior

Mean score of Suicidal Behaviors Questionnaire was 3.00±1.89. Suicidal behavior questionnaire score was lower than 3 in 63 (71.5%) out of 88 people who answered the scale and make up 7.87% of the sample. This score was 3 or over in 25 people (28.5%) and 17 of them (68%) were women and 8 (32%) were men. Suicidal behavior rate was found 2.23%.

Four questions were asked in Suicidal Behaviors Questionnaire: First question was examining life-time suicidal plan and attempt and history of suicidal behavior (Have you ever thought of killing or attempted to kill yourself?). Answering choices of this question were "Never", "Once", "Sometimes", "Often", "Very often" and "Always". To detect life-time suicidal plan or attempt, positive choices were grouped as "Yes" and negative choices were grouped as "No". Participants whom answered "Yes" were re- classified as "Once", "Sometimes", "Often", "Very Often" and "Always". Number of participants whom answered "Yes" to this question were 40 and make up the 3.58% of the sample. Twenty-eight of the participants whom answered "Yes" were women (70%) and 12 were men (30%). Twenty-five of these people (62.5%) answered "Once", 8 (20%) answered "Sometimes", 6 (15%) answered "Often", 1 (2.5%) answered "Very Often".

Second question in Suicidal Behaviors Questionnaire was examining suicidal ideas in the last year (How many times did you think of killing yourself in the last year?). In order to determine suicidal thoughts in the last year, positive choices were grouped as "Yes" and negative choices were grouped as "No". Participants whom answered "Yes" were re- classified as "Once", "Sometimes", "Often", "Very Often" and "Always". Number of participants whom answered "Yes" to this question were 16 and make up the 1.43% of the sample. Thirteen (81.2%) of participants whom answered "Yes" were women and 3 (18.8%) were men. Twelve of these

people (75%) answered "Once", 3 (18.8%) answered "Sometimes" and 1 (6.2%) answered "Often".

Third question at the Suicidal Behaviors Questionnaire was related with suicidal threat and contained "Yes" and "No" choices (Have you ever told anybody that you may or will commit suicide?). Twenty-three people answered "Yes" to this question and make up 2.05% of the sample. Seventeen (74%) of "Yes" responders were women and 6 (26%) were men.

Fourth question at the Suicidal Behaviors Questionnaire was about repeatability of suicide and contained five choices (How likely do you commit suicide sometime in the future?). Positive choices were grouped as "Yes" and negative choices were grouped as "No". "Yes" responders were re-grouped as "I don't think now but cannot say anything about the future", "May be", "Absolutely", "Absolutely more than once". Number of "Yes" responders were 88 and make up 7.87% of the sample. Fifty-two (59%) of the "Yes" responders were women and 36 (41%) were men). Seventy-four (84%) of them answered "I don't think now but cannot say anything about the future" and 14 (16%) answered "May be".

Suicidal Ideation

Mean score of Suicidal Ideation Scale which examines suicidal ideas in the last week was 7.21±2.24 (lowest score 3, highest score 16). Suicidal idea scale scores of 170 people whom answered the scale and make up 62.5% of the sample were less than 7 and scores of the remaining 102 people (37.5%) were 7 or over. Sixty-five (63.8%) of the participants whom scores were 7 or over were women and 37 (36.2%) were men. Suicidal ideation in the last week was found 9.13%.

Suicidal Intent

In this study suicidal attempt was found in 16 people and this makes up 1.43% of the sample. Twelve (75%) of the participants whom attempted suicide were women and 4 (25%) were men. Lowest score of 16 participants whom answered Suicidal Intent Scale were 1 and highest score was 16. Mean scores of Suicidal Intent Scale was 7.50±3.44. Scores of nine (56.2%) of these individuals were less than 7.5 and scores of 7 (43.8%) of them were over 7.5. Suicidal intent rate was found 0.62%. Five (71.4%) of the participants whom Suicidal Intent Scale score was over 7.5 were women and two (28.6%) were men.

Thirteen (81.2%) out of 16 people who answered Suicidal Intent Scale reported that they attempted suicide without thinking whether any intervention is possible or not, 11 (68%) reported that they did not prepare anything for the suicidal attempt, 10 (62.5%) reported that their main aim was to change or impress their environment, 11 (68%) reported that they did not write any note before the attempt, 12 (75%) reported that they did not want to die after the attempt, 9 (56.2%) reported that they did not want to attempt suicide, 13 (81.2%) reported that they do not regret due to their attempts, 11 (68%) reported that they attempted suicide for the first time, all participants who attempted suicide reported that they did not take alcohol during the attempt and 11 (68%) reported that they took drugs to an extent that they were not aware of themselves during the attempt. Suicidal behavior prevalence rates were given in Table 3 (Table 3).

Table 3: Prevalence rates of suicidal behaviors according to genders of participants

Prevalence	Suicidal Behavior (%)	Suicidal Plan and Attempt (%)	Suicidal Attempt (%)	Suicidal Ideation (%)	Suicidal Intent (%)
Life-time	2.23	3.58	1.43		0.62
Women	2.57	4.53	1.94		0.80
Men	1.60	2.40	0.80		0.40
Last One Year				1.43	
Women				2.10	
Men				0.60	
Last One Week				9.13	
Women				10.31	
Men				7.41	

Relationship between Socio-demographic Data and Suicide Scale Scores

When socio-demographic data such as age groups, gender, sex, marital status, educational level, income level, profession, family type, history of smoking, family history of suicide were compared to scores of

Table 4: Relationship between suicide scale scores and socio-demographic data

Characteristics	SIS*			SBQ**			SITS***		
	n	Mean±SD		n	Mean±SD		n	Mean±SD	
Age Groups									
18-24	57	7.50 ± 1.93	F= 0.93	30	2.73 ± 1.20	KW= 3. 90	2	8.00 ± 0.00	p > 0.05
25-34	87	7.37 ± 2.53	p= 0.43	29	3.41 ± 2.02	p= 0.33	9	7.00 ± 3.96	****
35-44	58	6.86 ± 2.09		17	3.17 ± 2.74		-	-	
45-54	49	7.20 ± 2.19		10	2.50 ± 1.35		4	7.75 ± 3.77	
55-65	23	6.78 ± 2.19		1	1.00		1	1.00	
Gender									
Women	161	7.37 ± 2.25	t= 1.44	51	3.17 ± 1.77	t= 1.03	12	7.25 ± 3.72	p= 0.48
Men	113	6.98 ± 2.21	p= 0.56	36	2.75 ± 2.04	p= 0.31	4	8.25 ± 2.75	
Marital Status									
Single	61	7.47 ± 2.04	KW= 1.93	29	3.20 ± 1.95	t= 0.67	2	8.00	p > 0.05
Married	204	7.15 ± 2.29	p= 0.78	57	2.91 ± 1.88	p= 0. 55	13	7.69 ± 3.70	****
Separated/Widow/Divorced	9	6.77 ± 2.27		-	-		1	-	
Educational Level									
Illiterate	20	7.85 ± 2.62	KW= 3.52	4	2.75 ± 2.21	KW= 3.77	1	9.00	p > 0.05
Cen read & write	15	7.26 ± 2.49	p= 0. 38	2	1.50 ± 0.70	p= 0. 39	1	4.00	****
Primary School	140	7.35 ± 2.26		48	3.16 ± 1.89		10	7.40 ± 4.06	
Primary School	79	6.93 ± 2.18		28	2.85 ± 1.95		3	8.33 ± 2.51	
University	20	6.70 ± 1.50		5	3.00 ± 1.87		1	8.00	
Income Level									
Low	70	7.42 ± 2.34	F= 1.87	25	3.36 ± 2.09	KW= 2.97	3	7.33 ± 1.52	p= 0. 93
Medium	162	7.27 ± 2.23	p= 0. 10	55	2.98 ± 1.84	p= 0. 61	13	7.53 ± 3.79	
High	42	6.61 ± 2.03		7	1.85 ± 1.06		-	-	
Age of Marriage	274		r= - 0.14		57	r= - 0.24			r= 0. 27
			p= 0.04			p= 0.04			p= 0.35
Type of Marriage									
Voluntarily	39	7.53 ± 2.37	t= 1.19	9	4.00 ± 1.87	t= 1.19	3	7.00 ± 2.00	p= 0.93
Involuntarily	74	7.05 ± 2.27	p= 0.18	49	2.69 ± 1.81	p= 0.04	11	7.54 ± 4.10	
History of Alcohol Dependence									
Present	17	7.88 ± 2.47	t= 1.25	10	2.00 ± 1.94	p= 0.02	2	8.00 ± 2.82	p= 0. 82
Absent	257	7.17 ± 2.22	p= 0. 08	77	3.12 ± 1.85		14	7.42 ± 3.61	
Family History of Psychiatric Disorder									
Present	69	7.88 ± 2.25	t= 2.90	32	2.90 ± 1.44	t= 0.65	7	6.14 ± 3.43	p= 0. 19
Absent	205	6.99 ± 2.19	p= 0.00	55	3.05 ± 2.12	p= 0. 51	9	8.55 ± 3.24	
Family History of Suicide									
Present	9	8.66 ± 3.00	p= 0. 64	10	3.20 ± 1.98	p= 0. 71	8	7.37 ± 4.44	p= 0. 84
Absent	265	7.16 ± 2.20		77	2.97 ± 1.89		8	7.62 ± 2.32	

*SIS: Suicidal Ideation Scale, **SBQ: Suicidal Behaviors Questionnaire, ***SITS: Suicidal Intent Scale, **** number (n) is 3 or under so absolute p value cannot be given.
KW: Kruskal–Wallis test, t: Significance of difference between two means, F: Analysis of variance, p: Mann-Whitney U test, r: Correlation analysis

SBQ, SIS and SITS, no statistically significant correlation was found (p>0.05). SBQ scores (±SD) were statistically significantly higher in participants married unwillingly (4.00±1.87) than participants married willingly (2.69±1.81) (t=1.19, p<0.05). There was a negative correlation between age of marriage and Suicidal Ideation Scale scores (r=-0.14) and this correlation was statistically significant (p<0.05). When age of marriage increases Suicidal Ideation Scale scores decrease. SIS scores of participants who have a family history of mental disease (7.88±2.25) were statistically significantly higher than participants who have not (6.99±2.19) (t=2.90, p<0.05). SBQ scores of participants who have history of alcohol dependence (2.00±1.94) were statistically significantly higher than who have not (3.12±1.85) (p<0.05). Relationship between scores of suicide scales and socio-demographic data are given in Table 4 (Table 4).

Psychiatric Diagnosis in Suicidal Attempt Cases

SCID-I and SCID-II tests were given to 12 cases (75%) out of 16 who attempted suicide. Two people (12.5%) could not be reached, 2 people (12.5%) rejected

to re-interview. No psychiatric disorder is found in 6 people by SCID-I and SCID-II. Three people were diagnosed major depressive disorder (18.7%), one person diagnosed dysthymic disorder (6.2%), one person diagnosed histrionic personality disorder (6.2%) and one person (6.2%) diagnosed both schizophrenia and substance abuse disorder.

DISCUSSION

Suicidal behaviors questionnaire was first used in our study among general population-based studies of suicidal behavior as far as we know. For this reason, there is not any other study which we can directly compare suicidal behavior rates we obtained from this scale. In general population studies, parasuicide rates were most often reported. Parasuicide is defined as "self-mutilating behaviors not resulted with death with or without intention to die". In this broad definition, there are both suicidal attempts and self-mutilating behaviors without intention to die (27). These two concepts were frequently confused in suicidal behavior literature. Self-mutilating behavior is labeled as suicidal attempt and people who have never attempted to kill themselves were classified as suicidal attempters (28). Due to disagreement of definition of parasuicide, special care was advised when comparing these studies (29). For these reasons, we did not find comparison of our data and parasuicide rates in the literature acceptable. Suicidal behavior rate in our study was 2.23% (2.57 in women, 1.60 in men).

Suicidal ideation rates largely vary between countries which is different from other suicidal behaviors (30). In general population studies life-time suicidal ideation rates were reported between 2.1 and 24% (30-32). In the study of Kessler et al (7), prevalence of life-time suicidal ideation was found 13.5% and in the study of Weissman et al. (30) this rate was found between 2.09 and 18.51%. In general population studies, suicidal ideation rate during the last year was found between 2 and 11% (30,32,33). Renberg (6), found prevalence of suicidal ideation in adults between 18 and 65 years old during the last year 12.5% in 1986 and 8.6% in 1996 in a sample representing the general population in Northern Sweden by using questionnaire forms twice in 1986 and 1996. Hintikka et al. (33) found prevalence of suicidal ideation 2.4% in women and 2.3% in men during the last year by telephone interview in a general population sample of Finland. Madianos et al. (34) found the same prevalence as 6.8-14.9% in women and 2.8-6.4% in men in a general population sample of Greece by face-to-face interview. Crosby et al. (4) found suicidal ideation prevalence 5.6% in a sample of household population representing the nation in U.S.A. by telephone interview. In studies which were done by face-to-face interview, this rate was also reported between 2.3 and 3.9% (31,32). To our knowledge, there is only one study which investigated the prevalence of suicidal ideation in general population sample in Turkey. In this study by Deveci et al. (35) life-time prevalence of suicidal ideation was found 6.6% by face-to-face interview in a sample of 1086 people between 15 and 65 years of age in Manisa city center. In our study, except prevalence of suicidal ideation during the last week (%9.13; 7.41% in men, 10.31% in women), prevalence of life-time suicidal ideation or attempt (3.58%; 2.40% in men, 4.53% in women) and suicidal ideation during the last year (1.43%; 0.60% in men, 2.10% in women) were close but lower than figures generally obtained in studies done in Western countries.

Suicidal attempt rates are more consistently similar in most of the countries and life-time prevalence of suicidal attempt was found between 0.72 and 5.93% (30). In general population studies based on interview, life-time prevalence of suicidal attempt was reported between 0.7 and 10% (30,31,33). In the study by Renberg (6) which was done in general population at Sweden, life-time prevalence of suicidal attempt was found 2.6% in 1986 and 2.7% in 1996; same prevalence was found 4.6% in the study of Kessler et al. (7) in a sample representing nation in U.S.A. In the section which was conducted in Ankara province of Turkey between 1998-2001 of multicenter study of suicidal behavior by WHO-EURO, Özgüven and Sayıl (11) reported annual rate of suicidal attempt as 57.9/100000 in the first year and 112.1/100000 in the fourth year and when these results were compared with the results of other European centers participated in the study prevalence of suicidal attempt in Turkey was

quite low but increasing trend was found striking. In the study by Deveci et al. (35) which was done in Manisa city center, prevalence of life-time suicidal attempt was found 2.3%. Although life-time suicidal attempt rates found in our study (1.43%; 0.8% in men, 1.94% in women) was close to the rates found in Western countries, it was still lower.

Lower prevalence rates of suicidal behavior, suicidal ideation and suicidal attempt might be due to using different tools to define or assess suicidal behavior between studies (questionnaire forms, DIS, General Health Questionnaire, suicide scales etc.), using different interview methods (face-to-face interview, collecting information by telephone or post etc.), differences in sample sizes (regional or national sample) and differences in prevalence of mental disorders, divorce/separation rates and cultures and religions. Having religious beliefs has a protective effect from suicide (36). It was reported that suicide rates are lower in Muslim societies (37). For example, in a study done in general population of Iran in 2005, life-time suicidal attempt rate was found 1.4% (0.9% in men, 2% in women) (38). Intrafamilial bonds, relations with neighbors and strong social ties have also a preventive effect from suicide. Sivas province is a city with strong traditional attitudes, intrafamilial bonds, neighbor relations and social ties. So, these factors might have contributed to explain the low suicidal behavior rates found in our study.

In the study of Kessler et al. (7), life-time suicidal plan rate was found 3.9% and in the study of Crosby et al. (4) this rate was found 2.7%; these figures are similar to life-time prevalence of suicidal plan and suicidal attempt (3.58%; 2.40% in men, 4.53% in women). In our study, life-time frequency of suicidal intention measured by suicidal intention scale was 0.62% and was found 0.40% in men 0.80% in women. We could not find any data about frequency of suicidal intention in general population studies. For this reason, we do not have any possibility to compare this finding to findings from other studies.

The most important risk factors defined in epidemiological studies on suicide in general population related with suicidal behavior and parasuicide were young age and female gender (31-33). Other risk factors were being single or divorced, unemployment, new changes in life style, presence of a mental disorder and history of suicidal behavior (39). In suicide studies done in Turkey, risk factors for suicidal attempt were being young and female gender (11,12).

In our study, frequency of suicidal behavior was higher in women than men but no statistically significant correlation was found between genders. Suicidal behaviors questionnaire scores were significantly higher in participants having a history of alcohol abuse compared to having not. Suicidal behavior has been known to be related with alcohol abuse and is consistent with our findings (39-41). Another finding in our study was the significant decrease of scores in suicidal behavior questionnaire and suicidal ideation scale by increasing age of marriage. It was reported that protective effect of marriage from suicidal behavior comes from its social support system (42) and appropriate social and family support decrease risk of suicidal behavior (43). People who got married at older ages may be more mature than people got married at younger ages and also have more experience of life. This may lead to healthier and wiser attitudes of these people towards partner selection, marriage and problems of life. Suicidal behavior questionnaire scores of people who got married willingly were significantly higher than people who got married unwillingly. When higher frequency of involuntary marriages in our country is taken into consideration, involuntary marriages can be considered as a risk factor for suicidal behavior.

Final significant finding in our study was the higher suicidal ideation scores in people with a family history of mental disorder. This may be due to more encountering with difficulties of life in families having these patients. Vilhjalmsson et al. (5) reported that devastating experiences leading to negative expectations and feelings may arouse suicidal ideation.

Our study has some limitations. First of them is not being represented of socio-demographic and cultural characteristics of Sivas the whole Turkey. Second, as far as we know, scales which we used in this study have first been used in a general population study. Third,

traditional values and underdeveloped characteristics of Sivas might have caused intolerance to suicide and thus reporting lower prevalence rates than true figures about suicidal behavior. For these reasons, our findings should be evaluated with caution.

In conclusion, in order to prevent suicidal behavior, reliable epidemiological data is needed about the issue. Determining risk factors about suicide in general population will help to develop public health strategies to prevent suicide.

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