

Prevalence of anorexia nervosa and bulimia nervosa among women who recently attempted suicide compared with suicide non-attempting women

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Summary

Aim of the study: The suicide risk in patients with eating disorders is 5-6 times higher than that of the general population. Due to the high likelihood of re-suicide in suicide survivors, in this study, we investigated the prevalence of the anorexia nervosa and bulimia nervosa among women who recently attempted suicide compared with suicide non-attempting women.

Materials and Methods: In this case-control study, two groups of 30 women aged 15-45-year-old were investigated after a suicide attempt. Case group was admitted to the Razi Hospital poisoning ward and the control group was admitted to other wards of the hospital. Data were collected using the EAT-26 questionnaire and a clinical interview based on the SCID-V. Finally, the results were analyzed using the SPSS version 21.

Results: The both groups' mean age was 26.96 ± 6.3 and 27.2 ± 7.16 years, respectively. There was no significant difference in age, employment status, marital status, and education level between the two groups ($P > 0.05$). The prevalence of both disorders did not show a significant interaction with demographic characteristics. The average prevalence of both disorders among the case group was 32.78 ± 8.1 and 37.42 ± 7.21 , respectively, and was significantly different in women who had recently attempted suicide compared to their counterparts ($p < 0.05$).

Discussion: Our findings are consistent with all previously conducted studies.

Conclusion: The prevalence of these disorders was significantly higher in women who had recently committed suicide compared to the control group ($p < 0.05$), although there was no significant difference in the prevalence of both disorders with other sociodemographic factors.

women, 15 to 45 years, age group, anorexia nervosa (an), bulimia nervosa (bn), suicide

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INTRODUCTION

The prevalence of eating disorders has significantly increased recently, with over 0.3% of young women living with anorexia nervosa (AN) and 1% with bulimia nervosa (BN) [1]. Epidemiological studies have shown that AN and BN are more common in women than in men [2]. Eating disorders are commonly observed in

middle-aged women that usually rooted in adolescence.

The eating disorder causes physical and psychological disorders in patients and plays an important role in mortality and high suicide rates. In addition to the significant financial burden, eating disorders impose on the health system, the risk of committing suicide in these patients is 5 times higher than the normal populations [3]. Eating disorders are characterized by chronic and debilitating nature, the complexity of the treatments, lower age of onset, and an ever-increasing prevalence in recent years. Therefore, attempts to prevent the occurrence of these disorders should focus on identifying effective factors in the emergence and continuity of these disorders and identifying the at-risk individuals [4]. In the clinical samples reported in a study, the rate of suicide attempts in patients with AN and in patients with BN was 3-20%, and 25-35%, respectively [5]. Those who commit suicide unsuccessfully are at risk for future suicide attempts. It is important to see a psychiatrist to get and talk about treatment to stabilize the physical and mental health of people with eating disorders [6].

As we know, psychiatric disorders such as personality disorders, substance abuse, anxiety disorders, obsessive-compulsive disorders; of course, eating disorders can be important causes of suicide in young women, but eating disorders are complex in nature and require long-term treatment and follow-up; however, in many psychiatric appointments and interviews are ignored or many patients are not actively complaining due to shame or other social and family concerns and are therefore often left untreated. Considering the likelihood of suicide again in survivors of suicide is high, paying attention to the causative factors can be very important. Therefore, since studies have focused on the prevalence of suicide as an important cause of eating disorders mortality and so far, no study on the prevalence of eating disorders in suicide survivors has been conducted, we decided to emphasize the importance of this two-way relationship by addressing this important issue. For the same reason, in this study, we investigated the prevalence of AN and BN among women who recently attempted suicide compared with suicide non-attempting women.

MATERIALS AND METHODS

First of all, this case-control study was approved by the ethics committee of the Ahvaz Jundishapur University of Medical Sciences (Ethic Code: IR.AJUMS.REC.1397.145).

This study was conducted on women (age range: 15-45 years old). The case group consisted of women who had recently committed suicide and were hospitalized in the poisoning ward of Razi Hospital, Ahvaz, Iran during the winter of 2018. The control group consisted of women hospitalized in other wards of Razi Hospital in Ahvaz except for CCU and ICU.

Inclusion criteria: Aged between 15-45 years; Persian speakers; reading and writing literacy; verbal communication ability and consent to enter the study.

Exclusion criteria: Neurocognitive disorders, intellectual disability, obvious physical problems, the history of major and severe psychiatric disorders leading to multiple hospitalizations and major disabilities in performance, and patient's failure to cooperate and excessive anxiety that prevents the patient to cooperate.

All participants were female and the patients were selected based on convenience sampling method and sampling distribution is normal. Purpose and stages of the study were described for 50 women aged 15-45 who had recently attempted suicide and were admitted to the poisoning ward and 50 women aged 15-45 who were admitted to other wards of the hospital except for ICU and CCU; finally, with respecting all inclusion and exclusion criteria, 42 and 40 respectively in the case and control groups were satisfied with the study and included in the study. Of the 42 women in the case groups, eight had a history of severe and debilitating psychiatric problems, four women had a history of severe physical problems (two had MS, one had nephrotic syndrome, and one woman had severe heart valve problems). Of the 40 women in the control groups, eight had physical problems and two had severe psychiatric problems. In the case group, two patients refused to complete the questionnaires and did not wish to continue in the study. Therefore, 30 women in the case group and 30 in the control group remained in the study and continued the study to the end.

For each woman, a questionnaire containing demographic information (age, educational level, employment status, and marital status) as well as the study variables (AN and BN) was filled.

The EAT-26 Garner Questionnaire (1979) was determined if there is any eating disorder that needs professional attention [3]. Eating disorder inventory-3 (EDI-3) was not used in this study because all domains yield the minimal reliability standards in Iran in comparison with EAT-26 [7]. The questionnaire includes 26 items that measure eating attitudes and behaviors. The scoring of the questionnaire was based on the Likert Scale as “always” 3 scores, “usually” 2 scores, and “often” 1 score, and zero scores were assigned to “sometimes”, “rarely” and “never”. The scale of the scores of the questionnaire is from zero to 87, and a higher score of 20 shows the probability of an eating disorder. If respondents respond to question 9 in the questionnaire, i.e. “I’m vomiting after eating”, as “always” or “almost always”, then they have BN.

Moreover, if the participant chooses to respond “always” or “almost always” to the item “even when I’m hungry, I avoid eating”, he would be identified as having AN. The correlation between the 26-item form with the 40-item form was 0.98. Different researches showed the high validity of this questionnaire. Garner showed a high degree of reliability of the questionnaire in 1979 and 1982. The reliability of the attitude to eating test used in the study was 0.79 for the non-clinical and clinical groups according to Cronbach’s alpha. In a study, Nobakht et al. obtained a reliability coefficient of 0.91 for a group of 63 female students based on the Pearson correlation coefficient, showing a satisfactory rate [8]. Afterward, those who scored 20 and more in questionnaires were interviewed by the SCID-V tool. We used SCID-V interviews to determine the exact type of AN and BN. The structured clinical interview for DSMV (SCID-V) is a semi-structured interview guide for making major DSMV diagnosis. This tool was implemented by a clinical educator or mental health specialist who is familiar with the diagnostic criteria and classification of disorders in DSM-5. In general, the populations of the interviewed patients are psychiatric patients or patients with general medical illnesses or those who do not

know themselves as patients. It may not be possible for people with severe cognitive impairment, unrest, or severe psychotic symptoms to carry out the SCID interview. These subjects are often identified during the first ten minutes of the review. In such cases, SCID can be used as a diagnostic checkpoint for interviewing other informed sources [8].

All of the collected data in the study were registered and analyzed with the SPSS (Windows, version 21). For all statistical analyses, the significance level was set at 0.05. All data were reported as mean \pm standard deviation (SD), distribution tables, and frequency percentages. Moreover, t-test and Chi-square tests were used to examine the relationship between the variables.

RESULTS

The results showed 15 (50%) of women who recently attempted suicide and 12 (40%) of women who had no history of suicide attempts were between the ages of 25 and 35. Moreover, the t-test showed that age in both women who recently attempted suicide and the women who had no history of suicide attempt was homogeneous and did not show a significant difference ($P = 0.235$). The mean age of women who recently attempted suicide was 26.96 ± 6.3 and the mean age of the women with no history of suicide attempt was 27.12 ± 7.16 . Fifteen women (50%) who recently attempted suicide and 14 (46.67%) of the women with no history of suicide attempt were single. The chi-square test showed that marital status in both recently attempted suicide and the women with no history of suicide attempt was homogeneous and did not show a significant difference ($P = 0.124$). Twenty-two women (73.33%) who recently attempted suicide and 21 women (70%) with no history of suicide attempt were housewives. The chi-square test also showed that employment status in both women who recently attempted suicide and women with no history of suicide attempt was homogeneous and did not show a significant difference ($P = 0.079$). Twelve women (40%) who recently attempted suicide and 14 women (46.67%) with no history of suicide attempt had an undergraduate education degree. The chi-square test showed that the level of education in both recently attempt-

ed suicide women and the women with no history of suicide attempt was homogeneous and did not show a significant difference (P = 0.102) (Table 1).

Table 1. Percentage and frequency distribution of the studied demographic variables

Statistical indicators		With a recent attempt of suicide			No history of suicide attempt			P-value
		*N (%)	BN** (P-value)	AN*** (P-value)	N (%)	BN (P-value)	AN (P-value)	
Age (year)	15-25	9 (30)	0.532	0.152	11 (36.67)	0.423	0.532	0.235
	25-35	15 (50)			12 (40)			
	35-45	6 (20)			7 (23.33)			
Marital status	Single	15 (50)	0.063	0.121	14 (46.67)	0.203	0.402	0.124
	Married	12 (40)			9 (30)			
	Widow	2 (6.66)			4 (13.33)			
	Divorced	1 (3.34)			3 (10)			
Employment status	Housewife	22 (73.33)	0.220	0.068	21 (7)	0.094	0.102	0.079
	Employee	4 (13.34)			3 (10)			
	Retired	1 (3.33)			2 (6.67)			
	Others	3 (10)			4 (13.34)			
Educational level	Diploma and lower	6 (20)	0.120	0.069	8 (26.67)	0.108	0.99	0.102
	Associate degree	11 (36.66)			6 (20)			
	Bachelor	12 (40)			14 (46.67)			
	Master's degree and higher	1 (3.34)			2 (6.66)			

*N= Number; **BN= Bulimia nervosa; ***AN= Anorexia nervosa

The prevalence of AN and BN in the recently attempted suicide women was 10 (33.33%) and 14 (46.64%), respectively. The prevalence of AN and BN in women without a history of suicide was 4 (13.33%) and 7 (23.23%), respectively. In this regard, the chi-square test showed that AN and BN in both women who recently attempted suicide and the women with no history of suicide attempt were non-homogeneous and

were significantly different and there was no significant difference between two groups (AN, p-value = 0.017; BN, p-value = 0.003). The prevalence of AN and BN did not show a significant difference in the women who recently attempted suicide (P> 0.05). Also, there was no significant difference in terms of AN and BN in women with no history of suicide attempts (P> 0.05) (Table 2).

Table 2. The prevalence of AN and BN in the two groups

Statistical indicators	AN**		BN***		P-value
	*N	%	N	%	
Women with a suicide attempt	10	33.33	14	46.64	0.521
Women with no history of suicide attempt	4	13.33	7	23.33	0.472
P-value	0.017		0.003		

*N= Number; ** AN= Anorexia nervosa; *** BN= Bulimia nervosa

AN did not have a significant relationship with demographic characteristics, including age, employment status, educational level and marital status (Table 3).

Table 3. Relationship between AN with demographic characteristics

Variables	Sum of squares	Degrees of freedom	Average squares	F-test	Significance level
Age	0.148	2	0.074	2.052	0.131
Education	0.090	3	0.018	0.497	0.780
Marital status	0.045	3	0.022	0.622	0.538
Employment status	0.018	3	0.006	0.162	0.922

BN did not have a significant relationship with demographic characteristics, including age, em-

ployment status, educational level, and marital status (Table 4).

Table 4. Relationship between BN with demographic characteristics

Variables	Sum of squares	Degrees of freedom	Average squares	F-test	Significance level
Age	0.156	2	0.032	1.014	0.269
Education	0.163	3	0.006	1.269	0.327
Marital status	0.178	3	0.019	1.045	0.269
Employment status	0.263	3	0.029	1.001	0.130

DISCUSSION

Simbar et al. showed that psychiatric disorders, including eating disorders, can play a role in the etiology of suicide in adolescents and young adults. In our study, the age of the case group was

96.26 ± 3.6 so given that eating disorders are rooted in adolescence and continue into adolescence. Thus, it is likely that the onset of these disorders was rooted in adolescence in our patients, which suggests the importance of early screening, although the age at onset of the disorder is not known in our study.

According to Portzky, the suicide percentage in patients with eating disorders was 11.8 and suicidal ideation in a lifetime was reported by 43.3%. According to Mandelli et al., 21% of individuals with an eating disorder have had attempted suicide [9]. In a study, Koutek stated that psychopathology, including self-harm and suicidal behavior, has often been found in patients with eating disorders. To better understand the causes of psychological pathology, including eating disorders, self-injury, and suicidal behavior, psychiatric comorbidities were studied among adolescent women with eating disorders. In a sample of 47 girls with AN, 72% had symptoms of depression, 11% had obsessive-compulsive symptoms, 9% had anxiety disorders, 23% substance abuse, 57% suicid-

al behavior, and 49% had a history of self-injury. In total, 68% of girls with eating disorders had depression in children's depression questionnaire and 62% of them had positive scores in the adolescent rehabilitation index [9].

Conti et al. observed that binge eating disorder (BED) was significantly associated with an elevated suicidal behavior and suicidal ideation. The presence and severity of eating disorders were found to be predictors of suicidal ideation, especially in relation to mood disorders and specific psychological characteristics [10].

Baek reported that eating disorders with depression are the cause of suicide. Alcohol disorder, anxiety disorder, post-traumatic stress disorder, and suicidal attempts were more common in people with an eating disorder [11].

In our study, people with severe and disabling psychiatric illnesses with a history of multiple hospitalizations were excluded, but, other psychiatric disorders and major personality disorders, all of which may be underlying factors, were not excluded from the study. Psychological factors have been implicated in the etiology of suicide; and major psychiatric disorders such as mood disorders, obsessive-compulsive disorder, anxiety, and cluster B personality disorders are highly correlated with eating disorders and are not as detailed in our study as in the above three studies. Kostro reported that suicide

is one of the common causes of mortality in people with eating disorders [12], this study reports the common causes of mortality of eating disorders but our study focuses on suicide survivors.

Finally, it should be borne in mind that the prevalence of eating disorders in 15-45 – year-old women admitted in the poisoning ward was examined, and usually, suicide attempters admitted to poisoning choose less violent methods than those who, for example, hang themselves or throw themselves from a height; so if this study was conducted on suicide survivors, who use a variety of methods to end their lives, were more likely to have an increased incidence or there may be a significant difference between AN and BN in suicide attempters(given that people with AN usually use more violent methods to commit suicide).

However, as stated, other comorbidities have not been studied in our study, and the prevalence of eating disorders in suicide survivors has been investigated, and these studies confirm the association between eating disorders and suicide. Unlike the previous studies that investigated all psychiatric disorders and increased risk of suicide attempts, this study examines other aspects of this issue and specifically addresses eating disorder as one of the most probable factors in suicide as well as the importance of screening the suicidal thoughts in eating disorders, which is becoming increasingly clear.

The prevalence of these two disorders was not significantly correlated with sociodemographic factors such as age, marital status, occupational status, and educational level ($P>0.05$). Therefore, in light of the above results, it is suggested that in psychiatric interviews with survivors of suicide, along with other psychiatric comorbidities, we should not neglect to screen for eating disorders and should always consider assessing the risk of suicide in people with eating disorders.

LIMITATIONS

The low number of patients in case and control groups; failure to evaluate other psychiatric comorbidities, including personality and mood disorders; failure to investigate other eating disorders; and failure to isolate sub-types of AN (binge-eating/purging type).

CONCLUSIONS

Our study showed the prevalence of AN and BN was significantly different in young women who recently attempted suicide compared to their peers ($P<0.05$).

However, the prevalence of these two disorders was not significantly correlated with sociodemographic factors such as age, marital status, occupational status, and educational level ($P>0.05$). Therefore, in light of the above results, it is suggested that in psychiatric interviews with survivors of suicide, along with other psychiatric comorbidities, we should not neglect to screen for eating disorders and should always consider assessing the risk of suicide in people with eating disorders.

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