

Suicide in Turkey: its changes and regional differences

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Abstract. The temporal dimensions and tendencies, including some characteristic features of suicide in Turkey during the social transformation process, are the subject of this study with a focus on the provinces and differentiation on a regional scale. The number of suicides in Turkey and the characteristic features of those committing suicide during the years 1974–2013 have been collected in the ‘Suicide Statistics’ yearbook within this context. Both the suicide numbers as well as the crude suicide rates in Turkey have increased from the last quarter of the 20th century to the beginning of the 21st century. As a matter of fact the number of suicides which was 788 in 1975 increased at a rate of 304.7% to become 3189 in 2013. The crude suicide rate per 100,000 population increased from 1.95 in 1975 to 1.69 in 1980, to 2.42 in 1990, to 2.67 in 2000 and increased to 4.19 in 2013. Although crude suicide rates are smaller than those in most European countries, the fact that there is a rapidly increasing trend indicates that it has started to become a significant public health problem.

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1. Introduction

Suicide is a complex phenomenon which is as ancient as the history of mankind with biological, spiritual and social dimensions (Eskin, 2014). Suicide which also has an idiosyncratic characteristic is divided into three categories: completed suicides, attempted suicides and suicidal ideation and is considered to be a process rather than a result (Eskin, 2014: 3-5). Although the frequencies may differ, suicide is evident in all societies and ranks among the top 10 reasons of death in the world. It is possible to divide the spatial distribution of suicide which is observed on different levels from society to society into two areas: regions where suicide is common and regions with low suicide rates. Durkheim emphasizes the association of different levels of suicide rates with the subjective conditions of societies within their attitude towards suicide and the determination of values (Durkheim, 2013).

It is not possible to give a single valid answer to the question: ‘Why do people kill themselves?’ because of the multi-dimensioned nature of suicide. Many variables are involved in suicide, from the psychological and mental health of an individual to genetic coding, from social and communal characteristics to demographic qualities. This general characteristic of suicide constitutes the pillar comprising biological, psychological and social dimensions in explaining suicidal behaviour. Consequently, the unity and interaction of biomedical sciences with social sciences in both the current understanding of suicide as well as its prevention have progressively increased (Bulut et al., 2012). Various disciplines working with suicidology have generated diverse theoretical approaches in explaining suicide. It is possible to gather the theoretical approaches explaining suicide under three main headings: Biological approaches (genetic approach (Roy, 1992) and endocrinological approach (Asberg et al.,

1987)), Psychological approaches (Psychodynamic theory (Freud, 1916), Social learning theory (Lester, 1987), Hopelessness theory (Beck, 1976), Escape theory (Baumeister, 1990)) and Social approaches (Durkheim’s sociological theory; Durkheim, (1897), Henry and Short theory (Henry, Short, 1954; Odağ, 2012; Eskin, 2014)).

In order to understand the reasons for suicide we must also take the venues of execution into consideration. In fact, the answer to where a suicide took place, the significant differences observed in the spatial pattern of suicide are closely related to the socio-spatial characteristics of those spatial units and therefore important information can be obtained in terms of observation and explanation of suicide at a local level as well as its prevention (Middleton et al., 2004). Therefore, similarly to the major differences between suicides among countries and regions, the geographical variations of the distribution of suicide within a country must be studied from the spatial perspective. Unfortunately, the spatial pattern of suicide has been studied by very few studies from this perspective (Middleton et al., 2008; Chang et. al., 2011; Gunnell et. al.; 2012). Previous studies have the following features both in terms of illustration as well as an ecologic perspective: (i) they focus on small or large areas defined locally as a single city or district; (ii) no study has been made as to whether there are variations between gender and age groups in the geography of suicide; (iii) simple regression models have been used without taking into consideration that the map as a whole is not composed of a single cluster, without taking into consideration the independence of the geographical areas or the reasons of the heterogeneity (Middleton et al., 2008).

A look at the distribution of suicide throughout the world reveals that Turkey is a country located in a geographical region with low suicide rates. It can be argued that this is influenced by numerous issues such as social, cultural and religious reasons.

However, the fact that after 1980 the crude suicide rate has increased 3-fold manifests suicide as a significant mental and public health problem. Furthermore, the fact that suicide ranks 9th as a reason of death indicates that suicide is a subject which needs to be considered carefully by all groups from a national scale to individual lives. If we consider that completed suicides which are reflected in the statistics are the visible tip of the iceberg, the prevalence of suicide in society is better understood (Eskin, 2014). The reason for this is that in our country as is the case in the world, officials have a tendency to qualify suicides as accidental deaths to protect the families from the attitude of the society (Sayıl, 1994). This situation has an impact on the reliability of statistics. Furthermore, the number of suicide attempts which have not ended in death is not known because there such data are not published on the national scale.

The studies on suicide in Turkey have developed in parallel with the number of suicides (Meder, Gültekin, 2012). Sayıl and Azizoglu (1992), who assessed 183 academic studies about suicide in Turkey for the period of 1900-1990, reported that the number of publications had increased after 1950 and peaked during 1980-1990 (Sayıl, Azizoglu, 1992). Another study which assessed suicide-related publications during 2000-2005 reported that interest in scientific studies continued to increase progressively and that the publication for that period comprised 1/4 of the total number of publications (Uçan, 2005).

Suicide studies which increase in parallel with the increasing number of suicides in Turkey are processed by different disciplines with reference to different aspects. The studies involving temporal and spatial distribution are still limited in number and cover certain periods (Alptekin, 2002; Aktaş, 2014). This study has processed the framework of data obtained from TUİK within the timeframe starting from 1974, when the suicide statistics started to be filed separately in Turkey, to the present. Thus, the development, characteristics and distribution of suicide in Turkey for the last 39 years has been prepared. The fact is that looking at the distribution of suicides in Turkey, a significant change has occurred over time. While the crude suicide rates used to be more pronounced in the western part of the country and in urban areas, today suicide prolif-

erates throughout the country. In other words, the regional differences in crude suicide rates display a decreasing trend. This situation shows that although disparities in regional development remain, suicide has become more prevalent regardless of the different circumstances of the regions. There is a need to explain the pattern of the distribution of suicide according to provinces and regions with statistical models with socio-spatial variables in which psychological and biological aspects have been separated.

2. Research materials and methods

Since suicide is accepted as a 'taboo' by many countries and societies, the official completed suicide statistics are far from reliable. The basic reason for this is that there is a tendency to shield victims of suicide because it is an act that is not endorsed from a social and religious aspect (Sayıl, 1994; Uçan, 2005; Aslan, Hocaoglu, 2014). The data pertaining to the reasons for suicide is the most problematic area in terms of suicide related data. The truth is that it is not possible to know the real reason behind a completed suicide. Consequently, studies dealing with suicide reasons in particular are executed over suicide attempts which have not resulted in death (Gümüş et al., 2010).

The statistics for suicide in Turkey have been maintained for the entire country by the Turkish Statistical Institute (TUİK) since 1962. At first, information regarding suicide was given as short information within Justice Statistics and as of 1974 a separate publication was started under the title of 'Suicide Statistics' (DİE, 1991). Recently statistics regarding attempted suicides, for example in Izmir, have started to be added to information regarding completed suicides (TUİK, 2012). Information such as the reason, permanent residence, form of suicide, other aspects of individual committed suicide such as victim's work and profession are included in addition to demographic characteristics such as the individual's gender, age, education status, marital status. The data is published on two different scales, mainly regional and provincial.

The data sources of the study include the annual 'Suicide Statistics' published during 1974-2013.

These yearly publications have provided the general characteristics for suicides in Turkey (gender, age, education status, marital status, etc.) and other qualities (reason for suicide, time of suicide, form of suicide, etc.). The same material provided information regarding the number of suicides, crude suicide rates as well as their reasons which were collated into a distribution according to provinces. Thematic maps were also generated based on the established database. Regional development and distribution of the established database were also analysed.

3. Research results

3.1. Growth of suicides in Turkey

A total of 68,984 people committed suicide in Turkey between the years 1974-2013. 6.4% out of this total committed suicide during 1974-1980 (4,458 individuals), 15.6% committed suicide during 1980-1990 (10,777 individuals), 22.5% committed suicide during 1990-2000 (15,525 individuals), 37.9% committed suicide during 2000-2010 (26,138 individuals) while 17.5% committed suicide during 2010-2013 (12,086 individuals). The development of suicide in Turkey during the past 39 years has gone through various ups and downs and there appears to be an increasing trend over the years. This increase is noteworthy also for being rapid. Indeed, the number of suicides which was 618 in 1974 increased more than 5-fold by 2013 and reached 3,189, whereas the population of Turkey increased at a rate of 92.5% during the same period. The crude suicide rate increased from 1.6 per 100,000 in 1974 to 4.2 in 2013. On the other hand, the population increased only 1.9-fold during this period. Furthermore, the acceleration of the increase is particularly notable after 2000 (Fig. 1). Meder and Gültekin (2012) argue that this increase in the acts of suicide has occurred on a social platform on which traumatic changes have been projected in Turkey after 1980, ranging from the social, economic, cultural and technological transformation to the expectations regarding the social position of the individual, the values, attitudes and perceptions.

The executed studies as well as the suicide data indicate that there are major differences between the distribution of suicides in the countries in the

world and even between regions within some countries (Vasserman et al., 1998; Chishti et al., 2003; Middleton et al., 2008; Chang et al., 2011; Aktaş, 2014). Some studies carried out since Durkheim have determined that there is a positive correlation between the modernization process of countries and societies and suicide (Zhang, 1998). Varnik (2012) asserts that the study he carried out and assessed using data from the World Health Organization for 1950-2009 indicates that on a global scale suicide shifted from West Europe to East Europe in time and currently has shifted towards East and Southeast Asia. Therefore, in this context the contribution on the global scale of current suicides in China, India and South Korea is important (Varnik, 2012:769). Although there are many reasons for differences between countries in the world in terms of suicide, one of the major differences in suicidality stems from religion (Bertolote, Fleischmann, 2002). According to the suicide death rates for 2012 of the World Health Organization standardized according to age the mean global rate for was 11.4 per 100,000 and 7 for Africa, 8.9 for America, 17.1 for Southeast Asia, 13.8 for Europe, 4.8 for East Mediterranean region and 9.9 in the West Pacific. Turkey ranks in 81st place with 8 per 100,000 in the same data set (WHO, 2016). Furthermore, suicide in Turkey is higher compared to other Islamic countries and less than the averages for the European Union and OECD countries. However, there has been a steady upward trend in suicides in Turkey during 1974-2013 whereas there has been a declining trend particularly in some of the OECD and European Union countries as of the second half of the 1990s which has continued in the 2000s. (Chishti et al., 2003).

3.2. The distribution of suicides in Turkey

The number of suicides and the crude suicide rates in Turkey were mapped according to their distribution in provinces and periods (1975-1980-1990-2000-2010-2013) in order to enable monitoring the developments of suicides (Fig. 2). Accordingly, the increase observed in crude suicide rates in Turkey in time (38 years) is being depicted on the maps. Another emerging result is that the differences among provinces and even regions observed in the beginning have decreased by a certain degree in

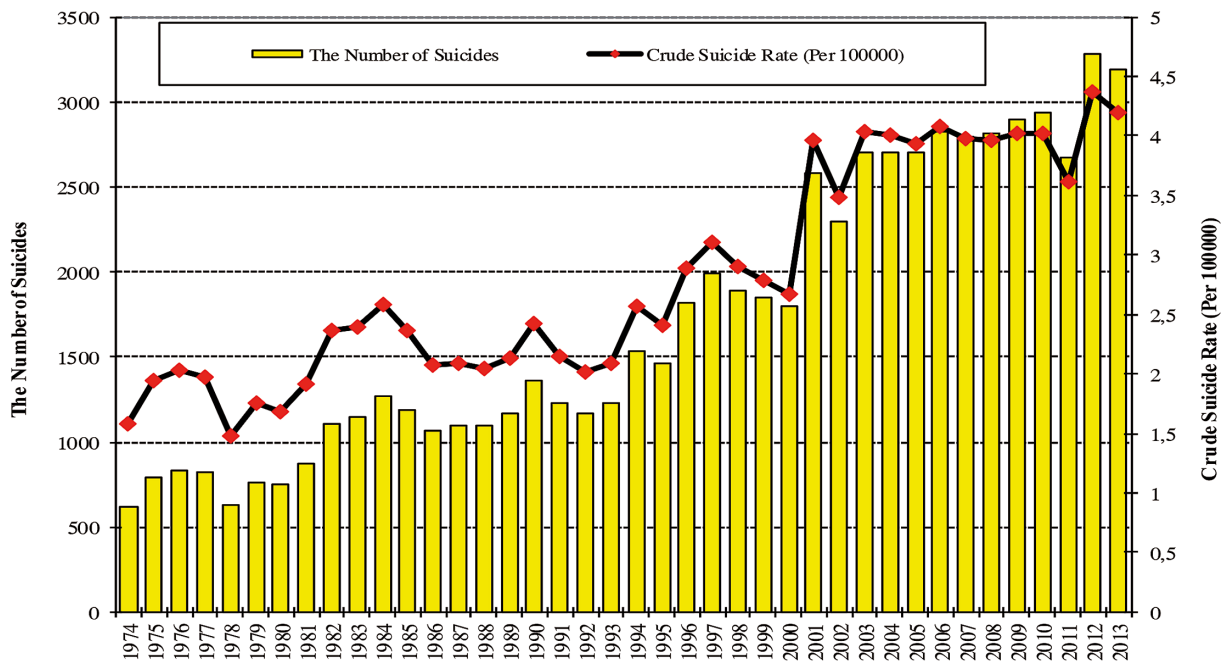


Fig. 1. The number of suicides in Turkey and crude suicide rate growth (1974-2013)

Source: Suicide Statistics in Turkey

time and suicide appears to have spread throughout the country. While suicide appeared to be more present in the more developed and urbanized western part of the country at the time when suicide statistics started to be applied, in time an increasing trend has manifested itself in the less developed eastern regions. Within this context, the increase particularly in the East and Southeast regions after the year 2000 is noteworthy (Köse, 2016).

In terms of the suicide numbers there appears to be a positive correlation between the total population of the provinces and urban population siz-

es and the number of suicides (Pearson correlation coefficient 0.97). Particularly, the number of suicides in urban areas with a population in excess of one million is higher than in other areas. Indeed, as of 2013, the provinces with the highest number of suicides are: Istanbul (488 individuals), Izmir (209 individuals), Ankara (191 individuals), Bursa (110 individuals), Adana (103 individuals) and Antalya (100 individuals). In contrast, the highest crude suicide rates per 100,000 appear in Karaman (9.2), Ardahan (7.8), Bingöl (7.2) and Elazığ (7) which are underpopulated provinces.

Table 1. Crude suicide rates per 100,000 by statistical regions (1975-2013)

Regions	1975	1980	1985	1990	1995	2000	2010	2013
İstanbul	2.92	2.61	3.03	2.30	3.11	2.44	3.24	3.45
West Marmara	2.87	2.26	3.06	2.90	2.82	2.59	5.34	4.70
Aegean	3.30	2.67	2.88	4.04	2.75	4.09	4.71	5.28
East Marmara	2.34	2.14	2.61	2.75	2.76	3.22	4.00	3.93
West Anatolia	1.95	1.02	2.31	2.32	2.71	3.09	3.75	3.98
Mediterranean	1.47	1.33	2.61	2.72	3.27	2.41	4.45	4.14
Central Anatolia	1.78	1.15	2.32	2.07	2.01	1.81	3.56	4.26
West Black Sea	0.96	1.25	2.05	1.62	1.97	1.70	3.98	4.27
East Black Sea	0.74	0.93	0.92	1.33	0.84	1.21	2.90	3.33
Northeast Anatolia	1.69	1.63	1.74	1.66	2.41	2.71	4.50	4.17
Central east Anatolia	1.82	1.49	2.13	1.84	1.45	3.57	4.19	4.93
Southeast Anatolia	1.00	1.01	1.37	1.49	1.38	1.89	3.69	4.00
Turkey	1.95	1.69	2.36	2.42	2.41	2.67	4.02	4.19

Source: Suicide Statistics in Turkey

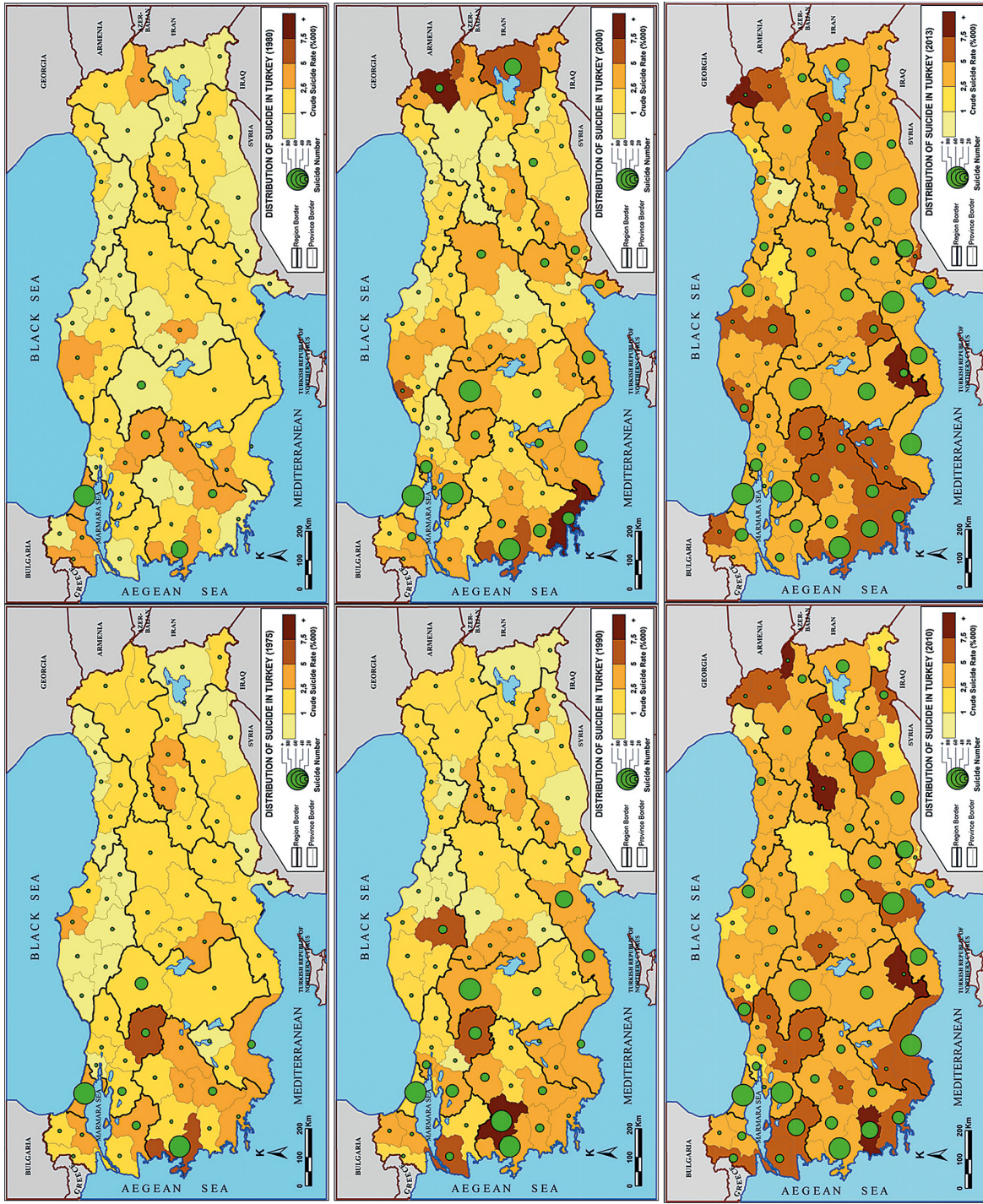


Fig. 2. Distribution of crude suicide rate per 100,000 (1975-1980-1990-2000-2010-2013)

Source: Suicide Statistics in Turkey

The regional distribution of suicides in Turkey can be evaluated separately according to the number of suicides and crude suicide rates. The leading regions in terms of suicide are the Aegean, Istanbul and the Mediterranean. These three regions account for 44% of the total population of Turkey, 48% of the urban population and 44% of suicides take place here.

The regional distribution of crude suicide rates is calculated according to the affiliation of suicide and the population because it enables more comparable assessments to be made. The most significant change in the regional distribution of crude suicide rates from 1975 to date is the progressive decrease in regional differences. Indeed, in 1975 the highest crude suicide rate was observed in the Aegean region with 3.3 per 100,000 and the lowest value was in the Eastern Black Sea Region with 0.7 and the difference between the two values was 2.6. In 2013 the highest rate was still in the Aegean Region with 5.3 per 100,000 and the lowest value was in the East Black Sea Region with 3.3 which means that the difference between maximum and minimum rates for this year receded to 2 (Table 1).

3.3. Suicide according to gender in Turkey

It is a known fact in the world that suicide differs according to gender. The general trend is that the rates of suicide for women are smaller than those for men (Fleischmann, 2016). However, suicide rates of women in comparison with suicide rates

for men are higher in China and India. (Alptekin, 2002). A review of the development of suicide in Turkey during the period of 1974-2013 from the gender perspective shows that, similarly to the majority of the countries in the world, a male-specific characteristic is displayed also in Turkey (Fig. 3, 4). 63.9% of the 68,984 suicides committed during 1974-2013 were committed by men (44,115 individuals) and the remaining 36.1% (24,869 individuals) were committed by women. In Turkey, male suicide rates are higher in terms of the number of individuals as well as crude suicide rates, and particularly after the year 2000 the gap has started to widen in favour of men. The number of suicides committed by men were more than double the suicides committed by women in 2012 and 2013 and the crude suicide rate resulted in around 6 per 100,000 versus 2. It is not only the number and rate of suicides which is influenced by the gender factor; it also has an influence on demographical characteristics such as age, marital status, education status as well as the form of committing suicide in addition to other reasons (Öner et al., 2007). Starting with gender roles, the psycho-social differences between men and women influence suicidal tendencies according to gender. The high number of suicides in the Southeast Anatolia region after the year 2000 have been alarming (Müjgan, 2003; Bağlı, 2004; Gören et al., 2004; Deniz et al., 2001; Altındağ et al., 2005; Delice, Teymur, 2012; Hekimoğlu, et. al. 2016). It is evident that men commit suicide more than women due to economic problems such as failing in business and financial difficulties.

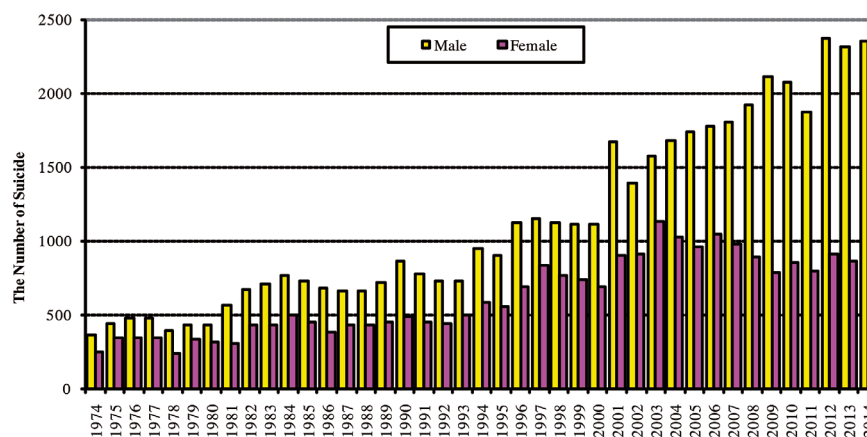


Fig. 3. Suicides in Turkey according to gender (1974-2013)

Source: Suicide Statistics in Turkey

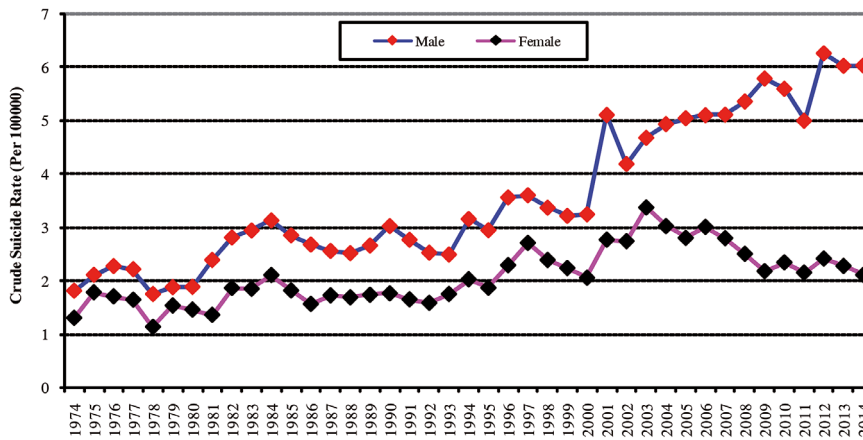


Fig. 4. Crude suicide rate in Turkey according to gender (1974-2013)

Source: Suicide Statistics in Turkey

3.4. Suicide in Turkey according to age

The fact that individuals encounter different situations throughout life and that their mental state in the face of these situations may cause them to contemplate suicide from time to time indicates that there is an affiliation between age and suicide. Therefore, there is a relationship between age and

suicide which increases from childhood to adolescence. The same trend is valid for Turkey.

In Turkey, the distribution of suicides by age groups shows an increase in all categories over time. The 15-24 age group has the biggest number of suicides almost every year (Asirdizer et al., 2010). The 25-34 age group takes the second place (Fig. 5). Almost half of the total suicides in each period are committed by the 15-34 age group.

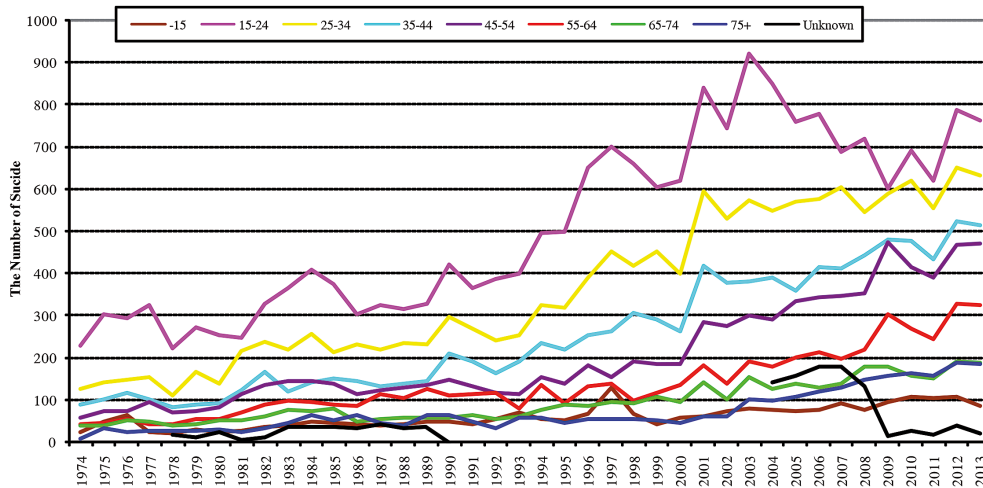


Fig. 5. Suicides in Turkey according to age groups (1974–2013)

Source: Suicide Statistics in Turkey

It can be argued that factors such as prolongation of aging and the average life expectancy in Turkey as well as changes in the position of the elderly individual within the family may increase the number of elderly suicides. Loneliness and sickness are risk factors which drive the elderly to suicide. A study carried out by Aydemir

(1999) with the suicide statistics for 1974-1996 revealed that there was an increase in the suicides of the 65+ individuals. The number of 65+ suicides increased 7.9-fold between 1974-2013 and while suicides of the elderly accounted for 7% of the total number of suicides, this rate had increased to 11.7% in 2013.

3.5. Suicides in Turkey divided into rural-urban

Although in some countries, such as China, suicides have a rural character, suicide in general is more common in urban areas. Meder and Gültekin (2012) link this with 'the profound antagonism established by the urban individual due to the speed and change that is unique to the urban environment with the rural individual, the failure of various social organizations in ensuring the compliance and integration of the individuals, the sudden so-

cial change in the position of the actors during periods of economic welfare and economic downturn and adaptation problems with the new circumstances, social isolation generated as a result of the physical/social urban environment and the anxiety, loneliness and insecurity caused in the actors by the mobility and anonymity which are unique to urban areas that are social phenomenon and processes linked/affiliated with understanding acts of suicide'.

A look at the course of suicides in Turkey displays a dominant urban character. Alptekin (2002) indicated that there were statistically significant

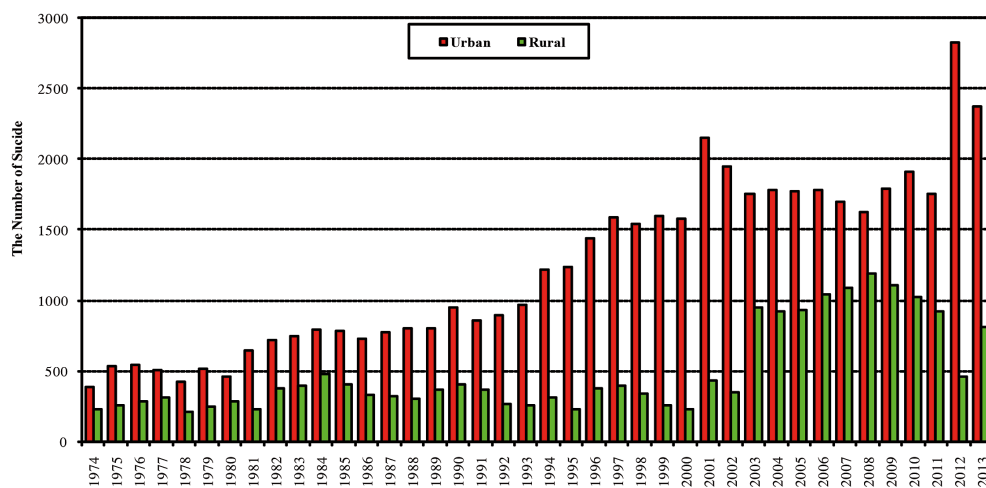


Fig. 6. Suicides split into rural-urban in Turkey (1974-2013)

Source: Suicide Statistics in Turkey

differences between the suicide rates of rural and urban areas. Another difference is that there is a smaller difference in suicides between men and women in rural areas compared to the difference between men and women in urban areas. In other words, in rural areas women commit suicide almost as often as men. This situation must be due to the gender role of women in rural areas and social pressure (Altındağ et al., 2005). The different lifestyles between individuals in rural and urban areas with their relevant economic, social, psychological and religious dimensions have an impact on suicidal behaviour.

The change which has occurred in time with the rural-urban separation of the entire population in

Turkey has also caused an increase in the distribution of the rural-urban separation in terms of suicides. During the past 39 years, suicides in urban areas have constituted between 60 and 90% of total suicides. 71.3% of the total number of suicides during 1974-2013 took place in cities (49,219 individuals). In parallel with the increase in the urban population, particularly after 1980, the percentage of suicides in urban areas reached 87% of total suicides in 2000 and declined to 57% in 2008. The share of rural suicides has mainly remained below the level of 40%. It is noteworthy that the share of rural suicides which had retreated to 12% in 2000 reached a level of 35-40% of all suicides during 2003-2011 (Fig. 7).

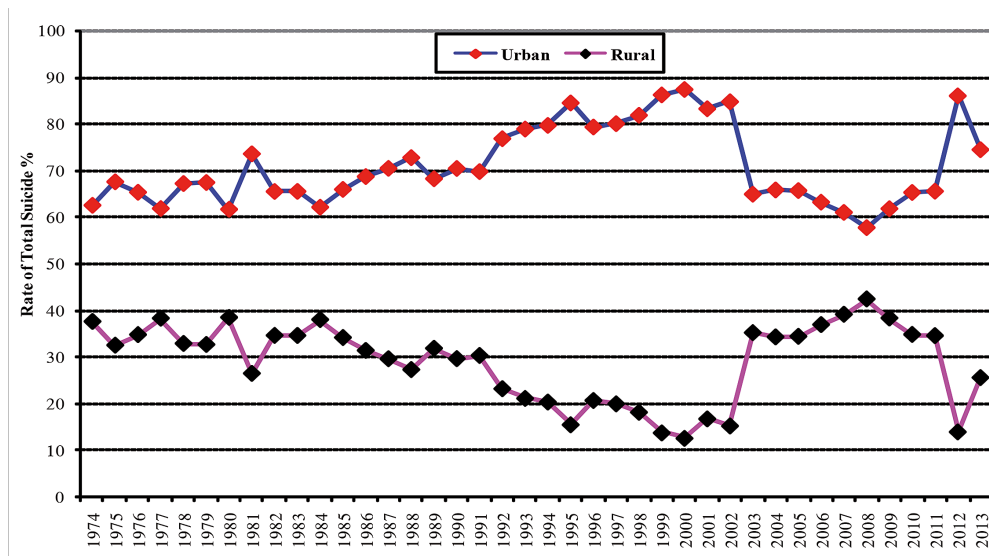


Fig. 7. Proportional growth of rural-urban suicides in Turkey (1974-2013)

Source: Suicide Statistics in Turkey

3.6. Suicides in Turkey according to marital status

A look at the relationship between marital status and suicide reveals that it is widespread among unmarried and widowed individuals. Being married with children decreases the likelihood of suicide: dialogue between spouses and their support for each other decreases suicidal tendencies (Aktaş, 2014). The social integration of these people is low because they live alone and are deprived of a social support mechanism and it can be argued that consequently it is common for them to feel alone and in a void; this triggers the tendency to commit suicide (Eskin, 2014: 141-142).

Looking at the development of suicides in Turkey during the period of 1974-2013 it is evident that

during every period married people committed the most suicides. This is followed by unmarried people (Fig. 8, 9). If those cohabiting (married) and those living alone (singles, widows/widowers and divorced) are divided into two groups, both groups appear to have a 50% share. When the values of this table, which displays the suicide figures and their share within the total number of suicides, are assessed according to the values of crude suicide values, the table changes completely. Taking into consideration the crude suicide values per 100,000 individuals as of 2013 according to marital status as an example it is evident that divorced individuals lead the list with 9.5 per 100,000, the unmarried group is second with 7.8 per 100,000, widows/widowers are third with 4.3 per 100,000 and married individuals rank fourth with 4.2 per 100,000.

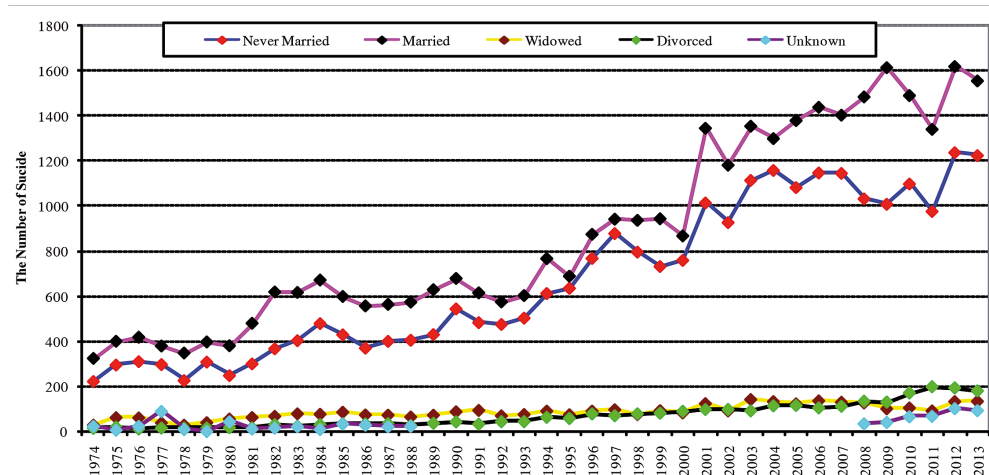


Fig. 8. Suicides in Turkey according to marital status (1974-2013)

Source: Suicide Statistics in Turkey

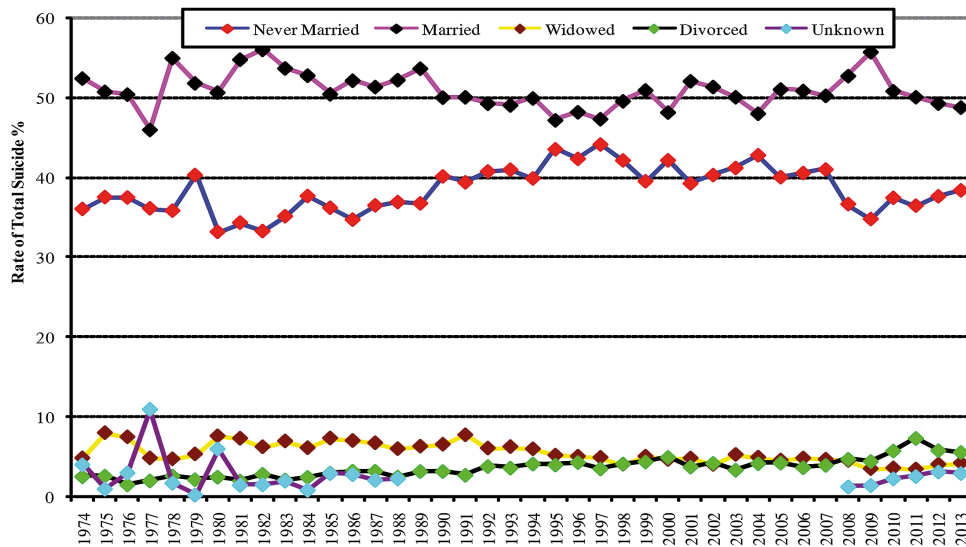


Fig. 9. The relative change of suicides in Turkey according to marital status (1974-2013)

Source: Suicide Statistics in Turkey

3.7. Suicides in Turkey according to educational status

One of the main socio-economic indicators of individuals and societies is education. The social class and other socio-economic indicators, in addition to the education of an individual, can have a significant role in terms of suicide. With the increase in the level of education, the level of integration with society increases and the individual's tendency to commit suicide may decrease together with a better status and social class. The assumption that sui-

cides decrease when the educational status increases appears to be valid for Turkey. Although the number and percentage of illiterate suicides appear to decrease, this change is related to the development in the percentage of literacy in Turkey. However, while the crude suicide rate of the illiterate was 3.8 per 100,000 in 2013, the same rate for the literate population was 4.3 per 100,000. Nevertheless, it can be argued that there is a negative correlation between the suicides of those who are literate yet have no diploma and those who have completed elementary, secondary, high school and higher education.

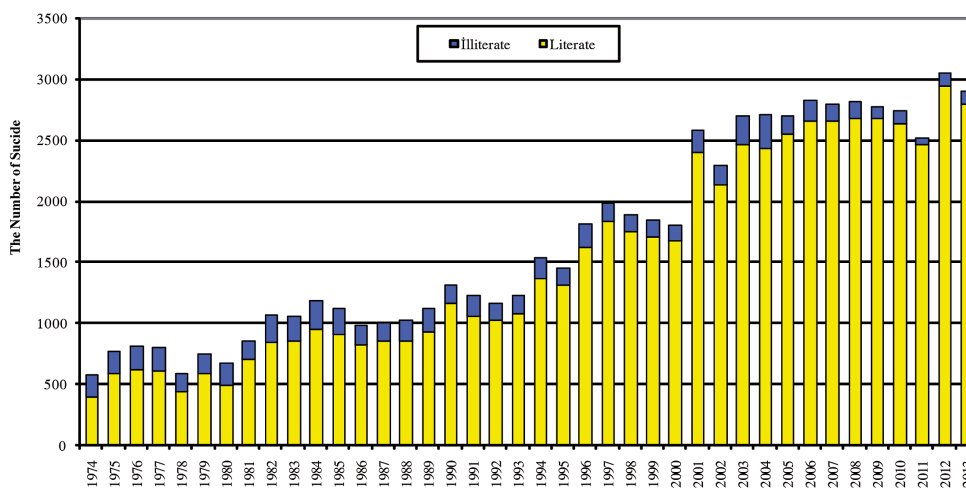


Fig. 10. Suicides in Turkey according to literacy status (1974-2013)

Source: Suicide Statistics in Turkey

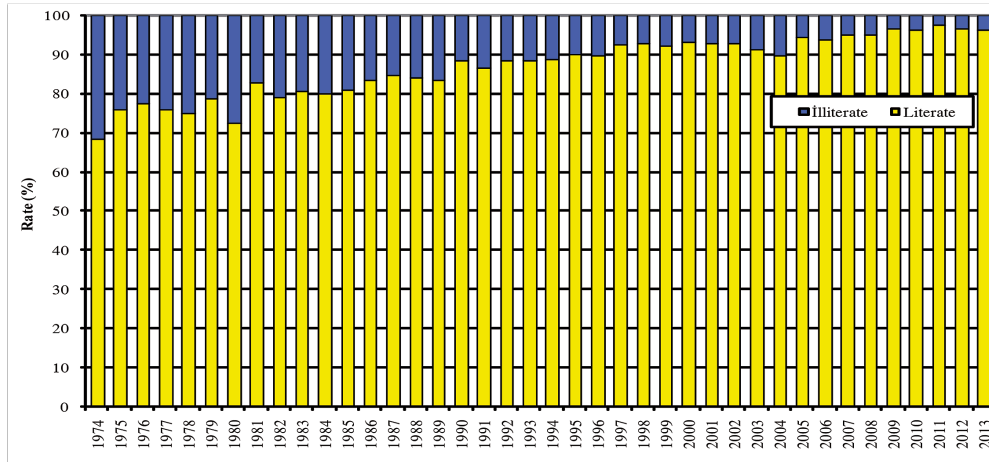


Fig. 11. The relative development of suicides in Turkey according to literacy status (1974-2013)

Source: Suicide Statistics in Turkey

It is evident that the number of elementary school graduates who commit suicide is increasing continuously and that almost every period they comprise more than 50% of the suicides. In contrast the numbers and percentages of those with

higher-education degrees form the least-numerous group. The increase in the number of high-school graduates committing suicide can be an indication that suicide will become more prevalent in the future in more educated groups.

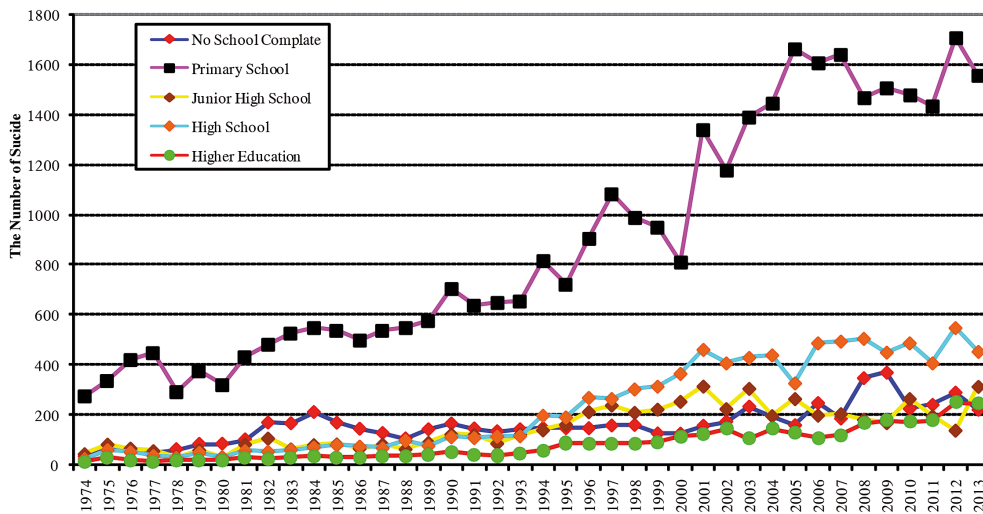


Fig. 12. Suicides in Turkey according to educational status (1974-2013)

Source: Suicide Statistics in Turkey

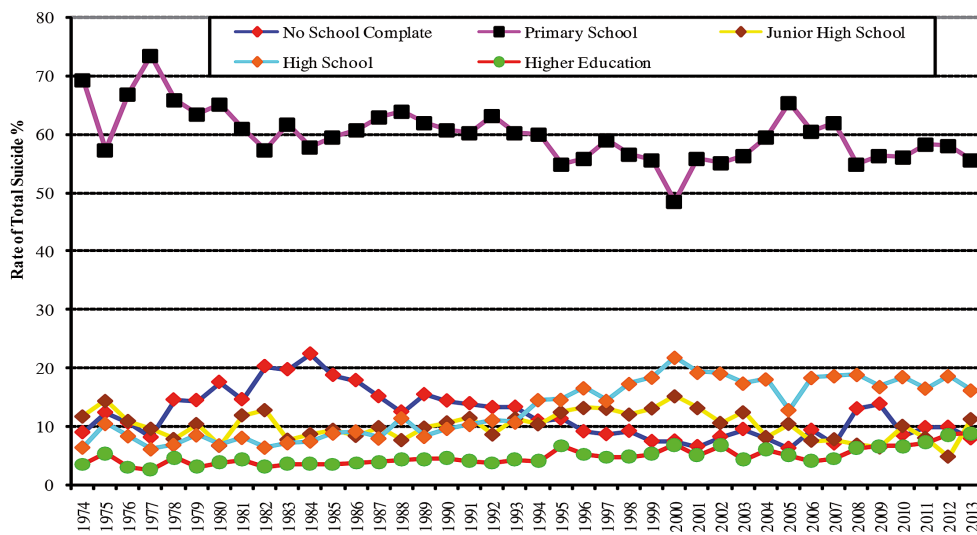


Fig. 13. The relative growth of suicides in Turkey according to educational status (1974-2013)

Source: Suicide Statistics in Turkey

3.8. Reasons for suicide in Turkey

The question: 'Why do people commit suicide?' is the most basic yet the most difficult question that suicide-related studies are trying to answer. It is not easy to find the full reason for a completed suicide. The reliability of official statistics, particularly for suicide reasons, is even more problematic. This is revealed in the distribution of reasons for suicide in the statistics of Turkey. The fact that there is an 'unknown' category within suicide reasons and in some years more than 50% of the suicides are included in this category reflects this situation. The main underlying factor is that the relatives of the suicide victim, influenced by the disapproval of society regarding suicide, do not want to disclose the real reason/reasons behind the suicide and also perhaps the officials mark the declared reason in the unknown category (Eskin, 2014). Furthermore, depending on the classification of the gathered data in the group marked as 'other', for which the percentages vary between 0.7% and 36%, the possibility of determining and assessing the reasons for suicide in Turkey is restricted even further.

When the 'unknown' and 'other' groups are put aside in terms of the suicide reason statistics in Tur-

key, the most significant reason for suicide is manifested as 'sickness' during each period (Asirdizer et al., 2010). Sickness was reported as being the reason for 26.4% of all suicides during 1974-2013 (18,241 individuals). 47% of all suicides caused by sickness were committed after the year 2000. Suicide due to sickness reached a high level particularly during 2001-2003 and peaked in 2003 with 1000 individuals. 61.8% of those committing suicide during this period were men. Literature regarding suicide indicates that psychiatric disorders such as, in particular, depression and hopelessness are the most important reasons for suicide. (Güney, Özden; 1993; Holat et al., 1994; Çetin, Eken, 2011). Disease-induced differentiation of the gender of suicides must be related to the change of psychiatric disorders in terms of gender.

Another reason for suicide in Turkey is 'family problems'. During 1974-2013, 12,505 individuals committed suicide for family reasons. The most characteristic aspect of suicides for family reasons, which comprise 18% of total suicides, is that both genders have the same percentage. Half of the suicides committed for family reasons are carried out by men while the other half are carried out by women. In fact, during some years women have committed more suicides than men for this reason (Fig. 14). This situation shows that both genders are equally affected by family problems.

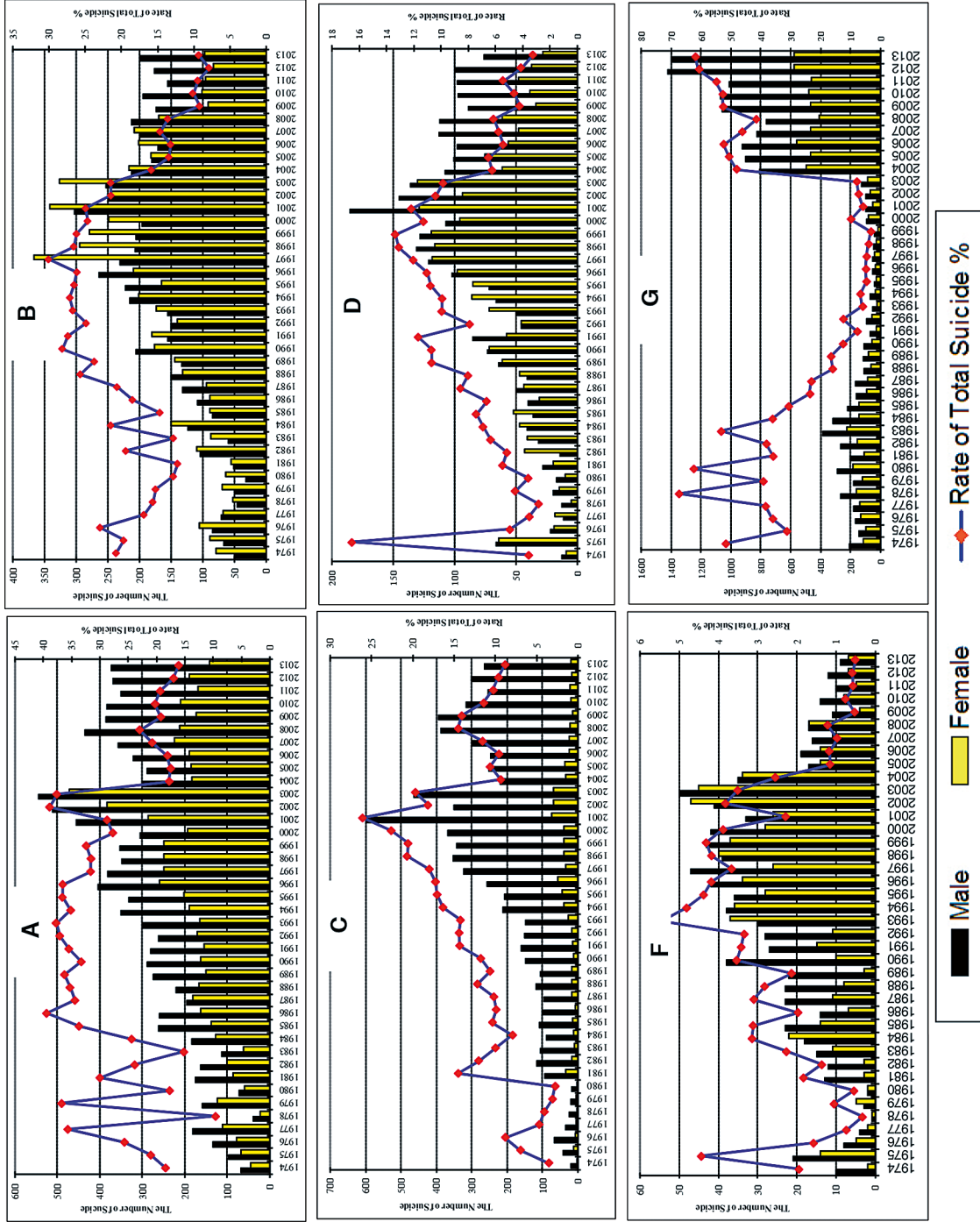


Fig. 14. Suicides by cause in Turkey (1974-2013)

Explanation: A- Illness, B - Family Problems, C - Economic and Business Problems, D - Emotional Relationships, F - Education Failure, G - Other and Unknown
 Source: Suicide Statistics in Turkey

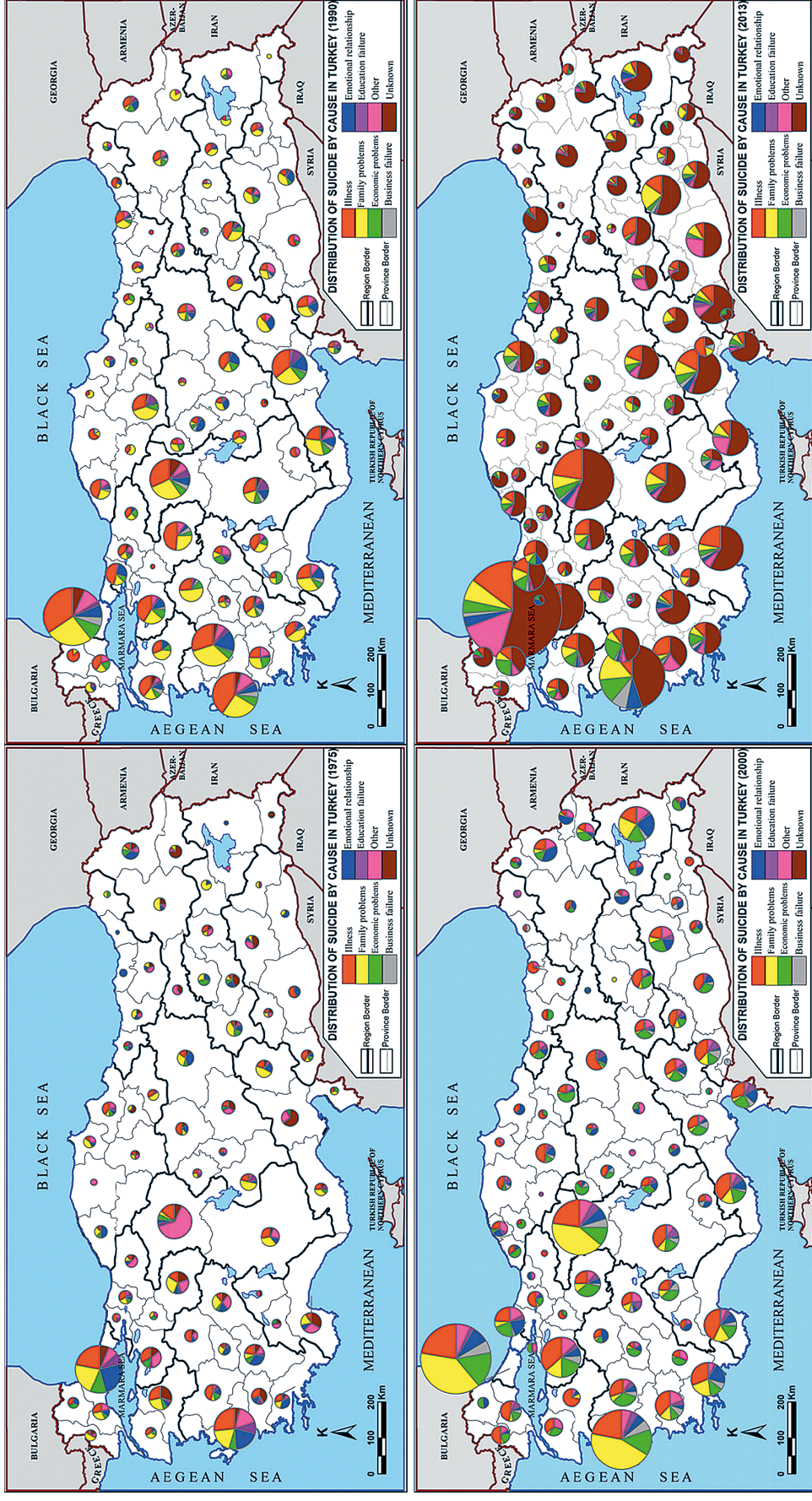


Fig. 15. Distribution of suicides by cause in Turkey (1975-1990-2000-2013)

Source: Suicide Statistics in Turkey

The typical male-specific reasons for suicide in Turkey are economic problems and lack of success at work. Indeed, 89.2% of the 9,149 suicides during 1974-2013 were committed by men. Another distinguishing feature of suicides induced by economic and business-related failures, which constitute 13.2% of total suicides, is their close affiliation with the economic crises which took place. A review of the development charts of these suicides indicates that suicides increased during the economic crises in 2001 and 2008. Bankruptcy and redundancy during crisis periods trigger suicide (Sezer, 2013; Topbaş, 2007).

Emotional relationships and not being able to marry the person of choice cause 7.6% of suicides in Turkey (5,278 individuals). With respect to gender, 55% of suicides committed during 1974-2013 due to emotional relationships and inability to marry the person of choice were committed by men while the remaining 45% were committed by women. There is a noteworthy difference in terms of the gender distribution before and after the year 2000. Most of the suicides committed for this reason before 2000 featured women, while after this date men were more likely to commit suicide for this reason. The primary reason for suicides by women is presumed to be due to the fact that women are pressurized by family and the community in terms of marriage and are not free to choose the person they marry. This situation, which is valid for rural areas and the eastern part of the country, is displaying a decreasing trend. Consequently, after the year 2000 the percentage of women committing suicide in this category has started to decrease.

Suicides caused by emotional relationships and the inability to marry according to one's choice, which has taken a downward trend after 2000 in Turkey, have a social dimension in addition to the individual one. In addition to intense feelings, such unrequited love, deception in relations with the opposite sex in addition to failing to marry the intended person after an intervention into one's choice regarding marriage can lead an individual to suicide.

The least-frequent failure-induced suicide reasons in Turkey involve failure in education. During 1974-2013, there were 1,560 suicides caused by this reason and they comprised only 2.2% of all suicides. Suicides in this group, 58% of which were committed by men, decreased rapidly after 2000.

Due to the dynamics of the comprehensive reasons for suicide, there are differences at the international level as well as on a country scale at a regional and local level. These differences are not only limited to the number of suicides or the percentages, but are displayed in the socio-demographic structure of individuals committing suicide. The different views on the gender roles of women with respect of the impact on women's/men's suicide rates are such examples.

The map for 2013 depicting the distribution of suicides in Turkey according to reasons indicates that there are significant differences between the western and eastern parts of the country. Suicides due to family-related problems were more prevalent in urban areas in the western part of the country during 1975-1990 and in 2000 (Fig. 15). This situation also parallels the higher divorce rates in the western part of the country. Economic problems and failure in business, which are more pronounced during periods of crises, also display the same trend.

3.9. Suicides in Turkey according to the methods used

As is the case with the other characteristics of suicide, the method used varies from society to society and depends on many factors such as gender, time, whether the contemplation of suicide is decisive. The method selected for suicide depends on cultural and personal characteristics, availability of the means and the determination to commit suicide (Ajdacic-Gross et. al., 2008). For example, Chinese women hang themselves while Indian women commit suicide by burning themselves (Aktaş, 2014:72). Various studies have revealed that the availability of means for suicide have accelerated suicides in adolescents in particular. The fact that many suicides committed in the USA are committed with firearms is associated with the availability of firearms in the house and it has been determined that the number of suicides committed in different states with firearms differed according to the accessibility of firearms, which varied from state to state (Atasoy et al., 2014).

The selected methods for suicide differ in Turkey according to gender. Methods including violent action such as using a firearm, a sharp instrument or jumping off a high place are methods which dis-

play male characteristics while women prefer methods such as consuming chemical substances (Aktaş, 2014; Öner et. al., 2015).

The most common method of suicide in Turkey is hanging oneself (Asirdizer et. al., 2010). The reason underlying its popularity in addition to the social and cultural reasons might be that this method is easily applicable and the materials are available (Eskin, 2014). Hanging, which comprised 48.9% of the total number of suicides, was the most widely used method in Turkey during 1974-2013. This method is preferred by both genders and during the past 39 years 50% of males and 46% of females committing suicide have done so by hanging themselves. It is noteworthy that this method has had an upward trend for both sexes in time (Fig. 16A).

After hanging, the second most preferred form of suicide during 1974-2013 with 20.1% was the use of a firearm. It is possible to mention two significant characteristics regarding this form of suicide. The first one is that the use of this method has increased rapidly after 1990 (Fig. 16E). Indeed, out of a total of 13,864 suicides taking place during 1974-2013, 86.7% took place after 1990 and 65.7% took place after 2000. This must be associated with the changing conditions in terms of firearm use and firearm access (Fedakar et. al., 2007). The second characteristic is that it is unique to gender and that 77.6% of suicides committed with this method have been carried out by men.

Committing suicide by using a chemical substance to induce poisoning ranks third as a suicide method with 13.8%. The main feature of this method, which is receding among the total number of suicides, is that it is preferred by women more than men (Fig. 16B). Data indicates that 58% of all suicides during 1974-2013 by chemical substances were committed by women. This method was used in 22.5% of the total number of suicides during this period committed by women.

9.5% of all suicides during the past 39 years were committed by jumping off a high place. It is interesting that the application of this method, which ranks fourth, has an increasing trend. The fact that there is an increase in the number of high-rise buildings may contribute to the popularity of this method. 44% of the 6,578 suicides using this method were committed by women.

Other methods used in Turkey during 1974-2013 to commit suicide can be listed as jumping into a body of water with 2.9%, using a cutting instrument with 1.4%, other with 1.2%, jumping in front of a train or motor vehicle 0.7%, self-burning with 0.6%, poisoning with natural gas or LPG with 0.5% and 0.2% where the method of suicide is reported as unknown. It is not possible to distinguish any kind of trend in terms of these methods during the course of 1974-2013 (Fig. 16F-G-H-I).

4. Conclusion

Due to its multi-component characteristics in terms of structure, suicide varies according to communities and countries and can also display regional differences within a country. Suicide has three fundamental dimensions: biological, psychological and social, and must also be studied from the perspective of spatial units. In this context, the clustering tendencies covering the similarities and differences in the distribution of spatial units where suicide has been committed must be determined to explain the geographical characteristics of suicide which is a study for different disciplines. In other words, it endeavours to explain why suicide displays a clustering tendency in certain areas with similar characteristics while it is less intense or non-existent in other places. These spatial perspectives of the analysis may have an important contribution in terms of applications for the prevention of suicides. In this context, in addition to enhancing the robustness and reliability of suicide statistics, it must be possible to present data for the smallest spatial units.

The change which has occurred over time in the global distribution of suicide displays a trend from the west to the east and from developed countries to developing countries. While a decline has been observed recently in the crude suicide rates of East European countries where these rates are relatively high, it is striking that in countries which are undergoing a transition in economy, such as Turkey, suicide displays an increasing trend. In fact, a 5-fold increase in suicide numbers in Turkey has occurred particularly after 1980, while the crude suicide rate has increased 2,5-fold. Furthermore, it has been de-

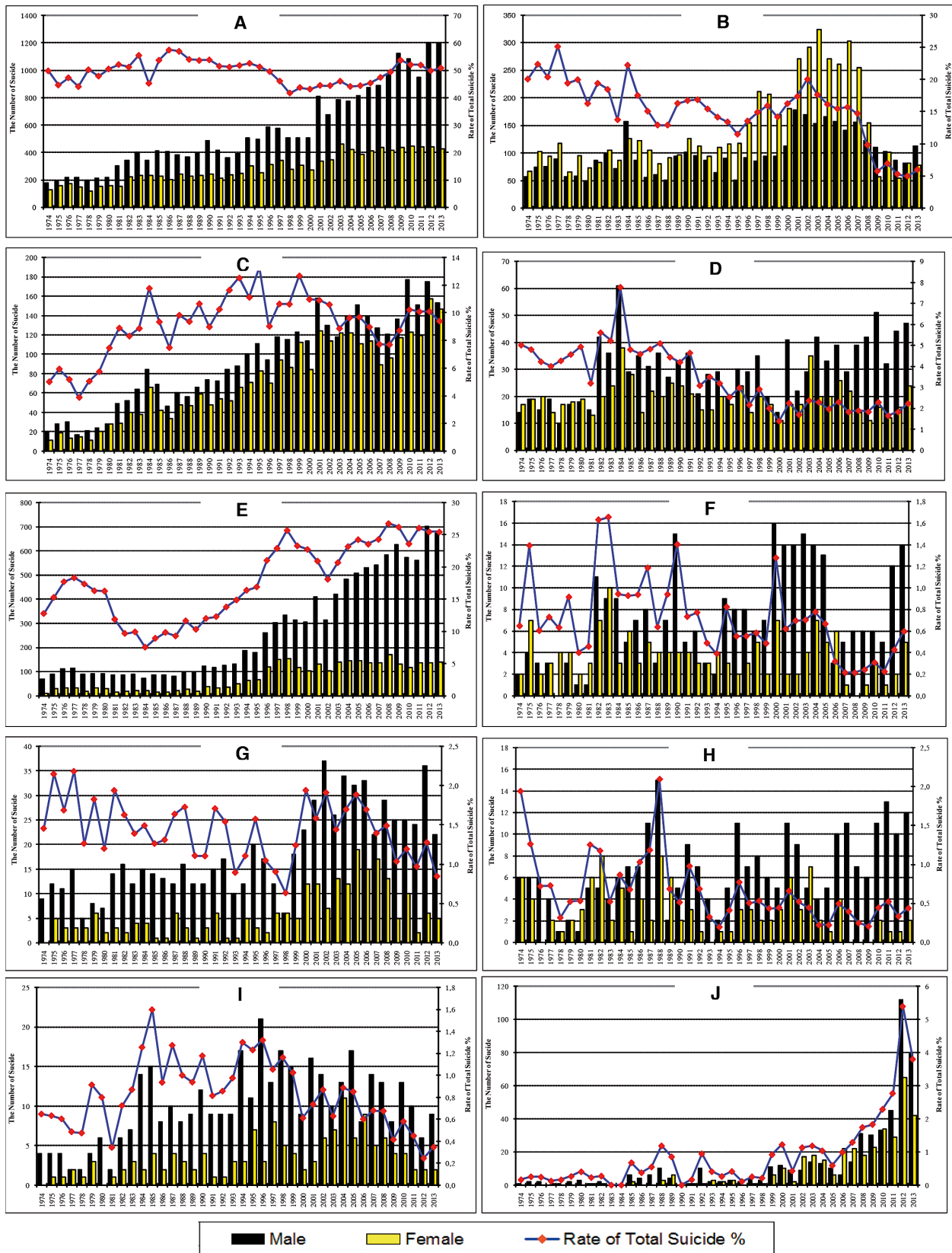


Fig. 16. Methods of suicide in Turkey (1974–2013)

Explanation: A – By Hanging, B – Taking Chemicals, C – Throwing from a High Place, D – By Drowning, E – Using Fire arms, G – Using a Sharp Instrument, H – Using Gas, I – Throwing off a Train or Another Motorized Vehicle, J – Other

Source: Suicide Statistics in Turkey

termed that suicide is spreading throughout the country and the difference between regions is declining. This situation means that the rapid transformation in the social and economic structure of Turkey is reflected on a national as well as regional and provincial level within the country, and in this aspect it may be compatible with the association between modernization and suicide as asserted by Durkheim.

Turkey displays a distinct characteristic among countries in terms of some aspects of suicide indicators. Primarily, almost the whole population of the country professes Islam and as a result Turkey ranks among countries with the lowest suicide rates in the world. Therefore, the increase in suicide, which is unacceptable in Turkey from a social and cultural aspect as well as from a religious perspective, is noteworthy. This increase is determined on a macro-scale by the industrialization and urbanization process as well as various changes in secularization and the social structure. The other characteristic feature of suicide in Turkey is that it is more common among young males in urban areas and less common among elderly women in rural areas. Reasons for suicide and the methods used vary according to gender. This information is very important in terms of determining suicide risk groups and their socio-demographic characteristics and should be included into national and local policies with a view of preventing suicides.

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