Perspectives

The suicide epidemic in Japan and strategies of depression screening for its prevention

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Introduction

Suicide is among the most tragic outcomes of all mental disorders. WHO estimates that, worldwide, there are approximately one million deaths from suicide each year, and 20 times this number of people attempt suicide. Although the Japanese population leads the world in longevity, it has a high rate of suicide that is globally ranked ninth. From 1995 to 2004, the incidence of reported suicides rose dramatically from 17.5 to 25.1 per 100 000. Some studies have reported that this increase is closely related to the economic depression that occurred in Japan over the same period. While a reduction in suicide rates may depend on an economic recovery, public health practitioners must try to help potentially suicidal individuals, regardless of outside influences such as the economy.

Depression plays an important role in the etiology of suicide. Over 60% of the individuals who commit suicide were identified as depressive. Reducing the number of suicide attempts requires, therefore, an initial identification of people with potential depression. When the University of Iowa's psychiatric department hosted clinics on the National Depression Screening Day in the USA in 1996, 65% of the 927 participants required further evaluation, of whom 83% subsequently received treatment for depression.[1] Efforts made in the USA indicate that tactics instituted to identify depression can work well to reduce suicide rates at the national level.

In 2000, the Japanese Government declared its goal to reduce the annual incidence of suicide by 30% until 2010. The National Committee published proposals for suicide prevention in 2002, emphasizing the importance of pre-intervention (assessment of factors affecting suicide), intervention (identification of high-risk persons to prevent suicide) and post-intervention (social support for bereaved family and friends). They also published two guidelines for managing depression: one for health-care professionals and one for public servants. The guidelines recommend a screening test for depression in the workplace and the community, using a method based on the full criteria of the *Statistical manual of mental disorders, 4th edition, text revision* (DSM-IV-TR), including eight or nine items for assessment. A simpler method is required to promote screening for depression nationwide. Fulfilment of the national goal within the next five years will require identification of target groups and extensive intervention for high-risk persons in these groups.

Identification of target groups

Depression is one of the most rapidly spreading mental disorders in Western countries and in Japan. According to the National Survey in Japan, the number of individuals diagnosed with depression increased from 83.1 to 340.0 per 100 000 during the period 1984–98. Although depression is generally more common in women than in men, the most dramatic increase has involved middle-aged men (40–60 years); this tendency also applies to the percentage of the population who commit suicide. In Japan, most middle-aged men function as the family breadwinner and may be too busy with work to visit a clinic, even when they feel mental distress. Because it is mandatory for all workers in Japan to undergo health check-ups every year at the expense of their employers, targeting middle-aged men in the workplace is a good strategy for identifying potentially depressive persons.

Simple screening methods to detect depression

The most commonly used standard for the diagnosis of major depressive disorder (MDD) is a structured interview by a specialist, such as a psychiatrist, according to the DSM-IV-TR criteria. Essential MDD symptoms are depressive mood and a loss of interest lasting at least two weeks; diagnosis also requires three additional concurrent symptoms (e.g. appetite loss, fatigue and insomnia). With the possible exceptions of psychiatrists and psychological specialists, diagnosing depression is not an easy task: interviews are somewhat complex and are time consuming. Although some reliable questionnaires exist and are used in clinical screening, such as the Profile of Mood States, the Self-rating Depression Scale and the Center for Epidemiologic Studies–Depression questionnaire, the length of such questionnaires (consisting of more than 10 questions) can be burdensome and they can be expensive (US$ 7.00 per person for a professional evaluation in Japan). It is important, therefore, to find screening methods that are less costly in terms of both time and money.

Previous studies have examined the possibility of reducing the number of questions in depression screening questionnaires. American researchers found that using two items ("depressed mood" and "no feeling of pleasure") from the Primary Care Evaluation of Mental Disorders questionnaire resulted in 96% sensitivity and 57% specificity for MDD detection.[2] European researchers found that two items ("depressive mood" and "not active") from the WHO-5 Wellbeing Index were sufficient to screen for depression.[3] Although these studies were limited, in that they examined only participants who visited clinics in the USA

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or Europe, they provide practical possibilities for depression screening in Japan.

Results from our recent studies indicate that including one or two screening questions in annual medical check-ups can be an effective way to screen for MDD in Japanese workers. Items selected for inclusion are not necessarily limited to psychological discomfort; any common somatic symptom can also be useful. For example, our study concerning annual health check-ups involved using DSM-IV-TR interviews with 991 male workers, 24 (2.4%) of whom were diagnosed with MDD.[4] Based on our previous studies and Western studies involving primary care patients, the following 12 common major somatic symptoms were simultaneously assessed: fatigue, headache, insomnia, back pain, abdominal pain, joint or limb pain, dizziness, chest pain, constipation, palpitation, nausea, and shortness of breath. Somatic symptoms were defined as positive when experienced one or more times a week. Surprisingly, no cases of MDD were identified among the 665 (67.1%) subjects who exhibited no somatic symptoms. MDD prevalence was positively associated ($P<0.001$) with the total number of somatic symptoms, and an area of 0.92 appeared under the receiver operator characteristic (ROC) curve, indicating the sensitivity and specificity of the total

number of somatic symptoms for detecting MDD.[4] More specifically, lower back pain and dizziness at baseline were independent risk factors of major depression in the year following the check-up.[5] Studies in clinical settings have also found that the number of somatic symptoms can predict the severity of major depression[6] and suicidal ideation.

This screening plan may be limited because of possible over-diagnosis. When one or two questions with high sensitivity are selected, they simply elicit core requirement symptoms for diagnosis. A definite diagnosis of depression requires more symptoms, which may result in situations of unsatisfied false-positives (individuals who were initially diagnosed as positive but were subsequently found to be without the disorder). This screening plan, however, is proposed as a first and convenient test to identify real depression. High sensitivity is much more important than low specificity, so as not to leave a depressive person undetected, and marginal tests could improve specificity during the successive screening process.

Depression screening as an approach to suicide prevention

Financially, employers cover the cost of

these annual health check-ups: the total annual cost borne by Japanese industry for the check-ups is estimated to be several billion dollars. The addition of one or two questions would not increase expenditure except for copying costs, and the answers could offer a very practical way for finding depressive persons among workers. Once a person is identified as suffering from depression, the treatment is covered by health insurance. While compulsory annual health check-ups may be specific to Japan, elements of the approach may be useful for settings in other countries.

A systematic reduction of the incidence of suicide in Japan will first require finding potentially depressive persons because most individuals who commit suicide are depressive. In Japan, government health-care policy recognizes mental health as a top-priority issue, and in 2005 the Ministry of Health, Labour and Welfare organized the Strategic Research Group on Managing Suicide Related to Depression. The strategy proposed here could promote understanding of the need to screen for depression in the working population, with less dependence on psychological specialists. ∎

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