

Suicide Prevention During and After the COVID-19 Pandemic

Evidence-Based Recommendations 2020

On behalf of the World Psychiatric Association – Section of Suicidology Danuta Wasserman, MD.PHD. Professor in Psychiatry and Suicidology at Karolinska Institute, Stockholm, Sweden, Director for the WHO collaborating Centre

Introduction

Global suicide rates

Approximately 800.000 people die of suicide every year in the world. The number is underestimated, due to various methods of monitoring and death registration as well as cultural factors. All 183 member states are included in the World Health Organization (WHO) mortality database, however only around 45% of the countries have appropriate monitoring. Suicide is the second leading cause of death among people aged 15-24 and for each death by suicide 20 suicide attempts are estimated. Thus, suicide is of international concern with a global suicide rate of 10.5 per 100.000 inhabitants (males: 13.7/100.000; females 7.5/100.000, Fig. 1). An overview of the suicide rates for each WHO region is given in the Appendix.

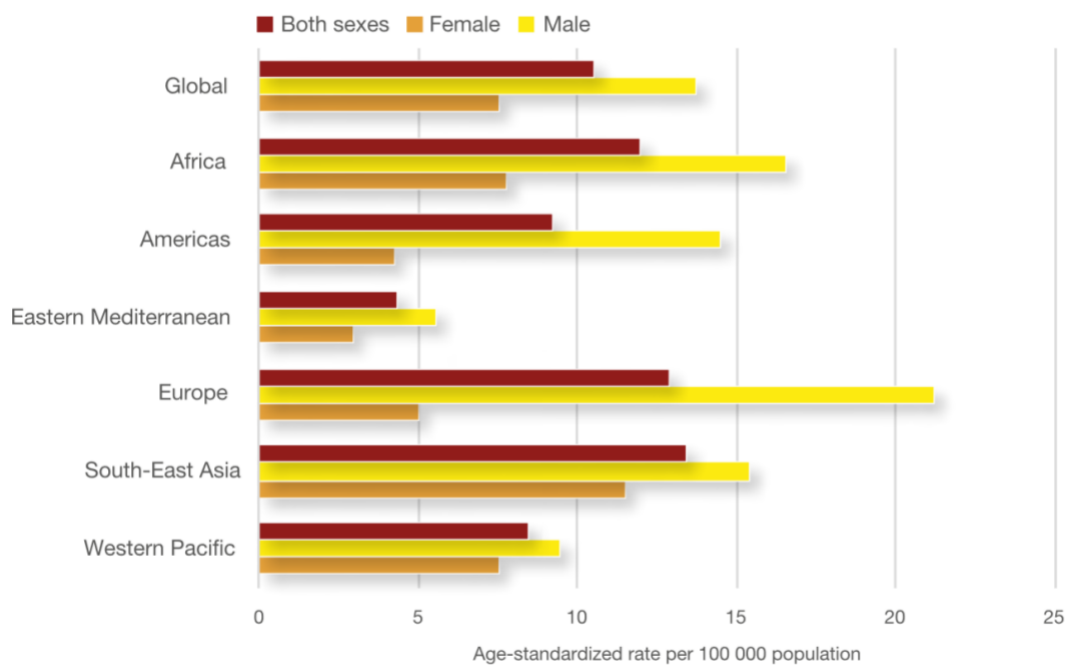


Figure 1. Annual suicide rate for all WHO regions. (Source: WHO Suicide in the world. Global Health Estimates, 2019)

It has been reported that, during times of crises, such as natural disasters, war, or health epidemics, like the severe acute respiratory syndrome (SARS), suicide rates may momentarily decrease. However, after the immediate crisis has passed suicide rates increase. In order, to successfully combat the likely increase of suicide after the coronavirus crisis, the implementation of evidence-based strategies must be strengthened. Thus, the aim of this report is to inform governments, policy makers and healthcare providers as well as the public to stimulate translation of these recommendations into actions.

Impact of the COVID-19 pandemic on risk and protective factors for suicide

The COVID-19 pandemic poses a special challenge to people around the world as it affects both physical and mental health, economy, and social life on all continents. Stress, sleep disturbances, anxiety, depression, and suicide as their utmost consequence are likely to increase. Worrying about the uncertain future and unemployment are only some aspects that impact mental well-being during and after the pandemic and that may lead to an increase in suicide rates. Suicide is an unnecessary death and can be prevented by using evidence-based methods.

An analysis of the impact of the pandemic on risk and protective factors for suicide is provided here as well as recommendations to policy makers for an appropriate suicide preventative response during and after the pandemic.

Risk factors for suicidal behaviour according to the WHO socio-ecological model are grouped into four multi-level groups: (1) society; (2) community; (3) relationships; (4) individual (Figure 2) which may be relevant for suicide behaviour.

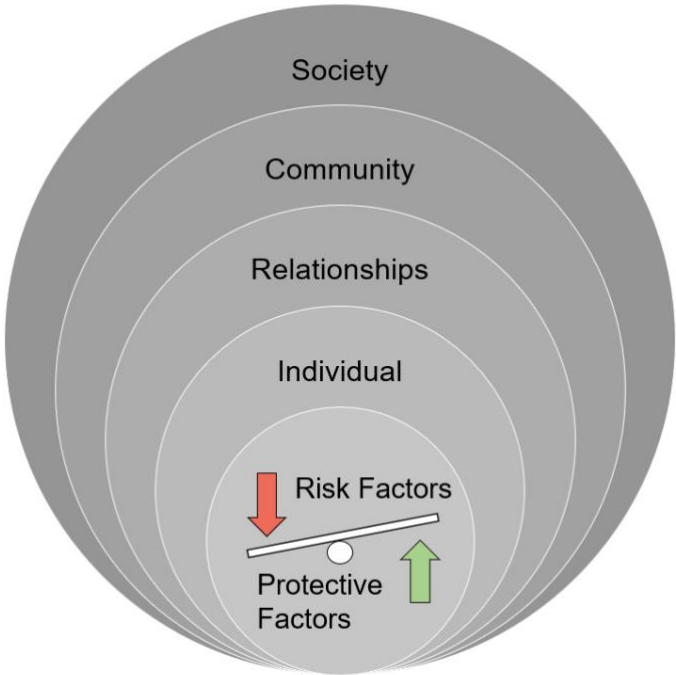


Figure 2. Overview of the multi-level groups of risk and protective factors of suicide.

Protective factors for suicide such as (1) effective mental healthcare; (2) strong personal relationships; (3) supportive social network; (4) life skills such as problem solving, coping, ability to adapt; (5) practice of positive coping strategies and well-being; (6) religious or spiritual beliefs are also of utmost importance. During the COVID-19 pandemic, it is likely that both risk and protective factors will be affected by either the disease itself or as a result of the implemented social and economic measures. Thus, the interplay between the pandemic, the risk factors, and protective factors should be studied to inform interdisciplinary prevention. The possible effect of the pandemic on risk and protective factors and preventative strategies are summarized in the tables below (Table 1-3).

Table 1. Risk and protective factors of suicide and the possible impact of the COVID-19 pandemic. Red shading indicates negative effect on risk or protective factors; Green shading indicates possible positive effect on risk and protective factors. Positive or negative effects differ between regions and countries depending on the local actions taken by politician and policymakers in response to the COVID-19 pandemic.

| | Society | Impact of COVID-19 Pandemic | Impact |
|---------------------------|--|--|------------------|
| Risk Factors | I. Barriers to accessing healthcare | <ul style="list-style-type: none"> Increased pressure on healthcare systems Increased delegation of resources towards the acute response of the pandemic Decreased focus on mental healthcare Increased barriers to access due to containment measures | - - - - |
| | II. Access to suicidal means | <ul style="list-style-type: none"> Increased buying and stockpiling of <ul style="list-style-type: none"> Medication Firearms | - |
| | III. Inappropriate media reporting | <ul style="list-style-type: none"> Sensationalizing of media impacts the perception of risks | - |
| | IV. Stigma associated with help-seeking behaviour | <ul style="list-style-type: none"> Reduced help-seeking behaviour through containment measures Increased stigma possible in societies with a higher tendency of stigmatizing mental health problems | - - |
| Protective Factors | I. Effective mental health care | <ul style="list-style-type: none"> Reduced effective mental healthcare during the pandemic (see above) | - |
| | II. Legislations concerning economy, social inequalities, welfare measures, healthcare accessibility, national prevention programs | <ul style="list-style-type: none"> Decrease of such legislations and programs due to the economic impact of the pandemic Increase in government funds for health policies in general Opportunity to strengthen mental healthcare system Increase of short- and/or long-term welfare measures | - + + + |
| | Community | Impact of COVID-19 Pandemic | |
| Risk Factors | I. Disaster, war, conflict | <ul style="list-style-type: none"> Reduced available healthcare in areas of conflict | - |
| | II. Stresses of acculturation & dislocation | <ul style="list-style-type: none"> Increased stress of acculturation and dislocation of individuals that are currently fleeing from conflicts or are staying in refugee camps through the pandemic | - |

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| | III. Discrimination | <ul style="list-style-type: none"> Decreased access to healthcare Decreased effectiveness of containment measures in such areas De-prioritization of mental health | - - - |
| Protective Factors | I. Social integration, social living conditions, local prevention, and recreational programs | <ul style="list-style-type: none"> Opportunity to increase resources for preventive activities | + |
| | Relationships | Impact of COVID-19 Pandemic | |
| Risk Factors | I. Loneliness II. Relationship conflict, discord, loss III. Trauma and abuse | <ul style="list-style-type: none"> Increased isolation and lack of social support Increased relationship conflict and discord as additional strains are put on relationships Decrease in opportunities for contact with people outside of the home who can help Loss of significant others due to death by COVID-19 Increased interpersonal violence and abuse within families or households as people are confined to their homes Decreased access to help | - - - - - |
| Protective Factors | I. Strong personal relationships | <ul style="list-style-type: none"> Improved relationships through new ways of connecting or having more time available to connect with other people (talking or activities) Reduced opportunities of communal experiences and activities | + - |
| | Individual | Impact of COVID-19 Pandemic | |
| Risk Factors | I. Mental disorders II. Harmful use of alcohol III. Job or financial loss IV. Hopelessness V. Chronic pain | <ul style="list-style-type: none"> Worsened symptoms of mental disorders Additional reduction in well-being through social isolation and quarantine Reduced treatment compliance Increased use of alcohol Increased job or financial loss due to the economic crisis Increased hopelessness through potential loss of friends and family, loss of job, and general uncertainty Worsened chronic pain through reduced care and increased stress | - - - - - - |
| Protective Factors | I. Life skills and lifestyle practice: problem solving, positive coping, ability to adapt, and well-being II. Religion or spiritual belief III. Food and diet impact on physical and mental health | <ul style="list-style-type: none"> Increased awareness of self-care strategies and positive coping through to media and internet support Increased emphasis on positive coping Increased time to practice self-care, find new ways of improving well-being Increase in individual practice of religion or spirituality at home plausible Increased time for practices available Decreased access to community activities Increased opportunities for a healthier diet Negative impact on diet through <ul style="list-style-type: none"> irregular eating patterns and frequent snacking stress and anxiety | + + + + + - + - |

| | | | |
|---|---|---|---|
| | IV. Physical activity has positive effects on mental health | • Increased physical activity | + |
| | | • due to individual motivation | |
| | | • if allowed to leave home for short times | |
| | V. Sleep is important to maintain mental health | • Decreased physical activity due to containment measures | - |
| • Improved regular sleep patterns through new work routines | | + | |
| • Increased anxiety and stress due to (in)direct consequences of the pandemic | | - | |

Suicide Prevention Strategies

Suicide prevention strategies comprise population-based and healthcare-based efforts. Population-based strategies are multisectoral and include education, labour, social welfare, agriculture, business, law, politics, and media, which are complemented by health care activities. Synergistic effects are obtained when both approaches are combined. Evaluation of effectiveness of all strategies is continuously ongoing and some strategies have more evidence than others. A combination of strategies as they complement each other is recommended to achieve.

The suicide preventive interventions proven to be most effective are: (1) restriction of access to lethal means, (2) policies to reduce harmful use of alcohol (3) school-based awareness programs, (4) pharmacological and (5) psychological treatment of depression, (6) chain of care and follow-up of at-risk individuals, and (7) responsible media reporting. Other interventions, such as gatekeeper training do not have conclusive evidence, but they are considered theoretically valid.

Evidence-based suicide prevention strategies during the COVID-19 pandemic

While there is evidence available which strongly suggest that suicide can be prevented, these strategies may be affected during a crisis such as the COVID-19 pandemic and adjustments are required.

In tables below the public health (Table 2) and healthcare (Table 3) suicide prevention strategies are described along with the effects of the pandemic on each strategy and recommended actions.

Table 2. Evidence-based public health strategies of suicide prevention and recommendations of implementation during the COVID-19 pandemic.

| Strategy | Description | Effects of COVID-19 Pandemic | Actions during COVID-19 Pandemic |
|--|---|---|--|
| Restricting access to lethal means of suicide | Restriction of access to lethal means of suicide entails various points of application, such as drugs, firearms or pesticides | <ul style="list-style-type: none"> Increased stockpiling of over-the-counter medication preparing for a possible infection or sickness Increased purchasing of firearms due to worries generated by the pandemic | <p><i>Government (national & regional level)</i></p> <ul style="list-style-type: none"> Restrict <ul style="list-style-type: none"> sales of lethal means, such as firearms and pesticides, amount of medication bought per person Ensure safe storage of firearms and medication at warehouses and at home through public awareness and policies Inform the public carefully about reduction of access |
| Policies to reduce harmful use of alcohol | Interventions to reduce harmful use of alcohol have been shown to reduce suicide rates | <ul style="list-style-type: none"> Increased alcohol intake may occur due to the confinement to home, loneliness, self-medication of mental distress, financial stress, or other related reasons | <p><i>Government (national & regional level)</i></p> <ul style="list-style-type: none"> Restrict availability of alcohol <p><i>Healthcare response</i></p> <ul style="list-style-type: none"> Follow-up individuals at risk <p><i>Public health response</i></p> <ul style="list-style-type: none"> Increase awareness of these effects and discourage consumption of alcohol Promote safe drinking Online tools for monitoring alcohol intake |
| Gatekeeper training | Interventions to increase presence of individuals qualified to identify suicidal individuals and refer them to appropriate services | <ul style="list-style-type: none"> Paused or completely stopped gatekeeper training results in a decrease of gatekeepers Reduced opportunity of gatekeepers to identify, observe and interact with suicidal persons | <p><i>Public health response</i></p> <ul style="list-style-type: none"> Continued training during the pandemic in line with local restrictions (i.e., keeping appropriate distance) or online Increase the number of volunteers to participate in the programs through public awareness |
| School-based interventions | Interventions to increase awareness of mental health and suicide | <ul style="list-style-type: none"> Closed schools or severely decreased presence at schools | <p><i>Government (national & regional level)</i></p> <ul style="list-style-type: none"> Plan to resume school-based interventions as soon as schools re-open <p><i>Teachers/parents</i></p> <ul style="list-style-type: none"> Discuss the virus, possible effects of containment measures, and feelings of children with the help of available resources <p><i>Public health response</i></p> <ul style="list-style-type: none"> Increase availability of (online) resources for youth |
| Responsible media reporting | Bi-directional relationship between media reporting and suicidal behaviour | <ul style="list-style-type: none"> Increased time spent on media to search for information about the pandemic | <p><i>Public health response</i></p> <ul style="list-style-type: none"> Existing WHO guidelines for responsible media reporting Additional and locally adapted guidelines to reduce sensationalizing of possible pandemic-related suicides |

Table 3. Evidence-based healthcare strategies for suicide prevention and recommendations of implementation during the COVID-19 pandemic.

| Strategy | Description | Effect during COVID-19 Pandemic | Actions during COVID-19 Pandemic |
|--------------------------------------|--|---|---|
| Access to healthcare | Appropriate and accessible treatment for mental disorders and substance use | <ul style="list-style-type: none"> Increased pressure on the healthcare system, adequate care of mental disorders may be de-prioritized Reduced care due to closed practices and increased sick-leave of mental healthcare professionals Acute stress, mental health problems and suicidal behaviour of frontline healthcare staff, first responders (police, firefighters, ambulance operators), and other healthcare workers, all having vital roles in the society. | <i>Public health response</i> <ul style="list-style-type: none"> Provide economical support to mental health services Ensure accessibility to mental healthcare services Develop telemedicine and digital services Provide tools for self-care online |
| | | | <i>Local healthcare system</i> <ul style="list-style-type: none"> Plan and adjust resources to maintain/improve treatment and follow-up of patients with mental disorders. Ensure availability of staff for mental healthcare Provide mental health support to frontline and healthcare workers Adopt and reinforce locally use of telemedicine |
| Treatment of mental disorders | Pharmacological and psychological treatment of depression, anxiety, and other mental disorders | <ul style="list-style-type: none"> Containment measures may affect treatment availability Practices may be closed or lack of staff due to sick leave Worsening symptoms of mental disorders among psychiatric patients Anxiety, depression and PTSD may increase due to the pandemic and its consequences Increased mental health disorders in the general population and first responders Suicidal behaviour may increase | <i>Local or national healthcare system</i> <ul style="list-style-type: none"> Develop guidance for remote assessment of mental disorders and suicide risk |
| | | | <i>Mental healthcare providers</i> <ul style="list-style-type: none"> Continue treatment and assessment in person or online and increase the assessment of at-risk individuals Offer online interventions to manage psychiatric symptoms Brief telephone and online therapies may constitute an effective tool of reducing suicidal outcomes compared to wait-list controls Develop guidance for mental health support in workplaces and whom to refer to the mental healthcare system As untreated individuals have a higher risk of suicide, ensure appropriate care for <ul style="list-style-type: none"> anxiety, depressive, PTSD symptoms alcohol and drug misuse suicidal behaviour psychotic and other psychiatric disorders |
| Chain of care & follow-up | Continuous and useful chain of care and follow-up through availability of mental health resources; | <ul style="list-style-type: none"> Increasing demands on healthcare systems, which may disrupt the chain of care and delay follow-up of psychiatric patients | <i>Healthcare professionals</i> <ul style="list-style-type: none"> Awareness of potential negative effects Educate about mental health resources & appropriate care Train staff for mental health responses Mental health support for survivors of COVID-19 |

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|--|--|--|---|
| | | | <ul style="list-style-type: none"> • Use alternative ways of contacting patients (phone contact, letters, or online) |
| | | | <p><i>Public health response</i></p> <ul style="list-style-type: none"> • Helplines for: <ul style="list-style-type: none"> • suicidal patients • individuals affected by the COVID-19 pandemic • Train volunteer workers in mental health |

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Appendix

Below, you will find an overview of age-standardised suicide rates per 100,000 standard population used by the WHO in their six regions. The WHO uses a global population standard for age-standardisation, based on the average age-structure of the world populations, compared over the period the standard is in use. This standard rate might be different than true population rate in individual countries. Therefore, the suicide rates presented in this appendix might differ when country specific standard populations are used.

Source: WHO Suicide in the world. Global Health Estimates, 2019.

Table A1. Suicide rates of the WHO African region.

| Country | Age-standardised suicide rate for both sexes (per 100.000) |
|----------------------------------|--|
| Lesotho | 28.9 |
| Côte d'Ivoire | 23.0 |
| Equatorial Guinea | 22.0 |
| Uganda | 20.0 |
| Cameroon | 19.5 |
| Zimbabwe | 19.1 |
| Nigeria | 17.3 |
| Eswatini | 16.7 |
| Togo | 16.6 |
| Sierra Leone | 16.1 |
| Benin | 15.7 |
| Chad | 15.5 |
| Cabo Verde | 15.1 |
| Burundi | 15.0 |
| Burkina Faso | 14.8 |
| Eritrea | 13.8 |
| Liberia | 13.4 |
| South Africa | 12.8 |
| Senegal | 11.8 |
| Central African Republic | 11.6 |
| Botswana | 11.5 |
| Namibia | 11.5 |
| Ethiopia | 11.4 |
| Zambia | 11.3 |
| Comoros | 11.1 |
| Rwanda | 11.0 |
| Guinea | 10.5 |
| Gambia | 10.0 |
| Democratic Republic of the Congo | 9.7 |
| Gabon | 9.6 |
| United Republic of Tanzania | 9.6 |
| Congo | 9.3 |
| Niger | 9.0 |
| Angola | 8.9 |
| Mali | 8.9 |
| Ghana | 8.7 |
| Mozambique | 8.4 |
| Seychelles | 8.3 |
| Malawi | 7.8 |
| Mauritania | 7.5 |

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| Guinea-Bissau | 7.4 |
| Mauritius | 7.3 |
| Madagascar | 6.9 |
| South Sudan | 6.1 |
| Kenya | 5.6 |
| Algeria | 3.3 |
| Sao Tome and Principe | 3.1 |

Table A2. Suicide rates of the WHO region of the Americas.

| Country | Age-standardised suicide rate for both sexes (per 100.000) |
|----------------------------------|--|
| Guyana | 30.2 |
| Suriname | 23.2 |
| Uruguay | 16.5 |
| United States of America | 13.7 |
| El Salvador | 13.5 |
| Bolivia | 12.9 |
| Trinidad and Tobago | 12.9 |
| Haiti | 12.1 |
| Nicaragua | 11.9 |
| Dominican Republic | 10.5 |
| Canada | 10.4 |
| Cuba | 10.1 |
| Chile | 9.7 |
| Paraguay | 9.3 |
| Argentina | 9.1 |
| Costa Rica | 7.5 |
| Saint Lucia | 7.3 |
| Ecuador | 7.2 |
| Columbia | 7.0 |
| Brazil | 6.1 |
| Belize | 5.9 |
| Mexico | 5.2 |
| Peru | 5.1 |
| Panama | 4.4 |
| Venezuela | 3.8 |
| Honduras | 3.4 |
| Guatemala | 2.9 |
| Saint Vincent and the Grenadines | 2.4 |
| Jamaica | 2.0 |
| Grenada | 1.7 |
| Bahamas | 1.6 |
| Barbados | 0.4 |

Table A3. Suicide rates of the WHO Eastern Mediterranean region.

| Country | Age-standardised suicide rate for both sexes (per 100.000) |
|----------------------------|--|
| Yemen | 9.8 |
| Sudan | 9.5 |
| Djibouti | 8.5 |
| Somalia | 8.3 |
| Afghanistan | 6.4 |
| Qatar | 5.8 |
| Bahrain | 5.7 |
| Libya | 5.5 |
| Egypt | 4.4 |
| Iraq | 4.1 |
| Iran (Islamic Republic of) | 4.0 |
| Jordan | 3.7 |
| Oman | 3.5 |
| Saudi Arabia | 3.4 |
| Lebanon | 3.2 |
| Tunisia | 3.2 |

| | |
|----------------------|-----|
| Morocco | 3.1 |
| Pakistan | 3.1 |
| United Arab Emirates | 2.7 |
| Syrian Arab Republic | 2.4 |
| Kuwait | 2.2 |

Table A4. Suicide rates of the WHO European region.

| Country | Age-standardised suicide rate for both sexes (per 100.000) |
|------------------------|--|
| Russian Federation | 26.5 |
| Lithuania | 25.7 |
| Kazakhstan | 22.8 |
| Belarus | 21.4 |
| Ukraine | 18.5 |
| Latvia | 17.2 |
| Belgium | 15.7 |
| Estonia | 14.4 |
| Finland | 13.8 |
| Hungary | 13.6 |
| Poland | 13.4 |
| Republic of Moldova | 13.4 |
| Iceland | 13.3 |
| Slovenia | 13.3 |
| France | 12.1 |
| Sweden | 11.7 |
| Croatia | 11.5 |
| Austria | 11.4 |
| Switzerland | 11.3 |
| Ireland | 10.9 |
| Serbia | 10.9 |
| Czechia | 10.5 |
| Luxembourg | 10.4 |
| Norway | 10.1 |
| Slovakia | 10.1 |
| Netherlands | 9.6 |
| Denmark | 9.2 |
| Germany | 9.1 |
| Kyrgyzstan | 9.1 |
| Portugal | 8.6 |
| Romania | 8.0 |
| Bulgaria | 7.9 |
| Montenegro | 7.9 |
| United Kingdom | 7.6 |
| Uzbekistan | 7.4 |
| Turkey | 7.2 |
| Turkmenistan | 7.2 |
| Georgia | 6.7 |
| Malta | 6.5 |
| Bosnia and Herzegovina | 6.4 |
| North Macedonia | 6.2 |
| Spain | 6.1 |
| Armenia | 5.7 |
| Albania | 5.6 |
| Italy | 5.5 |
| Israel | 5.2 |
| Cyprus | 4.5 |
| Greece | 3.8 |
| Tajikistan | 3.3 |
| Azerbaijan | 2.6 |

Table A5. Suicide rates of the WHO South East Asia region.

| Country | Age-standardised suicide rate for both sexes (per 100.000) |
|---------|--|
|---------|--|

| | |
|-------------|------|
| India | 16.5 |
| Sri Lanka | 14.2 |
| Thailand | 12.9 |
| Bhutan | 11.6 |
| Nepal | 9.6 |
| Myanmar | 8.1 |
| Timor-Leste | 6.4 |
| Bangladesh | 6.1 |
| Indonesia | 3.7 |
| Maldives | 2.7 |

Table A6. Suicide rates of the WHO Western Pacific region.

| Country | Age-standardised suicide rate for both sexes (per 100.000) |
|-----------------------------------|--|
| Republic of Korea | 20.2 |
| Kiribati | 15.2 |
| Japan | 14.3 |
| Mongolia | 13.3 |
| Australia | 11.7 |
| New Zealand | 11.6 |
| Micronesia (Federated States of) | 11.3 |
| Laos People's Democratic Republic | 9.3 |
| China | 8.0 |
| Singapore | 7.9 |
| Papua New Guinea | 7.0 |
| Vietnam | 7.0 |
| Malaysia | 6.2 |
| Cambodia | 5.9 |
| Solomon Islands | 5.9 |
| Fiji | 5.5 |
| Samoa | 5.4 |
| Vanuatu | 5.4 |
| Brunei Darussalam | 4.5 |
| Tonga | 4.0 |
| Philippines | 3.7 |