

# Disease Management Reporter in Japan

May 2010 **No.17**

## The Fuji Model Project for Depression and Suicide Prevention among Middle-aged Men in Fuji City, Shizuoka

In Japan, the annual number of suicides has exceeded 30,000 over the past 11 consecutive years. A high percentage of those who commit suicide are middle-aged men, particularly men in their 50s and their suicides have had a significant impact on their families and workplaces. It is believed that depression is the cause of their suicide attempts in many cases and therefore the early detection and treatment of depression is an effective suicide prevention. However, study results show that many people who experience symptoms of depression do not visit medical institutions, and therefore do not have access to treatment.

Shizuoka Prefecture has been implementing the Fuji Model Project for depression and suicide prevention targeting middle-aged men, mainly in their 50s, since June 2006. The Fuji Model Project focuses on insomnia, of which more than 90% of depressives complain. The project includes the Sleep Campaign, which encourages awareness of depression, a Referral System where family doctors and occupational health physicians refer middle-aged men with possible depression to psychiatrists, Consultation Encouragement where pharmacists encourage middle-aged men who continuously purchase sleeping pills at pharmacies to consult doctors, as well as other components. The project provides an integrated system which provides a number of activities to raise awareness about depression and the early detection and treatment of depression.

The Sleep Campaign raises awareness about depression in middle-aged men by distributing a message through various media from a female high school student to remind the target audience of their daughters, and asks, "Dad, are you sleeping well?". In the Referral System family doctors and occupational health physicians are encouraged to advise middle-aged men who complain of insomnia to see psychiatrists if they experience more than two weeks of sleeplessness. Suggesting the specific number of two weeks helps people to assess their situation easily. Through the Fuji Model Project, the number of suicides in Fuji City decreased from 67 in 2005 to 55 in 2008 (the estimated figure for the old Fuji City after the consolidation of municipalities).

Modeled on the Fuji Model Project, the Cabinet Office launched the Sleep Campaign on a national level in March 2010. In this article, we will feature the outline of the Fuji Model Project based on interviews with Dr. Teruaki Matsumoto, the Director of the Shizuoka Prefecture Mental Health and Welfare Center which plays a central role in the Fuji Model Project, and public health nurse Ms. Hisako Sakamoto, the Chief of the Mental Health and Welfare Center.

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## Increase in the Number of Suicides and Countermeasures in Japan

In Japan, the annual number of suicides has exceeded 30,000 for 11 consecutive years since 1998<sup>1</sup>. Males account for 70.8% of the number of suicides in 2008 and females 29.2%. This means that male suicides outnumber female suicides by more than two-fold. The age group accounting for the highest percentage of suicides is 50-59 with 19.7%, followed by 60-69 with 17.8% and 40-49 with 15.4%. These figures show that the middle-aged and the elderly, particularly people in their 50s, account for a high percentage of suicides (see Table 1).

In light of this situation, the Ministry of Health, Labour and Welfare (MHLW) (then just the Ministry of Health and Welfare) included "relaxation and mental health promotion" in Healthy Japan 21 (National Health Promotion Movement for the 21st Century)<sup>2</sup> which it designed in 2000. The campaign focused on three issues, namely the mitigation of stress, the promotion of sleep, and the reduction of suicides, and set a target for each issue: reduce the number of people who felt stressed in the past one month by at least 10%; reduce the number of people who cannot get adequate rest through sleeping by at least 10%; and reduce the number of suicides to 22,000 or less.

In July 2005, the Committee on Health, Welfare and Labour of the House of Councillors unanimously passed the Resolution to Request the Urgent and Effective Promotion of Comprehensive Measures on Suicides. Responding to the resolution, the government announced that relevant ministries and agencies would make united efforts to comprehensively promote measures to prevent suicides and established the Basic Act on Suicide Prevention in June 2006, which was followed by the formulation of the Outline of Comprehensive Suicide Prevention Policy in June 2007. The Basic Act on Suicide Prevention aims at the prevention of suicides and focuses on fact-finding surveys on suicides, raising awareness, early detection, the development of medical care systems, etc. The results of the fact-finding surveys have been summarized in the White Paper on Suicide Prevention<sup>3</sup> every year since fiscal year 2007 and submitted to Parliament. The outline also stipulates that, in order to raise awareness about suicide, the week starting September 10 is set as Suicide Prevention Week every year in connection with the World Suicide Prevention Day on September 10. Activities to raise awareness are conducted during the week with broad public participation. The program is a cooperation between national and local governments. It also designates March, the month which has the largest number of suicides, as the Suicide Prevention Promotion Month. In March 2010, the Sleep Campaign was conducted at the national level, modeled after the Fuji Model Project.

## The Fuji Model Project for Measures to Prevent Depression and Suicide

### 1. Background

#### (1) The Reasons for Focusing on Middle-aged Men in Suicide Prevention

**Table 1 Percentage of Suicides in each Age Group in 2008**

Age group	19 or younger	20-29	30-39	40-49	50-59	60-69	70-79	80 or older	Unknown	Total
No. of suicides (people)	611	3,438	4,850	4,970	6,363	5,735	3,697	2,361	224	32,249
Percentage(%)	1.9	10.7	15.0	15.4	19.7	17.8	11.5	7.3	0.7	100.0

(Source) Community Safety Planning Division, Community Safety Bureau, National Police Agency, "Summary Document on Suicide in 2008", May 2009.

Similar to the national trend, the number of suicides in Shizuoka surged from 1998, and male suicides outnumber female suicides by about two-fold. When looking at each age group, those in their 50s have the largest number of suicides, followed by those in their 60s and then those in their 40s, thus there are many suicides among the middle-aged<sup>4</sup> (Figure 1). Suicide is the number two cause of death among those in their 40s and number four among those in their 50s, making it one of the most common causes of deaths in Japan. The top three causes of deaths in Japan are cancer, heart disease and cerebrovascular disease. In contrast with a variety of efforts being made to prevent these diseases, no particular effort has been made to prevent suicide among middle-aged men.

Middle-aged men play a central role in the home as well as the workplace. The suicide of a middle-aged man causes financial loss and has a significant psychological impact on his family, and represents a loss of experienced managerial personnel at his workplace. In light of these facts, Shizuoka Prefecture implemented the Fuji Model Project targeting middle-aged men for three years from fiscal year 2007. It is designated as a model project for the MHLW's program for promoting regional suicide prevention measures, with the prefectural Mental Health and Welfare Center serving as the coordinator.

#### (2) Reasons for Focusing on Insomnia

It is believed that early detection and treatment of depression is effective in suicide prevention because 46% of people who attempt suicide have mood disorders such as depression<sup>5</sup>, yet 75% of those who have experienced symptoms of depression did not consult a doctor<sup>6</sup>. In particular, the percentage of middle-aged men who go to see a doctor is low because they have the mentality that they are immune to depression and this prevents them from considering depression to be their problem even if they understand what depression is. It is also reported that only a small number of middle-aged men use psychiatric consultation services provided by the workplace and local communities. Therefore, Shizuoka Prefecture launched a suicide prevention project targeting middle-aged men, which avoided touching on their "mental barrier" towards depression. Depressives develop many other physical conditions, such as insomnia and anorexia, although the mental symptoms of depressives

<sup>1</sup> Community Safety Planning Division, Community Safety Bureau, National Police Agency, "Summary Document on Suicide in 2008", May 2009.

<sup>2</sup> Other items include nutrition and diet, physical activities and exercise, smoking, alcohol consumption, dental health, diabetes, cardiovascular diseases and cancers.

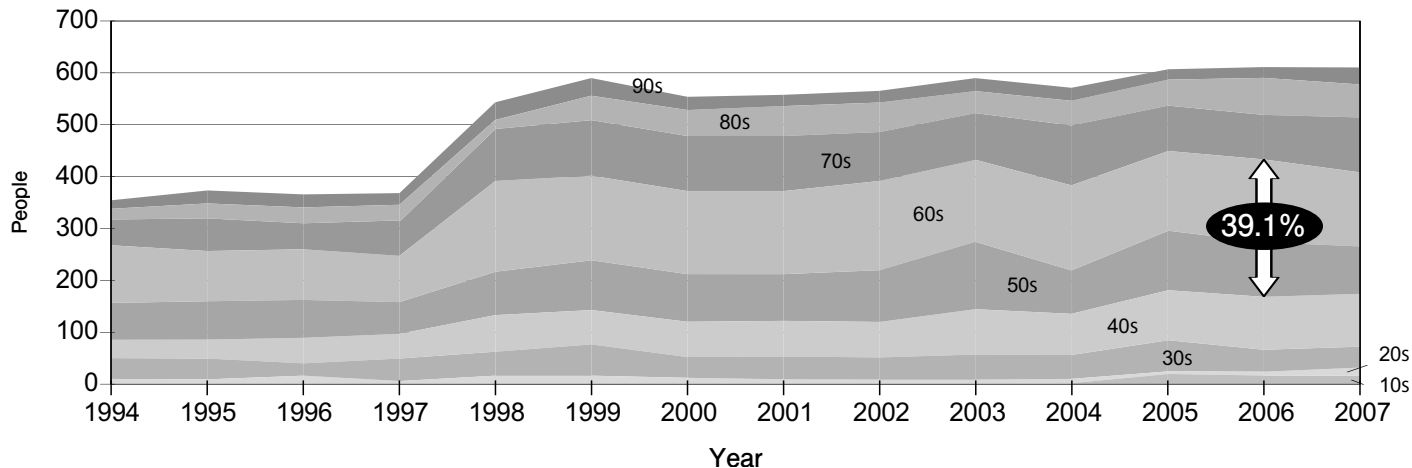
<sup>3</sup> Cabinet Office Director-general for Policies on Cohesive Society, "White Paper on Suicide Prevention", (visited on March 19, 2010), <<http://www8.cao.go.jp/jisatsutaisaku/whitepaper/index-w.html>>

<sup>4</sup> Shizuoka Prefecture Mental Health and Welfare Center, "Fuji Model Project for Measures to Prevent Depression and Suicide", (visited on March 4, 2010), <<http://www.pref.shizuoka.jp/kousei/ko-810/seishin/utsu.html>>

<sup>5</sup> Nozomu Asukai, "Mental Disorders as a Risk Factor for Suicides: Diagnostic Discussions on those who Have Attempted Suicide Using Life-threatening Means", *Psychiatria et Neurologia Japonica*, 96, 415-443, 1994.

<sup>6</sup> Norito Kawakami, Chief Researcher, "Study on the Status of Mental Health Problems and Infrastructures for their Countermeasures, as the General Research Report of the Study on the Status of Mental Health Problems and Infrastructures for their Countermeasures, FY 2002 MHLW Scientific Research Grant (MHLW Special Scientific Research Program)", 2002.

**Figure 1 The Number of Deaths Caused by Suicide in Shizuoka Prefecture (Males)**



(Source) Created by the Shizuoka Prefecture Mental Health and Welfare Center based on the MHLW's Vital Statistics.

have been focused in preventing depression in the past. Specifically it is reported that more than 90% of depressives complain of sleep disorders. Although having a sleep disorder does not necessarily also mean depression, continuous insomnia for a middle-aged man for more than two weeks is a likely sign of depression. The Fuji Model Project focused on insomnia because it is easy to recognize and more likely to lead to consulting a doctor. Also, the symptom is easy for family members to recognize.

**2. Details of the Fuji Model Project**

The Fuji Model Project includes the Sleep Campaign, which encourages awareness of depression, a Referral System, where family doctors and occupational health

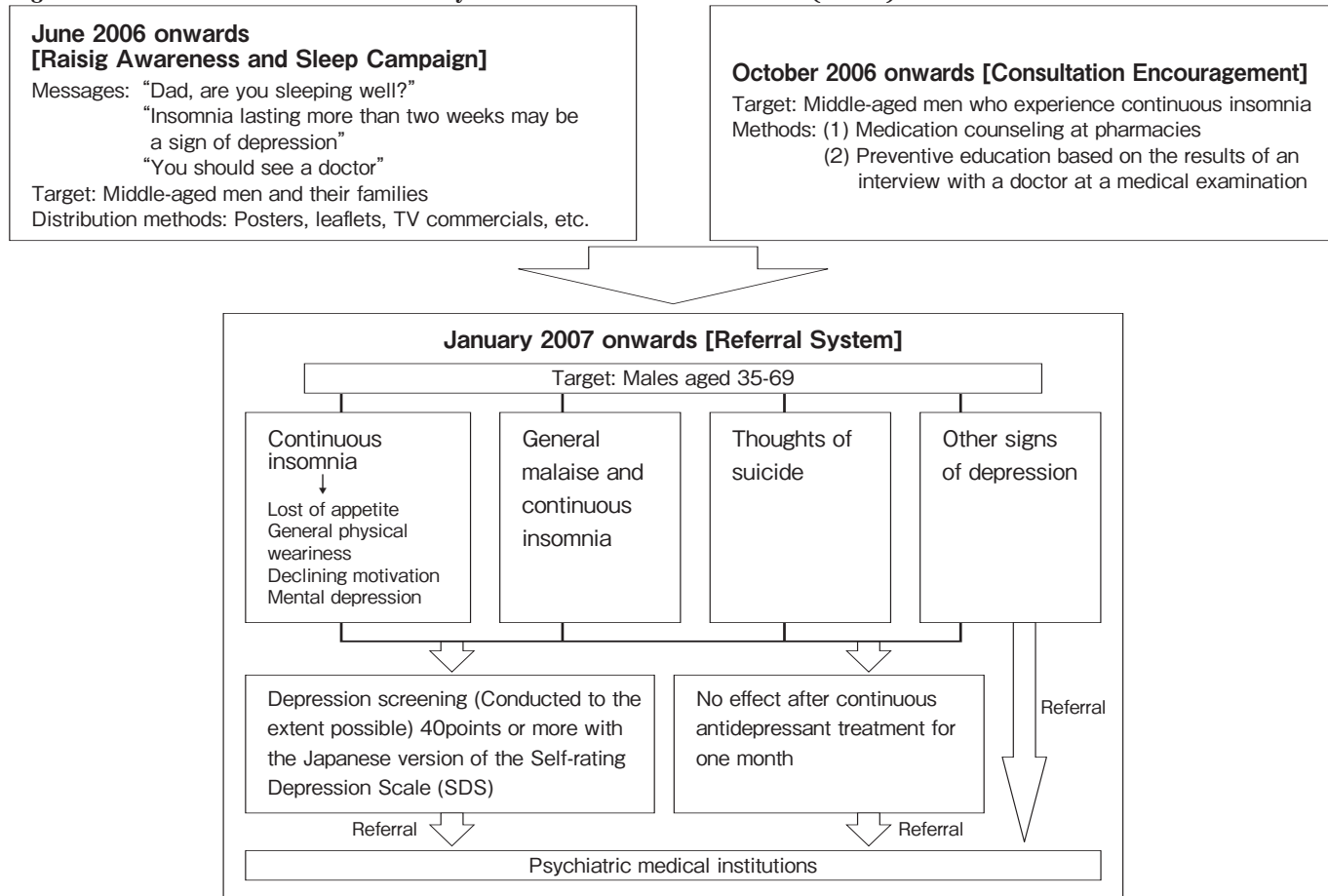
physicians refer people with possible depression to psychiatrists, Consultation Encouragement which, through cooperation with pharmacies and medical examination facilities, encourages people to consult doctors. Therefore, the project provides an Integrated System for the Early Detection and Treatment of Depression (Figure 2).

**(1) Details of the Project Activities**

**1) Sleep Campaign**

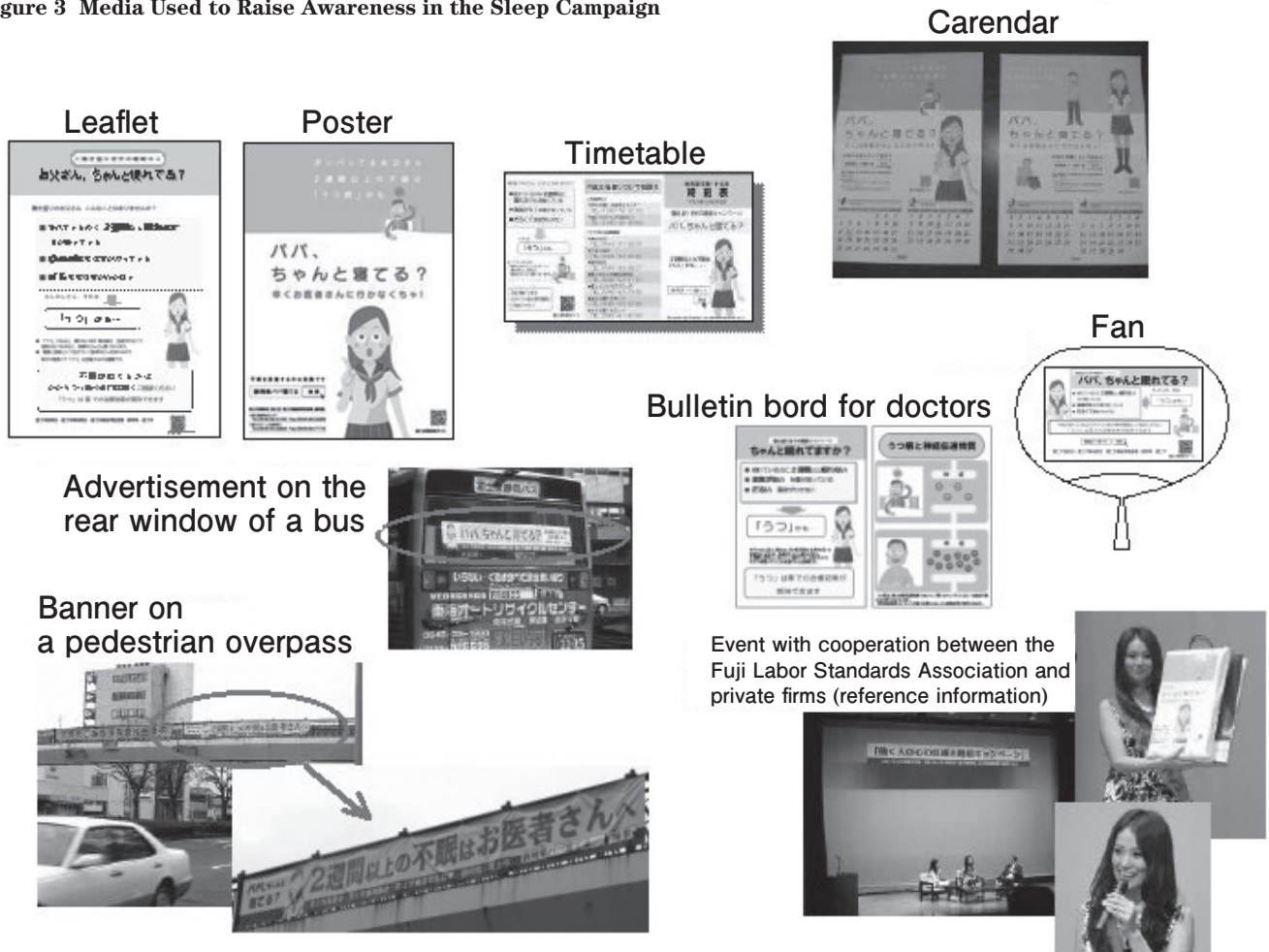
The Sleep Campaign, which started in June 2006, was designed to raise awareness about insomnia in middle-aged men. Messages from a high school age girl including, "Dad, are you sleeping well?," "Insomnia lasting more than two weeks may be a sign of depression", and "You should see a doctor" are being distributed through various media such as posters, leaflets,

**Figure 2 The Number of Deaths Caused by Suicide in Shizuoka Prefecture (Males)**



(Source) Created by the Shizuoka Prefecture Mental Health and Welfare Center based on the MHLW's Vital Statistics.

Figure 3 Media Used to Raise Awareness in the Sleep Campaign



(Source) Materials provided by the Shizuoka Prefecture Mental Health and Welfare Center.

timetables, stickers on buses, tissues, toilet paper, etc. (Figure 3). A TV commercial was also made and it is being broadcast repeatedly (Figure 4).

The Sleep Campaign is characterized by its use of a high school age girl talking to her father, and by its use of the specific number of “two weeks,” in order to create messages that stick in the minds of middle-aged men. People can tell that the messages are for middle-aged men because they can see a girl of high school age talking to her father. This family connection also makes it possible for family members such as wives and children to become interested in their fathers’ and husbands’ situation. The figure of “two weeks” was included in the message because Japanese people tend to become interested when specific numbers are shown, according to Dr. Matsumoto.

In addition to the efforts to make the messages effective, there are also attempts to make the messages frequently catch one’s eye. For example, putting the messages on timetables and medication history notebooks will increase the chance of being noticed since people carry these items for a long period of time, unlike flyers which are soon discarded. Calendars which carry the messages are also distributed to 500 companies in Fuji City with the cooperation of the Labor Standards Inspection Office since they are used all year round and consulted often.

2) Referral System from Family Doctors and Occupational Health Physicians to Psychiatrists

The Referral System in the Fuji Model Project is an early treatment system launched in January 2007, which encourages middle-aged men with possible

depression to seek treatment.

One study shows that only 10% of patients who have developed depressive symptoms get an initial medical consultation at a psychiatric or psychosomatic department<sup>7</sup>. In particular, middle-aged men seldom visit psychiatric departments because they feel uncomfortable about it. Instead they see their family doctors, or occupational health physicians at their workplaces, with the chief complaints of physical symptoms such as insomnia, physical weariness and anorexia. In the Referral System, middle-aged men who complain of insomnia are asked if the insomnia has lasted more than two weeks. If that is the case, the doctor recommends that the patient see a psychiatrist, using a special-purpose form Letter of Referral. This letter includes a list of questions the doctor can ask the patient that serve as a screen for depression. If the result is positive for suspected depression, the same form is then used as the letter of referral to a psychiatrist. When explaining about depression to a patient, the local primary care providers have found that a theoretical explanation using a diagram of the brain showing physical abnormality in the neurotransmitters helps in gaining the consent of the patient and makes the referral to a psychiatrist easier.

A doctor who refers a patient to a psychiatrist can earn 200 medical fee points (the equivalent of about twenty US dollars). However, Dr. Matsumoto points out that the system of earning medical fee points alone does not facilitate smooth referrals from family

<sup>7</sup> Osamu Miki, “The Clinical Feature of Depression with Psychosomatic Medicine in Primary Care”, Japanese Journal of Psychosomatic Medicine, 42(9), 585-591, 2002.

Figure 4 TV Commercial for the Sleep Campaign



Daughter: Dad, are you not sleeping well?  
 Father: I'm OK.  
 Daughter: You must be tired. You have been working so hard all these years.  
 You have been putting up with so much stress.  
 Narration: Insomnia lasting more than two weeks is a sign of depression.  
 Shizuoka Prefecture.  
 Daughter: Dad, let's go see a doctor!

(Source) Materials provided by the Shizuoka Prefecture Mental Health and Welfare Center.

doctors and occupational health physicians to psychiatrists. In order for the Referral System to work seamlessly in the Fuji Model Project, Referral System Working Committee meetings are held 2-3 times a year. Five psychiatrists and seven non-psychiatric doctors from the Fuji Medical Association are assigned as committee members. The aim of the committee is to establish a local network by developing cooperation between family doctors, occupational health physicians and psychiatrists in Fuji City. Dr. Matsumoto said that holding committee meetings has enabled them to build close relationships where doctors can freely see and talk to each other and that this process is important for creating a local network to host the Referral System.

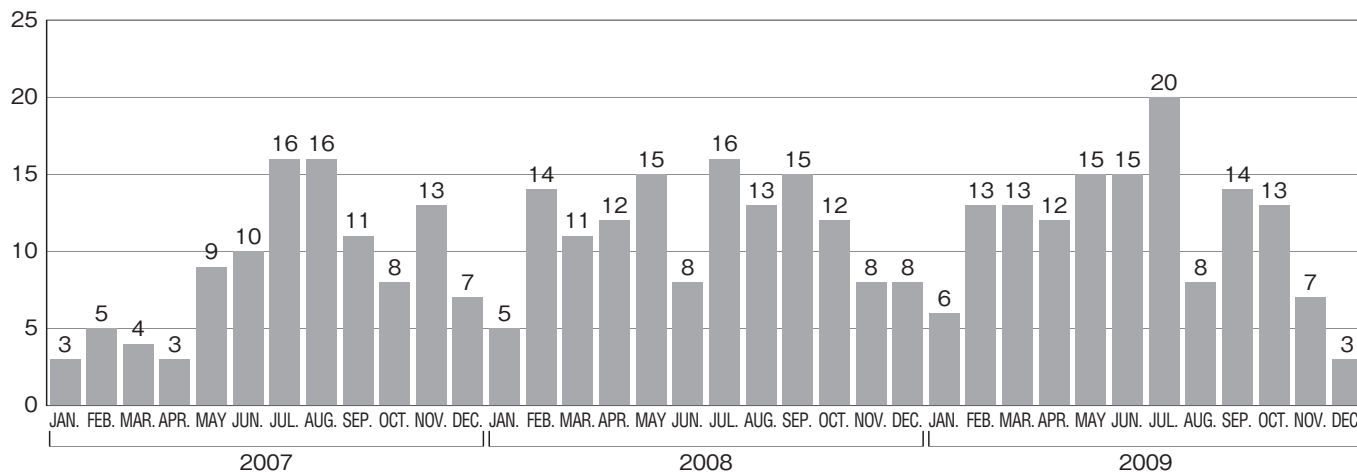
Ninety-one medical institutions, which make up of 74% of those in Fuji City, were participating in the Referral System as of the end of 2008. The number of referrals through the Referral System has reached a total of 381 in the three years since 2007 (Figure 5).

3) Consultation Encouragement for Those Who Have a High Risk of Depression

As explained above, the Referral System targets middle-aged men who visit their family doctors or occupational health physicians for a medical examination. However, many men do not visit hospitals even when they develop physical symptoms such as insomnia. Therefore, in order to encourage middle-aged men experiencing continuous insomnia to have early checkups, the Fuji Model Project has been providing them with medication counseling and encouraging them to see a doctor through local pharmacies since October 2006. The project has also built up cooperation with annual medical checkup facilities and provides preventive education when doctors ask their patients questions during such examinations.

In the pharmacy program, local pharmacists encourage middle-aged men who repeatedly purchase over the counter sleeping pills for insomnia, to see a doctor. Currently, almost all pharmacies in Fuji City (87 pharmacies) cooperate with the system. Dr. Matsumoto explained that the 87 pharmacies are serving as medical consultation desks through this system. He also added that the Consultation Encouragement has been implemented without putting a significant additional burden on pharmacists since they

Figure 5 The Number of Referrals by month through the Referral System



(Source) Materials provided by the Shizuoka Prefecture Mental Health and Welfare Center.

already provide medication counseling advice as a part of their daily routine.

Initial cooperation with annual medical checkup facilities involved physicians handing out the Sleep Campaign leaflets when they are questioning patients during the medical examinations. Physicians are also able to detect early signs of depression through their questions about dependence on alcohol before bedtime to overcome insomnia. The project is currently cooperating with four annual medical examination facilities and the Fuji Medical Association.

Therefore, the Fuji Model Project provides an Integrated System for the Early Detection and Treatment of Depression which includes the Sleep Campaign, the Consultation Encouragement at pharmacies and medical examination facilities and the Referral System where family doctors and occupational health physicians refer patients to psychiatrists as needed. According to Dr. Matsumoto, the population approach in the Sleep Campaign which targets a mass population, and the high-risk approach in the Referral System and the Consultation Encouragement which targets specific people, are both indispensable, and the combination of both approaches is enabling the seamless implementation of the project.

**(2) Organizational Structure for Implementation**

In the Fuji Model Project, the Shizuoka Prefecture Mental Health and Welfare Center serves as the Secretariat and implements the project by cooperating with other related organizations in Fuji City. Personnel responsible for the project at administrative agencies of the national government, Shizuoka Prefecture and Fuji City from the related organizations shown in Table 2 attend a liaison conference held every month. Prefectural and municipal officials responsible for health promotion are the main personnel working on the Sleep Campaign and those responsible for mental health are the main personnel in charge of the Referral System. Therefore, the project considers it important that both officials in charge of the Sleep Campaign and those in

charge of the Referral System should participate in the liaison conference and cooperate with each other so that the two activities will not become separate projects. As mentioned above, the Working Committee meetings on the system to increase referrals to psychiatrists are also held 2-3 times a year, with the cooperation of the Fuji Medical Association. In the industry sector, the project members visit related organizations such as the chamber of commerce and companies to ask for their cooperation in awareness-raising activities and participate in study meetings for interested people in order to introduce the project.

Although there is cooperation with various related organizations today, Dr. Matsumoto says that such a seamless relationship was not established in the initial stage of the project. He explained that, in order to establish a close working relationship, it is important to keep visiting related organizations and exchange views, take up the ideas that are proposed by the related organizations as possible ways for cooperation, and ask them to start helping in whatever ways they can. He also said that the process of trial and error is important where people make mistakes and then gradually figure out how to solve the problems together.

**(3) Achievements and Development of the Project**

When looking at the changes in the number of suicides in Fuji City, the number declined from 67 in 2005 to 55 in 2008. The Shizuoka Prefecture Mental Health and Welfare Center conducted questionnaire surveys targeting males and females in their 30s to 60s regarding the degree of awareness, etc. about the project which led to the decline in the suicide rate. 842 people answered the questionnaire in fiscal year 2007 and 801 in fiscal year 2008. The survey results showed that while only 11.6% of respondents replied that they knew about the Sleep Campaign in fiscal year 2007, the percentage increased to 46.3% in fiscal year 2008. A survey on the Referral System was also conducted for a total of 99 family doctors, occupational health physicians and psychiatrists in Fuji City. When it was suspected that patients had

**Table 2 Table of Organizations Involved in the Fuji Model Project**

Classification		Main related organizations	Roles
Government	National government	Fuji Labor Standards Inspection Office	Planning, raising awareness
	Shizuoka Prefecture	Fuji Public Health and Welfare Center (Health Promotion Section, Health and Welfare Section)	Planning, raising awareness, Consultation Encouragement
	Fuji City	Fuji City (Health Measures Division, Division of Welfare for the Disabled) Fuji City General Hospital	Planning, raising awareness, Referral System
Private sector	Medical services	Fuji Medical Association Fuji Pharmacist Association	Raising awareness, Consultation Encouragement
	Insurance	Shizuoka Branch of the Social Insurance Health Project Foundation	Raising awareness, Consultation Encouragement
	Welfare	Local Activity Support Center	Raising awareness, Consultation Encouragement
	Industry	Fuji Chamber of Commerce and Industry Takaoka Society of Commerce and Industry	Raising awareness

(Source) Shizuoka Prefecture Mental Health and Welfare Center, "Fuji Model Project for Measures to Prevent Depression and Suicide", (visited on March 4, 2010), <<http://www.pref.shizuoka.jp/kousei/ko-810/seishin/utsu.html>>

depression, eighty percent of the family doctors and occupational health physicians responded that they checked to see if patients had experienced insomnia lasting more than two weeks. The percentage of family doctors who considered the possibility of depression when they discovered that middle-aged male patients had experienced continuous insomnia and asked questions accordingly increased from 44.0% in fiscal year 2007 to 50.5% in fiscal year 2008. To the question concerning cooperation between family doctors/occupational health physicians and psychiatrists, 9.0% of family doctors and occupational health physicians and 33.3% of psychiatrists answered, "Cooperation between family doctors/occupational health physicians and psychiatrists improved" in fiscal year 2007. The percentages in fiscal year 2008 increased to 26.2% and 53.3%, respectively. The percentage of doctors who agreed with the statement, "Family doctors and occupational health physicians deepened their understanding about depression" increased, from 30.0% of family doctors and occupational health physicians and 33.3% of psychiatrists in fiscal year 2007 to 54.5% and 60.0%, respectively, in fiscal year 2008.

The Sleep Campaign has also spread outside Fuji City. Thirty-three out of 37 municipalities in Shizuoka Prefecture used the campaign media such as leaflets, posters, calendars and fans in fiscal year 2009, and the government conducted a campaign at the national level during March 2010, which is Suicide Prevention Promotion Month.

## Future Challenges

Traditional measures to prevent depression and suicide mainly focus on the high-risk approach which is secondary prevention. The Fuji Model Project intends to ensure the effectiveness of depression and suicide prevention by implementing both the population approach (primary prevention) in the Sleep Campaign and the high-risk approach (secondary prevention) in the Referral System and the Consultation Encouragement. Dr. Matsumoto told us about his ambition to establish safety nets for the unemployed, those with large debts, etc., to take into consideration the aspect of safety promotion<sup>8</sup> and promote suicide prevention measures as part of the development of safe communities.

## Suggestions for Depression and Suicide Prevention

Dr. Matsumoto suggested the points below concerning suicide prevention, based on the experience of the Fuji Model Project.

### 1. Points to Consider When Implementing the Project in Other Areas

The most important point when a project similar to the Fuji Model Project is implemented in another area is that the local characteristics of each region need to be taken into account and the project scheme adjusted accordingly. Dr. Matsumoto explained that, although they receive many inquiries about the Fuji Model Project from outside Shizuoka, the Sleep Campaign and the Referral System do not work effectively when introduced without making adjustments for local conditions. According to Dr. Matsumoto, municipalities which visit Fuji City to see the project directly and adjust the activities in accordance with

the situation in their areas are implementing similar projects successfully.

### 2. Need for Other Measures to Prevent Modern Depression

The Fuji Model Project targets middle-aged men in their late 30s to 50s and many suffer from endogenous depression<sup>9</sup> which is a common type of depression. On the other hand, patients with so-called modern depression<sup>10</sup>, which differs from common depression, are increasing among young people in their 20s to early 30s. Patients with common depression experience continuous symptoms of insomnia, etc., but patients with modern depression have less serious physical symptoms such as insomnia and anorexia and antidepressants are less effective for this type of depression. The chances are high that common depression will lead to sudden suicide, but modern depression leads instead to long-term absence from work. Dr. Matsumoto points out that modern depression also needs measures in industrial mental health, including support for returning to work, rather than the same measures provided by the Fuji Model Project, because the two types of depression are different.

<sup>8</sup> Safety promotion is an effort to prevent accidents, violence and the resulting injuries and deaths using scientifically assessable interventions, through cross-sectoral and cross-occupational collaboration, in order for community residents to live peacefully. Japanese Society of Safety Promotion, "What is Safety Promotion?", (visited on April 16, 2010), <<http://www.safetyprom.com/safetyprom.html>>

<sup>9</sup> It is understood that endogenous depression is derived from biological causes such as decreased levels of serotonin and noradrenaline in the brain. A person can develop endogenous depression through a change in the brain even if he/she does not experience psychological or social stress. Materials provided by the Shizuoka Prefecture Mental Health and Welfare Center.

<sup>10</sup> It is understood that modern depression is caused psychological or social symptoms derived from psychological and social stress causes. They are free of a physical abnormal finding. Materials provided by the Shizuoka Prefecture Mental Health and Welfare Center.

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