Report

Age and sex suicide rates in the Eastern Mediterranean Region based on global burden of disease estimates for 2000

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معدلات الانتحار بحسب العمر والجنس في إقليم شرق المتوسط، استناداً إلى التقديرات العالمية لِعِبْء المرض في عام ألفَيْن

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الخلاصة: تشير التقديرات إلى أن الانتحار هو المسبِّب الرئيسي الخامس والعشرون للوفاة في إقليم شرق المتوسط في عام ألفَيْن. وعندما استُخدمت البيانات المستقاة من المشروع العالمي لمنظمة الصحة العالمية، المعني بعبء المرض، في تقدير المعدلات للوفيات الناجمة عن الانتحار بحسب فئات العمر والجنس، كانت المعدلات الإجمالية للانتحار أعلى في الإناث من الذكور في الفئتَيْن العمريتَيْن 5 ــ 14 عاماً و 15 ــ 29 عاماً. كما كانت نسبة الانتحار العليا بين الإناث في الفئة العمرية 15 ــ 29 عاماً (8.6 لكل 100 000)، وبين الذكور في الفئة العمرية 60 عاماً فأكثر (10.8 لكل 100 000). وكان معدَّل الانتحار، منسوباً إلى جميع حالات الوفاة الناجمة عن الإصابات، أعلى بشكل ملموس بين الإناث بالمقارنة مع الذكور. وكانت نسبة الانتحار أقل ما تكون لدى جميع الفئات العمرية للإناث في البلدان المرتفعة الدخل. كما كانت هذه النسبة أقل لدى الذكور في البلدان المرتفعة الدخل بالمقارنة مع الذكور في البلدان ذات الدخل المنخفض والمتوسط.

ABSTRACT Suicide was estimated to be the 25th leading cause of death in the WHO Eastern Mediterranean Region in the year 2000. Using data from the WHO global burden of disease project, estimated rates of suicidal deaths were plotted for different sex and age groups. Overall rates of suicide were higher in females than males in age groups 5–14 and 15–29 years. The peak age for suicides among females was 15–29 years (8.6 per 100 000) and for males 60+ years (10.8 per 100 000). As a proportion of all deaths due to injury, suicides were substantially higher in females than males. Females in high-income countries had the lowest rates of suicide in all age groups and males in high-income countries had a lower rate than males in low- and middle-income countries.

Taux de suicide dans la Région de la Méditerranée orientale en fonction de l'âge et du sexe, selon les estimations de la charge mondiale de morbidité pour l'an 2000
RÉSUMÉ Selon les estimations pour l'année 2000, le suicide apparaît comme la 25e cause de décès dans la Région OMS de la Méditerranée orientale. Si l'on se réfère aux données recueillies dans le cadre du projet de l'OMS sur la charge mondiale de morbidité, les estimations des décès par suicide ont été calculées par sexe et tranche d'âge. Le taux global de suicide s'est avéré plus élevé dans la population féminine que dans la population masculine pour ce qui concerne les tranches d'âge 5-14 ans et 15-29 ans. C'est dans la population féminine âgée de 15 à 29 ans (8,6 suicides pour 100 000 habitantes) et dans la population masculine de 60 ans et plus (10,8 suicides pour 100 000 habitants) que se situent les pics de suicide en fonction de l'âge. Si l'on considère les causes de l'ensemble des décès post-traumatiques, le suicide l'emporte sensiblement chez les femmes, par rapport aux hommes. Le taux de suicide féminin le plus faible s'observe dans les pays à revenu élevé, quelle que soit la tranche d'âge, tandis que les hommes de ces mêmes pays enregistrent un taux plus bas que leurs homologues des pays à revenu faible ou intermédiaire.

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Introduction

In the year 2000, suicide was estimated to be the 25th leading cause of death in the countries of the Eastern Mediterranean Region (EMR) of the World Health Organization (WHO), but was ranked 7th in the European Region, 8th in the Western Pacific Region and 16th in the South-East Asia Region [1]. On the face of it, suicide may not be considered as one the most urgent health problems in the EMR. However, the aggregate figures may hide variations among different groups [2]. Therefore, it is useful to reanalyse the patterns of suicide in order to assess which groups are at highest risk and to apply effective measures, if needed, to address this [3].

In the year 2000, the EMR consisted of 22 countries (Afghanistan, Bahrain, Cyprus, Djibouti, Egypt, Iraq, Islamic Republic of Iran, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen) [1]. Countries in this Region were divided into high income (US$ 9636 or more) and low- and middle-income (US$ 9635 or less) based on their 1996 estimates of gross national product per capita. Using this classification, only 4 countries—Cyprus, Kuwait, Qatar and United Arab Emirates—were classified as high income and the remaining countries were classified as low- or middle-income [1].

The aim of this paper was to report the estimated rates of suicide by age and sex in the year 2000 within EMR countries, adjusted for the income level of the countries.

Methods

This report used data based on the *International classification of diseases, 9th revision* (ICD9) codes E950–E959 (suicides) [4], which were collected by the WHO global burden of disease project for 2000, version 1 [5]. The aggregated results for WHO regions were published in the *World report on violence and health* [1].

In the present study estimated rates of suicidal deaths were plotted for different sex and age groups (5–14, 15–29, 30–44, 45–59, 60+ years). A similar procedure was applied to compare suicide deaths as a proportion of all deaths due to injury. In order to have a better picture, all data were plotted without and with adjustment for the country's level of income.

Results

Plotting the suicide rates by age showed that in the age groups 5–14 and 15–29 years the rates of suicide were slightly higher in females compared with males (Figure 1). The peak age for suicides among females was 15–29 years (8.6 per 100 000). After this, the rates for women fell in age groups 30–44 and 45–59 years, with a rise again at 60+ years. For males, the suicide rate rose continuously with age, peaking at 60+ years (10.8 per 100 000).

Plotting the same rates adjusted for the level of income of the countries showed a similar pattern for the low- and middle-income countries (Figure 2). However, patterns of suicide in the high-income countries were different. Females in these countries had the lowest rates of suicide in all age groups (range from 0.1 to 3.5 per 100 000), lower than women in low-/middle-income countries (range 2.0 to 8.6 per 100 000). Males in the high-income countries had a lower suicide rate (range 0.4 to 7.3 per 100 000) compared to males in low- and middle-income countries (range 0.8 to 10.8 per 100 000).
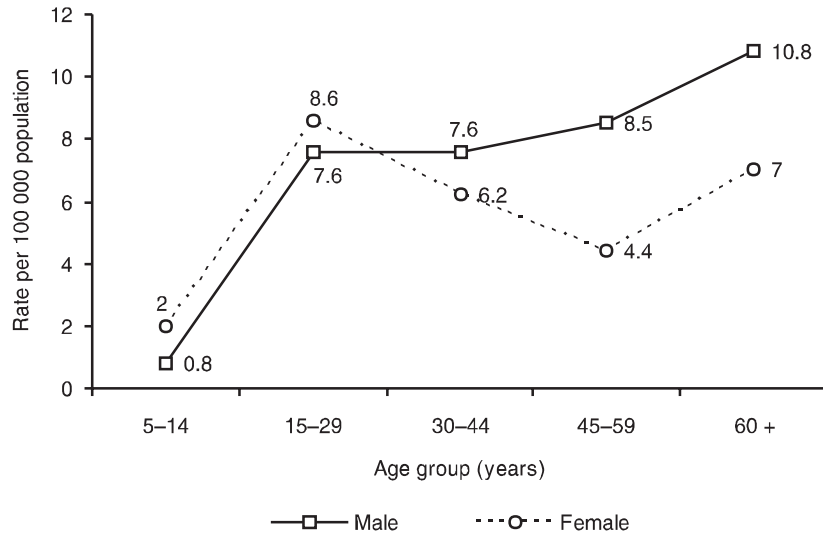
Figure 1 **Estimated suicide mortality rates by sex and age group, World Health Organization Eastern Mediterranean Region countries, 2000**
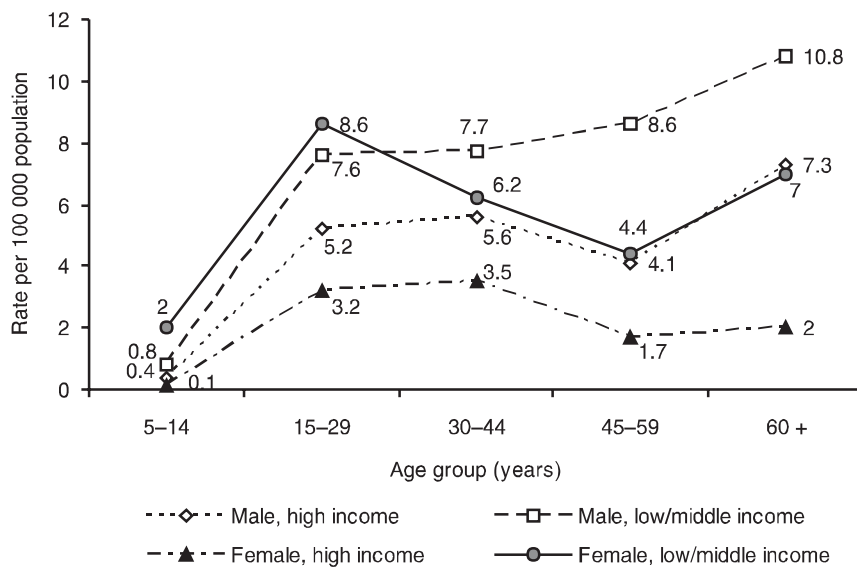

Figure 2 **Estimated suicide mortality rates by sex, age group and country income level, World Health Organization Eastern Mediterranean Region countries, 2000**

When suicide deaths were calculated as a proportion of all deaths due to injury, the proportion of such deaths was substantially higher in females than males in all ages groups except 60+ years (Figure 3). The difference was most marked in age group 15–29 years, when suicides comprised 20.0% of all deaths due to injury in females and only 8.6% for males. When adjusted for level of a country's income, a similar pattern was seen for all countries. For females in low- and middle-income countries, the rates of suicide as a proportion of all deaths by injury were the highest, while for males in high-income countries they were the lowest (Figure 4).

Discussion

The WHO global burden of disease project for 2000 has been based on an extensive analysis of mortality data and also statistical modelling, systematic reviews of health service data and epidemiological studies [5] and seems to produce reasonable estimates of suicide rates. However, suicide data are the end-product of a chain of informants, including family members, police, doctors and coroners, and any of them, for a variety of reasons, may be unwilling to record the death as suicide. Therefore, we need to bear in mind the possibility of underestimation of true suicide rates in the population, especially in places where cultural and/or religious attitudes condemn suicide [1].

The countries of the EMR have certain common factors including religion which justify grouping them together as a Region. The Region is the cradle of many religions—Islam, Christianity, Judaism and Zoroastrianism—but Islam is the religion of about 90% of the people [6]. This could to some extent explain why the recorded suicide mortality rate as a whole in EMR is lower than the other Regions. The Qur'an states that no one should kill him/herself,
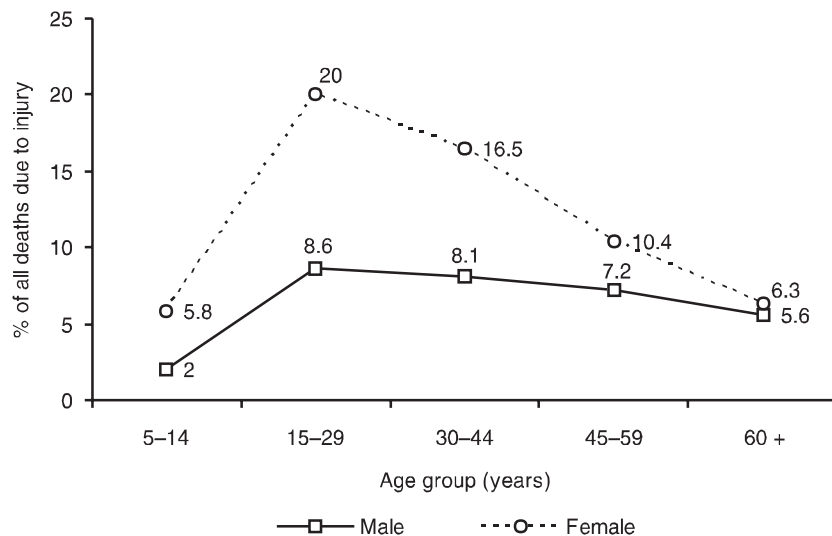

Figure 3 **Estimated suicide deaths as a proportion of all deaths due to injury by sex and age group, World Health Organization Eastern Mediterranean Region countries, 2000**
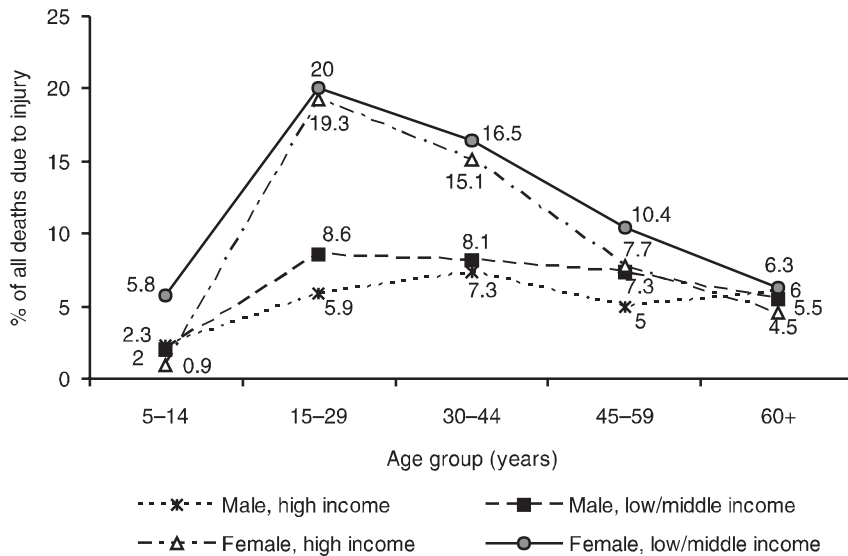
Figure 4 **Estimated suicide deaths as a proportion of all deaths due to injury by sex, age group and country income level, World Health Organization Eastern Mediterranean Region countries, 2000**

because God has been merciful to him/her. This commandment is believed to play a role in the low rates of suicide recorded among Muslim communities [7].

However, looking at the estimated suicide rates for different age and sex groups revealed interesting patterns: females in the age group 15–29 years and males in the age group 60+ years were at highest risk in terms of committing suicide. Furthermore, the high proportion of suicide deaths in all female age groups, especially 15–29 years, uncovers another interesting pattern. It seems that by looking at the most important risk factors for suicide it would be possible to explain these patterns to some extent.

One of the strongest risk factors for suicide is mental disorders [8], and in a meta-analysis it has been shown that most types of mental disorder increase the suicide risk between 5-fold and 15-fold [9]. For instance, depression is the most important mood disorder that is strongly associated with suicide [10], especially for young women and elderly people; in a recent study the prevalence of major depressive episodes in the year 2000 for the EMR were estimated to be 1872 and 2748 per 100 000 males and females, respectively; clearly both figures are higher than the world average [11].

Marriage usually has a protective effect against suicide [12,13], which might illustrate the fact that those people who may be prone to suicide are more likely to be single or to have been divorced or widowed [13]. However, marriage might not be protective in all cultures, especially for young women. For instance, higher rates of suicide and deliberate self-harm have been reported among married women in Pakistan

in comparison to both married men and single women [*14,15*]. This may be because social, economic and legal discrimination creates psychological stress that leads these women to commit suicide or deliberately harm themselves [*14*]. More research is needed in order to reveal the true nature of suicides among young women in the EMR and to find out to what extent marriage and/or other risk factors such as oppression, women's empowerment and secondary role in a patriarchal society could explain this high suicide rate.

Suicide rates are also directly associated with recent discharge from hospital [*16,17*], substance misuse [*18,19*] and deliberate self-harm [*20*]. It also seems that people in lower socioeconomic groups experience a greater risk of suicide [*21*] and the reasons for this could be as a result of poverty, unemployment or job insecurity [*22*]. Moreover, there are several published studies which have shown that there are ecological associations between suicide rates in different areas and indices of deprivation or social fragmentation [*23–30*]. The magnitude of these risk factors could be very high for the EMR if we realize that, as in many developing countries, the cultural backgrounds of the people of the Region are rapidly and inevitably changing. This has resulted in fast and usually unplanned urbanization and the emergence of suburban slums, especially in large cities. Widespread unemployment usually accompanies this condition, which in turn may create young people who are prone to develop depression and behaviour problems [*6*].

To sum up, it seems that these findings justify paying more attention to the ways of preventing suicide among high risk groups, especially in low- and middle-income countries. For prevention of suicide, there are at least 2 important routes for countries within this Region. First, it will be important for each country to develop national programmes for mental health in order to meet the mental health needs of the people, especially young women and elderly people. Although countries of the Region have made significant progress over the past 2 decades in developing such national programmes, more efforts will be needed for integrating the mental health components into primary health care [*31*]. Secondly, countries within this Region, especially low- and middle-income ones, urgently need to tackle poverty, reduce unemployment and job insecurity and provide social support for high-risk groups.

Finally, it should be added that since the enhanced information about suicide mortality can come from systematic surveillance programmes [*32*], a national or regional database of suicide could help countries of the EMR to have a better understanding of patterns of suicide in order to adopt the most appropriate preventive plan.

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Eradication of poliomyelitis in the EMR

Rapid and significant progress towards the eradication of poliomyelitis is continuing in all countries of the Eastern Mediterranean Region. The number of cases decreased regularly to a minimum in 2002, in the light of a well developed and efficiently performing surveillance system. Poliovirus transmission had been interrupted in 15 countries of the Region for more than 3 years. Three countries, Somalia, Sudan and Yemen, were re-infected by virus originating from West Africa during 2004-2006.

Confirmed cases of poliomyelitis 2002–2006

Country	2002	2003	2004	2005	2006
Oman	0	0	0	0	0
Lebanon	0	1	0	0	0
Egypt	7	1	1	0	0
Saudi Arabia	0	0	1	0	0
Sudan	0	0	128	27	0
Yemen	0	0	0	47	1
Somalia	3	0	0	185	36
Pakistan	90	103	53	28	40
Afghanistan	10	8	4	9	31
Total	110	113	187	727	108

Source: http://www.emro.who.int/polio/