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Suicide Rates among Turkish and American Youth: A Cross-Cultural Comparison

Murat Coskun, Salih Zoroglu, and Neera Ghaziuddin

This study compares youth (<24 years) suicide rates in Turkey and the United States; a demographic and cross-cultural comparison and exploration of possible causative factors. Publicly available data were compared for children, adolescents, and young adults for years 1992–2004. The mean general population suicide rate in Turkey (per 100,000) was, male = 3.53 and female = 2.31 (for the US, males = 18.37, females = 4.31); for ages below 15 years the rate was, males = 0.28 and females = 0.39 (for the US, males = 1.09 and females = 0.38); while for aged 15–24 years the rate was, males = 4.58 and females = 5.22 (for the US, males = 18.84 and females = 3.36).

The patterns for Turkey are: (a) Female youth had a higher suicide rate than male youth; this was the reverse of the U.S. pattern, (b) Youth suicide increased during the time period in Turkey, whereas it was relatively stable in the US, (c) However, suicide rates in Turkey were generally lower than the US, (d) Fifty percent of all female suicide victims in Turkey were under the age of 24 years (versus 11% in the US).

Possible psychosocial causative factors may include (a) negative social status of females (forced marriage, young marriage age, low literacy, honor killings); (b) substantial rural to urban migration which disrupts ties and exposes migrants to a less traditional cultural system; (c) shortage of mental health services; (d) and possibly, reduced religious education enrollment may be an additional factor.

Keywords adolescents, children, suicide, Turkey, US

INTRODUCTION

The World Health Organization (WHO) defines juvenile suicide as the death of a child due to self-harm before his/her 15th birthday. Suicide between the ages of 15 and 19 years is defined as adolescent suicide.

Youth suicide is a serious worldwide mental and a public health problem and is one of the leading causes of death among children and adolescents in many countries. For instance in the United States (US), suicide was the third leading cause of death for age groups 10–14 and 15–24 years between 1999 and 2004 (Center for Disease Control). However, systematic data on youth suicide are mostly derived from western countries which may be relatively less relevant to non-western populations.

Turkey, similar to many other developing countries, lacks systematic data which are specific to its youth population. In this study, we present youth suicide rates, as these relate with gender and male versus female suicide differences in Turkey compared with the US. Furthermore, in the discussion section we attempt to explain our findings in the context of cultural factors, status of women in Turkish society as it pertains to marriage, the concept of family honor, rural to urban migration, and educational factors.

Suicide is a complex symptom or a behavior rather than a disorder in itself. It is well documented in association with several psychiatric disorders, such as depression and substance use disorders (Brent, Perper, Moritz et al., 1993; Pfeffer 2007; Shaffer, Gould, Fisher et al., 1996). In addition to psychiatric disorders, sociocultural, environmental, and family factors may significantly contribute to the development of suicidal behaviors and suicide (Dervic, Gould, Lenz et al., 2006; Eskin, 2003; Etzersdorfer, Vijayakumar, Schony et al., 1998; Johnson, Cohen, Gould et al., 2002; King, Stone, Flisher et al., 2001; Kocmur, 1996; Pfeffer, 2007; Randell, Wang, Herting et al., 2006; Wagner, 1997). Therefore, a thorough understanding of sociocultural and environmental factors is especially important because of the diversity among different societies. These findings would, unarguably, influence the development of specific and effective prevention strategies.

To this end, we compared the data pertaining to suicide among children, adolescents, and young adults in Turkey with data for an identical age group in the US. We hypothesized that there would be significant differences among young people who kill themselves by suicide in the US and Turkey. To our knowledge, this is the first cross-cultural comparison of suicide among youth in a western and a nonwestern country. It is noteworthy, that unlike the US, Turkey is a predominantly Muslim country.

METHOD

Publicly available data involving suicide victims from 1992 to 2004, who were either below 15 years or ranged in age from 15–24 years, were identified for both countries. Data for the US were obtained from the Centers for Disease Control (CDC) Website (http://www.cdc.gov/ncipc/wisqars/), whereas for Turkey, the annual suicide reports of State Institute of Statistic (SIS) were accessed. The following were examined: general suicide rates; changes in suicide rates over years; male/female ratios for suicide; ratio of young suicide victims among all suicide victims; method used for suicide; and possible causes resulting in suicide among those who were below age 15 or 15–24 years of age. The SIS data have several limitations, which are described later in the article. However, noteworthy advantages of this data-set are that these data pertain to the entire country. Additionally, these are the largest available data at this time, spanning some 13 years. In contrast, previous reports from Turkey have been limited by data which were derived from individual cities or regions, by relatively small samples, or covering relatively short time-periods. For instance, Altindag (2005a) had published 31 cases which were limited to a single city, Batman.

RESULTS

The crude suicide rates (per 100,000) from 1992 to 2004, among the general Turkish population ranged from 2.43 to 4.86 (3.53 ± 0.77) for males, 1.53 to 3.25 (2.31 ± 0.50) for females; while in the US, rates ranged from 17.11 to 19.70 (18.37 ± 0.95) for males, 4.00 to 4.61

(4.31 ± 0.20) for females. For the age group under 15 years in Turkey, the crude suicide rates ranged from 0.17 to 0.55 (0.28 ± 0.09) for males, and 0.23 to 0.75 (0.39 ± 0.12) for females; for the US, the rates were 0.90 to 1.31 (1.09 ± 0.13) for males, and 0.25 to 0.49 (0.38 ± 0.08) for females. Crude suicide rates for the age group ranging from 15 to 24 years of age in Turkey were 2.93 to 6.36 (4.58 ± 1.13) for males, and 3.40 to 7.90 (5.22 ± 1.39) for females; while, for the US these rates were 15.99 to 23.04 (18.84 ± 2.56) for males, and 2.88 to 4.10 (3.36 ± 0.37) for females. See Table 1 for a comparison of suicide rates for Turkey and US.

We found that among males in the US, during time-period 1992 to 2004, the general population suicide rates, and rates for age group 15 to 24 years were decreasing. Conversely, these rates for the same age groups in Turkey had been increasing. Additionally, while for females in the US, among the general population and age group 15 to 24 years, the rates had been generally stable, these rates had almost doubled in Turkey. See Figures 1 and 2 for changes in suicide rates from 1992 to 2004 for Turkey and the US.

We found that in every age group, male suicide rates in the US clearly exceeded female rates. In sharp contrast, the female suicide rate among 15 to 24 year olds in Turkey exceeded the rates for males, while the female general population rate was only slightly lower than males (Table 1). On examining the general population male/female (M/F) ratio for suicide rates, it was 1.56 and 4.08 for Turkey and the US, respectively. While the M/F ratio of suicide for the under 15 year olds was 0.74 and 2.99 for Turkey and the US respectively, for the age group 15 to 24 years, whereas the M/F ratio was 0.92 and 5.87 for Turkey and the US, respectively. Additionally, only 11.5 percent of female suicide victims were under 24 years of age in the US, whereas this group constituted the single largest group of suicide victims at 50 percent for Turkey ($X^2 = 32.6$; $p < 0.0001$). See Table 2 for male/female proportion of victims below 24 years of age among all suicides.

In regard to the method of suicide (see Table 3), gender and age group were both important. For instance, in Turkey, suffocation was the most commonly employed method among those below the age of 15 and the group 15 to 24 years; this was true

TABLE 1. **Crude Rates (per 100.000) of Completed Suicide in Turkey and USA: 1992 to 2004**

Population	Mean	95% CI	SD	Minimum	Maximum
Turkey/general population/male	3,53	3,06–4,00	0,77	2,43	4,86
US/general population/male	18,37	17,80–18,95	0,95	17,11	19,70
Turkey/general population/female	2,31	2,00–2,61	0,50	1,53	3,25
US/general population/female	4,31	4,19–4,43	0,20	4,00	4,61
Turkey/under 15 years of age/male	0,28	0,22–0,34	0,09	0,17	0,55
US/under 15 years of age/male	1,09	1,01–1,18	0,13	0,90	1,31
Turkey/under 15 years of age/female	0,39	0,32–0,47	0,12	0,23	0,75
US/under 15 years of age/female	0,38	0,33–0,43	0,08	0,25	0,49
Turkey/15–24 years of age/male	4,58	3,90–5,27	1,13	2,93	6,36
US/15–24 years of age/male	18,84	17,29–20,39	2,56	15,99	23,04
Turkey/15–24 years of age/female	5,22	4,38–6,06	1,39	3,40	7,90
US/15–24 years of age/female	3,36	3,13–3,58	0,37	2,88	4,10

Note. CI: Confidence Interval; SD: Standard Deviation.

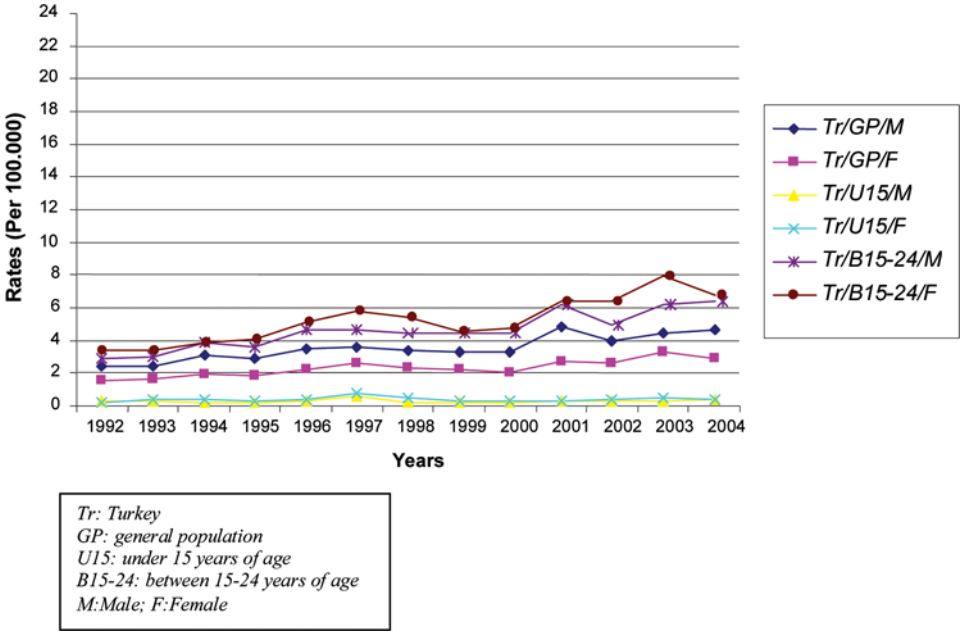

FIGURE 1. *Suicide during 1992 to 2004 for Turkey. (Color figure available online.)*

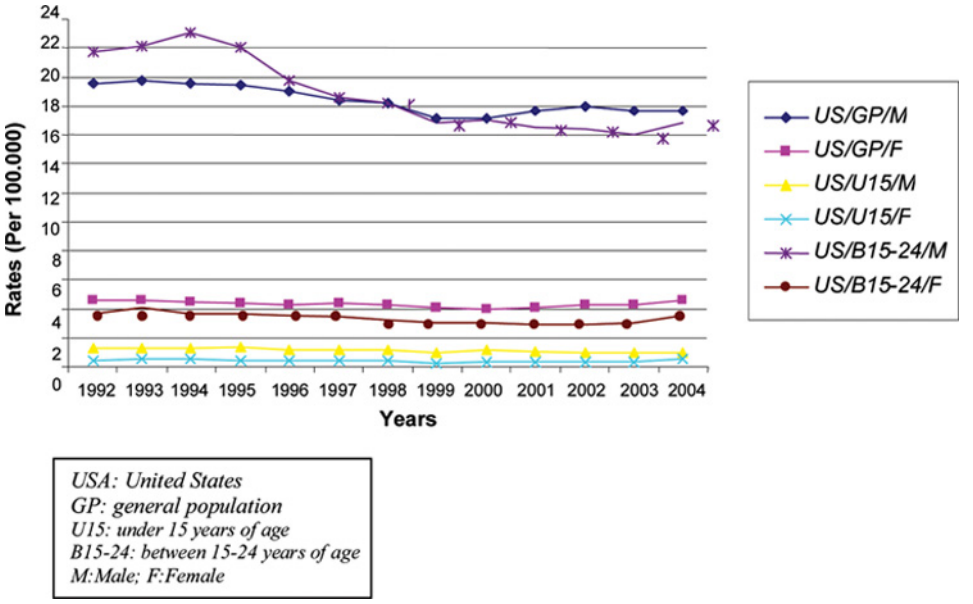

FIGURE 2. *Suicide rates 1992 to 2004 for US. (Color figure available online.)*

TABLE 2. **Ratio of Males to Females among all Suicide Victims in Turkey and the US: 1992 to 2004**

Male/Female ratio	Turkey	USA	Significance
General population	1.56	4.58	
Under 15 years of age	0.74	2.99	
Between 15–24 years of age	0.92	5.87	
Percentage of male suicide victims	28.7%	15.7%	$X^2 = 4.1$
under 24 years of age among all male suicides			$p = 0.0429$
Percentage of female suicide victims under	49.8%	11.5%	$X^2 = 32.6$
24 years of age among all female suicides			$p < 0.0001$

for males and females. In the US, firearms were the commonest method employed, among males under 15 years and for those in the 15 to 24 age group. However, suffocation was commoner among females in the US among the two age groups. On further examination of a subset of the US data (not included in Table 3), firearms exceeded suffocation among the under 15 years of age group, but only during 1992 to 1998; this method was replaced by suffocation, for this age group, as the commonest method during 1999–2004.

We next examined possible contributing factors for suicide, based on data from Turkey. It should be noted that these contributing factors in this data-set are based on hospital/police records and opinion of the jury and the prosecutor who decide whether a death is a suicide. Based on this information, family conflict was the most important reason given by the group under 15 years of age, while termination of romantic relationship/unable to marry the desired person was the commonest reason given by group 15 to 24 years of age. These were followed by psychiatric or physical illness among the 15 to 24 year age group, while educational failure followed family conflict among those under 15 years of age. See Table 4 for possible contributing factors of suicide among youth in Turkey. Cause of suicide was not available in the CDC data.

DISCUSSION

The most striking and important finding from these comparisons is that unlike the US and other Western countries, where male suicide rates exceed female rates, young females in Turkey under the age of 24 years are at the highest risk for suicide,

TABLE 3. **The Commonest Methods of Suicide in Turkey and the US: 1992 to 2004**

	Turkey				USA			
Method of Suicide (%)	**Below age 15 years**		**Between age 15–24 years**		**Below age 15 years**		**Between age 15–24 years**	
	M*	F*	M	F	M	F	M	F
Firearms	19	20.6	31.1	21.4	45	36.9	61.8	42.3
Suffocation	67	48.8	44.1	33.3	51	42.3	25.6	27.2
Poisoning	7.9	21.6	10.4	31	1.6	13.7	6.3	21.2

Note. *M: Males; F: Females.

TABLE 4. *Contributing Factors Associated with Youth Suicide in Turkey: 1992–2004

	Age <15 years		Age 15 to 24 years	
Possible Reasons (%)	**M**	**F**	**M**	**F**
Family conflict	31.6	34.4	19.1	32.5
Problems of emotional relationship; such as unable to marry the desired person, unwanted marriage, termination of a relationship	6.8	11.8	21.9	21.7
Mental or physical illnesses	14.7	20.6	18.1	17.6
Educational failure	27.7	18.7	8	6.6

Note. M: Male; F: Female.
*Contributing factors in the SIS data are based on hospital/police records, opinion of a jury and a prosecutor.

they constitute 50% of all suicide victims and continue to experience a rate increase. These findings challenge the widely replicated inference from Western data, that suicide is a predominantly male phenomenon. However, it should be noted that female rates exceeding the rates for males is not an entirely a new finding, and a similar gender pattern among youth suicides was also reported from rural China, where young females have a higher suicide rate compared to males (Zhang, 2010; Zhang, Xiao, & Zhou, 2010).

Other major findings of the present study are: (1) The general population suicide rate in the US was higher than in Turkey; (2) The general population suicide rates for the US compared with Turkey, for both males and females, was higher in the US, with rate for males six-fold higher, whereas, the female US rate was two-fold higher than Turkey; (3) While suicide rates were generally declining for all age groups since 2000 in the US, the reverse was true for Turkey for both the general population and for youth between 15 and 24 years of age; (4) Males in all age groups in the US were 3–5 times more likely than females to commit suicide. However, in Turkey, among the general population, males were only at a slightly higher risk than females; (5) The female suicide rate for Turkey, among the 15 to 24 age group, exceeded the male suicide rate within Turkey and also exceeded the rate for the same age group in the US; (6) Almost half of all female suicide victims in Turkey were under 24 years of age, whereas this age group constituted only 11.5% in the US; (7) Suffocation was the most frequent method of suicide among the group under 24 years in Turkey, whereas firearms was the most frequently employed method of suicide for the age group between 15 and 24 years in the US. For the age group below 15 years, in the US, suffocation exceeded firearms during 1999 to 2004 (although, firearms was the most frequent method during the prior interval from 1992 to 1998). This change in the method of suicide among those below 15 years was most likely the result of a change in regulations since the 1990s, which had resulted in restricted access to firearms among this younger group (Cummings, Grossman, Rivara et al., 1997; Loftin, McDowell, Wiersema et al., 1991).

Youth suicide has been extensively studied in Western countries and forms the basis of understanding this phenomenon in psychiatry. For instance, the majority of psychiatric textbooks state that males are more likely to complete suicide, while females are more likely to repeat attempts. Clearly, in the light of our findings and those from rural China, female

suicide warrants greater attention. Information based on data from non-Western and developing countries are relatively scarce, perpetuating the assumption that cross-cultural similarities exceed differences, if any. Our findings are particularly noteworthy because previous publications from Turkey were not based on a nationwide dataset and/or covered a significantly short time span (Altindag, Ozdemir, & Yank, 2005; Altındag, Ozkan, & Oto, 2005; Arslan, Akçan, Hilal et al., 2007; Azmak, Altun, Bilgi et al., 1998; Cetin, Gunay, Fincanci et al., 2001; Ozguven & Sayıl, 2002, 2003; Uzun, Karayel, Akyildiz et al., 2009; Yasan, Danis, Tamam et al., 2008). Therefore, despite the limitations of the Turkish SIS data-set used for the present study, these data are an opportunity to examine a population previously not studied. Other unique features of these data are that Turkey is a predominantly Muslim country, albeit a blend of Western and Eastern cultures. Cross-cultural comparisons therefore, offer understanding of suicide which may assist in the development of prevention strategies for non-Western societies, developing countries, and possibly, countries with different religious affiliations.

One major limitation of the SIS data is that likely contributing factors to suicide are determined by a local jury and a prosecutor. Despite limitations of the SIS data, a major strength is that these are the most comprehensive official data available for Turkey.

Because the U.S. CDC data did not include similar information, the remaining discussion is limited to these presumed contributing factors included in the SIS data, other relevant sociodemographic factors previously reported in published literature, and clinical experience of the authors. Family conflict and interpersonal problems are some of the frequently reported contributing factors associated with youth in Turkey (Table 4). However, there are additional sociocultural variables which merit discussion.

Negative Social Status of Females

Several negative psychosocial factors identified in rural Southeast and Eastern regions of Turkey are pertinent to young females. These include low psychosocial status and literacy rates, lack of social support, high rates of domestic violence, and early marriage often forced against the wishes of the female. Not surprisingly, the association between female gender and higher suicide rates appears to be particularly important in rural Turkey. For instance, a number of previous publications from Turkey have emphasized an association between sociocultural factors and higher rates of female youth suicide in rural Southeast and Eastern regions and the city of Adana (Akyuz, Kugu, Dogan et al., 2002; Alptekin, Duyan, & Demirel, 2006; Altındag, Ozdemir, & Yank, 2005; Altindag, Ozkan, & Oto, 2005; Arslan, Akçan, Hilal et al., 2007; Sayıl, Canat, & Tugcu, 2003; Sir, Altindag, Ozen et al., 1999; Yasan, Danis, Tamam et al., 2008). Consistent with higher female suicide rates found in rural Turkey, similarly high female rates have been found in eastern regions of China, which are believed to be associated with a male-oriented family structure, lack of freedom in marriage, lower education for females, religion, lower socioeconomic status and lack of social support (Zhang, 2010; Zhang, Xaio, & Zhou, 2010). Zhang (2010) and Zhang, Xaio, and Zhou. (2010) suggested that although mental illness is a strong risk factor for suicide, it is less relevant among young Chinese youth from rural areas. Higher suicide rates were found in rural counties of China, when compared with data from Western countries, and also that Chinese female rates exceeded the rates for males; they explained their findings on the inordinate level of negative sociocultural experiences of females in rural China.

Although, China and Turkey have many sociocultural and religious differences, the similarity in higher youth female suicide rates is striking, as is the association with negative family, psychological, and social experiences. These findings are also consistent with findings by Girard (1993) that the relationship between age/life cycle and national suicide rates depends upon level of economic development. For less developed nations (like China and Turkey), at the time these data were collected, female youth tend to experience their highest risk for suicide. The aforementioned negative sociocultural factors of female youth could be suggested as an important factor to account for this finding.

Several previous studies have reported higher female suicide rates in regions with low female literacy rates (Akyuz, Kugu, Dogan et al., 2002; Alptekin, Duyan, & Demirel, 2006; Altındag, Ozdemir, & Yanik, 2005; Altindag, Ozkan, & Oto, 2005; Sir, Altindag, Ozen et al., 1999; Yasan, Danis, Tamam et al., 2008). According to data from 2000, although the literacy rates in Turkey are 92.4% among males and 78.7% among females, these rates decline to 81.8% among males and 55.6% among females in the Southeast rural region of the country. The adult female literacy rate is below the country's mean, among all cities in this region, and may be as low as 23.9% in some cities. Low literacy reflects the negative sociocultural status of females, and may limit help seeking behaviors and impair communication with mental health professionals. Because females may not be able to speak Turkish (many can only speak Kurdish), it is not uncommon for a mental health professional not to be able to communicate with their patient in this part of the country.

Marriage age may also be an important factor underlying the high female suicide rates. The overall mean age of marriage is 18.9 for females (Southeast Anatolia Development Project 2002), 17 years in rural and 17.5 years in urban regions of southeast Turkey. However, 37% of females in rural areas are married below the age of 15 years in this region. Clearly, these young females would be at risk for other negative social experiences.

Domestic violence is a another common problem widely experienced by young females in Turkey. According to data from the Institution of Family Research, 35% of women in Turkey experienced physical violence perpetrated by their husbands. Data indicate that domestic violence was common among all socioeconomic groups and was found irrespective of urban versus rural areas, with the highest experienced by females among age group 15 to 22 years (Institution of Family Research 1995, 1998). Even higher rates are reported from the more disadvantaged Eastern and Southeast regions, where rates as high as 57% have been reported (Akyuz, Kugu, Dogan et al., 2002).

Stigma associated with psychiatric illness and treatment is also a relevant factor which may contribute to suicide among the Turkish population (Alptekin, Duyan, & Demirel, 2006; Altındag, Ozdemir, & Yanik, 2005; Altindag, Ozkan, & Oto, 2005; Sayıl, Canat, & Tugcu, 2003). For instance, in a case-controlled psychological autopsy study, Altındag, Ozkan, and Oto (2005) investigated social, economic, cultural and psychiatric reasons for suicides in Batman (a small city in southeastern Turkey). They found that the female suicide rate was 9.3 per 100,000 and the female/male ratio was 1.72/1. Additionally, suicides most frequently occurred among young people ranging in age from 15 to 24 years (65%), and particularly among young females (mean age for female victims was 20.7 years). Serious mental disorders were present in more than 60%, however, psychological autopsies revealed that only 15% of victims with psychiatric disorders had received treatment. The most common method used (45%) was by

hanging and was related to stressful life events, such as family disruption and health problems. They concluded that high suicide rates among females were related to their negative social status. Similarly, a recent study by Yasan, Danis, Tamam et al. (2008), regarding sociocultural factors and gender profile of individuals who had made serious suicide attempts in southeastern Turkey, found that in comparison to males, females were predominantly in the age range 15–24 years, experienced more stressful events during the week preceding the suicide attempt, had a lower education level and lower employment rates. One year after the suicide attempt, female suicide attempters, compared with male attempters, continued to experience unfavorable family attitude, lack of support, an unfavorable lifestyle, and higher rates of domestic violence. Similar findings were reported by other studies from the same region (Alptekin, Duyan, & Demirel, 2006; Altındag, Ozdemir, & Yanik, 2005; Altındag & Yanık, 2005; Sayıl, Canat, & Tugcu, 2003; Sir, Altindag, Ozen et al., 1999). In a case-controlled psychological autopsy study conducted in Istanbul, Ekici, Savas, and Citak (2001) reported that psychosocial stressors such as conviction, being fired from a job, divorce, and being a victim of rape were found among 48.9% of suicide victims, whereas, these factors were present in only 13.3% of the control group. In addition, 72.9% of the suicide group, versus 35.6% of the control group, lacked health insurance.

An additional risk factor for a young females is the strict social/cultural taboo in regard to marrying a man of their choice. In some regions the cultural expectation is that a young woman should not marry without the consent of her family and may be forced to marry the man that her family approves of. Honor killings are often reported if a young female marries against the wishes of her family (by eloping). The family may decide that an "honor killing" is warranted or may even force the young female to kill herself to save the honor of the family. Usually, honor killings are committed by a male relative (such as the brother of the victim). There are many instances when a young female may willingly commit suicide to avoid family conflict or face the consequence of being killed by male relatives. This tradition is not exclusive to rural areas and can be observed in many regions, including big cities, due to high internal rural-to-urban migration. For instance more than 1,000 cases of honor killing occurred between the years 2002 to 2007, among these 220 cases of honor killing occurred in Istanbul alone in 2007 (Commission on the Prevention of Honor Killing in The Grand National Assembly of Turkey).

Migration

Migration is defined as a force that lowers social integration and has an association with suicide (Stack, 2000). It may be regarded as an uncontrollable life situation which either exacerbates preexisting problems, or results in the emergence of new ones, thereby, increasing the risk for suicidal behavior among adolescents (Ponizovsky, Ritsner, & Modal, 1999). Stress resulting from migration is often referred to as "acculturative stress" which may include a set of emotions and behaviors including depression and anxiety, feelings of marginality and alienation, heightened psychosomatic symptoms, and identity confusion (Williams & Berry, 1991). Due to these unavoidable experiences associated with migration, it is easy to imagine why this phenomenon has been implicated with higher suicide rates (Hovey & King, 1996; Kposowa, Mcelvain, & Breault, 2008; Ponizovsky, Ritsner, & Modal, 1999). A series of cross-sectional studies have found associations between internal migration and

increased suicide rates (Stack, 2000). In a case-controlled psychological autopsy-study from Istanbul, Ekici, Savas, and Citak (2001) found significantly higher migration rates among victims of suicide (19.1%) than among the control group (2.2%). However, this factor has not been studied among the younger age group, therefore specific data are lacking.

Stress related to migration is particularly relevant to Turkey because of high internal migration from rural Eastern and Southeastern regions to big cities such as Istanbul, Ankara, Izmir, and Bursa (Turkey Immigrant and Displaced Population Study, 2006). The sociocultural background of many migrants differs from indigenous residents of big cities. For instance, migrant groups, mostly from smaller towns or rural areas, are more likely to be conservative in comparison with more westernized and secular residents of larger cities, resulting in stricter parenting, especially where daughters are concerned and greater inter-generational conflict. Additional stress may be associated with higher rates of unemployment, legal problems and conviction rates, problems with accommodation, and language and educational problems, all of which contribute to the higher "acculturative stress" and a higher risk for suicide among migrants (Ekici, Savas, & Citak, 2001; Turkey Immigrant and Displaced Population Study 2006).

Absence or Shortage of Mental Health Services

Turkey has over 25 million children and adolescents among its population (2007 Census), however, there are approximately 250 child and adolescent psychiatrists, most of whom practice in big cities. Altındag, Ozkan, and Oto (2005) reported that despite 31 cases of suicide in 2000, there was no psychiatrist or psychologist in the city involved, during that year. Based on studies conducted in the US, psychological autopsies suggest that about 90% of adolescent suicides occur among individuals with a pre-existing psychiatric disorder (Brent, Baugher, Bridge et al., 1999; Marttunen, Hillevi, Henrikssson et al., 1991; Shaffer, Gould, Fisher et al., 1996). Several studies from Turkey have also reported the presence of treatable psychiatric disorders, such as depressive disorders, in a majority of young suicide victims (Altındag, Ozdemir, & Yanik, 2005; Altindag, Ozkan, & Oto, 2005; Altındag & Yanık, 2005; Sayıl, Canat, & Tugcu, 2003). However, the absence or shortage of mental health services in many parts of Turkey must result in high rates of untreated psychiatric disorders, and related suicides among youth (Altındag, Ozdemir, & Yanik, 2005; Altindag, Ozkan, & Oto, 2005).

Religiosity

Interestingly, religiosity has been shown to be related to both a lower tolerance for suicidal behaviors and suicide, and for lower rates of suicide (Neeleman, 1998a; Neeleman, Halpern, Leon et al., 1997; Stack & Lester, 1991; Stack & Wasserman, 1992). It has been suggested that modernization, industrialization, urbanization, and secularization may erode the ties of the individual to society and thereby contribute to suicide (Stack, 2000). Suicide is strongly and explicitly prohibited by Islam, which is consistent with other major religions. Some reports have found that suicide rates are reportedly lower in Muslim communities (Elfawal, 1999; Kok, 1988; Lester, 1997; Shooshtary, Malakouti, Bolhari et al. 2008; Simpson & Conklin, 1989). For instance, a cross-cultural study (approximately 10 countries were involved) found that being a Muslim was significantly related to lower suicidality, independent of

socioeconomic variables (Stack & Kposowa, 2011). Furthermore, Levav and Aisenberg (1989) found, based on data from Israel, that Jews residing in Muslim countries, such as the Israeli-Arabs, had lower rates of self-killing compared with all Jews, including Jews from European countries. Similarly, a lower suicide rate among African-Americans in the US has been attributed to their higher affiliation with the church (Martin, 1984; Neeleman, Wessely, & Lewis, 1998), although, the rate difference between young African-Americans and Caucasians has narrowed since 1987 (Shaffer, Gould, & Hicks, 1994). Greater religiosity was cited for this long-standing difference between African-Americans and Caucasians; while, growing secularism among the groups is suggested as a possible one of several reasons for the narrowing of the difference (Neeleman, Wessely, & Lewis, 1998). Consistent with this line of thought, Martin (1984) and Neeleman, Wessely, and Lewis (1998b) noted that the African-American/Caucasian differences in suicidal ideation were no longer present after controlling for spirituality. In a similar study, Eskin (2004) investigated the impact of religious versus secular education on suicidal ideation and attitudes towards suicide among Turkish adolescents. They reported that significantly more students from secular groups (41.7%) than religious groups (24%) reported that they had considered killing themselves. Although, the relationship between religiosity-secularization and suicide is a complex issue, literature so far suggests that religiosity as a protective factor may also be relevant to Turkey. A noteworthy decline in the number of students receiving religious education (500,000 students were in religious education in 1996–1997, but numbers declined to 120,000 in 2006–2007), may have contributed to an increase in suicide rates among youth (National Education Statistics of Turkey, 2008).

CONCLUSIONS & LIMITATIONS

Although suicide is a universal problem, there are significant cross-cultural differences in overall rates, gender-based differences, contributing factors, methods used, and sociocultural and family factors. We found significant differences between Turkish and American youth who completed suicide. Young females are particularly at higher risk for completed suicide in Turkey. Given a similar pattern found in rural China, sociocultural and family factors appear to contribute to this vulnerability among young females where highly traditional roles persist despite advances in other aspects of the society. Since Turkey lacks a nationwide suicide prevention program, policy makers should take these factors into consideration and urgently address the need for social programs for the prevention of domestic violence, forced marriages of females, honor killings and/or forced suicide, lack of mental health services and provide support services for migrants.

Study limitations include concern with the reliability of SIS data, which are limited by the manner in which a death is labeled as a suicide, under-reporting due to social taboo in divulging a suicide and unreliable family reporting. Despite these limitations, the main strengths of the study are that these results are derived from the largest available national database. Furthermore, our findings draw urgent attention to the special social burden faced by females in Turkey.

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