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SUICIDE ATTEMPTS, SUICIDE AND THEIR ASSOCIATION WITH SOCIO-DEMOGRAPHIC VARIABLES IN IRAN: A RETROSPECTIVE, REGISTRY-BASED, COHORT STUDY (2016–2021)

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ABSTRACT

INTRODUCTION: Suicide is recognized as one of the most significant concerns in healthcare and a serious psychological health issue in many countries throughout the world. Suicide attempts occur in all social sectors and demographics. It is important to know what are the causes for people to try to commit suicide for an effective prevention and control. The aim of this review was to find out the levels and predictors of suicide attempts.

MATERIAL AND METHODS: A cross-sectional descriptive-analytical research looked for suicide attempt reported cases at Dr. Moaven Hospital in Sahneh, Iran, during the 2016–2021 period. Data was collected via checklists completed by supervisors during referrals and subsequently analyzed using the SPSS Statistics software tool (version 24). Descriptive statistics and the Chi-square test were used. A significance threshold of 0.05 was used.

RESULTS: A total of 1,059 cases of suicide attempts were found. The highest prevalence rate was reported in the group ages 16–25. Males had higher rates of cases (57.4%), which were twice more prevalent in cities and more common in lower-socioeconomic-status families Furthermore, the most common method used (79.5%) was medication intake. There was also a significant association between marital status, job, and suicide-attempt rates ($p < 0.05$).

CONCLUSIONS: Suicide attempts are among the most important issues in terms of psychosocial healthcare in all countries and communities, and their prevalence rates may be determined by a variety of factors, such as mental health status, family and living conditions, financial problems and unemployment rate. Preventive control of these factors can contribute to reducing the prevalence of these acts.

KEY WORDS: suicide; suicide attempt; prevalence rate; risk factor; prevention

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INTRODUCTION

Over the years, researchers have identified suicide as one of the major psychiatric crises [1] and one of the most frequently reported challenges in the field of health care [2, 3]. Suicide has been described by the World Health Organization (WHO) as a conscious and intentional act in which a person terminates his or her own life [3, 4]. A suicide attempt is when someone harms themselves with any intent to end their life, but they do not die as a result of their action. Suicide and suicidal ideation have been identified as public health concerns [5, 6]. Every year, more than 800,000 individuals worldwide commit suicide [5, 7]. It is also the third major cause of mortality among adolescents aged 10 to 24 [8] and the eighth cause of adult mortality in various countries. In the last 50 years, suicidal deaths are more prevalent than accidents, with thousands of individuals committing suicide every day. The number of suicide attempts is increasing [9, 10], showing rates 10–40 times higher than the number of deaths from suicide. Suicide occurs in all socioeconomic groups, yet the incidence of suicide attempts is higher in women than in men, while completed suicides are higher in males [11]. In Iran, the prevalence of suicide attempts is 9.4%, with a mean age of 29, which is lower than in Western nations [12].

The reasons for suicide attempts are various, but they may be classified into three main categories: mental diseases, social challenges, and physical conditions [13–15]. Depression, alcoholism, drug addiction, schizophrenia [16, 17], and personality disorders have been identified as relevant risk factors for suicide attempts [18, 19]. In relation to social factors, the primary causes are isolation, deprivation, separation, and unemployment [20]. Physical diseases or health-related issues, malignant tumors, neurological disorders, and low levels of serotonin in the brain have so far been recognized as key contributors in the domain of physical illnesses [21]. Risk factors and approaches to dealing with suicide attempts differ from place to place since this intentional act reflects the cultural-psychological background of the community where a person lives [22]. According to an Iranian survey, 33.9% of suicide attempters were single women, whereas 64.9% were single men. In addition, 43.4% of those surveyed had a modest level of education, and 48.2% and 19.8% were males and females experiencing marital conflict Medications are the most commonly used method of suicide (88.5%), with sedatives being the most commonly mean used in both genders [23]. In another study, 82.7% of people who tried suicide had moderate or severe depression classified and the major risk factors are were family problems, mental illnesses, unemployment, and financial problems [22, 24].

In this regard, Behirooz and Haghayegh showed in Kermanshah, a western Iranian province, a high prevalence rate of suicide attempts, accounting for 11% of all cases documented in Iran in 2006, ranking third behind Tehran and Ardabil provinces [4]. Moreover, researches in various regions of Iran over the past two decades showed high prevalence rates of suicide attempts, particularly among young people and adolescents [9]. Another survey found that young people aged 15 to 25 years had the highest prevalence rate of suicide, with 52% of the cases in males, whereas 68.1% of them showed previously one or more suicide attempts [25]. There are many determinants of suicide attempts, which policymakers need to understand in order to establish effective strategies against this issue. For this reason, the aim of this study was to study prevalence rates and social determinants of suicide and suicide attempts in a sample of individuals presented at the emergency department in Sahneh, Iran.

MATERIAL AND METHODS

Study design and procedure

In this retrospective, registry-based, cohort study, a convenience and purposive sample, randomly drawn, of all suicide attempts reported from 2016 to 2021 at the emergency department of the "Dr. Moaven" Hospital in Sahneh, Iran, were collected. This study was authorized by the Ethics Committee of Kermanshah University Medical Sciences with the number IR.KUMS.REC.1397.1064. An informed consent form was fulfilled and obtained by all participants.

Before our group commenced the research, the main researchers of the teamwork visited the study area for explaining research objectives and procedures to hospital officials and supervisors. The eligibility criterion was people admitted to the emergency department with a recent history (within 48 hours since the entrance into the hospital) of suicide attempts, carried out with any means and resulting in death or not. All adults, previously healthy or affected by psychiatric comorbidities, aged 18 years and over from the general population were asked

Table 1. Frequency distribution of suicide attempts by socio-demographic data

Variable	Group	Male	Female	Pearson Chi-Square
Marital status	Single	26.2%	18.8%	p-value = 0.000 df = 3 89.302 = Chi-Square
	Married	15.6%	35.4%	
	Divorced	0.9%	2.5%	
	Widowed	0.0%	0.8%	
Job	Farmer	2.6%	0.2%	p-value = 0.000 df = 8 535.666 Chi-Square
	Worker	3.8%	2.2%	
	Clerk	2.1%	0.8%	
	Student	7.2%	10.8%	
	Free	10.9%	1.5%	
	Jobless	13.5%	4.5%	
	Soldier	1.5%	0.2%	
	Housewife	0.7%	37.2%	
	Other	0.4%	0.1%	

df — degree of freedom

to be included in this study and were administered a medical interview and a questionnaire containing socio-demographic information (age, gender, family size, income, and educational levels) as well as medical information about general and psychiatric disorders. Furthermore, means and outcomes of suicide attempts were drawn by medical interviews to patients and witnesses.

In this research, the influence of socio-demographic variables and the presence of psychiatric disorders and suicide attempts was explored, and the prevalence of this phenomenon was reported the SPSS Statistics software program (version 24) was used for elaborating frequency, percentages, and descriptive statistics. Chi-square tests between independent and dependent variables were carried out. A significance level of 0.05 was fixed.

RESULTS

Sociodemographic characteristics

From 2016 to 2021, a total of 1,059 cases of suicide attempts were recorded at the Dr. Moaven Hospital in Sahneh, Iran. 50.6% of the attempts were made by people between the ages of 16 and 25, and 57.4% of them were males. Only 8.9% of the participants had a university degree, while the majority of them (31.1%) had a high school diploma or lower educational level. Inhabitants of Sahneh's metropolitan regions tried suicide twice compared to those who lived in rural areas. In terms of socioeconomic conditions, people with poor financial status (31.8%) attempted suicide more than others.

In one-third of the cases (30.7%) a mental disorder was diagnosed, and in more than half of the cases (54%), marital disputes were reported as the only life stressful event before the attempt. In most cases (80.2%), we reported the first suicide attempt and almost all patients (94.5%) did not have relatives attempting suicides in their medical history. In nearly two third of the cases (67.8%), without significant differences between males and females, the suicide attempts failed. The chi-square test revealed a positive association between suicide attempts and gender ($p = 0.037$), employment status ($p = 0.0001$), and marital status ($p = 0.001$) (Tab. 1).

DISCUSSION

Our findings showed a higher prevalence of suicide attempts among adolescents and young people in Iran, in agreement with previous literature [1, 8, 11, 12, 26–28]. In this study, two-thirds of suicide attempts failed. Furthermore, we found an association between low socio-economic status and suicide attempts, consistently with Moradi and Mostafayi [29]. Prevalence rates of suicide attempts were higher in males than in females, in disagreement with some authors [29], and in agreement with other scholars [29]. As shown in the literature, young males are more likely to commit self-injury and violent acts against third parties, due to their

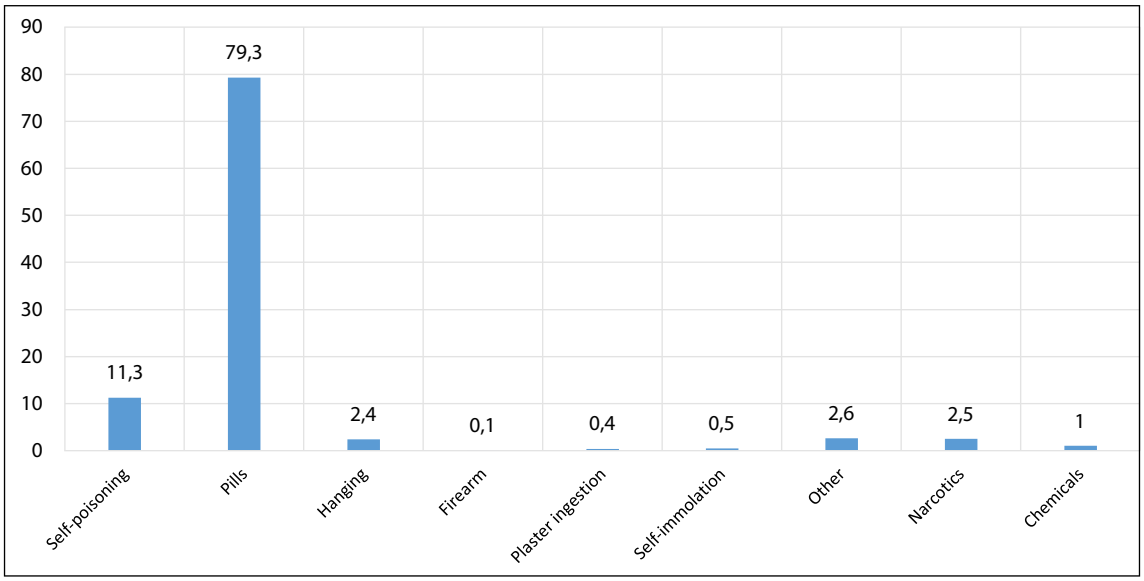

FIGURE 1. suicide attempts by considering the means of the suicide attempt

impulsivity, especially during the puberty stage of their life [29].

Our findings agreed with global reports as well as the findings by Salari Lak in West Azerbaijan Province [30], Iran, and Hosseini et al. [11], Behirooz and Haghayegh [4], Gholami Zarini et al. [21], Ghodrati and Taklavi [1], Bertolote and Fleischmann [9], Kim et al. [25], and Gordon et al. [31] in other high-risk regions. In terms of literacy and education level, patients with less education levels had greater incidence rates of suicide attempts, which corroborated with earlier findings in Iranian research, such as the Miveban survey [32].

Furthermore, medication intake (swallowing medications indicated as "pills" in Fig. 1) was the most common means of suicide attempt (79.3%), in agreement with previous research this fact is consistent with previous research that reported 88.5% [32]. In our study, men were more likely than women to use irreversible methods of suicide, such as hanging, by confirming findings by Yasemi et al. [33] in Kerman Province, Iran.

In agreement with Yasemi et al. [33], the relationship between the location of the suicides and gender was not significant, whereas their work positions were strongly correlated with suicide attempts. Curiously, unemployed males and housekeepers were more likely to commit suicide, consistent with the findings from Yasemi et al. [33].

A substantial association was also found between marital status and the likelihood of suicide attempt, showing how married women and men are more likely to commit suicide than single, divorced, and widowed people because marriage is associated with a variety of problems, such as unemployment, housing, and financial issues which could put an additional psychological burden on them. Salari Lak [30], Khazaei et al. [34], Emad and Hadianfard [35], Ghalambor et al. [21], and Stefan-Dabson et al. [23]. Our study has some limitations, as we analyzed only some socio-demographic characteristics in our sample. In literature, suicide ideation has been also associated with a wide number of factors, including a family history of violence and child abuse, a history of mental health problems, traumatic events such as experiences of sexual assaults and rapes, workplace bullying, or traumatic life events and other stress-related events [36]. All these factors should be considered in future studies as potential risk factors for suicide attempts, even if the relationship between suicide ideation and suicide attempts is complex. Furthermore, the role of the COVID-19 pandemic due to restrictions and lockdown measures, fear of contagion, and the high burden of stress-related disorders among healthcare workers and other essential workers should be considered in future studies. While increased levels of pandemic-related anxiety and depression have been described among young and old people around the world, among those living alone and the so-called "fragile", who are people affected by pre-existing mental health problems, increasingly rates of adjustment disorders and post-traumatic stress disorders have been also described among healthcare workers, who were

already affected by high levels of job stress, burnout syndrome, and high suicide rates before pandemic. All these factors could increase the phenomenon of suicide-ideation and suicide attempts in certain categories of workers and require targeted interventional policies by politicians and policymakers for preventing this phenomenon. In this way, a strict cooperation between public and occupational stakeholders may address this issue by reaching the 2030 Sustainable Development Goals [32, 37].

Finally, the reasons behind suicide attempts, including medical conditions, drug and alcohol intake, and psychiatric co-morbidities in Iran will require future studies.

CONCLUSIONS

Our study showed that suicide attempts are one serious public health problem in Iran, which is correlated with socio-economic issues, fewer education levels, marital disputes, and young age. Further studies and interventions for recording and evaluating instances of suicide attempts are vital in preventing and managing the suicide phenomenon.

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Conflict of interest

All authors declare no conflict of interest.

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