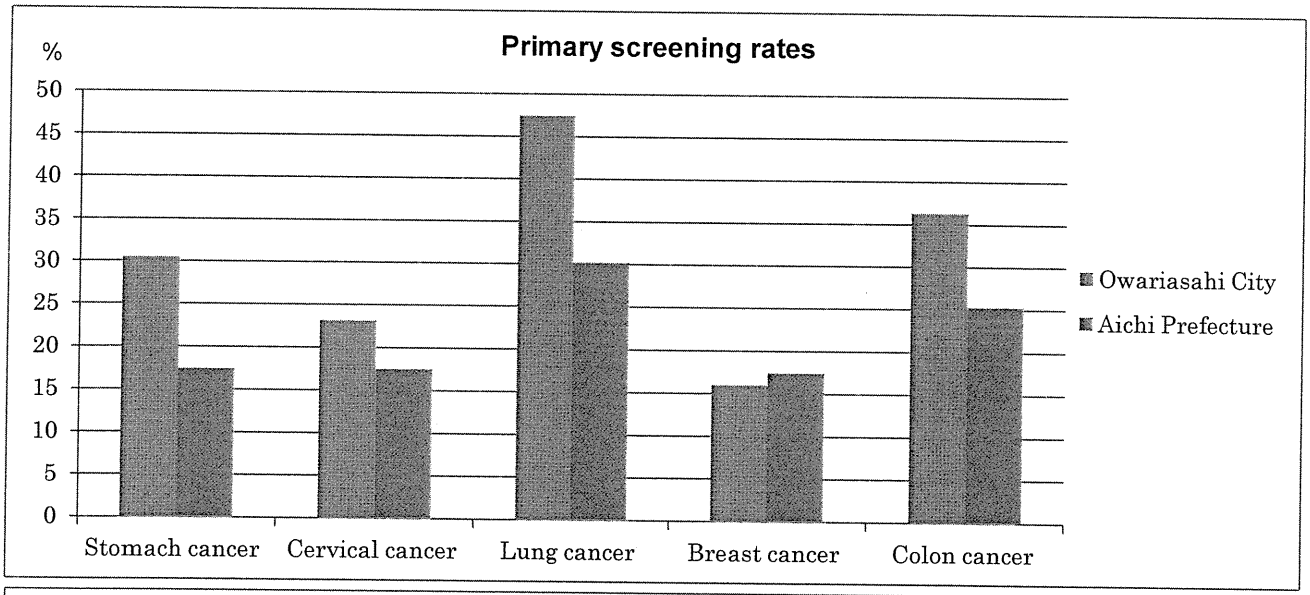
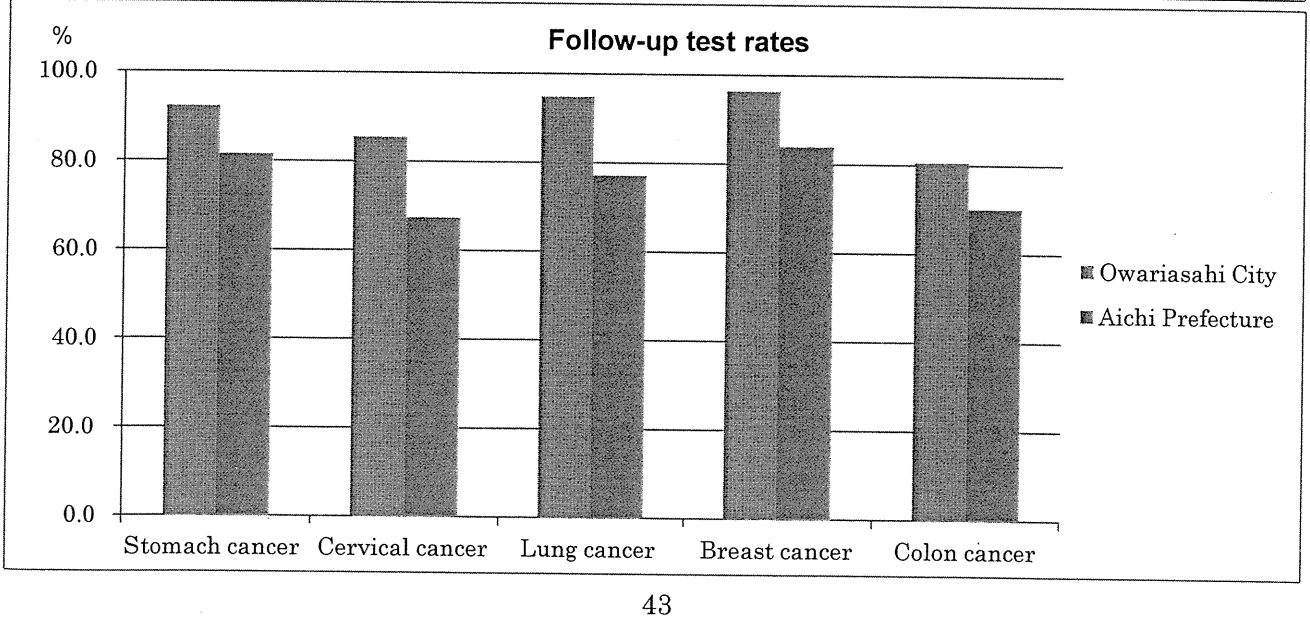
	Stomach cancer	Cervical cancer	Lung cancer	Breast cancer	Colon cancer	Total
Difference in medical fees between treatment in the early stage and final stage (A) (approximate amount)	2,100,000 yen	330,000 yen	1,600,000 yen	3,200,000 yen	5,300,000 yen	—
Number of people who were diagnosed with cancer from the screening (B)	15 persons	3 persons	7 persons	7 persons	32 persons	64 persons
Difference in medical fees (A) x Number of people diagnosed with cancer (B)	31,500,000 yen	990,000 yen	11,200,000 yen	22,400,000 yen	169,600,000 yen	235,690,000 yen

(6) Evaluation

We made a comparison of cancer screening rates and follow-up test rates for Owariasahi City and Aichi Prefecture in fiscal 2010. Owariasahi had higher rates than Aichi Prefecture for all items except for primary screening of breast cancer.

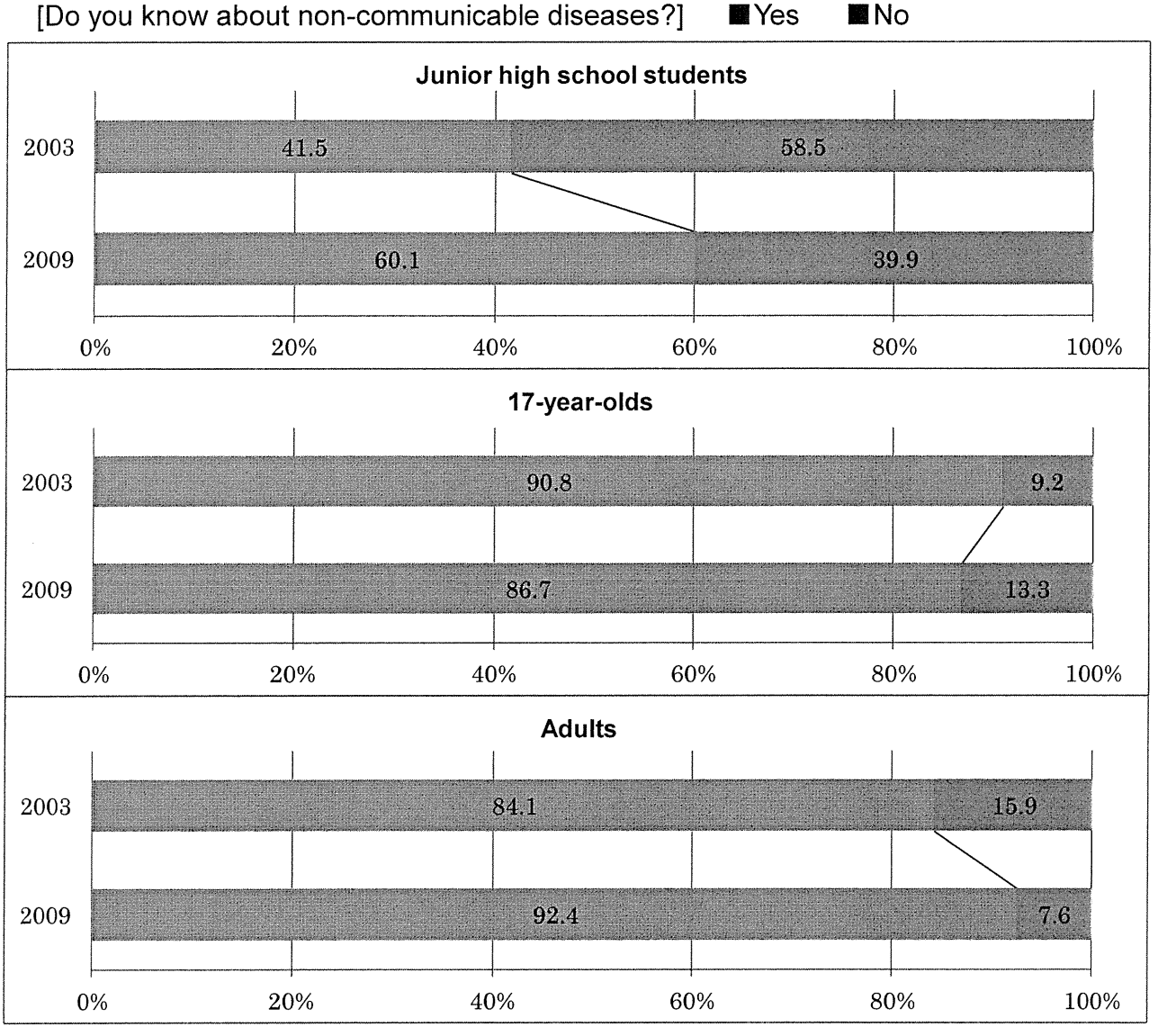




IV. Effects

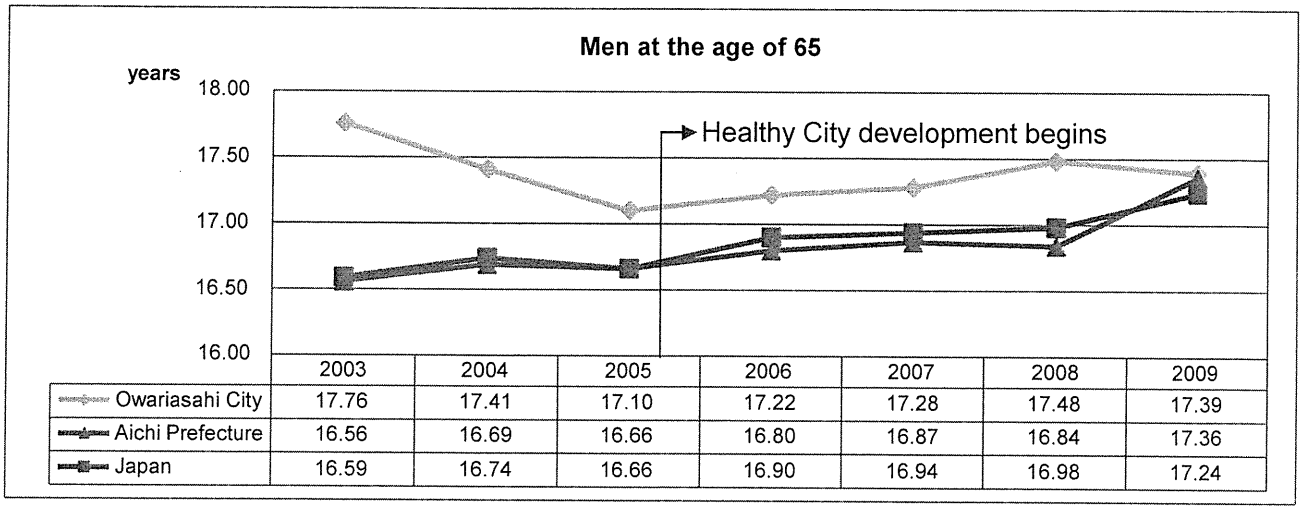
(1) Questionnaire survey

In 2009, we conducted an evaluation of target values of the Healthy Asahi 21 Plan set in March 2005 as well as a questionnaire survey for citizens. The results of this questionnaire were compared with those of a questionnaire conducted in 2003 in the planning stage of the Healthy Asahi 21 Plan. The rate of people who knew about non-communicable diseases rose for junior high school students and adults, though it fell slightly for 17-year-olds.

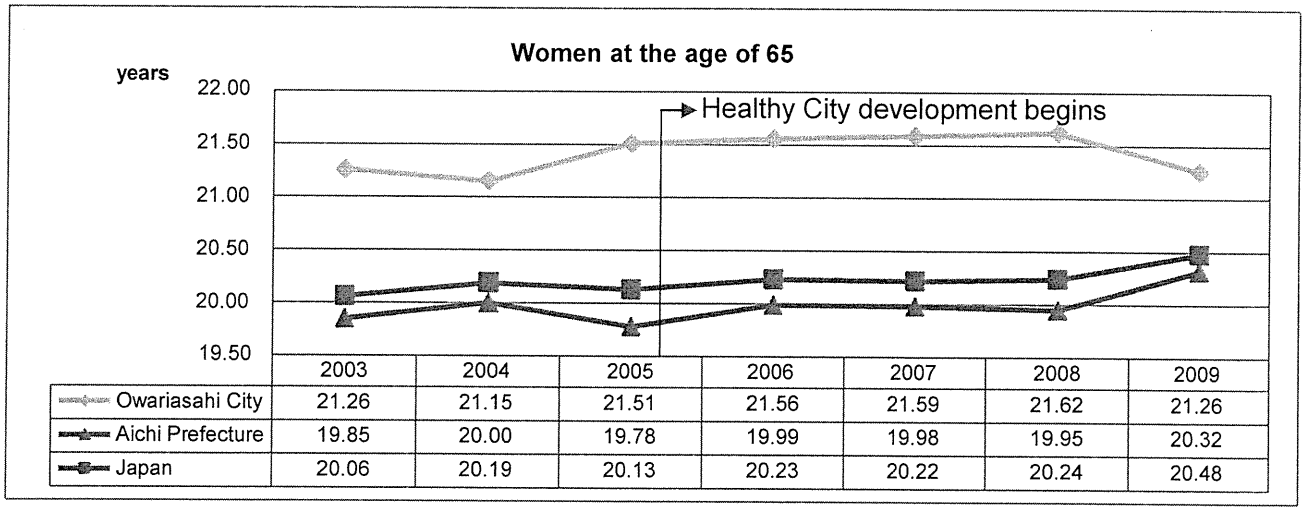


(2) Expected period of independence

We also studied the transition of the expected period of independence at the age of 65. Though figures fell slightly for 2009, the period is consistently longer than those for Japan and Aichi Prefecture.



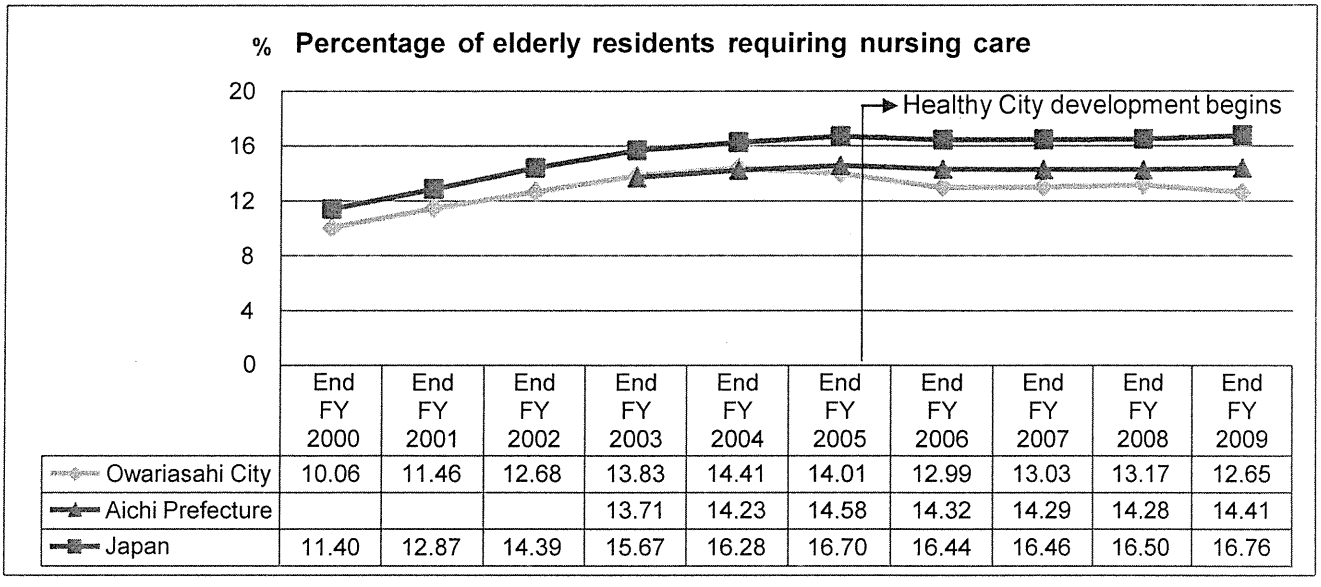
	2003	2004	2005	2006	2007	2008	2009
Owariasahi City	17.76	17.41	17.10	17.22	17.28	17.48	17.39
Aichi Prefecture	16.56	16.69	16.66	16.80	16.87	16.84	17.36
Japan	16.59	16.74	16.66	16.90	16.94	16.98	17.24



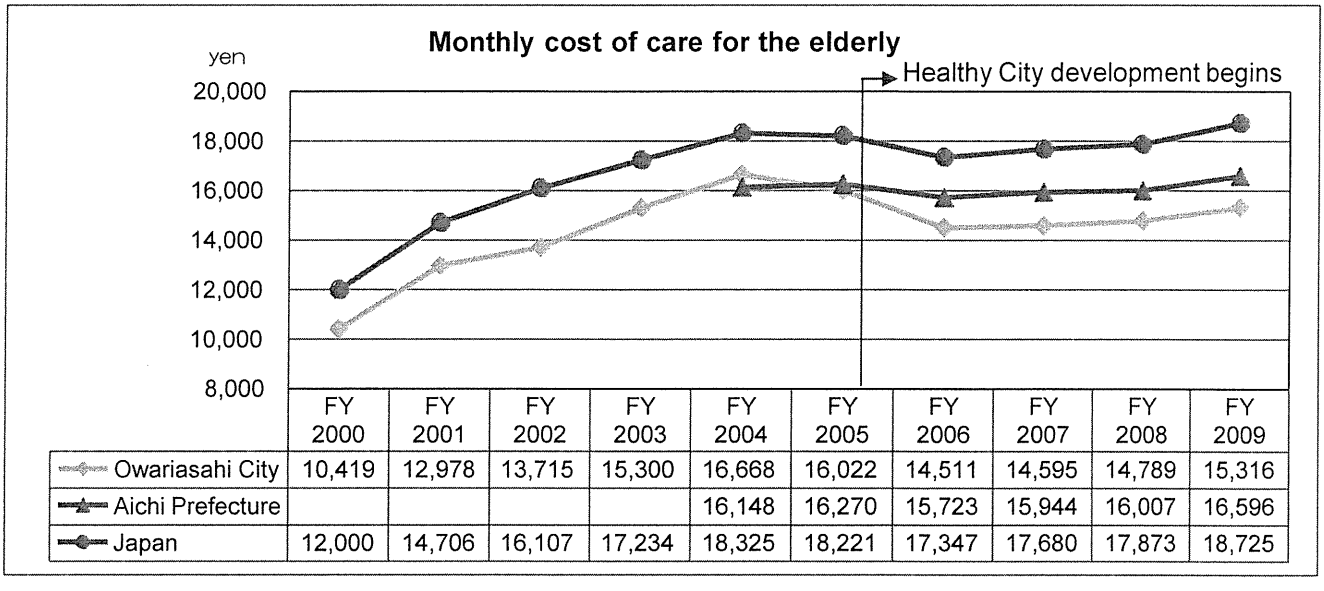
	2003	2004	2005	2006	2007	2008	2009
Owariasahi City	21.26	21.15	21.51	21.56	21.59	21.62	21.26
Aichi Prefecture	19.85	20.00	19.78	19.99	19.98	19.95	20.32
Japan	20.06	20.19	20.13	20.23	20.22	20.24	20.48

(3) Percentage of elderly residents requiring nursing care and Monthly cost of care for the elderly

Figures for the percentage of elderly residents requiring nursing care and monthly cost of care for the elderly are consistently lower than those for Japan and Aichi Prefecture. We are confident that these are the fruits of our efforts to prevent non-communicable diseases.



	End FY 2000	End FY 2001	End FY 2002	End FY 2003	End FY 2004	End FY 2005	End FY 2006	End FY 2007	End FY 2008	End FY 2009
Owariasahi City	10.06	11.46	12.68	13.83	14.41	14.01	12.99	13.03	13.17	12.65
Aichi Prefecture				13.71	14.23	14.58	14.32	14.29	14.28	14.41
Japan	11.40	12.87	14.39	15.67	16.28	16.70	16.44	16.46	16.50	16.76



	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Owariasahi City	10,419	12,978	13,715	15,300	16,668	16,022	14,511	14,595	14,789	15,316
Aichi Prefecture					16,148	16,270	15,723	15,944	16,007	16,596
Japan	12,000	14,706	16,107	17,234	18,325	18,221	17,347	17,680	17,873	18,725

V. Visits

We welcome visits and requests on Healthy City from other cities. . We have presented our efforts for making Owariasahi a Healthy City at mayors' summits and meetings, short courses and parallel sessions at the Global Conference of the Alliance for Healthy Cities, and have received many requests from other countries and cities in Japan. We have welcomed about 130 visitors from 13 countries and seven organizations abroad as well as about 280 visitors from 36 cities and towns (in 18 prefectures) in Japan since 2005.

VI. Conclusion

Japan is coping with a growing number of patients with non-communicable diseases and people who require nursing. As such, we have placed emphasis on policies for primary prevention. We have held health courses to instruct easy exercises that can be conducted by anyone, anywhere, and anytime and promoted the Genkimaru Health Assessment as an opportunity for people to take up exercising and review their lifestyles and habits. We have also paid careful attention for quality control of secondary prevention of cancer by encouraging early detection and treatment in the early stages. Our efforts to grasp the health conditions of each of our citizens have matured in the form of more citizens who have knowledge of non-communicable diseases and decide to improve their lifestyles and habits.

The outcome on how far our target values had been achieved in our review conducted in 2009 to 2010 has been publicized to our citizens to keep up their motivation for improving their lifestyles and habits. The metabolic syndrome, food education, and other new issues have been acknowledged and incorporated in the plan. We shall continue our endeavors to implement policies to prevent non-communicable diseases along the Healthy Asahi 21 Plan in collaboration with other programs.

Health Promotion with Partnerships, Singapore Health Promotion Board

Introduction

Good public health is one of the fundamental goals of many countries and in Singapore, this goal is pursued tenaciously by strong emphasis on both the provision of medical care and the promotion of healthy lifestyle practices to prevent illnesses and diseases. Health promotion services and activities started some 50 years ago, with Singapore's independence and this effort continues today under the mandate of the Singapore Health Promotion Board (HPB).

HPB was established in 2001 with the amalgamation of several departments under the Singapore Ministry of Health, which strengthened the coordination and synergy between these departments to develop and implement policies and programmes on health promotion and disease prevention. With its vision of building a nation of health and happy people, HPB drives national health promotion and disease prevention programmes to increase the quality and years of healthy life and prevent illness, disability and premature death, and to help residents in Singapore attain optimal health. These include physical activity, nutrition, smoking control, mental wellness and communicable disease education programmes, cancer and health screening programmes for adults, health screening, immunisation and dental services for school children.

Growth of partnerships

The concept of partnerships is not new to HPB. During its early formative years, HPB have worked with relevant public agencies, hospitals and schools in the planning and execution of its various policies and programmes. The rationale for partnership was easy to appreciate. These partners have mandates, expertise and access which are useful and helpful to HPB, and the collaborations would open up support and channels to make HPB's efforts more effective and successful. The same principle underpins the co-operation with non-government organisations as these latter groups bring different sets of resources and outreach channels to HPB's efforts.

Early 2006 brought a new milestone to HPB's engagement in partnerships. In its effort to streamline and more efficiently leverage on partnerships, HPB established a dedicated partnership department with the responsibilities of developing the strategies, policies and processes on partnerships, and growing relevant corporate partnerships.

Successes and advantages of partnerships

HPB has made great strides in partnerships over the last few years, particularly in the field of corporate partnerships. The number of initiatives and activities that are supported by corporate partnerships have increased by six-fold, and the number of corporate partners and the level of corporate sponsorship have both grown by four-fold from 2006 to 2009. More importantly, these partnerships have increased the effectiveness of HPB's effort to reach out to a wider audience and build better appeal and outcomes of its programmes.

Many of HPB's most successful campaigns are organised in collaboration with multiple partners. These include the Fitness@Work initiative which offers weekly public aerobics sessions at three locations every week and which draws a participation of about 200 aerobics enthusiasts for each session. In addition, HPB organises an annual National Healthy Lifestyle Campaign, with partnerships and sponsorships from various corporate partners, which attracts a participation level of over 10,000 people. For these and many other activities, the corporate partners bring their different contributions in the form of providing services and activities to enhance the appeal of the events, communications and marketing support to inform their networks of the activities, and sponsorship to lower the costs of organising the events. Two partnership projects are elaborated in the next sections as examples of possible partnerships that can be undertaken.

Case: Nutrition Programme & Wholegrain Campaign

Introduction

The goal of HPB's Nutrition Programme is to promote the public knowledge and adoption of a healthy diet. The strategy of the programme rests on a three-pronged approach, namely the establishment of national nutritional standards and guidelines, the collaboration with the food industry to manufacture and supply healthier food and dining options, and public education to change perceptions and increase demand for healthier food and diet. Two key implementations to support the effort are the Healthier Choice Symbol (HCS) Programme and Whole-grains Campaign.

The HCS Programme aims to make food information accessible to consumers, increase the availability of healthier products and provide a framework for government co-operation with the food industry to improve nutrition labelling. Started in 1998, the range of HCS-certified products has grown to include 70 food categories with a total of more than 2400 food products today. The number of HCS-certified products has grown on an average of 10% per year. For common grocery items, HCS products account for 47% of total purchases made in supermarkets.

Notwithstanding the successes of the HCS Programme and the increases in the awareness, availability and consumption of HCS-certified products, HPB continues to monitor the public dietary patterns. Acting upon the findings of the National Nutrition Survey which revealed the low consumption of whole-grains food among the Singapore population, HPB then initiated the Whole-grains Campaign to communicate the importance of incorporating wholegrain into the daily diet of the public.

Whole-grains Campaign

The Whole-grains Campaign itself is a holistic multi-pronged effort. One focus is on the public communication and education on whole-grains. In this effort, HPB embarked on an educational campaign to build public knowledge on wholegrain, its importance and link to health, the recommended servings, where whole-grains could be found and ways to creatively prepare and include into the daily diet. One key component of this effort was the introduction of a new "Higher in Whole-grains" HCS (Healthier Choice Symbol) logo as an easy identifying aid to the public's food purchasing decision.

Concurrently, effort was also invested on the second focus of rallying the food manufacturers and suppliers to increase the range of whole-grains products in the market. The food industry was provided with new guidelines on whole-grains food labelling, and HPB worked closely with the manufacturers to support the review and reformulation of their products to increase the whole-grains content.

Challenges

For the food manufacturers and suppliers, there is a constant conflict between demand and supply in creating and providing more whole-grains products. Although the take-up for whole-grains has increased in recent years, the common polished and refined products are still higher in demand, and the manufacturers and suppliers therefore find it a challenge to move towards whole-grains. In addition, the reformulation of food products to achieve higher content of whole-grains incurs additional cost which therefore raises a bottom-line concern for the manufacturers.

Furthermore, as with the general effort to encourage consumption of healthier food, there is an inherent disbelief that healthier food can be tasty. This therefore creates a deterrent to change public taste to the healthier whole-grains.

Partnerships

HPB worked closely with the major supermarket chains to feature in-store promotions on whole-grains products during the campaign period. In addition, cooking demonstrations incorporating whole-grains food products were held during the week-ends at selected branches of these supermarket chains. HPB provided the marketing collaterals, resources and promoters to conduct the cooking demonstrations and the supermarkets provided the locations and the supply of the whole-grains products. It was a partnership of mutual benefits. HPB successfully drove home the messages and demand for whole-grains and the supermarkets saw their sales for whole-grains increased drastically during the campaign period.

HPB also made breakthroughs in getting hawkers to incorporate whole-grains into their recipes. One success story is the brown rice chicken rice. For the famous Singapore chicken white rice dish to be changed into brown rice was un-thought of. However, one chicken rice stall owner took the plunge and because of his unique offering, the press took an interest to his story and he made the news as part of HPB's whole-grains public relations campaign.

Learning Points
In order to implement a new guideline or policy on nutrition successfully, it is crucial to have the support and buy-in of the various stakeholders such as the consumers and the suppliers. The selection of the right partners and having the right proposition are important factors for a successful programme implementation. With each successful partnership and the positive results, the partners then gain a deeper appreciation of HPB's work and grow in their support for HPB's programmes.

Challenges of partnerships

The two cases highlighted the many benefits that can be achieved through partnerships. It is also generally not difficult to come across other organisations which are keen to offer partnerships. So, why are there not greater acceptance and formation of partnerships? The challenges of partnerships essentially lie in the management of the benefits and risks. It is important to recognise that every organisation has its own objectives. Therefore, for a partnership to be successful, the objectives of each partner have to be aligned.

The Nutrition Programme and Whole-grains Campaign provide an example of the business objective of the food industry. While it is arguable that the industry would draw benefits such as better social standing and goodwill from supporting the campaign, one key interest is still sales generation. It is therefore important that the campaign addresses the growth of consumer demand for the whole-grains products and, where appropriate, provides opportunities for the industry to directly engage and offer the products to the consumers which, it should be noted, is in alignment with the objectives of the campaign.

Similarly, many discussions were held with the partners of the H1N1 public education campaign to understand their interests, and to coordinate and align the campaign plans. For instance, the different partners were developing and scheduling their campaigns and it was critical to align the messages and schedules to avoid confusing the public with different messages. This coordination may sound like an insurmountable effort and challenge, but it may also turn out to be easier than expected. In HPB's experience, many partners were willing to re-prioritise their objectives and align their plans and messages to support the national effort for the good of the public, and the partnerships would then add to their corporate branding and public goodwill.

Conclusion

Much has already been said about the benefits of partnerships. Furthermore, as all organisations, public and private, are increasingly pushed to do more with less, there is a growing need to explore greater efficiency and synergy with other organisations. Partnerships provide this value and should therefore be given due consideration in terms of the benefits and risks. The risks should be managed and mitigated, and the benefits should be mutual and shared. If these conditions can be attained, the partnership and relationship can be truly be established, sustained and grown for the good of the partners and their missions and more importantly to improve the health and lives of the citizens.

Authors:
1. Dr K. Vijaya, Director, Youth Health Division, Health Promotion Board
2. Mr Robin Chua, Deputy Director, Corporate Partnership Management, Corporate Marketing & Communications, Health Promotion Board
3. Ms Ar-lene Lee, Senior Executive, Corporate Partnership Management, Corporate Marketing & Communications, Health Promotion Board
4. Ms Jolin Lim, Senior Executive, Corporate Partnership Management, Corporate Marketing & Communications, Health Promotion Board

Prevention and Control of Non-communicable Diseases, Changwon City

Summary

Changwon is very younger city for their ages. Percentage of population working in a workplace was enormous, being 79.5% of all the citizens (502,239 people) as of the end of August 2012. Also, Changwon has many children or school-age group with totals of 89,007 school age groups (17.7% of total population). So, Changwon has two peaks of age groups with school age groups and young adults and middle-aged people. But, percentage of people over 65 years old is 6.09% (30,556 persons). Therefore, Changwon does not so much chronic diseases including four major disease categories, such as, cardiovascular disease, cancer, chronic obstructive pulmonary disease and diabetes. Of course, I do not know exact cause about these.
We should take six following strategies and tactics :
(1) To raise the priority accorded to non-communicable disease in development work at global and national levels, and to integrate prevention and control of such diseases into policies across all government departments;
(2) To establish and strengthen national policies and plans for the prevention and control of non-communicable diseases;
(3) To promote interventions to reduce the main shared modifiable risk factors for non-communicable diseases: tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol;
(4) To promote research for the prevention and control of non-communicable diseases;
(5) To promote partnerships for the prevention and control of non-communicable diseases;
(6) To monitor non-communicable diseases and their determinants and evaluate progress at the national, regional and global levels.

1. Introduction and background to the situation

We, Changwon City are the first designed city in Korea, like Canberra in Australia. Before establishing of a city, Changwon had been a National Industrial Complex. So, there are any companies and factories, which have many workers or employees (399,138 peoples) in about 73,132 businesses. Changwon is very younger city for their ages. Percentage of population working in a workplace was enormous, being 79.5% of all the citizens (502,239 people) as of the end of August 2012. Also, Changwon has many children or school-age group with totals of 89,007 school age groups (17.7% of total population). So, Changwon has two peaks of age groups with school age groups and young adults and middle-aged people. But, percentage of people over 65 years old is 6.09% (30,556 persons). Changwon has high blood pressure patients of 15.6% (46,790 persons), diabetes patients of 6% (17,996 persons), hyper-lipidemia patients of 15.4% (46,190 persons) and registered cancer patients of 1.06% (5,338 persons) on number of Health Insurance complex in 2011 and /or cancer patients of 0.28%(1,435 persons) on Local Cancer Center in 2009. It is assumed that second date of statistics is more correct. Therefore, Changwon does not so much chronic diseases including four major disease categories, such as, cardiovascular disease, cancer, chronic obstructive pulmonary disease and diabetes. Of course, I do not know exact cause about these.

Also, we should remember that 'Obesity" is a disease or illness, not rather than clinical sign or system. In Changwon, rate of obesity with self-reported (over BMI 25) is 18.9% in 2009, compared with decreasing by 4.4% in 2008. And, rate of obesity with the subjective awareness (slightly obese or very obese) is 37.5% in 2009(Fig.1), compared with the increased by 6.6% in 2008. Though the prevalence might be currently low, it has steadily increased over the years. It is a major public health challenge due to the adverse health consequences associated with it, such as diabetes, hypertension, coronary heart disease, certain cancers and osteoarthritis . After we has declared "War against obesity" in 2006(Fig 2), we are fighting hard for the prevention of above-mentioned four disease group, by

increased physical activity and coordinated nutrition status, with programs of anti-smoking and reducing alcohol intake.

2. Baseline analysis

Four of the most prominent non-communicable diseases – cardiovascular disease, cancer, chronic obstructive pulmonary disease and diabetes – are linked by common preventable risk factors related to lifestyle. These factors are tobacco use, unhealthy diet and physical inactivity. Action to prevent these diseases should therefore focus on controlling the risk factors in an integrated manner. Intervention at the level of the family and community is essential for prevention because the causal risk factors are deeply entrenched in the social and cultural framework of the society. Addressing the major risk factors should be given the highest priority in the global strategy for the prevention and control of non-communicable diseases. Continuing surveillance of levels and patterns of risk factors is of fundamental importance to planning and evaluating these preventive activities.

Today, non-communicable diseases, mainly cardiovascular diseases, cancers, chronic respiratory diseases and diabetes represent a leading threat to human health and development. These four diseases are the world's biggest killers, causing an estimated 35 million deaths each year - 60% of all deaths globally - with 80% in low- and middle-income countries.

We have the right vision and knowledge to address these problems. Proven cost-effective strategies exist to prevent and control this growing burden. However, high-level commitment and concrete action are often missing at the national level. Non-communicable diseases prevention and control programs remain dramatically under-funded at the national and global levels and have been left off the global development agenda. Despite impacting the poorest people in low-income parts of the world and imposing a heavy burden on socioeconomic development, non-communicable diseases prevention is currently absent from the Millennium Development Goals. However, in all low and middle-income countries and by any measure, non-communicable diseases account for a large enough share of the disease burden of the poor to merit a serious policy response[i].

3. Details of the plans and activities

WHO said that they have six objectives of the 2008-2013 Action Plans[ii], however, here, especially we have considered the 3rd objective in longer sentences (Fig 3). Those are interventions or strategies against/for the modifiable risk factors, which are four main life styles: tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol. When we would describe or cite the contents of the references provided by WHO/WPRO, as following six objectives.

(1) To raise the priority accorded to non-communicable disease in development work at global and national levels, and to integrate prevention and control of such diseases into policies across all government departments;

It is proposed that, in accordance with their legislation, and as appropriate in view of their specific circumstances, Member States should undertake the actions set out below.
These addressed strongly the health determinants, poverty-reduction strategy, public health issues and equitable financing and primary health care services.

(2) To establish and strengthen national policies and plans for the prevention and control of non-communicable diseases; also, nation-wide

I. National multi-sectoral framework for the prevention and control of non-communicable diseases. These are nation-wide works.
II. Integration of the prevention and control of non-communicable diseases into the national health development plan
III. Reorientation and strengthening of health systems[iii]

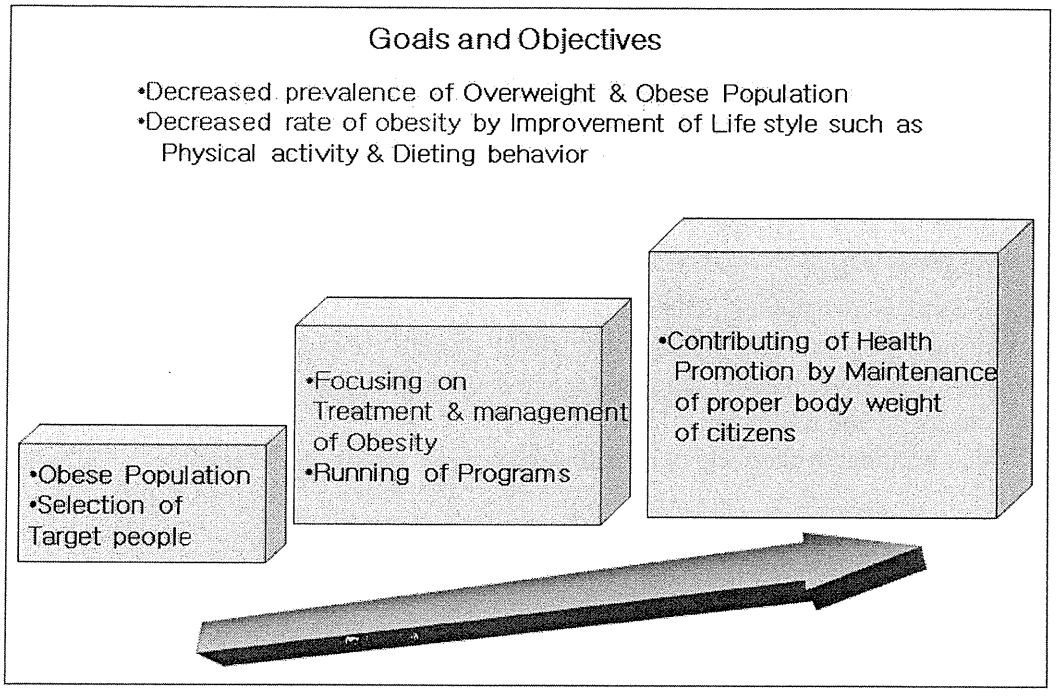


Fig3. Goals for obesity control

(3) To promote interventions to reduce the main shared modifiable risk factors for non-communicable diseases: tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol; we would explain or describe healthy lifestyles (tobacco, diet, physical activity and alcohol).

Tobacco control

Consider implementing the following package of six cost-effective policy interventions (the MPOWER package[iv]), which builds on the measures for reducing demand contained in the WHO Framework Convention for Tobacco Control[v]:

A. monitor tobacco use and tobacco-prevention policies

B. protect people from tobacco smoke in public places and workplaces

C. offer help to people who want to stop using tobacco

D. warn people about the dangers of tobacco

E. enforce bans on tobacco advertising, promotion and sponsorship[vi]

F. raise tobacco taxes and prices.

F. raise tobacco taxes and prices.

Promoting healthy diet

Implement the actions recommended in, but not limited to, the Global Strategy on Diet, Physical Activity and Health in order to:

A. promote and support exclusive breastfeeding for the first six months of life and promote programs to ensure optimal feeding for all infants and young children;

B. develop a national policy and action plan on food and nutrition, with an emphasis on national nutrition priorities including the control of diet-related non-communicable diseases;

C. establish and implement food-based dietary guidelines and support the healthier composition of food by:

- reducing salt levels
- eliminating industrially produced trans-fatty acids
- decreasing saturated fats
- limiting free sugars

D. provide accurate and balanced information for consumers in order to enable them to make

well-informed, healthy choices;

E. prepare and put in place, as appropriate, and with all relevant stakeholders, a framework and/or mechanisms for promoting the responsible marketing of foods and non-alcoholic beverages to children, in order to reduce the impact of foods high in saturated fats, trans-fatty acids, free sugars, or salt.

Promoting physical activity

Implement the actions recommended in, but not limited to, the Global Strategy on Diet, Physical Activity and Health in order to:

A. develop and implement national guidelines on physical activity for health;

B. implement school-based programs in line with WHO's health-promoting schools initiative;

C. ensure that physical environments support safe active commuting, and create space for recreational activity, by the following:

- ensuring that walking, cycling and other forms of physical activity are accessible to and safe for all;
- introducing transport policies that promote active and safe methods of travelling to and from schools and workplaces, such as walking or cycling;
- improving sports, recreation and leisure facilities;
- increasing the number of safe spaces available for active play.

Reducing the harmful use of alcohol[vii]

In order to respond effectively to the public-health challenges posed by harmful use of alcohol – in accordance with existing regional strategies and guided by the outcome of current and future WHO global activities to reduce harmful use of alcohol – Member States may wish to:

A. consider the following areas:

- under-age drinking (as defined in the country)
- the harmful use of alcohol by women of reproductive age
- driving or operating machinery while under the influence of alcohol (including all traffic-related injuries involving alcohol)
- drinking to intoxication
- alcohol-use disorders
- the consumption of alcoholic beverages that have been illegally produced and distributed
- the impact of harmful use of alcohol on other health conditions, in particular on cancers, liver and cardiovascular diseases, and injuries.

B. adopts measures in support of an appropriate monitoring system for the harmful use of alcohol.

(4) To promote research for the prevention and control of non-communicable diseases;

A. Invest in and health-system research as part of national programs for the prevention of non-communicable diseases and develops – jointly with academic and research institutions – a shared agenda for research, based on national priorities.

B. Encourage the establishment of national reference centers and networks to conduct research on socioeconomic determinants, gender, and the cost–effectiveness of interventions, affordable technology, health-system reorientation and workforce development.

(5) To promote partnerships for the prevention and control of non-communicable diseases;

A. Participate actively in regional and sub-regional networks for the prevention and control of non-communicable diseases.

B. Establish effective partnerships for the prevention and control of non-communicable diseases, and develop collaborative networks, involving key stakeholders, as appropriate.

(6) To monitor non-communicable diseases and their determinants and evaluate progress at the national, regional and global levels.

A. Strengthen surveillance systems and standardized data collection on risk factors, disease incidence and mortality by cause, using existing WHO tools.
B. Contribute, on a routine basis, data and information on trends in respect of non-communicable diseases and their risk factors disaggregated by age, gender, and socioeconomic groups; and provide information on progress made in implementation of national strategies and plans.

4. Evaluation of the activities.

We report the results of formative and outcome evaluation of two ongoing community-based intervention programs for integrated non-communicable disease prevention and control in urban high-income settings of Korea, Changwon, compared with other smaller county or communities. At this setting, a coalition of community members facilitated by a variety of sectors including academic, planned and implemented the intervention since 1989, when health promotion works have been started. The intervention consisted of advocacy and mediation with stakeholders, training of volunteers and school teachers, communication campaigns, risk assessment camps and reorientation of health services. The formative evaluation was based on the review of documents, and outcomes were assessed using the standardized surveys for non-communicable disease risk factors on 1) **2008-2013 Action Plan** for the Global Strategy for the Prevention and Control of Non-communicable Diseases[viii]; 2) Meeting Report: Regional High-Level Actions for Non-communicable diseases prevention and control[ix]; and other internet sites concerning prevention and control of non-communicable diseases. The baseline surveys showed that tobacco use, low intake of fruits and vegetable, suboptimal levels of physical activity and obesity were prevalent in our community. A frequent change in local administrators and lack of perceived priority for health and non-communicable diseases limited their involvement. Pre-existing engagement of community-based organizations and volunteers in health activities facilitated its implementation. The reach of the program among the population was modest. Health system interventions resulted in increased diagnosis and better management of non-communicable diseases at health facilities. Early outcome measures showed mixed results of change in different risk factors. The experiences gained are being used in this community to expand and provide technical support to national efforts. We add to the knowledge base on the feasibility of designing and implementing large-scale community-based interventions for integrated prevention of non-communicable diseases through modification of risk factors.

Here, we shall give our colleague(in Korea) Examples for evaluation after Cycling program:

- An average number of bicycle held by each household : 0.75 ('07.12) -> 0.79 ('08.12, approximately 138,000 bicycles)
- Citizens' assessment about cycling movement : positive 92.4% (as compare with the result in 2008.01, 16.5% increase)
- Commute ratio by bicycles in industrial area : 4.8% ('06.10) ->6.2%('07.10) -> 7.3%('08.12)
- As the nation's first, bicycle culture center open : '08.9.5 (supply full service like education, maintenance, promotion, and display)
- As the nation's first, take out a citizen bicycle insurance : '08.9.22
- As the nation's first, constructing a public bicycle rent service and operating it : '08.10.22(20places, 430 bicycles)
- Nation's longest bikeways : 96.6Km (15 lanes)
- Changwon has become the benchmark site for local governments and by media: about 130 times in throughout a country.

5. Highlight the learning points (Lessons learned)

Following lesson points are the same as 2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Non-communicable Diseases.

- Much is known about the prevention of non-communicable diseases. Experience clearly shows that they are to a great extent preventable through interventions against the major risk factors and their environmental, economic, social and behavioral determinants in the population. Countries can reverse the advance of these diseases if appropriate action is taken. Such action may be guided by the lessons learned from existing knowledge and experience, which are summarized below.
- Strategies to reduce exposure to established risk factors and to lower the risk for individuals, who present clinical signs of further progression of these diseases, even when implemented together, do not achieve the full potential for prevention. A comprehensive long-term strategy for control of non-communicable diseases must therefore necessarily include prevention of the emergence of risk factors in the first place.
- In any population, most people have a moderate level of risk factors, and minorities have a high level. Taken together, those at moderate risk contribute more to the total burden of non-communicable diseases than those at high risk. Consequently, a comprehensive prevention strategy needs to blend synergistically an approach aimed at reducing risk factor levels in the population as a whole with one directed at high-risk individuals.
- Review of studies has shown that, for substantial reductions in the levels of risk factors and in disease outcomes, delivery of interventions should be of appropriate intensity and sustained over extended periods of time. However, even modest changes in risk factor levels will have a substantial public health benefit.
- Experience indicates that success of community-based interventions requires community participation, supportive policy decisions, inter-sectoral action, appropriate legislation, health care reforms, and collaboration with nongovernmental organizations, industry and the private sector.
- Decisions made outside the health sector often have a major bearing on elements that influence the risk factors. More health gains in terms of prevention are achieved by influencing public policies in domains such as trade, food and pharmaceutical production, agriculture, urban development, and taxation policies than by changes in health policy alone.
- The long-term needs of people with non-communicable diseases are rarely dealt with successfully by the present organizational and financial arrangements of health care. Member States need to address the challenge in the context of overall health system reform.

CONCLUSIONS

WHO has led the development of a full range of strategies to respond to the main risk factors for non-communicable diseases, notably the Framework Convention on Tobacco Control (FCTC), which has been ratified by all countries in the Region, and global and regional strategies for diet and physical activity and to reduce the harmful effects of alcohol. To date, implementation of these strategies has been incomplete at the national level. For example, tobacco use remains high in many countries, especially among men, and the key elements of the FCTC are not yet being fully implemented.

We, Changwon would benefit from extra resources and innovative funding mechanisms such as health promotion foundations in place in several other communities. They generally have been successful in reducing harmful consumption and raising extra revenue.

The NGO community is a valuable partner for local and regional efforts.

Evaluation and monitoring are essential components of all non-communicable diseases programs with attention to learning lessons and modifying approaches as appropriate.

[i] 2008-2013 Action Plan for **2008-2013 Action Plan** for the Global Strategy for the Prevention and Control of Non-communicable Diseases; WHO , ISBN 978 92 4 159741 8

[ii] 2008-2013 Action Plan for **2008-2013 Action Plan** for the Global Strategy for the Prevention and Control of Non-communicable Diseases; WHO , ISBN 978 92 4 159741 8

[iii] These actions are proposed in view of the fact that in many Member States the organizational and financial arrangements with respect to health care are such that the long-term needs of people with non-communicable diseases are rarely dealt with successfully (recitation)

[iv] Program using MPOWER package has been implemented in 2009, after awarding the best proposal using it by seed money US dollar 10,000.

[v] Implementation of other measures contained in the WHO Framework Convention on Tobacco Control may be considered as part of national comprehensive tobacco-control programs(recitation)

[vi] In Article 13 of the WHO Framework Convention on Tobacco Control, paragraph 1 states that: "Parties recognize that a comprehensive ban on advertising, promotion and sponsorship would reduce the consumption of tobacco products." At the same time, Article 13 recognizes that the ability of some countries to undertake comprehensive bans may be limited by their constitution or constitutional principles(recitation)

[vii] See resolution WHA61.4.

[viii] **2008-2013 Action Plan** for the Global Strategy for the Prevention and Control of Non-communicable Diseases, WHO, ISBN 978 92 4 159741 8

[ix] Meeting Report: Regional High-Level Actions for Non-communicable diseases prevention and control; 17-18 March 2011m, Seoul, Republic of Korea.

Ubiquitous-Health Promotional Project, Gangnam-gu, Seoul

Summary

Gangnam Ubiquitous-Health Promotional Project, so called Gangnam U-Project, has been developed under Ubiquitous Healthy Cities, Gangnam project. It is preventative health promotional programs, aimed at decreasing the prevalence of metabolic syndromes (MS) in Gangnam through improving physical activity, such as walking.

Gangnam started this project, based on the results from community analysis, which demonstrated the prevalence of physical activity and walking activity, as well as mental status were lower than the average Seoul citizens. Also, underprivileged population and welfare facilities have been increased over time.

U-healthcare center and U-Healthpark are part of the Project and running by alliance, which is composed of core team, steering committee, and other affiliated members within and across Gangnam office. Two programs are offering personalized MS management program including nutrition, medication, and physical activity consultation, and Yangjaechun U-Healthpark as physical activity facilitator in on-and off-lines. In addition, telemedicine service is providing with medical consultation and will be more sophisticated as medical society allows telemedicine as a part of medical treatment. Only a year after that the Project was implemented, Gangnam could see the difference due to the Project. According to the 2011 Gangnam Community Health Survey data, the prevalence of walking activities became 75.1% from 48.1% in 2010 and the trend has been increased since 2008. The prevalence of walking activities participation was 70% or more in both sexes and had the highest participation rate in their twenties (90.0% men, 80.0% women). Using internal evaluation criteria (i.e. process and outcome indicators), Gangnam U-Project received score of 87, indicating excellent outcome.

In summary, Gangnam U-Project would be the most cost-effective and exemplary public health policy implementation and created by the joint effort among local government, private sectors and residents, as driving-forces.

1. Introduction and background to the situation

Characteristics of the 21st century city residents are increased prevalence of obesity and other chronic diseases, but decreased physical activity. Gangnam residents, known as health-conscious population, also have similar pattern; decreased in their physical activity, but increased in obesity trend since 2008[1]. In 2010, Gangnam's walking activities[2] became even lower than those in the average Seoul citizen.

Limited physical activity, increased work-stress, and Westernized diet are traditional risk factors for chronic diseases, such as metabolic syndrome (MS) and type 2 diabetes mellitus, which have a greater impact on Asians than other race/ethnicities[3]. In addition, the increased incidence of MS will raise medical and economical burden in Gangnam and its societal impact will be tremendous in near future, because of the aged-population[4].

It is especially important to make people regularly do exercise, if programs are targeted for city dwellers. Gangnam, famous for her IT infrastructures and techniques, has developed diverse health promotion programs, combining her IT infrastructure with BT contents, for examples, U-healthcare center and Yangjaechun U-Healthpark. U-healthcare center, set in Nonhyeon-2-dong and Ilwon-1-dong, identifies the prevalence of MS among residents and offers personalized service including exercise and nutrition management. Exercise component is especially operating at the U-Healthpark in Yangjaechun, eco-friendly stream in Gangnam with a daily average of 10,000 visitors during July and August. U-Healthpark is especially stressed on making people exercise as a part of their life with their own pace.

Gangnam Ubiquitous-Health Promotional Project, so called Gangnam U-Project, was developed

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[1] According to Community Health Survey (CHS) results: 13.9% (2008), 18.6% (2009), 16.3% (2010)

[2] Walking activity defines as the proportion of population(%), walking at least 30 minutes/day, 5 times per week recent 7 days The median of walking activity over times are 50.6% (2008), 49.9% (2009), 43.0% (2010), 41.7% (2011)

[3] JiWon R. Lee, Frederick L. Brancati, Hsin-Chieh Yeh. Trends in the prevalence of type 2 diabetes in Asians versus Whites: results from the United States National Health Interview Survey, 1997-2008. Diabetes Care 2011:34:353-7

[4] The proportion of elderly among population: 10.82% (2010), national health expenditure: 66.7 x 10^6 KRW (2008). The proportion of elderly in medical expenditure : 31.2% (2010), U-health service cost-effectiveness in metabolic syndrome management program, social welfare current issues analysis and public health projects 2011(II), Korean Institute for Health and Social Affairs (KIHSA) ,

under Ubiquitous Healthy Cities, Gangnam project and has three main purposes. First, it designs to makes health prevention programs familiar with everybody. Second, it is intended to provide visitors with advanced healthcare service utilizing Yangjaechun ubiquitous system, in other words Radio-Frequency Identification (RFID) system. Lastly, it plans to disseminate a new concept of health promotion programs, "Healthtainment", the combination of health with entertainment. To achieve these purposes, Gangnam sets short- and long-term goals for the project. Short-term goals are to have at least 1,000 visitors per year enrolled in the MS Management Registry at Gangnam U-healthcare center; to have at least 1,200 enrolled visitors at U-Healthpark per year, as well as at least 100 visitors per month at Saturday Yangjaechun Pang Pang Day; having at least 100 participants in every 6-month, specialized programs for chronic diseases. Long-term goals are to decrease in the prevalence of chronic diseases among Gangnam residents to match that in the average Seoul citizens, while to increase in the prevalence of physical activity and walking activities. Therefore, the ultimate goal for this project is to translate the effects of the Gangnam U-Project into improving Gangnam Community Health Survey (CHS) data.

Table 1. Summary of Health Status in Gangnam 2010

Category	Index	Gangnam			Seoul (Reference)
		2010	2009	2008	2010
Health Behavior					
Smoking	Current Smoking	19.2 %	20.4 %	19.7 %	23.7 %
	Current Smoking, Male	35.0 %	36.8 %	33.8 %	44.2 %
	Smoking Campaign Experience	58.5 %	74.7 %	75.4 %	78.1 %
Drinking	Weekly Drinking	58.5 %	74.7 %	75.4 %	78.1 %
	High-Risk Drinking	52.4 %	49.2 %	55.5 %	60.4 %
Physical Activity	Moderate to Severe Physical Activity	18.3 %	21.8 %	—	18.5 %
	Walking Activity	47.8 %	52.2 %	50.6 %	55.6 %
Obesity, Weight Management	Obesity	16.6 %	19.5 %	14.8 %	21.7 %
	Perceived Obesity	26.9 %	28.1 %	28.9 %	35.6 %
	Weight Management Trial	47.3 %	47.2 %	46.0 %	55.9 %
Mental Health	Perceived Stress	30.8 %	26.1 %	28.4 %	29.8 %
	Depression Experience	6.3 %	4.2 %	5.4 %	6.8 %
Physical Check-up & Vaccination					
Yearly Influenza Vaccination		26.2 %	35.7 %	29.9 %	27.3 %
Physical Exam		59.9 %	62.0 %	57.6 %	58.4 %
Cancer Screening		43.6 %	50.7 %	42.0 %	43.4 %
Prevalence of Diseases					
Hypertension (Doctor's diagnosis, >30 years old)		16.0 %	15.1 %	14.6 %	19.1 %
Diabetes (Doctor's diagnosis, >30 years old)		6.3 %	6.1 %	4.4 %	7.3 %
Arthritis (Doctor's diagnosis, >50 years old)		13.0 %	13.3 %	11.5 %	18.3 %
Quality of Life (QoL)					
Perceived Health Status		64.2 %	58.8 %	63.4 %	49.4 %

1. Analysis before the project was implemented

Before the project, Gangnam conducted community analysis to identify problems and concerns in Gangnam Community. According to the 2010 Gangnam Statistics, Gangnam has total 577,000 people with 52% people are women. The proportion of elderly[5] are 7.6% (44,095 people), which shows rapidly processing aging society.

Overall health status in Gangnam is good, but the prevalence of physical activity and walking activity, as well as mental status show lower than the average Seoul citizens, based on the 2010 Community Health Survey Data (Table 1). In addition, underprivileged population and welfare facilities have been increased over time[6-7]. Considering their health issues are worse than the rest of

[5] Aged 65 years and older

[6] People on the National basic living subsidiary programs are increased by 5.7%, disabled by 2.73%, compared with previous year

residents, the increased proportion of these populations demonstrates Gangnam needs special attention on them and further analysis should be needed for improving health equality in Gangnam.

In summary, Gangnam has been increasing in cars and parking space, while physical and walking activities have been decreased greater than the average Seoul citizens. It shows that Gangnam has good infrastructure for driving and owning cars, so the physical activity, especially walking activity become poor.

Considering the effect of increased physical activity on health, Gangnam should develop health promotional programs, focused on physical activity. Especially programs targeted for increasing walking activity would be the prior topic for Gangnam. Walking activity is easy and common physical activity for everybody and considered to be the best and most cost-effective exercise for them. In addition, regular exercise has known as the similar effect on physical improvement like many other exercises.

Therefore, programs stressed on enhancing walking activity utilizing Gangnam's advanced IT technology should be the one first considered to improve current health concerns and issues in Gangnam.

2. Details of the project

Gangnam U-Project composes of two major programs; U-healthcare center and U-Healthpark. U-healthcare centers are located in Nonhyeon-2-dong and Ilwon-1-dong residents' recreational centers, while U-healthpark and its visitors' center are in Yangjaechun bank. It is especially running by alliance, which is composed of core team, steering committee, and other affiliated members within and across Gangnam office. The alliance has been running in order to objectively approach the project in its strategy, plan, outcomes, and limitations, as well as to operate the project with a view of the beneficiaries (residents and visitors).

Among affiliated members, civic representative committee and steering committee members are included. Civic representative committee members are in-charging of monitoring the Gangnam U-Project, which involves experience and satisfaction evaluation activities and their opinions and suggestions are a crucial component of the project operation and regarded as direct feedbacks from the U-Project visitors. Steering committee, so called committee of the Gangnam U-Project, is a professional organization and provides advices and direction on its practical matters.

Gangnam U-Project has been running in diverse city environments, on-and off-line services. In off-line services are following; U-healthcare centers are equipped with high-technology machines showing individuals' anthropometric and biological measurements, such as BMI, blood cholesterol, pressures, and glucose, % body fat and managing their risk for MS by registered nurse at the centers. Residents directly visit center with-, without reservation and check their MS status and then receive health consultations, such as nutrition, medication, and exercises therapy, based on their MS status. Physical exercises programs include walking and other health programs can be offered by U-Healthpark (i.e. bordrobics, stretching, health classes).

U-Healthpark is located alongside with Yangjaechun, famous Gangnam stream for recreational outdoor place. It is imbedded Radio-Frequency Identification (RFID) to create ubiquitous environments using existing walking-path and designed for promoting visitors' physical activity while enjoying nature, Yangjaechun.

As online components are homepages for the U-healthcare center and U-Healthpark. Using homepage, U-healthcare center registered residents can monitor their body composition changes over time. Also, it is linked with the U-Healthpark homepage, so that visitor can observe their body change associated with their physical activity at the U-Healthpark. Both homepages are offering personalized health promotion programs and have record on their daily exercise and dietary history, and health status (Figure 1). This data can be used as a future reference when they receive consultations from nurse, dietician, and physical therapist at the centers.

The telemedicine consultation service is used both off- and on-line systems simultaneously. Participant should visit U-healthcare center first to receive telemedicine consultation service with medical specialist and then actual service is offered by online system. In addition, this program is under the way of developing that residents even can receive telemedicine consultation service without visiting u-healthcare center in-person.

Gangnam U-Project is open to all visitors from Gangnam, as well as around the world. So, it is a general health promotional project for everybody. However, the U-healthcare center at Ilwon-1-dong deals with the equity of the general Gangnam U-health promotional project. The proportion of disadvantaged people in Gangnam has been steadily increased over time. In particular, Ilwon-1-dong

[7] Social welfare facilities have been increased by 8, compared to previous year. The average 1,772 people in 26 Social welfare facilities have been living

has many residents who are on social benefits, middle class residents, and the elderly. Therefore, the U-Healthcare Center at Ilwon-dong focuses on theses people who have less access to medical care and offers diverse prevention programs, in order to minimize health-inequality especially in MS prevention. The nurses at the center will collect survey responses and body composition results to analyze visitors' health status and provide a personalized health/nutrition/exercise consultation. The center also encourages residents to do regular exercise by utilizing U-Healthpark. The fortnightly text message from the center provides information on nutrition and exercise, which has been shown to be very popular among visitors and effective in managing their healthy lifestyle. To fulfil public health duties as a part of the community health center, U-healthcare center has been developing telemedicine consultation service by connecting with tertiary medical center specialists in Gangnam. This will be an excellent example of the ubiquitous technology usage in Gangnam for improving the health inequality among disadvantaged Gangnam residents.

Saturday Yangjaechun Pang Pang Days are events where families gather during the weekend and participate in health promotional activities, which will help their children to develop a healthy lifestyle. Considering the habits developed during the childhood will greatly affect them throughout their lives, this event will be a good example as the future direction of the current health promotional programs. In addition, it would be a program where families enjoy activities together and tighten their bands, as well as promote their health, as a consequence.

Gangnam U-Project is open to any bodies so that many people can participate in it through various community activities, such as civic representative committee. The civic representative committee consists of 50 citizen representatives, who are participating in the project as Yangjaechun environments wardens and other roles. They tested U-healthcare center medical devices and RFID cards at Yangjaechun U-Healthpark before opening. They also volunteered as Yangjaechun walking classes and healthy city lectures, as well as working as Gangnam health partners and promotion officers. Their other roles are patrols for U-Healthpark environments and biodiversity. Lastly, their ideas and participation is actively implemented on other health promotional programs.

In addition, individuals could participate in the project as regular visitors. Their experience and feedback on running programs is a direct evaluation for the project and allows managers to identify problems and/or concerns for it. Their monitoring results affect existing programs, which make them more appropriate for users and further can improve overall satisfaction and efficiency of the project. Therefore, Gangnam, U-Project encourages community participation and carefully listen to their feedback.

3. Analysis after the project was implemented

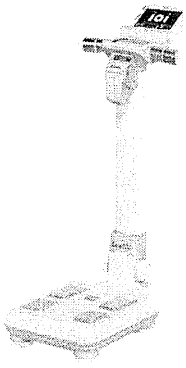
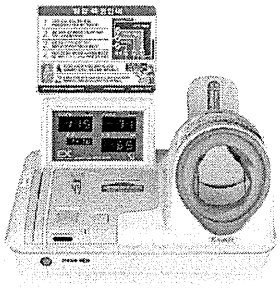
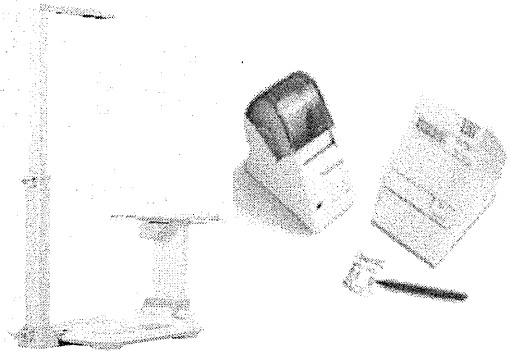
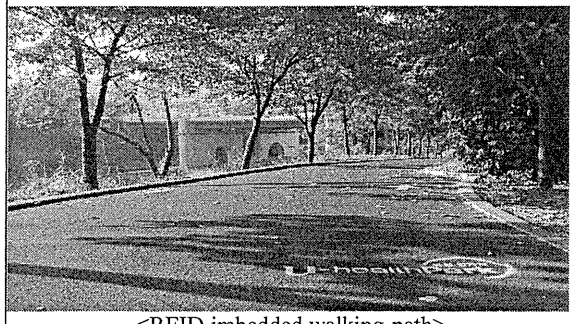
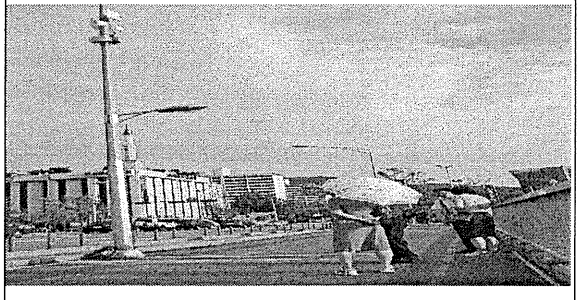
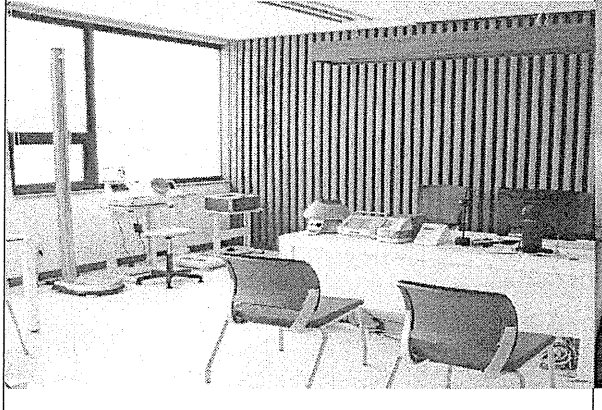
To systematically and comprehensively develop a project, accurate outcomes assessment and evaluation should be established first. For this purpose, Gangnam U-Project develops standardized evaluation criteria (Table 2) using existing Seoul Metropolitan Health Promotion Program evaluation criteria. The evaluation was done more than once for the majority of the programs (72%, 13/18) at different time (A= before starting program, B= during program, C=after program) in order to improve reliability of results. Scores at 90% and above are considered as excellent. Scores between 70 and 79% are average; score of 60~69% unsatisfactory and under 60% as inadequate, which are reflected on next year program planning.

Gangnam U-Project results can be expressed in many ways. The data from the 2011 Korean CHS, as well as walking activity from the self-evaluation can be used final outcomes for this project. To make Gangnam U-Project comparable with other similar projects, following data were used as the Gangnam U-Project final outcomes.

1. Walking Activity rate in Gangnam from the 2011 CHS data

According to the 2011 Gangnam CHS data, the prevalence of walking activities was 75.1%, which was a significant increase from 48.1% in 2010. It was also shown to have upward trend since 2008 (Figure 2). The prevalence of walking activities participation was 70% or more in both men and women (78.0% males, 72.6% females) and both sexed in their twenties have the highest participation rates out of all the age groups (90.0% men, 80.0% women).

< Figure 1. Gangnam U-Project Overview >

	U-healthcare center	U-Healthpark & visitors' center
Devices	  <Body Composition Machine> <Blood Pressure Machine>  <Anthropometric Measurement> < Cholestech LDX >	 <RFID included in reader, Antenna>  <RFID imbedded walking-path>  <Wireless receptor>  <Kiosk>  <Portable RFID card>
Center View	 <Ilwon-1-dong>	 < Inside View>