

**Health Promotion : An Emerging Strategy for Health
Enhancement and Business Cost Savings in Korea**

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Summary

- Half of deaths are caused by life-style related problems in developed nations.
- Health promotion can improve life-style and health.
- Improvements in life-style and health lead to savings in medical care core costs and enhancements in productivity.
- Win-Win-Win-Win : Management, Labor, Employees and Government benefit

Leading Causes of Death, Korea, 1996

1. Cancer	21.1%
2. Stroke	15.3
3. Accidents	14.5
4. Heart Disease	9.3
5. Digestive Tract Diseases	7.0
6. Respiratory Diseases	4.5
7. Endocrine Related Diseases	3.6
8. Infectious Diseases	2.1
All others	22.0

Contributing Factors to Leading Causes of Death, Before age 75

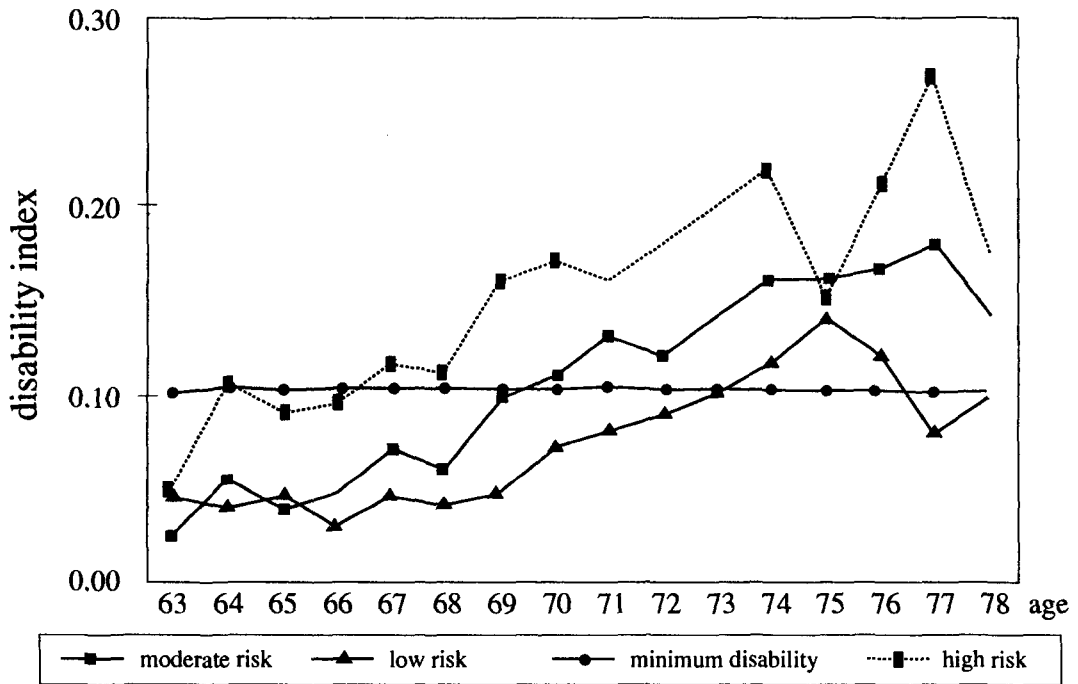
	Life style	Environment	Heredity	Health care Access
cancer	37%	24%	29%	10%
stroke	50%	22%	21%	7%
motor vehicle accidents	69%	18%	1%	12%
other accidents	51%	31%	4%	13%
heart disease	54%	9%	25%	12%
homicide	63%	35%	2%	0%
suicide	60%	35%	2%	3%
cirrhosis	70%	9%	18%	3%
influenza/pneumonia	23%	2%	39%	18%
diabetes	34%	0%	60%	6%
total	51%	20%	20%	8%

Actual Causes of Death, US, 1990

Cause	Number	%
Tobacco	400,000	19%
Diet/inactivity	300,000	14%
Alcohol	100,000	5%
Microbial agents	90,000	4%
Toxic agents	60,000	3%
Firearms	35,000	2%
Sexual behavior	30,000	1%
Motor vehicles	25,000	1%
Illicit drug use	20,000	< 1%
total		

Progression of Disability Index by Age

Health Risk as Defined in 1986



Comprehensive Review of Health Impact of Workplace Health Promotion Programs

- Centers for Disease Control and Prevention
- Review conducted by 22 scientists
- 378 studies of workplace health promotion programs
- Program budget range : \$ 10 - \$ 200/employee/per year

- Conclusions : programs improve health behaviors and conditions short term

Intensive Health disease Reversal program

- intensive screening and individual counseling
- weekly meetings for five year
- vegetarian diet, low cholesterol, 10% fat, 15% protein, 75% complex carbohydrates, B₁₂ supplement
- stress management
- exercise
- smoking cessation
- social support

Results

improvements in treatment versus control

- **REDUCED HEART DISEASE**
 - reduced size and severity of myocardial perfusion abnormalities measured by PET at rest and after dipyridamole stress decreased
 - treatment subjects :
 - 99% improved or got no worse, 1% got worse
 - control subjects :
 - 55% improved or got no worse, 45% got worse
- **REDUCED ARTERY BLOCKAGE**
 - regression of coronary artery stenosis

Financial Return From Health Promotion

1. Image enhancement for employers
2. Productivity enhancement for employes

3. Medical care cost reduction for employers, employees, and government

Image Enhancement

- Korea wants to compete globally.
- Korea ranks 38th in global competitiveness.
 - *Annual World Competitiveness Yearbook, April, 1999*
 - Institute for Management Development, Geneva, Switzerland
- To be fully competitive, Korean employers needs to offer benefit programs similar to global leading companies.

Mean Annual Expenditures High Risk vs Low Risk Employees

Risk factor	High Risk	Low Risk	% difference (unadjusted)	% difference (adjusted)
Depression	\$3,189	\$1,679	90%	70%
Stress	\$2,287	\$1,579	45%	46%
Blood Glucose	\$2,598	\$1,691	54%	35%
Body Weight	\$2,318	\$1,571	48%	21%
Tobacco (current)	\$1,950	\$1,503	25%	20%
Tobacco (former)	\$1,873	\$1,503	30%	14%
Blood Pressure	\$2,123	\$1,716	24%	12%
Exercise	\$2,011	\$1,567	28%	10%
Cholesterol	\$1,962	\$1,678	17%	-1%
Alcohol Use	\$1,431	\$1,726	-17%	-3%
Nutrition	\$1,498	\$1,772	-15%	-9%

Relationship of Risk Factor Clusters to Medical Expenditures

Risk factor Cluster	With risk factors	Without risk factors	% difference
Heart Disease risks	\$3,804	\$1,158	228%
Stroke risks	\$2,349	\$1,272	85%
Psychosocial risks	\$3,368	\$1,368	147%
No risk factors		\$1,166	

Annual Excess Costs of High Risk Status

Risk Category	cost/ high risk	# at high risk	total cost due to risk	% of total costs	cost/ capita
Stress	\$732	8,518	\$6,236,880	7.9%	\$136
Former Tobacco Smoker	\$311	14,329	\$4,455,029	5.6%	\$97
Body weigh	\$352	9,197	\$3,239,919	4.1%	\$7.
Exercise Habits	\$173	14,908	\$2,574,760	3.3%	\$56
Current Tobacco User	\$228	8,797	\$2,004,045	2.5%	\$44
Blood Glucose	\$587	2271	\$1,332,646	1.7%	\$29
Depression	\$1,187	997	\$1,183,439	1.5%	\$26
Blood Pressure	\$199	1,827	\$363,317	4.6%	\$8
Excess Alcohol Use	-\$52	1,723	-\$89,027	-1.1%	\$2
High Cholesterol	-\$14	8,641	-\$117,431	-1.5%	-\$3
Nutrition Habits	-\$162	9,278	-\$1,500,623	-1.9%	-\$33
Total Expenditures Attributable to High Risk Per Capita			\$19,682,953	24.9%	\$428
Total Medical Care Expenditures			\$78,959,286		

Health Behaviors and Medical Care Costs in Korea

- **Smokers**
 - inpatient hospital costs : 36% higher than non-smokers
 - hospital stays : 44% longer than non-smokers
 - \$ 300,000,000 annual excess inpatient hospital costs

Jee Sun Ha, Yonsei University preliminary unpublished data

Impact of Health Promotion Programs on Medical Care Costs

	# of studies	
Reduced Absenteeism	14	87%
No Change	1	6%
Increased Absenteeism	1	6%
total	16	100%

Cost/benefit analysis : 5 studies

range of savings : \$ 2.50 - \$ 10.10 per \$ 1.00 invested

average savings : \$ 4.90 per \$ 1.00 invested

Impact of Health Promotion Programs on Medical Care Costs

	# of studies	
Reduced medical Care Costs	21	88%
No Change	3	12%
Increased Medical Care costs	0	0%
total	24	100%

Cost/benefit analysis : 8 studies

range of savings : \$ 2.30 - \$ 5.90 per \$ 1.00 invested

average savings : \$ 3.35 per \$ 1.00 invested

Potential Impact of Health Promotion on Medical Care Costs

Control 25% of total annual costs

- \$ 5,000,000,000/year in Korea

How Much More Productive ?

How much more productive is employee who is physically and emotionally able to work, and motivated to work ?

1 % ? 5 % ? 10 % ? 15 % ? 20 % ?

Potential Impact of Health Promotion on Productivity

- 1% increase in productivity
 - 9% increase in profits if 10% profit margin
 - 19% increase in profits if 5% profit margin
- 10% increase in productivity
 - 82% increase in profits if 10% profit margin
 - 173% increase in profits if 5% profit margin
- value of productivity increase (in Korea)
 - 1% increase = \$3,000,000,000/year
 - 10% increase = \$30,000,000,000/year

Win-Win-Win-Win

Business : more productive employees, enhanced image and lower medical care costs

Employees : improved health and well-being and lower medical care costs

Labor : more satisfied union members, participation in process

Government : labor/management cooperation, lower medical care costs, more competitive businesses

example : United Auto Workers with General Motors, Ford and Chrysler