Epidemiology of Suicide in Korea

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Abstract

In 2002, an estimated 877,000 lives were lost worldwide through suicide. In Korea, suicidal deaths have increased very rapidly since the economic crisis in 1997, and suicide is regarded as one of the most serious public health and social issues in Korea. This study examines the current situation and trends of the recently increasing rates of suicidal deaths, ideas, and attempts in Korea.

This study reanalyzed the 20-year statistics of suicidal deaths recently published by the National Statistical Office and the data of the National Health Interview Survey conducted in 1995 and 1998.

The suicidal mortality rate in Korea is quite high compared to those in other OECD countries and the rate of increase is the highest. The rate of suicidal idea is high among males, those in their late teens and those in their seventies. The suicidal attempt rate is higher among females and those in their late teens.

Suicide, one of the important causes of death in the younger age group, has a greater socioeconomic impact than other common causes of death in the older age group. Therefore, we are in urgent need of a public mental health network to prevent suicide and to detect and treat early mental health problems leading to suicide.

Key words: Suicide, Epidemiology, Suicidal attempt.

Introduction

Suicide is not only the primary emergency for the mental health professional, but also a major public health problem in the world. Suicide's history goes back at least to the earliest human written records (e.g., Socrates, Seneca). The traditional or legal definition of suicide was first given clarity by Emile Durkeim, who defined suicide as "a death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce that result".1

In 2002, an estimated 877,000 lives were lost worldwide through suicide, representing 1.5% of the global burden of disease or more than 20 million disability-adjusted life-years (years of healthy life lost through premature death or disability).2 The global mortality rate is estimated to be 16 per 100,000; One death every 40 seconds. The WHO further reports that in the last 45 years worldwide suicide rates have increased by 60%.3 Suicide is now among the three leading causes of death among those aged 15-44 (both sexes).4 Suicidal behavior has multiple causes that are broadly divided into predisposition, proximal stressors or triggers.5 Psychiatric illness is a major contributing factor, and more than 90% of those who commit suicide have a Diagnostic and Statistical Manual of
Suicide epidemiology

Mental Disorders, Fourth Edition (DSM-IV) psychiatric illness. Suicide results from various complex sociocultural factors and is more likely to occur during periods of socioeconomic, family and individual crisis (e.g. loss of a loved one, employment or honor).

Suicide attempts are up to 20 times more frequent than completed suicides. Although suicide rates have traditionally been the highest among elderly males, suicide rates among young people have been increasing to such an extent that they are now the group at highest risk in one third of all countries.

In Korea, the rapid increase in the suicidal rate in recent years has meant that suicide has become a serious public health and social problem. Epidemiological reviews of suicide rates are valuable for the delineation of trends, the prioritization of risk groups and the provision of clues to its etiology. The objective of this paper is to review the current situation and trends of the recently increasing suicidal deaths, ideas and attempts in Korea.

Methods

This data is based on the population mortality statistics and death certificates registered between 1990 and 2004 provided by the Korean National Statistical Office. The prevalence of suicidal idea and attempts were derived from the National Health Interview Surveys conducted in 1995 and 1999 by the Department of Health and Welfare and the Korea Institute for Health and Social Affairs. The present study presents the gender- and age-specific suicide rates, the average annual rates of suicide per 100,000 population, and the rates of suicidal ideas and attempts.

Results

Serial changes of suicide rates (1990-2002)

The suicide mortality rate in Korea did not show any evident changes until the early 1990s. However, after 1997, the year of the IMF crisis in Korea, there was a sharp increase, followed by a drop in the rate

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**FIGURE 1.** Suicidal rates (per 100,000) in Korea, 1989-2004.
of increase which has continued ever since. In 1998, the number of suicide mortalities was 8,569, which is a 42.4% increment compared to the 6,022 suicide mortalities in 1997. The number of suicide mortalities per 100,000 persons also increased from 13.1 (1997) to 18.5 (1998). After 2001, the suicide mortality rate increased, reaching 25.2 in 2004, the highest level recorded so far.

The changes in the suicide mortality rates during the past 20 years suggest that there is an overall relation between the suicide mortality rate and economy cycle. Compared to the 80s and early 90s, however, the suicide mortality rate also increased 2-fold during the early 90s to mid 90s and the years 2000 and 2001, during which Korea enjoyed a good economy. This implies that reasons other than the economy, such as increases in divorce and the aging of the population, have also contributed. The fact that the economy does not account for the increments can also be noted by examining the cases of suicide mortality in China, where suicide ranks fifth (287,000 cases) in terms of the total number of mortalities and over 2 million people attempt suicide despite China’s soaring economic growth.9

Gender-specific differences are also noticeable. Up to the mid 90s the difference between the genders remained at a steady level, but afterwards the difference between the genders increased, a shift which can also be seen in other regions of the world.10

**Changes in suicide mortality among age groups**

Figure 2 reveals the changes in the suicide mortality rates among the different age groups. Until the 90s, the rates remained at a steady level, however since the mid 90s mortality rates have rapidly increased. The incre-
ment however differed among age groups. Since the 1990s, a sharp increase in the mortality rate was only observed in those over 40, while little change was observed amongst teenagers. The mortality rates of the middle-aged and elderly rapidly increased during the early 90s and decreased slightly after the economic crisis of 1997, only to increase again after 2001. Subsequently, the ratio between the mortality rates of the elderly (over 65) and young (aged 15-24) increased from 1.2 (1983) to 4.8 (2001).

Comparison of suicidal rates among OECD nations

The changes of the suicide mortality rates among the OECD nations including Korea are shown in Table 1. Korea ranked 26th among the 28 OECD nations in terms of the suicide mortality rates in 1982, but jumped to second place in 2004. Nations that ranked high (Hungary, Finland, Denmark, and Switzerland) revealed decreased or steady rates, in contrast to Korea which shows an annual increase of 16.8%. This rapid increase is the highest among the OECD nations.

Rates of suicidal ideas and attempts

Suicidal ideas

According to the 1998 National Health and Nutrition Survey, one fourth of the Korean population above the age of 10 have "thought of attempting suicide during the past 12 months" (Table 2). This survey reveals the existence of gender differences with 1 out of 5.2 males and 1 out of 3.3 females reporting a suicidal ideation. This is consistent with national statistics that show higher urges and attempts for suicide in females, while males reveal higher suicidal mortality.11

The rate of suicidal idea according to age group reveals an "N" shape distribution with those in their late teens and over seventy showing the highest rates. Over one third of these two subgroups considered committing suicide during the previous 1 year period.

<table>
<thead>
<tr>
<th>Country</th>
<th>1980-1989</th>
<th>1990-2004</th>
<th>Annual Increase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>22.44 (1982)</td>
<td>24.68 (1995)</td>
<td>0.73</td>
</tr>
<tr>
<td>Switzerland</td>
<td>22.68 (1982)</td>
<td>18.59 (1994)</td>
<td>-1.64</td>
</tr>
<tr>
<td>Luxemburg</td>
<td>19.50 (1982)</td>
<td>17.13 (1997)</td>
<td>-0.86</td>
</tr>
<tr>
<td>Czech</td>
<td>19.72 (1986)</td>
<td>17.00 (1993)</td>
<td>-2.10</td>
</tr>
<tr>
<td>New Zealand</td>
<td>11.90 (1982)</td>
<td>14.54 (1994)</td>
<td>1.68</td>
</tr>
<tr>
<td>Japan</td>
<td>17.06 (1982)</td>
<td>14.09 (1994)</td>
<td>-1.58</td>
</tr>
<tr>
<td>Canada</td>
<td>14.10 (1982)</td>
<td>12.56 (1995)</td>
<td>-0.89</td>
</tr>
<tr>
<td>Australia</td>
<td>11.74 (1982)</td>
<td>11.50 (1995)</td>
<td>-0.16</td>
</tr>
<tr>
<td>USA</td>
<td>11.86 (1982)</td>
<td>11.07 (1996)</td>
<td>-0.49</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>10.31 (1982)</td>
<td>8.70 (1995)</td>
<td>-1.30</td>
</tr>
<tr>
<td>Spain</td>
<td>4.80 (1982)</td>
<td>6.91 (1995)</td>
<td>2.84</td>
</tr>
<tr>
<td>Italia</td>
<td>6.78 (1982)</td>
<td>6.84 (1993)</td>
<td>0.08</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>8.08 (1982)</td>
<td>6.50 (1997)</td>
<td>-1.44</td>
</tr>
<tr>
<td>Greece</td>
<td>3.34 (1982)</td>
<td>2.92 (1996)</td>
<td>-0.96</td>
</tr>
</tbody>
</table>

Source: OECD (1999), OECD Health Data 1999

Suicidal attempts

According to the 1998 National Health Nutrition Survey in Korea, one out of every 100 persons above the age of 10 has "attempted suicide during the past 12 months". Gender differences are noted, with this figure
When analyzed by age group, teenageres show the highest rate of suicidal attempts. Those in their late teens (15~19 years old) showed an especially high rate of attempted suicide, which attained 1 out of 50 persons.

Among those who experienced suicidal ideas, 4.0% attempted to take their own lives, while one out of 25 persons who thought of committing suicide actually carried it out. The rate of actually committing or attempting suicide among those with suicidal ideation is slightly higher in males (4.3%) than in females (3.8%).

Those in their early teens revealed the highest rate of suicidal attempts amongst those with such thoughts. One out of 16 persons who had suicidal ideas actually went on to attempt suicide. On the other hand, those over fifty manifested a relatively low rate of putting suicidal thoughts into action.

The relationship of suicide mortality with suicide ideas and attempts

As previously mentioned, the suicide mortality rate of those above the age of 10 in Korea is 0.022%; 22 out of 100,000. This rate is one of the highest in the world. Gender differences are noted with rates of 32 out of 100,000 persons for males and 12 out of 100,000 for females. The suicide mortality rates increase with age. The suicide mortality rate of those over seventy was 42/100,000.

One out of 1,136 who experienced suicidal ideas and one out of 46 who attempted suicide succeeded. In other words, 87 out of 100,000 persons who thought of committing suicide attempted to take their lives. and 2 out of 87 succeeded.

When analyzed by gender, males who experienced

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When analyzed by gender, males who experienced
suicidal idea or attempted suicide showed higher suicidal mortality rates than females; 165 out of 100,000 males who experienced suicidal ideas carried it out and, amongst these, 4 actually killed themselves. On the other hand, 40 out of 100,000 females who experienced suicidal ideas carried it out and only one of them subsequently died.

Generally, the mortality rates of those who attempted suicide or had suicidal ideas increased with age. Especially, the suicidal mortality rate of early teens attempters was one out of 588, whereas the corresponding rate for over seventies attempters was one out of 10.

That is to say, the suicide attempt rate in adolescents is higher than that in the elderly, but elderly people who attempt suicide show a higher suicide mortality rate than adolescents. These trends are also seen in other countries.

Discussion

The rise of the suicidal rate

The suicidal rate has been increasing at an alarming rate since 1997. According to the annual statistical report of the Korea National Statistical Office (2004), suicide has become the second most frequent cause of death in men aged 10 to 39, and the third in men aged 40-49. Suicide is also the second most frequent cause of death in women aged 10-19, and the first in women aged 20-39. Suicide is a major cause of death among the young generation in Korea. High unemployment rates, the breakdown of the family support system caused by high divorce rates and cultural changes, and the poverty observed after the foreign exchange crisis in 1997 might have affected the rise of suicide in Korea.

The number of death certificates reported by non medical doctors has progressively decreased. This has led to a decline in the number of undetermined causes of death, which might have contributed to the rises observed in suicide rates to some extent.

Comparison of suicidal rate in OECD countries

Our data revealed that the suicide rate in Korea is the one of the highest in developed countries. The highest annual rates are observed in Eastern Europe, where 10 countries report more than 27 suicides per 100,000 persons. Latin American and Muslim countries report the lowest rates, viz. fewer than 6.5 per 100,000. Durkeim argued that "each society has a definite attitude toward suicide....characteristic of the society under consideration." He suggested several factors which could be considered to play a role in determining suicide rates; climate, latitude and sunshine, contagion, religion and education, social support by family and political society, genetic buffering, economics, migration, and depression. While a WHO working group and others have expressed confidence in the use of international suicide statistics, the impact of different reporting systems can not be ignored. In the US, Kleck estimated that about 26% of suicides are incorrectly certified as accidental and undetermined. However, underreporting of suicides was said not to be common in many studies.

Major rises in suicide rates occurred among those over 40 in Korea, while the rates amongst teenagers did not show much change in recent years. However, sharp rises (approximately 200%) in suicide rates were found in the 15-29 year-old age groups in western countries. This result suggests that our unique social stress might have an impact on the suicidal behavior of middle and old aged Koreans.

Suicidal ideas and attempts

Suicidal ideas are very common in the general population and are 25 times more common than suicidal attempts. Furthermore, for every suicide completion, there are nearly 45 suicide attempts. The rates of suicidal idea and attempts are more
frequent in the late teens, but actual suicide mortality rates are higher in old age. These results are consistent with the previous findings from western countries.\textsuperscript{10}

The high rates of suicidal idea and attempts in youths can be explained as follows: First, many suicide attempts by youths can be viewed as a strategic action on the part of the youth to resolve conflicts within him or her self or with others. Youths have little direct economic or familial power, and given such situations, self-injury can be used to signal distress or to encourage a response from others. Second, contagion effects are more influential; youths are more likely to attempt or commit suicide themselves, when a friend or family member attempts or commits suicide. Finally, the rise in the youth suicide rate over time can be explained, to some extent, by the increased share of youths living in homes with a divorced parent. The rate of suicide mortality is the highest among the elderly. However, it has been suggested that the elderly consider suicide as a rational choice when the expected value of the future utility of being alive is less than the value of death (escape from distress and loneliness), so they are more prone to suicidal death.\textsuperscript{11}

While much is known about the epidemiology of suicide, more remains to be clarified. Psychological autopsy studies of suicide cases and the establishment of a detailed national suicide data system can facilitate research into suicide and the establishment of a suicide prevention program in Korea. Suicide, as one of the important causes of death in the younger age group has a greater socioeconomic impact than other common causes of death in the older age group. Therefore, we are in urgent need of a public mental health network to prevent suicide and to detect and treat early mental health problems in the primary health care system.

\textbf{References}


