



# The Effects of a Health Plan on Reducing Health Inequality for Upsurge of Cardiovascular Risk in Hospital Workforces

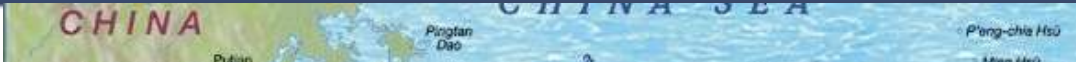
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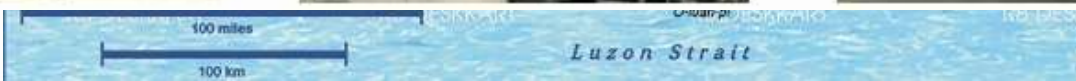
# OUR WAY TO APPROACH

- Introduction of Taiwan Adventist Hospital
- Materials and Methods
- Results and Discussion
  - Outcome





Since 1955





# Mission

To emulate Jesus Christ's spirit to provide services to all people and to establish a model of preventive medicine.



# CARDIOVASCULAR DISEASE IN HOSPITAL WORKERS

- Cardiovascular disease and diabetes: crucial health problems in Taiwan
  - One fourth of the top ten causes of death related to cerebral vascular disease, cardiovascular disease and diabetes in Taiwan (Department of Health, 2008)
- Hospital employees may have a higher risk for cardiovascular diseases and metabolic syndrome than general population, which is probably due to shift work schedule, an unhealthy lifestyle and high stress works, etc.
- Hospitals are responsible for providing not only a safe working environment but also various programs to alter health behavior of staffs toward a more healthy lifestyle.

# CURRENT STRATEGIES

## Supportive Environment

- Reduce hospital environmental hazards
- Focus on illness prevention
- NEWSTART Cafeteria\*
- NEWSTART Exercise Center\*

## Health Promotion

- NEWSTART Lifestyle Camp for new staffs
- Variant exercise program for employees
- **NEWSTART Lifestyle Program for staffs with CVD risk factor(s)**

# NEWSTART CAFETERIA

## “Taste of Nature”

We offer healthy, natural, high-fiber **vegan** foods **without refined sugar, refined oil, milk and eggs.**

Low-sugar, low-fat pastries, whole-grain bread, and various types of health-promoting foods are available.





# Exercise center



# NEWSTART

Since 1987 in TAH



**N**utrition 均衡營養



**E**xercise 持久運動



**W**ater 充足水分



**S**unlight 適度陽光



**T**emperance 節制生活



**A**ir 清新空氣



**R**est 身心休息



**T**rust in God 信靠上帝

# HOW NEWSTART CAN HELP YOU

- Reverse Diabetes
- Restore Hearts
- Relieve Arthritis
- Renew Immune Systems
- Shed Pounds
- Lower Cholesterol
- Increase Energy
- Enhance Vital Capacity



By Dan Buettner

Photographs by David McLain

Residents of Okinawa, Sardinia, and Loma Linda, California, live longer, healthier lives than just about anyone else on Earth. What do they know that the rest of us don't?

NOV 2005 , National Geographic  
Magazine

# Hospital employees with risk factor(s) for CVD in 2006-2009

Year	2006	2007	2008	2009
Number	199	239	239	195
Missing data	4	8	4	13
Normal	168 ( 84.4% )	184 ( 77.0% )	188 ( 78.7% )	159 ( 81.5% )
≤ 2 factors	19 ( 9.5% )	34 ( 14.2% )	28 ( 11.7% )	19 ( 9.7% )
≥ 3 factors	12 ( 6.0% )	21 ( 8.8% )	23 ( 9.6% )	17 ( 8.7% )



# Hospital Strategies

## ◆ The purpose

A health promotion program was initiated to reduce risk factors of cardiovascular diseases for high risk employees.

## ◆ Method

### ◆ Health Promotion Program: Including

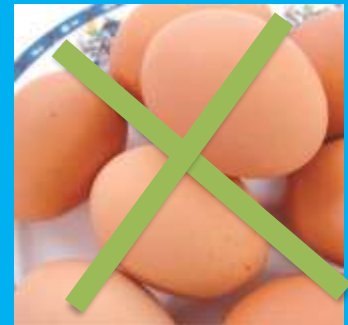
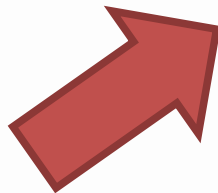
- NEWSTART DIET for 12 days
- Exercise program for 3 months

## ◆ Subjects

- ◆ 60 eligible recruits with risk factor(s) for CVD

### • Diet

- 1,300 , 1,400, 1,500 and 1,600 kcal/day, based on body weight



# Procedure

1<sup>st</sup> Blood Test and Physical Fitness Test

NEWSTART Lifestyle Program

2<sup>nd</sup> Blood Test

Blood Test and Physical Fitness Test  
(3 months later)



再來看看你的柔軟度有多好呢!!

✓ Test items: Weight, BMI, Waist circumference, BP, T-Chol, HDL-C, LDL-C, TG, fasting glucose, Body Fat, Cardiovascular endurance, Flexibility, and Muscular endurance

# Result-1

Indicators	Baseline	12 days	3 months
Anthropometric index and BP			
Weight ( kg )	61.2±10.6	60.0±10.4***	60.6±10.5
BMI ( kg/m <sup>2</sup> )	24.1±3.5	23.6±3.3***	23.9±3.3
Waist circumference ( cm )	80.4±8.8	78.6±8.5***	80.6±9.5
SBP ( mmHg )	121.7±15.7	120.6±13.6	120.33±15.6
DBP ( mmHg )	72.2±9.1	72.9±8.8	72.1±9.1
Biochemical profile			
Fasting glucose ( mg/dl )	96.1±18.7	94.5±17.4***	96.1±24.3
T-Chol ( mg/dl )	202.5±41.9	186.5±36.6***	202.3±41.5
HDL-C ( mg/dl )	52.9±16.7	49.1±16.5***	48.9±15.4 ***
LDL-C ( mg/dl )	127.6±36.3	121.2±32.7*	134.2±36.5
TG ( mg/dl )	115.0±83.7	87.3±51.1***	96.2±74.4**

# RESULT-2

## Physical Fitness

Indicators	Baseline	3 months	p-value
Physical Fitness			
Body fat ( % )	31.7±7.2	31.4±6.8	0.04*
Cardiovascular endurance	143.0±19.4	143.0±18.7	1.00
Flexibility	25.0±9.8	25.8±9.5	0.04*
Muscular endurance	19.9±10.5	22.6±10.6	< 0.001***

## Metabolic syndrome

Baseline  
10

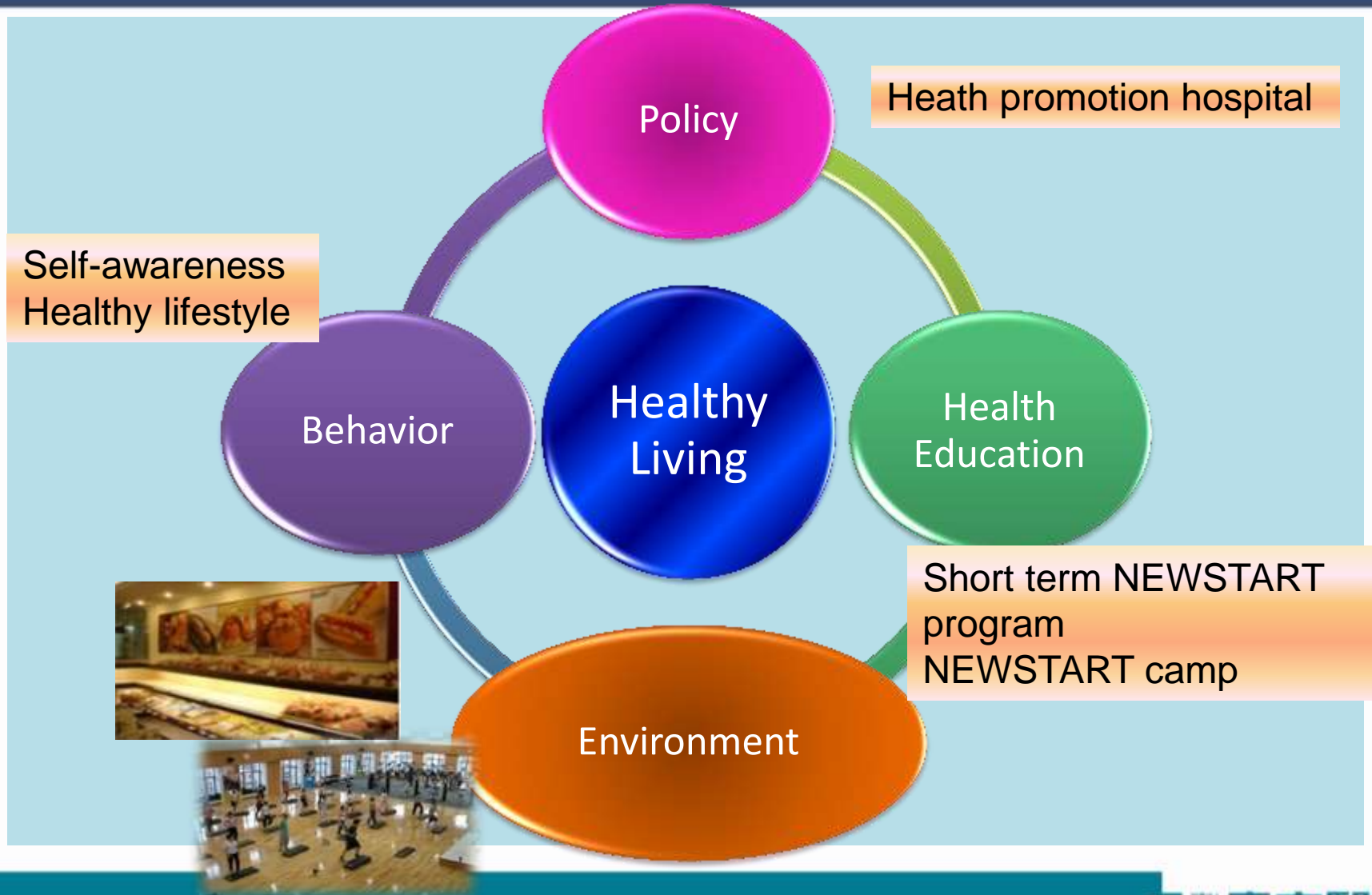
12 days  
8

3 months  
4

# DISCUSSION

- Hospitals obligate to implement policies regarding to employees' health.
- NEWSTART Lifestyle program
  - Short-term improvement in biochemical parameters.
  - Better physical fitness after 3 months.
  - The number of metabolic syndrome decreased by 60%
  - Limitations of this program
    - Holiday Effects:  
overeating and less physical activities in Chinese New Year
    - Short duration

# CONCLUSION



# THE RESPONSE OF STAFFS

- Support health promotion programs: >90%
- TAH is a safe workplace: 83.9%
- Have regular exercise: 68.9%
- Benefited by the health promotion environment:  
>80%



Health Promotion Hospital  
Healthy and Happy employees

THANK YOU FOR YOUR ATTENTION



臺安醫院