

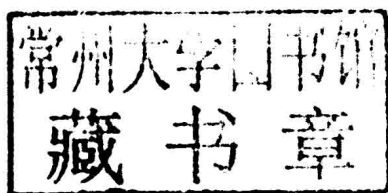


# Affective Disorders

Harvey Wilson

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Edited by **Harvey Wilson**



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Edited by Harvey Wilson

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# Affective Disorders



## Preface

This book provides comprehensive insights into affective disorders which are also known as mood disorders. The origin, progression and consequences of disorders are determined by the interplay of psychological, social and cultural factors along with biochemistry and physiology. This book discusses and presents recent reports on synchronization between brain and its cognitive processes and gives supporting evidence to the fact that biochemistry and physiology hold a strong link with our everyday events. It has been composed from the reports by experts on affective disorders and deals with diagnosis, neurobiology and early life stress associated with Mood Disorders. It talks about challenges and problems that affective disorder patients face and it also presents research and treatment methods to cure these disorders. The content is easy to understand and highly accessible to researchers, doctors and medical students.

The information shared in this book is based on empirical researches made by veterans in this field of study. The elaborative information provided in this book will help the readers further their scope of knowledge leading to advancements in this field.

Finally, I would like to thank my fellow researchers who gave constructive feedback and my family members who supported me at every step of my research.

**Editor**



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**Permissions**

**List of Contributors**

**Part 1**

**Clinical**



# Self-Reported Symptoms Related to Depression and Suicidal Risk

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## 1. Introduction

Depression is often accompanied by a wide variety of somatic symptoms even when there is no evidence of any organic disorder that can cause such symptoms. Though the underlying mechanism still remains unclear, there are two assumptions explaining the associations between somatic symptoms and depression. One is that depression itself causes several somatic symptoms. That is, people with depression may express their mental conflicts in various somatic symptoms. This hypothesis could apply especially to those who have a vague feeling of stigma or prejudice against mental disorders, and who are reluctant to frankly express their mental symptoms. From another point of view, this might mean that some chronic somatic symptoms are magnified due to the person's depressive state. Another possible hypothesis is that those who have had chronic somatic symptoms of unknown origin, in other words, functional somatic symptoms, are likely to be depressed since they cannot always receive effective medical treatment for such symptoms.

Likewise, people at risk of suicide sometimes express somatic symptoms instead of obvious psychiatric symptoms, such as depressive moods, loss of interest, anxiety, or irritation. Since depression is strongly associated with suicidal risk, it may often be that those who do not show any signs of a depressive state suddenly attempt suicide, especially when they harbor strong feelings against expressing emotional conflicts of the kind described above. Therefore, general physicians should pay close attention to such suicide-related somatic symptoms as possible signs of suicide, and if necessary, take appropriate action, including referring such patients to a psychiatrist.

Previous epidemiological studies suggest that Japanese are generally more likely than Westerners to share a strong prejudice against mental disorders or suicidal ideation and to suppress their emotions and mental symptoms accordingly (Griffiths et al., 2006; Kawakami et al., 2008). Police officers are considered to have this tendency more strongly than the general population (Royle, Keenan, & Farrell, 2009). In such populations, some particular self-reported somatic symptoms may serve as an alternative for detecting depressive disorders or suicidal signs. Furthermore, if such people have a prejudice against mental

disorders, rather than visit a psychiatric clinic, they are more likely to visit a psychosomatic clinic of the kind that has become popular in Japan.

Although many studies have evaluated the associations between somatic symptoms and depression or suicidal risk (Smolderen et al., 2009; Spiegel, Schoenfeld & Naliboff, 2007; Wang et al., 2007, 2009; Yoon et al., 2011), few have evaluated gender differences of such symptoms (Silverstein, 1999, 2002). Likewise, few investigations have evaluated the associations between a wide range of somatic symptoms and depression in both general and clinical populations (Haug, Mykletun & Dahl, 2004; Simon et al., 1999). In one of these reports (Simon et al., 1999), Japanese patients were reported to show the lowest number of depression-related psychological and somatic symptoms among those of 14 countries at the primary care setting. Thus, Japanese cultural characteristics may exert some influence on the relationship between somatic symptoms and depression.

We have conducted a series of epidemiological studies regarding this issue using separate samples of new outpatients visiting a psychosomatic clinic, community residents, and a working population (male police officers). The purpose of the present study is to evaluate the associations among various subjective somatic symptoms and depression as well as the suicidal risk among Japanese clinical, community and working populations. That involves establishing the key contributing elements that might aid in discovering depressive/suicidal signs in the pre-clinical or primary care stage by extracting key somatic symptoms associated with such risk in those populations. Furthermore, focusing on the outpatients who have a major depressive disorder, we evaluated the gender differences in psychiatric symptoms related to suicidal ideation.

## 2. Methods

Three separate samples were included in the present study; i.e., new outpatients of a psychosomatic clinic, community dwellers aged 40 or older, and male police officers in one prefectural police organization. In previously published studies of outpatients (Sugahara et al., 2004; Yoshimasu et al., 2006, 2009), we used several psychological tests, such as State-Trait Anxiety Inventory (STAI) (Spielberger, 1972) or Zung's self-rating depression scale (SDS) (Zung, Richards & Short, 1965), for evaluating their mental and physical status. Since outpatients had too many mental and somatic symptoms, those related to depression or suicidal ideation were narrowed down by an appropriate statistical method (i.e., stepwise selection).

Annual health check-up data were available for the latter two samples (community dwellers and male police officers). In those samples, the relation between each symptom (both mental and somatic) and depression or suicidal risk was assessed. Because depressive symptoms were regarded as confounding factors between somatic symptoms and suicidal risk, we adjusted for depression in multivariate analyses when suicidal risk/ideation was used as an outcome variable.

We also examined the gender differences of somatic symptoms related to suicidal ideation in outpatients visiting the psychosomatic clinic. Furthermore, focusing on the patients who have a major depressive disorder, the gender differences in psychiatric symptoms related to suicidal ideation were evaluated. Those studies were generally approved by the institutional review boards of each corresponding institution.

## **2.1 Outpatients visiting a psychosomatic clinic**

A total of 914 consecutive new patients had check-ups at the Department of Psychosomatic Medicine in a university hospital in the Kyushu area of Japan during the period from June 2000 to March 2001. The Department usually treats primary cases with psychosomatic disorders or mild psychiatric disorders. Patients with psychotic diseases such as schizophrenia or severe depression are not treated in the Department. Those with such disorders are rather treated in the Department of Neuropsychiatry, which is distinct from the Department of Psychosomatic Medicine. In the first stage, an admitting physician interviewed the outpatients. After the interview, the patients were assigned a separate physician (physician in charge). Both the admitting physician and the physician in charge diagnosed each patient independently based on the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV) (American Psychiatric Association, 1994; Japanese edition, 1996).

### **2.1.1 Diagnosis of depression**

Patients were diagnosed with depression if both the admitting physician and the physician in charge confirmed that their symptoms met the diagnostic criteria of major depressive disorder based on the DSM-IV. A total of 335 patients were diagnosed with depression according to those criteria. If both physicians did not diagnose the patients with a major depressive disorder, they were classified in a non-depression group ( $n = 423$ ). The remaining patients ( $n = 156$ ) were excluded from the analysis since a definitive diagnosis of a major depressive disorder could not be obtained.

### **2.1.2 Assessment of suicidal ideation**

The patients were requested to answer questions based on the Kyudai Medical Index (KMI), Kyushu University's original medical index (Matsuoka, 1990), which was developed as a modification of the Cornell Medical Index Health Questionnaire for rapid screening. Each patient was requested to choose between dichotomous answers (yes/no), and to reveal their true intentions with a guarantee of confidentiality. They were also requested to give intuitive responses since prolonged thinking might confuse them. The question regarding suicidal ideation was included in the KMI that asked: "Do you often think you want to die?" If the patients answered "yes," they were regarded as having suicidal ideation. McNemar's test did not reveal any significant differences between this question and the corresponding suicide-related question included in the SDS (data not shown). After patients with missing data of suicidal ideation were excluded, 820 (304 men and 516 women) remained in the analyses.

### **2.1.3 Assessment of somatic symptoms**

KMI includes questions for 45 subjective somatic symptoms (two concerning menstruation were added for women). The patients confirmed the presence of each symptom by yes/no answers to the corresponding questions. At the same time, they were asked to note the three symptoms that were causing them the most distress, and how long they had been suffering from these symptoms, since information regarding chief complaints is important in clinical setting. The three most distressing symptoms were checked with the original health

questionnaire, and were also later identified by the admitting physician at the first interview.

#### **2.1.4 Statistical analysis**

In our analyses of the associations between somatic symptoms and depression, those somatic symptoms identified as the three most distressing ones were used. Since some of the three most distressing symptoms were psychiatric, we also evaluated the associations between those symptoms and depression. Somatic symptoms included in the KMI were used in the analyses for associations between those somatic symptoms and suicidal ideation. In the multivariate logistic regression models, depression and suicidal ideation were used as outcome variables, while somatic symptoms were used as the explanatory variables. A stepwise method was applied to narrow down the somatic symptoms that were significantly associated with depression or suicidal ideation. The number of subjects included in the regression models varied according to each calculating algorithm due to the missing values of the relevant factors to be adjusted for. In addition, the gender differences in psychiatric symptoms related to suicidal ideation were assessed in patients with major depressive disorders by logistic regression analysis using the stepwise method. In this analysis, the candidates' psychiatric symptoms considered to be related to suicidal ideation were chosen from the KMI.

### **2.2 Community dwellers**

Town A (total population, approximately 8000) and Town B (total population, approximately 7000) are both located in the middle of Wakayama Prefecture, the Kinki area in Japan. To detect lifestyle-related diseases such as metabolic syndrome, those towns provided an annual health check-up program for self-employed community dwellers and their family members aged 40-74 years. In 2008, a total of 3656 people aged 40-74 years were eligible for the annual health check-up program, and 686 underwent a health check-up from May through August. Among those, 452 agreed to participate in the study.

#### **2.2.1 Assessment of depression and suicidal risk**

The Mini-International Neuropsychiatric Interview (M.I.N.I.), Japanese version 5.0.0 (2003) (Sheehan et al., 1998; Sheehan & Lecrubier, 2003), a conveniently structured tool designed to identify cases of mental disorder, was used for the present interview survey. The reliability and validity of the Japanese version of the M.I.N.I. were reported to be satisfactory (Otsubo et al., 2005). A total of nine interviewers, all of whom were licensed doctors or nurses, were enrolled as competent to conduct the interviews. The first author (KY), a psychiatrist, trained them in essential interview skills, including didactic sessions of a general interview, or reviews of the instrument sections. The first author also checked the interviewers and corrected them as the need arose during the sessions so that the interview could be appropriately conducted. Thus, the diagnosis of major depressive disorder was conducted according to the diagnostic criteria of DSM-IV.

The suicidal risk of each person was measured by six relevant items included in the M.I.N.I., five of which were concerned with suicidal thoughts or behaviors within the previous one-month, while one item dealt with lifetime experiences of suicidal attempts according to the

weighted value of each question; points 1, 2, 6, and 10 (comprising two questions) were allotted for each response to the former five questions, and point 4 was allotted to the last response regarding lifetime experiences of suicidal attempts. More concretely, they were: a wish to die (point 1), a desire to harm oneself (point 2), suicidal thoughts (point 6), having a suicide plan (point 10), suicide attempts (point 10) (all five of which were events occurring in the past month), and life-time suicide attempts (point 4). This scoring system is in accordance with the M.I.N.I. 5.0.0 (January 1, 2003). Thus, a total score of 33 showed the maximum points for suicidal risk. All questions included in the M.I.N.I. were coded as two categories according to the respondents' yes/no answers. Subjects who scored more than 0 were regarded as possibly having a suicidal risk.

### **2.2.2 Assessment of somatic symptoms**

An annual health examination for self-employed community dwellers in those towns was conducted during the period from May to July 2008. The health examination was comprised of several basic examinations and a doctor's check-up based on one's self-reported medical history and symptoms as confirmed by a self-administered questionnaire. The questionnaire included items regarding lifestyle factors, past and current illnesses as well as their current treatment status and self-reported symptoms. Because this health examination mainly focused on the secondary prevention of lifestyle-related diseases, a checklist included in the questionnaire for such symptoms contained a variety of 18 current physical symptoms, including those of the respiratory, cardiovascular, or digestive organs. Based on the information from this checklist, any associations between self-reported physical symptoms and depression as well as suicidal risk were assessed.

### **2.2.3 Statistical analysis**

Logistic regression analyses were conducted using depression and suicidal risk as outcome variables and somatic symptoms as explanatory variables. Age, sex, and two basic depressive symptoms that were used for the screening of major depressive disorders were controlled when suicidal risk was used as an outcome variable. Using logistic regression analysis, we also evaluated the associations between psychiatric symptoms of major depressive disorder as well as dysthymia and suicidal risk.

## **2.3 Male police officers**

A total of 2399 employees at 18 stations of one prefectural police organization in the Kinki area of Japan underwent annual health checkups from May to July 2008. The number of police officers amounted to approximately 1% of all Japanese police officers. However, the characteristics of each prefectural police organization in Japan are standardized and strictly controlled by the National Police Agency. Thus, our sample would be representative of the entire Japanese police organization. Of these, 2100 (87.5%) agreed to participate in the study. After excluding female police officers whose suicidal rate is negligibly few, and clerical workers that might impede the homogenous characteristic of the study sample, 1718 male police officers remained in the analyses. Further 33 officers with missing information regarding suicidal risk were excluded in the analyses for evaluating the associations between somatic symptoms and suicidal risk.



### **2.3.1 Assessments of depression and suicidal risk**

Assessments of depression and suicidal risk were conducted in the same manner as for community dwellers using M.I.N.I. as described above. Furthermore, assessments of post-traumatic stress disorders (PTSD) by M.I.N.I. were included for the police officers.

### **2.3.2 Assessment of somatic symptoms**

As with community dwellers, annual health check-up data confirmed by self-administered questionnaires were used for the assessment of somatic symptoms. Since the secondary prevention of the lifestyle-related diseases was the main purpose of the health examination in both community dwellers and the workplace, this checklist included in the questionnaire also contained a variety of 22 current physical symptoms, including those of the respiratory, cardiovascular, or digestive organs.

### **2.3.3 Statistical analysis**

As in the previous two samples described above, logistic regression analyses were performed using depression and suicidal risk as the outcome variables and somatic symptoms as the explanatory variables. Age, two basic depressive and three PTSD symptoms that were used for the screening of major depressive disorder and PTSD, respectively, were controlled when suicidal risk was used as an outcome variable. We also evaluated the associations between psychiatric symptoms of major depressive disorder, PTSD as well as dysthymia, and suicidal risk by logistic regression analyses.

## **3. Results**

Several somatic symptoms were shown to be significantly associated with suicidal ideation or suicidal risk in the three populations, even after adjusting for depression and/or PTSD. Among outpatients, women showed a wider variety of somatic symptoms related to depression than men. Some differences among the outpatients were observed regarding somatic symptoms associated with depression between men and women.

In community dwellers and male police officers, the somatic symptoms significantly associated with the suicidal risk were limited. On the other hand, a variety of symptoms were significantly associated with depression in those populations.

### **3.1 Somatic symptoms associated with suicidal ideation in outpatients visiting a psychosomatic clinic**

Table 1 shows somatic symptoms significantly associated with suicidal ideation among the outpatients separately for men and women. Women showed a somewhat wider variety of somatic symptoms compared to men. There were no common symptoms significantly associated with suicidal ideation in either men or women.

### **3.2 Somatic symptoms associated with suicidal risk in community dwellers and male police officers**

Those somatic symptoms associated with suicidal risk in community dwellers and male police officers were shown in Table 2.