

## An Example of Contribution by Pharmacists to Local People as Health Care Advisors

by

Hiroshi Moriuchi\*<sup>1</sup>, Takako Ishiguro\*<sup>2</sup>, Satoshi Tsuruta\*<sup>2</sup>, Yoichi Ishitsuka\*<sup>3</sup>,  
Mitsuru Irikura\*<sup>4</sup>, Tetsumi Irie\*<sup>3</sup>.

### Abstract

**Background)** In Japan, there is a national health program called “healthy Japan in the 21st century”, which aims to keep Japanese people well mainly by reducing the number of patients with lifestyle-related diseases and their candidates (future possible patients). However, many people do not eat well-balanced foods, do not do enough exercise, or stop smoking, to prevent lifestyle-related diseases, mainly because they underestimate bad habits and possible life-threatening results caused by the habits. **Objective)** In this paper, we would like to show some examples of contribution by community pharmacists as health care advisors to local people based on the program. **Method)** The main methods are 1) making health records of local people either in an electronic, or in a paper way, 2) giving questionnaires in a pharmacy or by phone or E-mail, 3) giving some advice to customers (patients), 4) following up the patients’ up-to-date data. **Expected Results and Discussion)** After pharmacists teach customers/patients dangerous aspects of bad habits, they might amend their lifestyles, while the amending degree can vary from person to person.

**Key Words:** contribution to local people, lifestyle-related diseases, community pharmacist, healthy Japan in the 21st century

### Introduction

Japan is recognized internationally for its

outstanding achievements in both improving the population’s health status and developing a strong health system.

Healthy Japan in the 21st century is a Japanese national program which aims to keep Japanese people well mainly by reducing the number of patients with lifestyle-related diseases (LRD) and their candidates (future possible patients). To attain the objectives, 9 areas are focused on as areas to be improved (Table 1) in the first version of the healthy Japan in the 21st century. The objectives in

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\*1 Associate professor, Faculty of Pharmaceutical Sciences

\*2 Laboratory of Pharmacy Practice, Faculty of pharmaceutical sciences Sojo University

\*3 Department of Clinical Chemistry and Informatics, Faculty of Medical and Pharmaceutical Sciences, Kumamoto University

\*4 Department of Clinical Pharmacy, Daiichi University of Pharmacy

the program in each area (see Table 1) are proper, but the objectives seem to be hard for some people to attain, because people tend to underestimate the importance of taking well-balanced nutrition, exercise, brushing teeth, quitting tobacco and so on. Out of many health professionals, pharmacists are the most easily accessed by the public in the sense that people do not have to make an appointment to meet a pharmacist and they do not have to pay for advice by a pharmacist. Therefore, we would like to propose an idea of how community pharmacists can contribute to local people to prevent lifestyle-related diseases in terms of the national program.

Table 1 Focused areas and their objectives

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- (1) Nutrition/Eating
- Take well-balanced nutrition.
  - Eat breakfast.
- (2) Physical activity/Exercise
- Get in the habit of doing some exercise.
  - Attain a proper body mass index (BMI).
- (3) Rest/Good mental condition
- Reduce the number of people who are depressed and have anxiety.
- (4) Tobacco
- Reduce the amount of /quit smoking.
- (5) Alcohol
- If he/she wants to drink alcohol, drink a modest amount of alcohol.
- (6) Keeping good teeth
- Decrease in the number of the patients with periodontitis.
  - Brush one's teeth.
- (7) Diabetes mellitus
- Acquire information about diabetes mellitus.
  - Improve lifestyle.
  - Note the importance of an early detection.
  - Adhere to treatment.
- (8) Circulatory disorders
- Acquire the knowledge of circulatory disorders.

- Improve lifestyle
- Note the importance of an early detection.
- Adhere to treatment.

(9) Cancer

- Improve their lifestyle to prevent cancer.
  - Understand the importance of early detection.
  - Reduce the amount of /quit smoking.
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## Methods (Pharmacist's intervention)

We propose the following possible pharmacist's interventions for each area.

### 1. NUTRITION/EATING

- Teach patients/customers (P/C) the three important categories of nutrition, namely, carbohydrate, protein, and fat.
- Teach (show) P/C examples of foods of the three categories.
- Give P/C a leaflet that gives the information on the importance of eating well-balanced foods using the categories.
- Give P/C a questionnaire with some questions on eating practice (checklists, rating scales and self-assessment etc.).

### MEASUREMENT OF THE OUTCOME

- Several months after asking the questions, call them up and check the eating practice and give them some advice, when needed.
- Make health records of local people either in an electronic, or in a paper way. This type of recording is necessary for the other 8 areas, as well.

### 2. PHYSICAL ACTIVITY/EXERCISE

- Give P/C leaflet giving information on 1) suitable body weight, 2) importance of

exercise to keep their health.

- Give P/C questionnaire with some questions on BMI and how much they exercise.
- Place equipment with which P/C can measure their BMI in the pharmacy.
- Give P/C a notebook to record the change in BMI.

#### MEASUREMENT OF THE OUTCOME

- Ask P/C to come to the pharmacy periodically. Check the improvement of BMI (fat proportion) and whether they are keeping up with their exercise and how much exercise they do.
- If P/C did not continue exercise, ask them why they discontinued exercise and give them suitable advice on how to keep exercising.

### 3. REST/GOOD MENTAL CONDITION

- Listen to P/C's anxieties and complaints.
- Tell P/C how to alleviate their stress, how to be optimistic, how to live, what they should eat.
- Let P/C know the existence of some support (by governments, by volunteers) for people with anxiety such as telephone hotlines that try to prevent suicide.
- Increase the number of P/C who know that some drugs are effective for anxiety and depression.
- Show P/C some items which could help them to have a good sleep (drugs, pillow, aromatics, music CD)
- Advise P/C to see a psychiatrist, if needed.

#### MEASUREMENT OF THE OUTCOME

- Several months after P/C visit, call them up and check the improvement of the depression and anxiety periodically.

### 4. TOBACCO

- Give P/C who smoke a leaflet that gives

information on the toxicity of tobacco.

- Advise them how to quit tobacco and inform them of supportive things such as nicotine patches.
- Give P/C a questionnaire (checklists, rating scales and self-assessment) with some questions on smoking tobacco.

#### MEASUREMENT OF THE OUTCOME

- Several months after asking the questions, call them up and check the reduction in the number of cigarettes they smoke or discontinuation of smoking tobacco.
- Give them some advice, if needed.

### 5. ALCOHOL

- Give P/C who drink alcohol a leaflet that gives information on toxicity and benefits of alcohol.
- Give P/C questionnaire (checklists, rating scales and self-assessment) with some questions on drinking alcohol.

#### MEASUREMENT OF THE OUTCOME

- Several months after asking the questions, call them up and check how much alcohol he/she usually drinks.
- Give them some advice, if needed.

### 6. KEEPING GOOD TEETH

- Give customers a leaflet which gives information on the importance of keeping good teeth and preventing harm on periodontitis.
- Give customers a questionnaire (checklists, rating scales and self-assessment) with some questions about their teeth and their practice of brushing and flossing teeth.
- Advise those who seem to have periodontitis to see a dentist.

## MEASUREMENT OF THE OUTCOME

- Several months after asking the questions, call them up and check how many times and how long they brush their teeth, and ask them about their teeth and gingiva.

**7. DIABETES MELLITUS**

- Give a lecture in schools on the importance of controlling blood sugar.
- Give P/C a leaflet which gives information on the importance of controlling blood sugar and exercise.
- Give P/C a questionnaire (checklists, rating scales and self-assessment) with some questions on importance of controlling blood sugar and exercise, and early signs/symptoms of diabetes mellitus.
- Place equipment with which P/C can measure their blood sugar in the pharmacy.

## MEASUREMENT OF THE OUTCOME

- Several months after asking the questions, call them up and check how they are faithful to the advice given by the pharmacist.

**8. CIRCULATORY DISORDERS**

- Put an equipment to measure blood pressure, body fat ratio, and body weight in pharmacies. Then record the data in a notebook kept by the P/C.
- Give a lecture in schools on the harm of circulatory disorders.
- Give P/C a leaflet which gives information on circulatory disorders.
- Give P/C a questionnaire (checklists, rating scales and self-assessment tests) with some questions concerning circulatory disorders.

## MEASUREMENT OF THE OUTCOME

- Several months after asking the questions, call them up and check if they have followed the

advice given by the pharmacists.

**9. CANCER**

- Give P/C a leaflet which gives information on possible causes of cancers (e.g. hepatitis C, smoking, too much intake of alcohol, sexually transmitted diseases etc.).
- Give P/C a questionnaire (checklists, rating scales and self-assessment tests) with some questions, which includes early signs/symptoms of cancer.
- Recommend P/C to take a blood test (e.g. hepatitis C virus), if the P/C feels something wrong.

## MEASUREMENT OF THE OUTCOME

- Several months after asking the questions, call them up and check whether they changed their life-style to prevent cancer.

**Expected Results and Discussion**

Some P/C do not have good adherence to a treatment mostly because they do not have symptoms nor know the dangerous prognosis of the disease (diabetes, hypertension, COPD, etc.). So after pharmacists tell them a bad prognosis of the disease, P/C should amend their ways. After the care of pharmacists, their lifestyle could be improved (at least to some extent) and which can lead to prevention of LRD.

To give proper information, pharmacists should collect and be familiar with up-to-date information. The information should be evidence-based. The following discussion refers to some of them.

There is profound global interest in the Japanese diet as a possible partial explanation for the Japanese people's favorable health status and longevity<sup>1)</sup>. However, now that there are a lot of Western foods in Japan, there are many people who love these foods and eat less fish and vegetable. So teaching about well-balanced food intake to P/C is

important. Skipping breakfast can lead to lower brain performance <sup>2)</sup> and being overweight <sup>3)</sup>. So pharmacists should pay attention to this point too.

Exercise and weight management are important not only for the prevention of LRD but also for the increase in coronary vasodilation <sup>4)</sup> and preventing chronic kidney diseases <sup>5)</sup>. If pharmacists can give P/C proper advice, consumers would seek pharmacists' advice about weight management <sup>6)</sup>. Pharmacists should tell P/C both about risk of LRD and importance of exercise.

To improve a mental condition and prevent depression and anxiety, there are some important lifestyle activities, such as being optimistic <sup>7)</sup>, exercising <sup>8)</sup>, having a well-balanced nutrition intake <sup>9)</sup>. In addition, an exposure our body to light, especially morning light is important <sup>10)</sup>. Pharmacists should check whether P/C are under stress or not worn out by their environment. People who commit suicide tend to have diseases, mainly psychiatric ones, so pharmacists can prevent suicide by preventing their disease or facilitating their recovery <sup>11)</sup>.

Obviously, tobacco is a risk factor for coronary heart diseases (CHD) <sup>12)</sup> and brain stroke <sup>13)</sup>. The World Bank suggests that if adult tobacco consumption is decreased by 50 % by the year 2020, approximately 180 million tobacco-related deaths can be avoided <sup>14)</sup>. It was reported that a short and simple intervention that is delivered by pharmacists can increase the smoking cessation rate <sup>15)</sup>. We pharmacists should tell P/C that at any age, quitting confers considerable health benefits including reduced risk of coronary heart disease, stroke and smoking-attributable cancers <sup>16)</sup>. By asking, advising and assessing P/C, pharmacists can assist more smokers in quitting <sup>17)</sup>.

Interestingly, non-drinkers had higher risks of having a CHD admission than drinkers <sup>18)</sup>. In addition, there are some reports showing that people who drink a proper amount of alcohol, have a longer life expectancy than that of people who do not drink alcohol <sup>19), 20)</sup>. So if P/C drink alcohol,

pharmacists should recommend a proper amount of alcohol. Needless to say, excessive intake of alcohol can lead to liver cirrhosis or cancer.

Pharmacists should let P/C know that brushing teeth is not only to keep teeth clean but also to clean gingiva, because periodontal disease can lead to diabetes <sup>21)</sup>, acute coronary syndrome <sup>22)</sup>, pneumonia <sup>23)</sup>, osteoporosis <sup>24)</sup>, and even gastrointestinal cancer <sup>25)</sup>.

Giving some advice of doing some physical activity to P/C with diabetes is important but if a pharmacist can teach them structured exercise, it seems better than just giving physical activity advice <sup>26)</sup>. Reducing the intake of carbohydrates, such as the ketogenic diet, seems to improve glycemic control in type 2 diabetes <sup>27)</sup>. However, the long-term effects and side effects are yet to be established.

It was suggested that physical activity is associated with substantial reduction in the risk of total and ischemic stroke in a dose-response manner <sup>28)</sup>. Interestingly, vegetarians have a significantly lower ischemic heart disease mortality (29%) and overall cancer incidence (18%) than nonvegetarians <sup>29)</sup>. Therefore, it is important to eat vegetables, although it has not been determined whether refraining from eating meat is beneficial or not. However, it is obvious that if a vegetarian who does not eat meat at all, and does not eat beans as a resource of protein, that would lead to a detrimental lack of amino acids. So pharmacists should recommend such vegetarians not to forget to eat beans. As to gastric cancer, reducing salt consumption may provide protection against gastric cancer <sup>30)</sup>.

## Conclusion

Pharmacists are uniquely situated to initiate behavioral change of local people. It is obvious that pharmacists cannot collect or be familiar with the all information of all the people in the area. However, if local people were aware of how we

can contribution to their health, they would be pleased and tell that to other local people. The other people would come to be aware of the importance of pharmacists and rely on us.

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