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Knowledge, Perceived Risks and Preventive Behavior of Coronary Heart Disease in  
Chinese Hong Kong Women

by

Lai Har Wu

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Nursing

in the

GRADUATE DIVISION

of the

KNOWLEDGE, PERCEIVED RISKS AND PREVENTIVE BEHAVIOR OF  
CORONARY HEART DISEASE IN CHINESE HONG KONG WOMEN

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by

Lai Har Wu

## Dedication

This dissertation is dedicated to my parents, Lin Tai Leung and Tim Wu; and the Wu's family, including Chun Wah., K.T., Y.L., Chun Lok, C.H., T.K., T.W., and T.H. This work is also dedicated to the Cheng's family including Father, L.T., Y.S., Y.M., I.S., K.Y., Y.Y., and K.C.; and also my husband, Y.H. for his endless love and support to my study.

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Abstract

KNOWLEDGE, PERCEIVED RISKS AND PREVENTIVE BEHAVIOR OF  
CORONARY HEART DISEASE IN CHINESE HONG KONG WOMEN

Lai Har Wu

University of California, San Francisco, 2007

Coronary heart disease (CHD) has been second to cancer as the most common cause of death for more than three decades in Hong Kong (HK). The purpose of this study was to examine the knowledge, perceived risks and preventive behavior regarding CHD among Chinese women living in HK. A cross-sectional study of 168 community dwelling women from HK was conducted in three settings. The respondents completed surveys or participated in interviews which included basic sociodemographic information, personal health data, the CHD risk factor knowledge test, CHD risk perception scale, Family APGAR test, Center for Epidemiological Studies-Depression CES-D and the Health-Promoting Lifestyle Profile II questionnaires. Results showed that family function was considered to be “moderately dysfunctional” and the likelihood of depression was 29%. The respondents also showed a low level of CHD risk factor knowledge and a moderate concern for perceived CHD risk. This sample had a low commitment to physical activity in daily life. Pearson correlation coefficient tests were performed to examine relationships between independent and dependent variables. A multiple regression model showed that eight socio-demographic variables, with family functioning and depression, explained 13.6% of the variance in CHD risk factor knowledge ( $R^2=.136$ ,  $F=2.481$ ,  $p=.009$ ); and 17.2% of the variance in CHD perceived risk ( $R^2=.172$ ,  $F=3.266$ ,  $p=.001$ ). Another regression model with CHD risk factor

knowledge, CHD perceived risk, and eight sociodemographic variables (age, educational attainment, number of people living in the household, monthly household income, marital status, self-reported body mass index, economic activity status and religion) as independent variables explained 28.6% of the variance in Chinese Hong Kong women's CHD preventive behavior ( $R^2=.286$ ,  $F=5.164$ ,  $p=.000$ ). Results showed that family functioning (Family APGAR) (6.9%) and depression scores (CES-D) (2.9%) significantly contributed to the variance in CHD preventive behavior. This study revealed that family functioning and depression symptoms independently predict CHD preventive behaviors in Chinese women living in HK. Improving family functioning and decreasing depression should be considered as a strategy for heart health promotion.



Sally H. Rankin, RN, PhD, FAAN, Committee Chair



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## **CHAPTER I**

### **INTRODUCTION**

Over the course of the past century, the processes and consequences of demographic and epidemiological transitions have triggered significant impacts on people's health and health care provision in the modern world (Taylor & Bury, 2007). While advancements in science and technology have prolonged people's lives in general, they have also brought along lifestyle changes which may have detrimental effects on population health. An increasing number of females are involved in the paid labor force, due to female emancipation, and this may also create certain "bitter-sweet" experiences in their everyday lives. Having a job may raise a woman's social status and financial freedom in society, however, the pressure of being a working woman, a housekeeper and a family caregiver could affect her general well-being, and physical health in particular.

Hong Kong (HK), like many other "developed" countries, has experienced such consequences of social advancement. The transformation of HK from a small fishing village to an industrialized and metropolitan city took place primarily in the early 1950s when textile mills were established with capital entrepreneurship from Mainland China (Cheng, 1997). Hong Kong is one of the most densely populated places in the world. Due to its strategic location and its status as a free port, it is a bustling center of economic activity (Yue, 2005). Although HK experienced the Asian financial crisis right after the handover from Britain to China in 1997, its competitiveness in many aspects of economic activity has not been diminished. Prior to the handover, Hong Kong's economy had already been transformed from an industry-based to a service-based economy. Although about 95% of the total population in HK are ethnic Chinese (Hong Kong Census &

Statistics Department, 2007), the westernized lifestyles along with the hectic daily life may take a toll on the health of the public.

### Coronary Heart Disease in Context

According to the World Health Organization (WHO) World Health Report (2003), ischemic heart disease is the leading cause of mortality for males and females aged 60 years and older. In fact, coronary heart disease (CHD) has been one of the leading causes of death for many years in HK and worldwide (Hong Kong Department of Health, 2006a). Coronary heart disease is decreasing in many developed countries, but is increasing in developing countries, partly as a result of increasing longevity, urbanization and lifestyle changes (Mackay & Mensah, 2004). Although the mortality rate from CHD in HK is only one-fourth that of Northern Europe and the United States, the disease has been and remains the second major cause of death after cancer (Fu, 2001; Hong Kong Department of Health, 2006a; Janus, 1997).

Even with the advancement of pharmacological, medical and cardiac technology, and the improvement of health care services, the death rate from CHD has not dropped significantly in recent years in HK. Diseases of the heart and cerebrovascular disease were number two and four of the top ten leading causes of death in HK in 2005 (Hong Kong Department of Health 2006b). Coronary heart disease risk increases with age, and this increase is more dramatic in women than men (Ali, 2002; Mosca, Ferris, Fabunmi & Robertson, 2004). The incidence of CHD is lower in premenopausal women, compared with men of the same age. After menopause, the risk of mortality from CHD increases in women.

Coronary heart disease is usually associated with one or more characteristics known

as risk factors, such as smoking, high blood cholesterol, high blood pressure, diabetes mellitus, physical inactivity and obesity (American Heart Association, 2003; Newton & Froelicher, 2005). According to the Hong Kong Health and Lifestyle Surveys conducted in 1999 and 2004 showed that people of HK are not motivated to lead a healthy lifestyle (Hong Kong Department of Health & University of Hong Kong, 1999, 2004). When people do not take up healthy lifestyles, it may be because they do not have the relevant knowledge, or they do not perceive that a healthy lifestyle is necessary if they do not believe they are susceptible to lifestyle diseases such as CHD (Tones & Green, 2004).

Families have been found to be the primary source of health-related behavior patterns, of the initial assessment of individuals' health problems or the decision to seek medical care, of health beliefs and attitudes in influencing compliance with medical regimens, and of social support for chronic health problems (Doherty & Campbell, 1988; Knafl & Gilliss, 2002; Weihs, Fisher & Baird, 2002). Undoubtedly, family functioning can affect an individual's coping with illness and prevention of diseases. In recent years, depression has been considered as a psychological risk factor for CHD in empirical and meta-analysis research studies (Madan & Froelicher, 2005; Rugulies, 2002). Family is a place to provide protection and women have long been considered as informal caregivers. Family functioning and depressive symptoms are two important aspects affecting women's health and their health behavior. Coronary heart disease is generally regarded by the public as a man's disease and women may not pay attention to CHD prevention (Tullmann, & Dracup, 2005). In order to understand women's CHD preventive behavior, their lifestyle will need to be examined since having a healthy lifestyle is considered a



means to promote heart health.

The five chapters comprising this dissertation provide a theoretical and empirical understanding of Chinese HK women's CHD preventive behavior. The first chapter outlines the significance and purpose of this study. The second chapter provides a selective critical review of literature pertinent to this study. The areas discussed are: the overall CHD profile in HK, risk factors of CHD, perception of risk of CHD, family functioning, depression and CHD. It is followed by a discussion of preventive behavior of CHD with a theoretical model proposed for this study. Chapter Three describes the study methodology in detail. In this chapter, the research design, study sites, sampling method, the recruitment procedure, methods of protection of human subjects, the instruments used to measure the variables, the procedures utilized to collect data, and the method of data analyses are described. Chapter Four presents the results of this descriptive correlational study to understand CHD preventive behavior in Chinese women living in HK. Findings reported in this chapter include descriptive information about the sociodemographic characteristics of the respondents, the results of the different instruments used in the study and data related to the six research questions. Finally, Chapter Five discusses the findings and presents the conclusions drawn from the findings. The discussion of results includes major findings and discussion of the research questions. Limitations of the study are then discussed, implications for nursing are outlined, and recommendations for future research are delineated.

#### Significance of Research

Women have long been regarded as informal caregivers and they are the ones considered to be responsible for the diet and health promotion for their families (Gahagan,

Loppie, Rehman, Maclellan & Side, 2007; Talley & Crews, 2007). It is a current trend to supplement the patient-focused biological approach by adopting a social system and a family-focused approach to the prevention and management of chronic diseases (Fisher & Weihs, 2000). The influence of family functioning has been regarded as important for an individual's personal, physical, behavioral, and social growth. Depression is regarded as a predictor for CHD in the Western countries (Rugulies, 2002). The relationship between family functioning, depression and CHD prevention has not been studied in HK. The purpose of this research is to identify the contribution and unique function of CHD risk factor knowledge, perceived CHD risks, depression, family functioning and sociodemographic status as predictors of CHD preventive behavior, through a health promoting lifestyle. The results of this study will shed light on the understanding of CHD risk factor knowledge, perceived risks and CHD preventive behaviors of Chinese Hong Kong women. The association between healthy lifestyle and family functioning as well as depression will also be studied in order to give health care professionals more understanding about the effect of family functioning on women's health. Effective and efficient health promotion strategies can be piloted and tested based on the results from the study on CHD prevention in Chinese women living in HK.

#### Purpose of the Study

The purpose of this study was to explain Chinese HK women's CHD preventive behavior, in terms of healthy lifestyle behaviors, as influenced by the women's knowledge of CHD risk factors, perceived risks of CHD, family functioning, level of depression, and some selected sociodemographic characteristics. The specific study aims and research questions for this descriptive correlational study will be elaborated in

## Chapter Two.

## **CHAPTER II**

### **LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK**

#### Introduction

Coronary Heart Disease is a leading cause of death worldwide (Rosamond et al., 2007). According to the World Health Organization (WHO), CHD was ranked number one of the top ten killing diseases, causing the deaths of 7 million people in 2002 (McKay & Mensah, 2004). The Hong Kong Department of Health reported that in 2003, CHD death accounted for 10.2% of all deaths in Hong Kong. Among these CHD deaths, 45% were females, of whom, 12.5% were under age 65 when they died. The death rate for heart diseases increased from 70 to 86.5 per 100,000 population during the period of 2001 and 2004. The death rate for cerebrovascular diseases also rose from 46.6 to 50.4 per 100,000 population in the same period (Hong Kong Department of Health, 2006b). Moreover, CHD was the major health problem in Hong Kong and a main cause for use of the public hospital services (Hong Kong Department of Health, 2004).

According to Hart (2005), women often perceive CHD as a male disease. Their longer life expectancy results in CHD being the cause of death for more women than men (Tullmann & Dracup, 2005). Several studies (Hart, 2005; Mosca, 2004; Thanavaro, 2005) indicate that women lack concern about CHD as they usually underestimate their risk of developing CHD. In fact, many women believe that cancer is the greatest risk, especially breast cancer (Mosca et al., 2000). In addition, women have limited knowledge of the risk factors for CHD. Many women are not aware that modifying their lifestyles can prevent them from developing the risk factors of CHD, such as obesity and smoking. Therefore, women often neglect their potential to modify their lifestyles (Rosamond et al.,

2007; Thanavaro, 2005). Meanwhile, the lack of perception and knowledge about CHD may also delay preventive efforts and the adoption of positive lifestyle changes (Mosca et al., 2000; Wilcox & Stefanick, 1999).

### Coronary Heart Disease: Risk Factors

According to the National Heart, Lung, and Blood Institute (NHLBI) (American Heart Association, 2003), Coronary Heart Disease, also called Coronary Artery Disease, occurs when the coronary arteries, which supply blood and oxygen to the heart muscle, become hardened and narrower. This may lead to the build-up of plaque on the inner walls, called atherosclerosis. When the amount of plaque increases, the insides of these arteries become narrower, causing less blood and oxygen to pass through the blood vessels. As a result, the insufficient blood and oxygen flow to the heart muscle cause angina pectoris, acute myocardial infraction or sudden death.

Without a known cause of CHD or clinical observations in relation to the development of the underlying disease processes, “risk factors” represent discrete characteristics linked to the probability of developing coronary heart disease (Oppenheimer, 2006). Numerous studies have shown that several factors increase the risk of developing CHD (Newton & Froelicher, 2005; Rosamond et al., 2007; Stampfer, Ridker & Dzau, 2004). The more risk factors one has, the greater one’s chance of developing CHD. Although some CHD risk factors are non-modifiable, such as gender, age or family history, most of the CHD risk factors are modifiable, e.g., smoking and physical inactivity. Studies document the relationship between lifestyle and CHD development or recovery (Gupta, Singh & Verma, 2006; Rosano, Vitale & Tulli, 2006; Williams et al., 1993). The common modifiable risk factors mentioned in literature

include smoking, poor stress management, physical inactivity and several physical conditions, such as diabetes mellitus, hypertension, high blood cholesterol and being overweight. These can be eliminated or modified by the adoption of a healthy lifestyle. (American Heart Association, 2003; Health Evidence Bulletins Wales, 2006; Janus, 1997; Mosca et al., 2000)

### Non-Modifiable Risk Factors

In the following sections, the non-modifiable risk factors are discussed.

#### *Gender and Age*

According to Stampfer and colleagues (2004), male gender and older age are risk factors for CHD. The rates of morbidity and mortality of females suffering from CHD are steadily rising, while those of males are declining (Cheek and Cesan, 2003; Fu, 2001; Health Evidence Bulletins Wales, 2006). Cheek and Cesan (2003) report that, in general, women are at lower risk of CHD than men until they reach the age of 65. Furthermore, women usually develop signs and symptoms of CHD 10 to 15 years later than men. Pre-menopausal hormones played an important role in the protective effects against CHD. The incidence and prevalence in women equalized after menopause. Therefore, women were also at a high risk of developing CHD before the age of 65 after menopause (Hart, 2005; Mosca et al., 2000). Meanwhile, 64% of women who died suddenly of CHD had no previous symptoms of this disease (Thom, Kannel, Silbershatz, & D'Agostino, 2001). To sum up, men have a greater risk of heart attack than women, and they have attacks earlier in life while women's risk rises after menopause (American Heart Association, 2003). Both genders have a higher risk of developing CHD with increasing age.

### *Family History*

Some studies confirm that family history of CHD is a useful marker for high-risk individuals. CHD has a strong genetic component, and inherited susceptibility patterns appear in families. An individual who has a family history of CHD would develop CHD at a younger age, usually before the age of 55 (Cheek & Cesan, 2003; Fu, 2001; Hart, 2005).

### Modifiable Risk Factors

The following section explains in detail the modifiable risk factors including smoking, serum lipids and lipoproteins, hypertension, diabetes mellitus, physical inactivity, overweight and stress management.

#### *Smoking*

There is plenty of literature showing that smoking is the single most preventable cause of death and a universal independent predictor of CHD in both men and women (American Heart Association, 2003; Anderson & Kessennich, 2001; Newton & Froelicher, 2005). According to the American Heart Association (2003), smokers' risk of heart attack is more than twice that of nonsmokers. Smokers who have a heart attack are more likely to die and die suddenly (within an hour) than are nonsmokers. Among Americans age 18 and above, 23.4% of men and 18.5% of women were smokers, putting them at increased risk of heart attack and stroke (Centers for Disease Control and Prevention, 2005). According to Rosamond et al. (2007), 20.6% of adults age 18 and above were current smokers in the US. Risks of CHD increased in individuals with hypertension, diabetes, obesity and smoking of  $\geq 20$  pack year (Lee et al., 2001). There is a socio-economic gradient between smoking and social groups (Health Evidence

Bulletins Wales, 2006). Cigarette smoking is more prevalent among manual labor social groups than among non-manual groups in Great Britain. It is estimated that 35% of men and 30% of women in manual occupations smoke compared with 23% of men and 22% of women in non-manual occupations as revealed by the British Heart Foundation (Health Evidence Bulletins Wales, 2006). In Hong Kong, a study on lifestyle implemented by the Department of Health found that among 1,101 female respondents, 6% were daily smokers while 89% had never smoked (Hong Kong Department of Health, 2006c). The CHD risk increases with number of cigarettes smoked, longer duration of smoking, and younger age at initiation of smoking (Newton & Froelicher, 2005). Women who are current smokers have up to four times the risk of first myocardial infarction of those who have never smoked before (Rosenberg, Palmer, & Shapiro, 1990). Smoking cessation should be encouraged among the general public regardless of age, gender, and the presence of established CHD and related diseases.

#### *Serum Lipids and Lipoproteins*

Cheek and Cesan (2003) in reporting The Framingham Heart Study, state that women with high total cholesterol levels are twice as likely to develop CHD as other women. The desirable level of total cholesterol is less than 200 mg/dL, which puts an individual at low risk for CHD (American Heart Association, 2003). Most cholesterol in the blood is carried in a protein “package” called low-density lipoprotein (LDL) cholesterol, which is a “bad” cholesterol causing the build-up of plaque. Elevated serum total cholesterol and LDL cholesterol are associated with an increased risk of CHD in men and women of all ages (Wilson, 1990). The optimal level of LDL cholesterol is less than 100 mg/dL. High-density lipoprotein (HDL) cholesterol is the “good”



cholesterol because it tends to carry excess cholesterol back to the liver where it is removed from the body. People with a low level of HDL cholesterol (less than 40 mg/dL) have a higher risk of CHD. Also, HDL is a much stronger predictor of CHD mortality in women than in men (Cheek & Cesan, 2003). Triglyceride is the most common type of fat in the body. The normal triglyceride level is less than 150 mg/dL. Many people who have CHD or diabetes have high triglyceride levels. Normal triglyceride levels vary by age and sex. A high triglyceride level combined with low HDL cholesterol or high LDL cholesterol seems to speed up atherosclerosis. A diet high in saturated fats, trans fats and cholesterol tends to raise total blood cholesterol and LDL cholesterol. Trans fat results from adding hydrogen to vegetable oils used in commercial baked goods and for cooking in most restaurants and fast-food chains (American Heart Association, 2003).

### *Hypertension*

In accordance with Li, Steward, Scott and Froelicher (2006), hypertension is defined as a systolic blood pressure  $\geq 140$  mmHg and a diastolic blood pressure  $\geq 90$  mmHg and it is also a well recognized risk factor for CHD and stroke. Blood pressure tends to increase with age. Men have a greater risk of high blood pressure than women until age 55, when their respective risks are similar. At age 75 and older, women are more likely to develop high blood pressure than men are (American Heart Association, 2003). High blood pressure usually has no specific symptoms and no early warning signs so it is a “silent killer” in men and women. The residual lifetime risk for hypertension in middle-aged and elderly individuals is 90%, indicating a huge public health burden (Health Evidence Bulletins Wales, 2006). Hypertension is also one of the most common

chronic illnesses and, along with its complications, causes great financial and manpower burden to the Hong Kong Hospital Authority and Department of Health (Hong Kong Department of Health, 2006a).

### *Diabetes Mellitus*

According to Ko (2000), in Hong Kong, diabetes mellitus (DM) is diagnosed if the fasting plasma glucose cut-off value is reduced to 7.0 mmol/L and two hour plasma glucose cut-off value is 11.1 mmol/L. Results from a meta-analysis suggested that, after combining studies that adjusted for other cardiac risk factors, the relative risk of coronary death from diabetes was 2.58 (95% CI, 2.05-3.26) for women and 1.85 (95% CI, 1.47-2.33) for men (Lee, Cheung, Cape, & Zinman, 2000). The difference is just statistically significant ( $p=.045$ ) and further research is required to explain this difference between the sexes. However, DM is still a greater risk factor for CHD in women than it is in men (Halm & Penque, 2000). As stated by Rosamond et al. (2007), DM increases a woman's CHD risk three to seven times. This may be explained by the fact that DM is strongly associated with other CHD risk factors, including hypertension, high cholesterol, obesity and aging. Wenger (1997, 2002) shows that women suffering from DM would lose all pre-menopausal protection, the pre-menopausal estrogen advantage. Hence, this group of women has an equal risk as men of developing CHD in their forties. Furthermore, pre-menopausal diabetic women have a sevenfold increase in CHD compared with women who do not suffer from diabetes mellitus.

### *Physical Inactivity*

Cheek and Cesan (2003) state that physical activity (exercise) could decrease a woman's risks of suffering from CHD by 50%. The benefits of regular exercise and

physical activity are well-documented (Chyun, Amend, Newlin, Langerman & Melkus, 2003; Knowler et al., 2002; Mosca, Ferris, Fabunmi, & Robertson, 2004). Exercise helps in decreasing CHD risk by increasing HDL cholesterol level, and decreasing total cholesterol levels, blood pressure and blood glucose. According to Halm and Penque (2000), a woman needs light to moderate activity to decrease her risk of CHD. Regular exercise was defined as undertaking at least 20 minutes moderate or strenuous physical activity in leisure time on three or more occasions per week (Health Evidence Bulletins Wales, 2006). However, according to the Department of Health, UK (2004), it was recommended that in order to benefit health, adults should aim to take at least 30 minutes of at least moderate intensity activity on five or more days a week. American Heart Association (AHA) recommends regular, moderate-to-vigorous exercise to reduce CHD risk. For most healthy people, the AHA recommends 30-60 minutes of physical activity on most days of the week to condition the heart and lungs (American Heart Association, 2003). However, it was found that people in HK were not keen to participate in physical exercise (Fu, 2001; Hui & Morrow, 2001). The health survey done by the Department of Health in 2006 also revealed that people in HK were not eager to participate in physical activity.

### *Obesity and Overweight*

Body Mass Index (BMI) is used to define overweight. Body mass index is calculated by body weight (in terms of kilograms) divided by the square of body height in meters. A person is classified as overweight if the BMI is  $\geq 25$  for men and  $\geq 24$  for women (Health Evidence Bulletins Wales, 2006). People are classified as obese if their BMI is over 30 in the Western countries. According to Hong Kong Department of

Health (2006d), the normal range of BMI for adult Asians is between 18.5 to 22.9 kg/m<sup>2</sup>, and BMI above 23.0 kg/m<sup>2</sup> is defined as overweight. Obesity is a common risk factor for CHD in both genders. However, several prospective studies have indicated that obesity might be a greater risk factor for women (Health Evidence Bulletins Wales, 2006; Mosca, Ferris, Fabunmi, Robertson, 2004; Rosamond et al., 2007). Obese women have a three times greater risk of CHD compared with non-obese women (Anderson & Kessenich, 2001). The waist measurement and the BMI are the recommended ways to estimate a person's body fat. A high-risk waistline is more than 35 inches for women and more than 40 inches for men in the Western countries (American Heart Association, 2003). According to Hong Kong Department of Health (2006d), about 30% of Hong Kong females are overweight.

#### *Stress Management*

Stress is considered an important psychosocial risk factor of CHD (Assmann et al., 1999). Studies agree that women who experienced high-stress, low-control situations in their lives have a much greater risk of developing CHD and a poor prognosis (Goldstein, & Niaura, 1992; Suzuki et al., 1997). There is evidence to suggest that in the hour after high levels of negative emotions, the risk for ischemic episodes would be doubled (Gullette et al., 1997). Lower socioeconomic status groups appear to have increased incidence of CHD because individuals who belong to these groups may have experienced stressful life events that their higher social class counterparts would not (Madan & Froelicher, 2005). Other psychosocial factors such as depression, anxiety, hostility, job stress, lack of social support and isolation have been studied and shown to cause an increased risk of CHD (Bunker et al., 2003; ENRICH Investigators, 2003).

To conclude, the modifiable risk factors play an important role affecting the chance of having CHD. A 50-year-old woman who does not have diabetes does not smoke and keeps her cholesterol and blood pressure in the range recommended by national guidelines has an 8% chance of symptomatic heart disease in the next 45 years (Kolata, 2007). But only 5% of 50-year-olds have those risk factors under control. If that woman has just one major risk factor, e.g., a high cholesterol level, her chance of having symptomatic heart disease rises to 39%, as reported by Dr. Levy, Chief of Cardiovascular Medicine at Brigham and Women's Hospital in Boston (Kolata, 2007). Just as for smoking cessation, having a healthy lifestyle to avoid modifiable risk factors of CHD can improve quality of life and decrease chances of having CHD. It is important to have knowledge of the risk factors so that healthy choices can be made, e.g., choosing food with low fat and cholesterol, having regular exercise and effective stress management techniques.

The aim of this study was to examine the knowledge of CHD risk factors, perceived risks and preventive behavior of CHD in Chinese women living in Hong Kong. The role of family functioning and depression, as well as some sociodemographic characteristics were also explored for their effects on CHD preventive behavior. In the following paragraphs, the knowledge of CHD risk factors and perceived risks of CHD will be outlined. Family functioning and depression, certain sociodemographic characteristics affecting CHD and preventive behavior of CHD in terms of healthy lifestyle would also be explored.

#### Knowledge of CHD Risk Factors

It is important that women know the risk factors before they can engage in effective

health promotion activities (Robertson, 2001). Women may be able to outline the most common risk factors such as smoking, overweight and increased blood cholesterol. However, they may not have a full picture of all the just mentioned ten most common risk factors being identified, such as family history, diabetes mellitus, hypertension and increasing age. Mosca and colleagues (2004) found that in their study, among the 914 female respondents, being overweight, not exercising, smoking and high cholesterol were the most cited responses as risk factors for CHD. Coronary heart disease with acute myocardial infarction can take the lives of individuals in a very short time. It is clear that knowledge of CHD risk factors needs to be promoted to gain people's understanding for better heart health (Assmann et al., 1999; Mosca, 2004). In Hong Kong, there is no existing research work and literature about women's knowledge of CHD risk factors. In order to better understand the Chinese HK women's CHD risk factor knowledge, an assessment of their recall of the different risk factors would be useful and appropriate.

#### Coronary Heart Disease Risks Perception

People usually engage more in health promoting activities when they perceive that the activities are beneficial to their health, taking into consideration the risk factors of having the disease, as well (Pender, Murdaugh & Parsons, 2006). However, people with low self-rated perception of CHD risk may not necessarily have an understanding of the CHD risk factors (Wilcox & Stefanick, 1999). Lack of knowledge of the risk factors of CHD may cause people to perceive their own CHD risk inaccurately. Only 11% of the female respondents aged 45-64 in Mosca et al. (2000) study perceived CHD as the major health problem; whereas 34% considered breast cancer as such. Lack of awareness and perception are barriers to promotion of heart health in women. A clear understanding of

Chinese women's self-rated CHD risk perception and its association with risk factor knowledge would be very important for nurses, as health educators, to give appropriate health education, e.g., to increase awareness and to give health advice.

#### Family Functioning, Depression and CHD

Family is defined as a group of intimates with strong emotional bonds (identification, attachment, loyalty, reciprocity and solidarity) and with a history and a future as a group (Gilliss, Highly, Roberts & Martinson, 1989). Families have always been influential in the health of all their members and are inherent and inevitable participants in the prevention and treatment of diseases and health problems (McDaniel, Campbell & Seaburn, 1990). Families have a powerful influence on health behavior. These behaviors include lifestyle behaviors like smoking, exercise and diet; health care behaviors such as adherence to medical treatment, and family caregiving (Campbell, 2003). Families have been found to be the primary source of health-related behavior patterns, of the initial assessment of individuals' health problems or the decision to seek medical care, of health beliefs and attitudes in influencing compliance with medical regimens, and of social support for chronic health problems (Doherty & Campbell, 1988; Knafl & Gilliss, 2002; Weihs, Fisher & Baird, 2002). Various family theorists and nursing academicians have suggested that family functioning is a valuable measurement by which to compare different families and to serve as a goal for family nursing intervention (Friedman, Bowden & Jones, 2003).

An extensive review of 73 articles by Knafl & Gilliss (2002) on family research and chronic illness demonstrated the contribution of enhanced family functioning in promoting recovery or responses to illness. A family-focused approach to the

management of chronic disease integrating patients, family, and community resources working with health care professionals for a better disease outcome was recommended by the National Working Group on Family-Based Interventions in Chronic Disease (Fisher & Weihs, 2000). Research indicates that emotional support from very close persons and social connectedness are major predictors of the onset and severity of CHD (Orth-Gomer, Rosengren & Wilhelmsen, 1993). The effect of family relationships has been illustrated by other research that linked social support and outcome of chronic illnesses such as CHD and DM (Berkman, 2000; Rankin, Galbraith & Huang, 1997). On the other hand, marital hostility and criticism may increase blood pressure in men with hypertension (Ewart, 1991). Due to the chaotic environment, dysfunctional families may not be able to engage in positive health initiatives.

Depression, anxiety and other negative emotions have been thought to be associated with an increased risk for CHD (Booth-Kewley, 1987; Froelicher et al., 2003; Rugulies, 2002). It is reported that recurring depression in healthy women was linked to calcification in the coronary arteries and/or the aorta, which is considered evidence of atherosclerosis (Agatsuma et al., 2005). According to Rugulies (2002), depression predicts the development of CHD in initially healthy people. Depressed people would tend to have more negative thinking or behavior about their own health. However, there is no literature showing the relationship between depression and self-rated CHD risk factors in HK.

#### Socio-Demographic Characteristics

Low socio-demographic status has been shown to be strongly associated with poor health in general and increased CHD specifically (Rosamond et al., 2007; Wild, Laws,



Fortmann, Varady, & Byrne, 1995). Socioeconomic status may influence people's perception of CHD risk and also their initiatives to take action to protect their heart (Ali, 2002; Tullmann & Dracup, 2005). It is believed that higher income families would invest more time and money on health matters. Jobs and busy work lives of HK women may make them neglect a healthy lifestyle and protection of the heart, as well as not being aware they are at risk of CHD (Duvall, 2003; Hart, 2005). A considerable body of literature supports the association between lower education and increased risk behavior, especially smoking (Health Evidence Bulletins Wales, 2006; Newton & Froelicher, 2005; Rosamond et al., 2007). Meanwhile, marital status has an important effect on individuals' health (Campbell, 2003). Sociodemographic characteristics have subtle and important influences on individual and family's health, including CHD.

#### Coronary Heart Disease Preventive Behavior

Coronary heart disease preventive behavior was interpreted in terms of health promotion lifestyle in this study. It is generally agreed that CHD preventive behavior means leading a healthy lifestyle, such as healthy eating, physical activities and stress management (American Heart Association, 2003; Health Evidence Bulletins Wales, 2006; Mosca, Ferris, Fabunmi, Robertson, 2004; Rosamond et al., 2007). People may give up a healthy lifestyle for the sake of enjoyment and lack of time to participate in physical activities (Health Evidence Bulletins Wales, 2006; Lee & Loke, 2005; Lichtenstein, et al., 2006). Some of the barriers to healthy lifestyles include poor knowledge about a healthy lifestyle, lack of awareness, unfavorable self-concept and low level of endurance (Doherty & Campbell, 1988; Rosamond et al., 2007, Stampfer et al., 2004; Williams et al., 1993) People with poor family functioning or depression problems may lack the energy

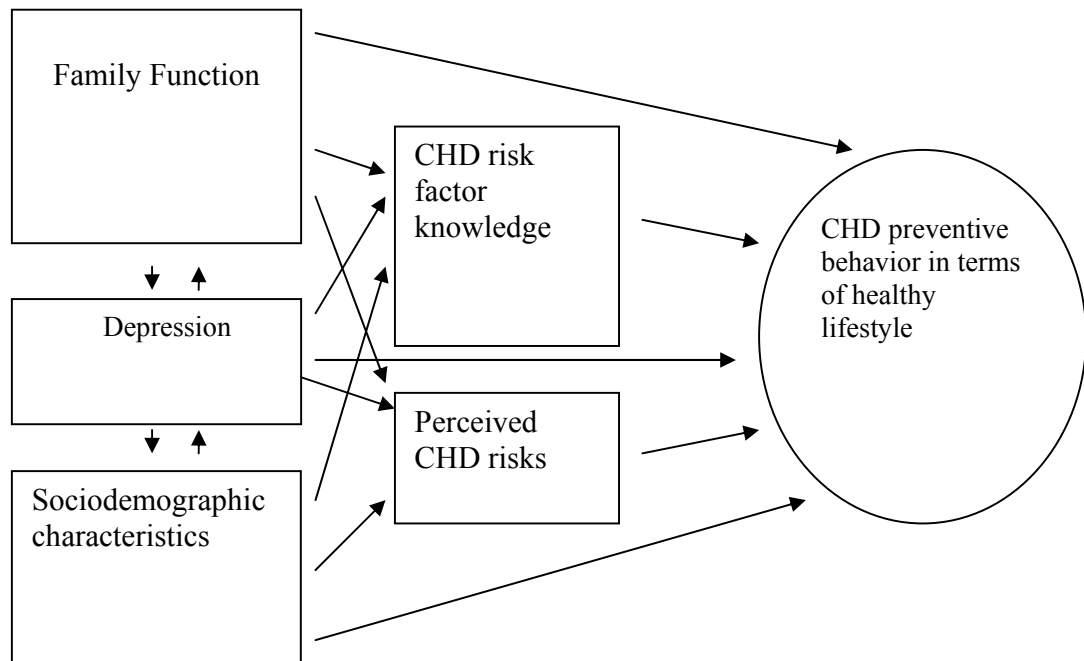
to have a healthy lifestyle (Campbell, 2003). Generally speaking, to promote heart health is to promote a healthy lifestyle (Chyun, Amend, Newlin, Langerman & Melkus, 2003; Mosca, 2004). It is believed that getting sufficient physical exercise, quitting smoking, avoiding high cholesterol and fat food items, and managing stress in a more appropriate way will improve quality of life and also promote heart health (Chyun et al., 2003; Gupta et al., 2006; Rosamond et al., 2007).

With the above understanding of the variables of personal knowledge of CHD risk factors, self-rated CHD risk perception, family functioning and depression with reference to CHD prevention, the relationship between the different variables will be examined to build understanding about the CHD preventive behavior of Chinese women living in Hong Kong. The overall theoretical model of the study is represented in Figure 2.1. The purpose of this study was to examine the knowledge of CHD risk factors, perceived risks and preventive behavior of CHD in Chinese women living in Hong Kong. The role of family functioning and depression, as well as some sociodemographic characteristics were also explored for their effects on the above mentioned variables. A cross-sectional descriptive correlational study design recruiting women from the community was utilized to understand their CHD preventive behavior, in terms of healthy lifestyle.

#### Study Purpose, Aims and Research Questions

The purpose of this study was to explain Chinese HK women's CHD preventive behavior, in terms of healthy lifestyle behaviors, as influenced by the women's knowledge of CHD risk factors, perceived risks of CHD, family functioning, level of depression, and some selected sociodemographic characteristics (Figure 2.1).

Figure 2.1: Theoretical model of the study



The specific study aims and research questions for this study were:

**Study Aim 1:** To describe family functioning, level of depression, CHD risk factor knowledge, perceived CHD risks, and CHD preventive behavior in Chinese women living in Hong Kong.

*Research Question 1a:* What are the sociodemographic characteristics (including health-related variables) of the sample?

*Research Question 1b:* What are the characteristics of the Chinese women living in Hong Kong in relation to knowledge of CHD risk factors, CHD perceived risks, family functioning, level of depression, and health promoting lifestyle?

**Study Aim 2:** To describe the associations among sociodemographic characteristics,

family functioning, level of depression, CHD risk factor knowledge, perceived CHD risks, and CHD preventive behavior in Chinese women living in Hong Kong.

*Research Question 2a:* What are the relationships among the sociodemographic characteristics, family functioning, depression, knowledge of CHD risk factors, CHD perceived risks, and health promoting lifestyle in Chinese women living in Hong Kong?

*Research Question 2b:* Do family functioning, level of depression and sociodemographic characteristics predict CHD risk factor knowledge in Chinese women living in Hong Kong?

*Research Question 2c:* Do family functioning, level of depression and sociodemographic characteristics predict perceived CHD risks in Chinese women living in Hong Kong?

*Research Question 2d:* Do knowledge of risk factors, perceived CHD risks family functioning, level of depression and socio-demographic characteristics predict CHD preventive behavior in Chinese women living in HK?

## **CHAPTER III**

### **METHODOLOGY**

The purpose of this study was to investigate knowledge of risk factors, perceived risks and preventive behavior of CHD among Chinese women living in Hong Kong. Figure 2.1 presented in Chapter II depicts the Theoretical Model for understanding the CHD preventive behavior of Chinese women living in HK and provides the theoretical framework for this cross-sectional study. Associations between family functioning, level of depression symptoms and the above mentioned variables as well as the sociodemographic characteristics of the women are also explored. The purpose of this chapter is to describe the study methods in detail. The research design, setting, sample size, recruitment procedure, measurement instruments, methods of data collection and plan of analysis will be presented.

#### Research Design

A cross-sectional study was conducted to understand the knowledge, perceived risks and preventive behavior of CHD in Chinese women living in HK, and to examine the relationship between the preventive behavior and the different variables including depression and family functioning. This method was chosen because it had the advantage of being cost-effective, efficient and there was no need to follow up (Burns & Grove, 2005; Hulley et al., 2001). Five sets of instruments were adopted. The first instrument was the CHD Risk Factor Knowledge Score to understand the respondents' knowledge of the CHD risk factors (Becker & Levine, 1987). The second instrument was the CHD Perceived Risks Index which was to measure the respondents' perception of their own risk of having CHD (Becker & Levine, 1987). The third instrument was the

Family APGAR score (Family APGAR) to examine the respondents' satisfaction with family functioning (Smilkstein, 1978). The fourth instrument was the Center for Epidemiological Studies – Depression Scale (CES-D) to reveal the severity of depression symptoms of the respondents in the non-clinical setting (Radloff, 1977). The fifth instrument was the Health-Promoting Lifestyle Profile (version II) (HPLP II) (Walker, Sechrist & Pender, 1995) to understand the respondents' lifestyles through the six domains: health responsibility, nutrition habits, physical activity, stress management, spiritual growth and interpersonal relationships. The sociodemographic data of the respondents are collected to examine their relationship to the different variables mentioned above. Examples of the sociodemographic data included age, educational attainment, religion, occupation, monthly household income, and number of people living in the same household. The independent variables of this descriptive correlational study were (1) knowledge of CHD risk factors, (2) perceived risks of having CHD, (3) family functioning, (4) level of depression, (5) age, (6) educational attainment, (7) economic activity status, (8) monthly household income, (9) number of people living in the same house, (10) marital status in terms of partnered or non-partnered status, (11) religion, and (12) estimated body mass index based on respondents' self-reported body weight and height. The dependent variable of this study was health promoting lifestyle.

#### Setting

Study participants were recruited from three sites in HK. In addition, a few respondents were recruited from colleagues of the investigator for this study. Some women preferred to fill in the questionnaires by themselves instead of being interviewed for the data collection. The investigator was present in all those data collection sessions.

Two trained research assistants assisted the investigator and helped with interviewing.

#### 1. The CSP Church

This is a Protestant church of about 120 members, the majority of whom are women. The church, which was established three years ago, is situated in Shamshuipo, Kowloon, a district consisting mainly of low social class families. A church minister introduced the investigator to the church board members to get permission to conduct the study in the church. The church workers helped by announcing the study in church meetings and putting up posters near the church building to make it known to the public. Members and non-members of the church were welcome to participate in the study. The purpose and procedures of the study were clearly written on the poster and flyers with the investigator's phone number for enquiry. The investigator visited the church on a few assigned Sunday afternoons so that any interested women could come during that period of time. A total of 67 women participated in the study through five organized sessions of interviews.

#### 2. An Insurance Company

This company provides different insurance agent services to the public, e.g., life and health insurance. The company chief executive officer allowed flyers to be posted for recruitment of subjects, including company employees and the company's clients who were interested in the study. The investigator met the employees and clients at the company according to their available time to fill in the questionnaires. A total of 23 employees and 40 clients participated in the study.

#### 3. A Beauty Salon

The beauty salon has about 60 regular clients for services like facial massage and

beauty services. The owner of the salon gave permission to post flyers in the salon. Female clients and staff members who were interested in the study could call the investigator for an appointment to complete the questionnaire. The interviews were done by the investigator in the salon. A total of three employees and 17 clients participated in the study.

Besides the above sites, the investigator also invited colleagues to participate in the study. A total of 18 women completed the questionnaire through the snowball sample technique.

### Sample

Convenience sampling was used in this study. An estimate of sample size was determined through the use of a statistical procedure called power analysis (Cohen, 1988). A sample size calculation for a multiple regression model was performed to determine the required sample size. Assuming a power of .80, a two-tailed alpha of .05, and with 10 independent variables, the power analysis revealed that a sample size of 120 would be needed to detect an overall  $R^2$  of at least .13 for this study. Over a 4-month period, 168 Chinese HK women who met criteria for participation in the study completed the study. The inclusion criteria were: (1) Chinese Hong Kong women aged 40 and above, (2) permanent residency in HK (holding HK identity card), (3) ability to speak and communicate in Cantonese. Women excluded from the study were those who failed to meet the above inclusion criteria, and those who had a confirmed diagnosis of CHD (from Western or Chinese medical practitioners), or cognitive impairment. Eligibility was determined by the investigator or the trained research assistants using inclusion and exclusion criteria at the time of initial contact with the potential participants.



All the respondents in this study came forward by themselves to approach the investigator and/or the responsible persons at the three sampling sites to show their willingness to be interviewed. In those arranged interview sessions, after explanation was given to them about the study purpose and study protocol, no one refused to be interviewed. However, in the CSP church site, two women were rejected because their age was below 40.

#### Human Subjects Assurance

Approvals for the study were obtained from the Committee on Human Research (CHR) of the UCSF (Approval Number H1832-29684-01) (Appendix A), and the Ethics Committee of The Hong Kong Polytechnic University (Appendix B). For the participants, an information sheet was provided to explain clearly the purpose and procedures of the study. Written consent was obtained from the participant after careful explanation of the information sheet. Participants had the right not to answer any questions and to stop the interview at any point. All subjects were reassured about the confidentiality and anonymity of the information provided by them. After successful completion of the interview and questionnaire, participants were given a supermarket coupon of HK\$50 (approximately US\$6.5) as a token of thanks for their time and effort to participate in the study. Data collected from all participants were kept in strict confidence and only used in this study. The data from the completed questionnaires were locked in a cabinet of the investigator's office. The demographic data were presented in aggregates so the identifiers were not linked. Only codes were used to identify participants and their names were not disclosed except to the investigator. All information will be destroyed in accordance with the standard procedures and regulation

of the Ethics Committees after the completion of the study.

## Instruments

### *Knowledge of CHD Risk Factors*

The knowledge of CHD risk factors was assessed using a single open-ended question asking people to name factors believed to cause or to be associated with CHD.

According to Becker and Levine (1987), the suggested answers for CHD risk factors include (1) smoking, (2) saturated fat intake or serum cholesterol, (3) obesity, (4) blood pressure, (5) family history, (6) age, (7) sex, (8) sedentary lifestyle, (9) stress, and (10) diabetes. The risk factors were each scaled one point if mentioned, to yield a potential total of ten points (Becker & Levine, 1987). This method was selected over a standardized CHD risk factor questionnaire because it assesses the recall of risk factors rather than their recognition and may thus better represent the individual's body of knowledge. According to Becker & Levine (1987), the Knowledge Score was valid and reliable because it demonstrated the different respondents' knowledge, which showed correlation with respondents' education level. According to Brislin (1970), back translation for a cross cultural research instrument requires two bilinguals, one translating from the source to the target language, the second blindly translating back from the target to the source. The investigator then has two versions in the original language, which, if they are identical, suggest that the target version from the middle of the process is equivalent to the source language forms. Based on Brislin's suggestion, the single open-ended question was translated into Chinese by the investigator. Then the Chinese translation was sent to a Chinese nurse academician working in a university to do the back translation into English. The English translation was then given to another

Chinese nurse academician to check the validity as compared with the original English version of the question. It was found that the two English versions of the wordings of the question were almost the same and the Chinese translation was accepted without the need of amendment.

#### *CHD Perceived Risks Index*

An index of perceived risk was proposed by Becker and Levine (1987) which was composed of four items scaled 0-5. Respondents rated their perception on (1) the frequency of concern over having a CHD event themselves, (2) their estimates of the likelihood of their having such an event in the next five years, (3) the likelihood of their having such an event in their lifetime, and (4) their estimates of their own CHD risk compared to other people of their age and sex in the general population. Polar anchors were presented for the low and high ends of the scale, with 0 indicating no concern at all or very low probability estimates for having an event and 5 indicating very high levels of concern and extremely high estimates for having an event. The fourth item on risk comparison offered responses of “much less,” “less,” “about the same,” “more” and “much more” risk than other people in the general population. The potential range of the perceived risk index was 0-20 points. The internal consistency of this index using Cronbach’s alpha was .803, as reported by Becker and Levine (1987). The procedure of back translation of the four item questions was the same as with the single open-ended question for knowledge score. The back translation of the four items was satisfactory without the need of amendment.

#### *Family APGAR Test*

The family APGAR proposed by Smilkstein in 1978 is the simplest instrument to

screen for family dysfunction (Smilkstein, 1978; 1993). It is a self-report, five-item questionnaire design to detect dysfunction in family. Adaptation, Partnership, Growth, Affection, and Resolve (thus the acronym APGAR) are the five areas of family function tested. Each question is scored 2, 1 or 0, corresponding to answers of “almost always,” “some of the time,” and “hardly ever,” respectively. It has been proposed that an APGAR score of 7 to 10 suggests a highly functional family, a score of 4 to 6 suggests a moderately dysfunctional family, and finally, a score of 0 to 3 suggests a severely dysfunctional family (Chan, Ho & Donnan, 1988; Smilkstein, 1980). Since its introduction in 1978, the family APGAR screening test has been used to identify patients with psychological distress related to the family (Hilliard, Gierde, & Parker, 1986; Powazki & Walsh, 2002). The content validity of the Family APGAR was claimed to be achieved by an expert panel of investigators in the development of the instrument (Smilkstein, 1978). The instrument has face validity because the questions appear to be about family functioning (Gwyther, Bentz, Drossman, & Berolzheimer, 1993). The construct validity of the instrument was determined to be acceptable (Good, Smilkstein, Good, Shaffer, & Aron, 1979). For instrument reliability, a two-week interval test-retest reliability was computed on data provided by 100 students from a Taiwan study (Chen, Chen, Hsu, & Lin, 1980). The coefficient of test-retest reliability was .83 (Smilkstein, Ashworth, & Montano, 1982) and .80 when compared with previously validated instrument (Juarez, Ferrell, & Rhiner, 2004). The Family APGAR was translated into Chinese and the instrument was used by Chen and colleagues (1980) at the National Taiwan University in Taipei to study students’ behavior. The use of Family APGAR was also validated in Hong Kong by a group of physicians and medical researchers, who

found it to be good for use by general practitioners for screening family dysfunction (Chan, Ho & Donnan, 1988). The Family APGAR has been widely adopted in cardiac health care research studies (Clarke, Walker, & Cuddy, 1996; Dunbar, Clark, Deaton, & Smith, 2005; Steine, Laerum, Eritsland, & Arnesen, 1996) and has been used by Rankin and colleagues in a study of Chinese immigrants with type 2 diabetes mellitus (Rankin, Galbraith & Huang, 1997).

### *Health-Promoting Lifestyle Profile II*

The concept of healthy lifestyle has begun to gain more importance when lifestyle is considered to include risk factors related to many chronic illnesses, e.g., CHD and diabetes mellitus. Healthy lifestyle can prevent illness, maintain or enhance wellness, and is good for the physical and psychosocial health of human beings. The Health-Promoting Lifestyle Profile II (HPLP II) (Walker, Sechrist & Pender, 1995) was the revised and updated version of the Health-Promoting Lifestyle Profile (HPLP) which was developed by Walker, Sechrist and Pender (1987) for use in testing the Health Promotion Model (Pender, Murdaugh & Parsons, 2006). The HPLP measures health promotion lifestyle, conceptualized as a “multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of wellness, self-actualization, and fulfillment of the individual” (Walker, Sechrist & Pender, 1987, p. 77). The HPLP II contains 52 items and 6 subscales (8-9 items each) that measure the dimensions of health promoting lifestyle: spiritual growth, interpersonal relationships, nutrition habits, physical activity, health responsibility, and stress management (Berger & Walker, 2004). The HPLP II summated behavior-rating scale uses a 4-point ordinal response format to measure frequency of self-reported health promoting behaviors. Each

item has four possible responses: 1 (never), 2 (sometimes), 3 (often), and 4 (routinely). A score for overall health-promoting lifestyle is obtained by calculating a mean of the individual's responses to all 52 items; six subscale scores are the means of responses to subscale items. The use of mean scores retains the 1-to-4 measurement of item responses and allows meaningful comparisons of scores across subscales. The HPLP II has been used extensively in health promotion research and has been reported to have sufficient validity and reliability for use among various populations including different age spectrums (Berger & Walker, 2004; Choi Hui, 2002). Walker & Hill-Polerecky (1995) reported a Cronbach alpha of 0.94 for the total HPLP II scale and alpha ranging from 0.79 to 0.94 for the six subscales. A principal axis factor analysis supported the presence of the six factors used as subscales. The HPLP II was used in Chinese communities with Cronbach alpha coefficient = .95 in Taiwan (Tang & Chen, 2002) and Cronbach alpha coefficient = .92 in Hong Kong (adopting the English version of the questionnaire) (Choi Hui, 2002). The instrument was then translated into Chinese in the Hong Kong context to assess the health behavior of university students. The instrument was found to be valid (Lee & Loke, 2005). The instrument was translated and back-translated to ensure that it was understandable and culturally sensitive. The Cronbach alpha coefficients reported by Lee & Loke was .91 for the total instrument. Permission to use the Chinese and English versions of the scale was granted by the respective authors.

*Center for Epidemiological Studies-Depression (CES-Depression)*

This instrument was originally developed for large epidemiological studies and has been considered a useful screening tool to measure depression symptoms (Radloff & Teri, 1986). The CES-Depression Scale (Radloff, 1977) consists of a 20-item scale with

items chosen from other existing measures to cover 6 major symptoms including (1) depressive mood, (2) feelings of guilt/worthlessness, (3) helplessness/hopelessness, (4) psychomotor retardation, (5) loss of appetite, and (6) sleep disturbance (Pasacreta, 2004). The 20-item scale is in Likert format using four possible responses anchored by 0 (rarely or none of the time) and 3 (most or all of the time). Respondents' scores can range from 0 to 60 with higher scores indicating a higher frequency of affective symptoms. The CES-Depression Scale takes approximately five minutes to complete. Scores at 16 and above have been used as indicators of depressive symptomatology and have been found to minimize the threat of being classified falsely as depressed (Cheung & Bagley, 1998; Radloff & Teri, 1986; Zich, Attkisson & Greenfield, 1990). When compared to other depression rating scales, the CES-Depression has also been relatively unbiased by respondents' somatic complaints. Standardized alpha coefficients for the scale have been reported at 0.85, and the scale has been shown to discriminate well between psychiatric inpatient and general population samples with approximately 21% of the general population scoring at 16 or above (Radloff, 1977). The validity of the instrument was assessed through an in-depth content analysis and through convergent validity analyses. The instrument was translated into Chinese and attained a reliability coefficient alpha of 0.92 in a group of 30 adult Chinese persons with noninsulin-dependent diabetes mellitus in California (Rankin, Galbraith & Johnson, 1993). The CES-Depression Scale was used in the Hong Kong community by Cheng and Chan (2005) in 398 subjects showing the scale was valid and reliable to be used in the Chinese community even though it was developed from a Western culture.

*Sociodemographic Characteristics (including health-related variables)*

This sociodemographic variables instrument, developed by the investigator, was used for the collection of the women's personal and family background information. Data included the respondent's age, marital status, educational attainment, occupation, monthly household income, number of people living in the same household, number of children, living arrangement, housing type, and religion. The respondents were also asked to fill in their body weight and height so that the body mass index of the respondent could be calculated. Some other items related to clinical information were also included such as smoking habits and presence of hypertension, diabetes mellitus or obesity. Respondents were also asked whether coronary heart disease was the number one killer of women in HK. If the respondents answered no, then they were asked to name the number one killer with which they were familiar.

The above-mentioned instruments are shown in Table 3.1.

Table 3.1 Study variables/concepts and instruments

Variable/concept	Instrument	Original source of instrument	Validated translated Chinese instrument	Number of items	Time spent in interview (minutes)
Knowledge of CHD risk factors	CHD Risk Factor Knowledge Score	Becker & Levine (1987)	Translated by investigator	1	5
Perceived Risks of CHD	CHD Perceived Risks Index	Becker & Levine (1987)	Translated by investigator	4	3
Family Functioning	Family APGAR	Smilkstein (1978)	Rankin et al. (1997)	5	3
CHD preventive behavior in terms of health promoting lifestyle	Health-Promoting Lifestyle Profile II (HPLP II)	Walker, Sechrist & Pender (1995)	Lee & Loke (2005)	52	20
Depressive symptoms	Center for Epidemiological Studies –	Radolff (1977)	Rankin et al. (1993)	20	5



	Depression Scale (CES-D)				
Sociodemographic information	Self-developed instrument	Self-developed instrument	Developed by investigator	23	9
Total				105	45

### Data Collection Methods

The data used in this study were collected by means of a structured questionnaire through self-administered questionnaires or in face-to-face interviews. Advertisements and flyers were posted and distributed in the CSP Church, the insurance company, and the beauty salon after receiving the ethics approval from the Committee on Human Research (CHR) of the University of California, San Francisco, and the Ethics Committee of the Hong Kong Polytechnic University. After seeing the flyers and advertisements, women who were interested in the study approached the responsible persons at those sampling sites or called the investigator to arrange a time slot for the interview if they were eligible for the study. The investigator was also present during the designated time slots shown in the flyers at a particular site.

After showing their interest to participate in the study whether by phone or in person, the women were first assessed by the investigator for the inclusion and exclusion criteria. If the women were eligible to participate in the study then consent forms were signed after having a clear explanation of the study given by the interviewer during the face-to-face meeting. The investigator also invited potential participation from colleagues who informed the investigator to arrange a time slot to do the face to face interview. Instead of the investigator, the research assistants did the interviews when colleagues participated in the study so as to avoid embarrassment related to personal questions, such

as age and family functioning items. All participants were assured that joining the study was on a voluntary basis. A private room or space was used to conduct the interviews with the individual participants.

After the consent form was signed, participants were interviewed by means of the questionnaire. The participants could withdraw from the study at any point in time without penalty. The interview lasted for about 40 to 50 minutes. The completeness of the questionnaire was thoroughly checked by the investigator or the research assistants. Health education leaflets on CHD published by the Hong Kong Department of Health were given to the participants for educational purposes when the interview was concluded. The interviewer was available for any questions raised by the participants concerning knowledge or information on CHD after the interview. When there were queries the interviewer could not answer, participants were then advised to contact the hotline at the Central Health Education Unit, Department of Health, Hong Kong.

#### Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) for Windows<sup>TM</sup> (Version 14). Responses were coded and entered into SPSS by the investigator. All the data were also verified for accuracy by reviewing questionable and missing data in the questionnaires. Missing data was also checked because missing data could reduce the precision of the calculated statistics due to the decrease in available data (Burns & Groves, 2005). Statistics were computed for all sociodemographic characteristics of the respondents. Descriptive statistics were obtained for all variables to check data entry errors and outliers. Mean scores, standard deviations and range were obtained for each scale. Internal consistency reliability measures for all instruments

were calculated using Cronbach alpha coefficients. Bi-variate and multi-variate analyses were performed to explore the issues concerned in the present study. The analysis plan is outlined below in Table 3.2.

Table 3.2 Analysis plan

Study Aim 1: To describe family functioning, level of depression, CHD risk factor knowledge, perceived CHD risks, and CHD preventive behavior in Chinese women living in Hong Kong.

Study Aim 2: To describe the associations between sociodemographic characteristics, family functioning, level of depression, CHD risk factor knowledge, perceived CHD risks, and CHD preventive behavior in Chinese women living in Hong Kong.

No.	Research question	Measures	Analysis
1a	What are the sociodemographic and clinical characteristics of the sample?	Sociodemographic data (age, educational attainment, economic activity status, number of persons living in the household, monthly household income, marital status, religious status) and clinical data (BMI, past health history)	Descriptive statistics
1b	What are the characteristics of the Chinese women living in Hong Kong in relation to knowledge of CHD risk factors, CHD perceived risks, family functioning, level of depression, and health promoting lifestyle?	CHD Risk Factor Knowledge Score, Perceived Risks Index, Family APGAR, CES-D, HPLP II	Descriptive statistics
2a	What are the relationships between the sociodemographic	Sociodemographic data, Family APGAR, CES-D,	Pearson correlation

	characteristics, family functioning, depression, knowledge of CHD risk factors, CHD perceived risks, and health promoting lifestyle in Chinese women living in Hong Kong?	CHD Risk Factor Knowledge Score, Perceived Risks Index, HPLP II	
2b	Do family functioning, level of depression and sociodemographic characteristics predict CHD risk factor knowledge in Chinese women living in Hong Kong?	Family APGAR, CES-D, Sociodemographic data, CHD Risk Factor Knowledge Score	Multiple linear regression
2c	Do family functioning, level of depression and sociodemographic characteristics predict perceived CHD risks in Chinese women living in Hong Kong?	Family APGAR, CES-D, Sociodemographic data, CHD Perceived Risks	Multiple linear regression
2d	Do knowledge of risk factors, perceived CHD risks, family functioning, level of depression and socio-demographic characteristics predict CHD preventive behavior in Chinese women living in HK?	CHD Risk Factor Knowledge Score, Perceived Risks Index, Family APGAR, CES-D, Sociodemographic data, HPLP II	Multiple linear regression

## CHAPTER IV

### RESULTS

The results of this cross-sectional study of CHD preventive behavior in Chinese women living in Hong Kong are presented in this chapter. Findings reported here include descriptive information concerning the 168 respondents, reliability of the instruments used (Table 4.1), and data addressing each of the six research questions according to the two study aims.

Table 4.1 Internal consistency of instruments adopted in the study (Cronbach Alpha)

	Standardized Alpha	Number of Items
Perceived Risk of CHD	.70	4
Family APGAR Test	.89	5
Center for Epidemiological Studies – Depression score (CES-D)	.90	20
Health-Promoting Lifestyle Profile (HPLP II) Total Scale	.94	52
Subscales		
HPLP II: Nutrition habits	.72	9
HPLP II: Health responsibility	.82	9
HPLP II: Physical activity	.83	8
HPLP II: Stress management	.71	8
HPLP II: Spiritual growth	.86	9
HPLP II: Interpersonal relationships	.81	9

## Research Questions

Study Aim 1: To describe family functioning, level of depression, CHD risk factor knowledge, perceived CHD risks, and CHD preventive behavior in Chinese women living in Hong Kong.

*Research Question 1a:* What are the sociodemographic characteristics (including health variables) of the sample?

### *Socio-demographic Characteristics of the Sample*

Among the 168 Chinese HK women participants, 147 (87.5%) participated in the interviews while 21 (12.5%) completed the same information in a survey format. The respondents were significantly different in age, number of persons in household, and monthly household income based on interview versus survey format (n=21). The respondents who completed the survey were younger in age, had smaller households and higher household income than those who participated in the interview.

Sixty-seven women (40%) were recruited from the CSP church (including members and non-church members); 23 (14%) employees and 40 (24%) clients of the insurance company; three (2%) employees and 17 (10%) clients of the beauty salon; and lastly 18 (10%) were colleagues of the investigator.

The age of the respondents ranged from 40 to 86 (mean=49.5±8.7 years); most of them were currently married (72.6%) and only 8.3% were single. The marital status of the respondents in this respect were regrouped into partnered (married) and non-partnered (including single, separated, divorced, widowed) in the subsequent statistical analysis. More than half of the respondents achieved secondary school educational level (53.6%), and 5.4 % were matriculated (a pre-requisite qualification of sitting for the examination

to enter universities and colleges). Only 6% of the respondents held a tertiary or above educational level, meaning having a university degree including bachelor, master or doctoral level. Close to half (42.3%) of the respondents reported no religion, and the others reported their religions as Protestant (24.4%), ancestor worshipping (23.2%), Buddhism (7.7%) and Catholic (2.4%). The respondents in this respect were regrouped into “with religion” (57.7%) and “without religion” (42.3%) for subsequent statistical analysis. Just over 40% of the respondents were homemakers, 5.4% were retired, and 1.8% were unemployed. The rest (52.4%) had either full- or part-time jobs. Among those who were employed, 27.3% had clerical jobs, the same proportion was working in service and sales positions, and 18.2% were in non-skilled work. Less than one fifth of the working respondents were in professional and managerial grades. Likewise, the respondents were regrouped into two groups, i.e., work and non-work, to become a new variable named economic activity status for subsequent statistical analysis.

Among the 168 respondents who had offspring, 47.6% reported having two children, 13.1% had three children and 6.6% had more than three. Only 4.2% of the respondents were living alone, while nearly 59% were living with spouse and their children. Nearly 40% had four persons living in the same household, including the respondent herself. The number living in three-person households accounted for less than a quarter (23.3%). A majority of the respondents (72.9%) had a household monthly income over HK\$10,000 (approximately US\$1,280). Respondents were predominantly born in Hong Kong (56%) and its neighboring area, Guangdong province (35.1%) (Table 4.2).

Table 4.2 Socio-demographic characteristics of respondents (N=168)

	n	%
Age		
Mean= 49.5±8.7 years		
Marital status		
Married	120	71.8
Divorced/ Separated	17	10.2
Single	15	9.0
Widowed	15	9.0
Educational attainment		
No formal education/primary level	59	35.1
Secondary level	90	53.6
Matriculated	9	5.3
Tertiary & above	10	6.0
Religion		
None	71	42.3
Protestant	41	24.4
Ancestor worshipping	38	22.6
Buddhist	13	7.7
Catholic	4	2.4
Taoist	1	0.6
Occupation		
Homemaker	68	40.5
Clerical	24	14.3
Services or sales related	24	14.3
Non-skilled manual worker	16	9.5
Professional	10	5.9
Retired	9	5.3
Managerial and administrative	8	4.8
Unemployed	3	1.8
Skilled manual worker	1	0.6
Other	5	3.0
Living arrangement		
Living with spouse and children	99	58.9
Living with children	27	16.1
Living with spouse	12	7.1
Living with spouse, children and parent/s	8	4.8
Living alone	8	4.8
Living with relatives and/or friends	5	3.0
Other	9	5.3



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Number of persons living in the same household (including the respondent)		
1	7	4.2
2	21	12.6
3	39	23.3
4	66	39.5
5	23	13.8
6	10	6.0
7	1	0.6
Housing type		
Private housing (whole flat) (own)	66	39.3
Public housing estate (rented)	57	33.9
Public housing (home ownership scheme)	16	9.5
Private housing (whole flat) (rented)	11	6.5
Private housing (a room) (rented)	8	4.8
Public housing estate (own)	8	4.8
Other	2	1.2
Total monthly household income (US\$1=HK\$7.80)		
Below HK\$5,000	10	6.0
HK\$5,000 – HK\$7,999	21	12.7
HK\$8,000 – HK\$9,999	14	8.4
HK\$10,000 – HK\$14,999	25	15.0
HK\$15,000 – HK\$19,999	39	23.5
HK\$20,000 – HK\$29,999	21	12.7
≥ HK\$30,000	36	21.7
Place of birth		
Hong Kong	94	56.0
Guangdong province	59	35.1
Other province in China	12	7.1
Other	3	1.8

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Regarding health status and history of risk factors, very few respondents (5.9%) reported having diabetes as diagnosed by Chinese or Western medical practitioners. Nearly 14% of the respondents reported a history of hypertension, and the same proportion reported high blood cholesterol levels. Just over 19% indicated that they had overweight problems. Most of the respondents (96.4%) said they were non-smokers.

Many of them (75.6%) had no immediate family members who had suffered from a heart attack or stroke. However, 13.7% reported that their father and 10% their mother had a history of heart attack or stroke (Table 4.3). In general, 56.5% of the respondents rated their health as fair, and 38% rated their health as good to excellent. Only 5.4% felt they had poor health.

Table 4.3 Self-reported history of risk factors of respondents (N=168)

	n	%
Hypertension	23	14.0
Diabetes mellitus	10	5.9
Increased cholesterol	23	14.0
Overweight	32	19.0
Family history of CHD or stroke:		
Father	23	14.0
Mother	16	10.0
Brother	2	1.2
Currently a smoker	6	3.6

In addition, respondents were asked to fill in their weight and height, so a self-reported BMI was calculated by the investigator. According to the Hong Kong Department of Health (2007), the BMI is classified into “underweight” (<18.5), “normal” (18.5-22.9), “overweight” (23-24.9), and “obese” ( $\geq 25$ ). Based on these criteria, only 7.1% were underweight, 48.2% were in the normal range (18.5-22.9), 20.2% were overweight, and 24.4% were classified as obese with BMI  $\geq 25$ . The mean score of the self-reported BMI of the present study was 22.66 (SD=3.17). One question in the questionnaire asked the respondents whether CHD is the number one cause of death in

women. 36 respondents (21.4%) replied “yes” and 132 women said no (78.6%).

Among the 132 who answered that CHD is not the number one killing disease of women, many suggested breast cancer (n=32, 24.2%), uterine cancer (n=29, 17.3%), breast and uterine cancer (n=21, 12.5%), and any form of cancer (n=24, 14.3%).

*Research Question 1b:* What are the characteristics of the Chinese women living in Hong Kong in relation to knowledge of CHD risk factors, CHD perceived risks, family functioning, level of depression, and health promoting lifestyle?

To answer this question, the mean scores, and/or total score, and standard deviation (SD), are reported in this section. The comparisons of each instrument’s mean score to the published norms are presented (Table 4.4).

Table 4.4 Mean scores on CHD risk factor knowledge, CHD perceived risks, Family APGAR, CES-D and HPLP II

	Mean (SD)	Range of score	Published norm Mean (SD)
CHD risk factor knowledge	2.45 (1.59)	0 - 10	5.92 (2.55) <sup>a</sup>
CHD perceived risks	10.35 (3.40)	0 – 20	8.1 (N.A.) <sup>#a</sup>
Family APGAR	6.26 (2.69)	0 – 10	7.06 (N.A.) <sup>b</sup>
CES-D	12.05 (9.64)	0 – 60	18.01 (12.2) <sup>c</sup> 12.34 (6.74) <sup>d</sup>
HPLP II	117.06 (18.82)	52 – 208	119.72 (N.A.) <sup>e</sup>
HPLP II: Subscales			
Interpersonal relationships	23.32 (3.78)	9 - 36	24.17 (N.A.) <sup>e</sup>
Spiritual growth	21.81 (4.58)	9 - 36	22.39 (N.A.) <sup>e</sup>
Nutritional habits	21.57 (3.94)	9 - 36	21.66 (N.A.) <sup>e</sup>
Stress management	17.82 (3.35)	8 - 32	18.20 (N.A.) <sup>e</sup>
Health responsibility	17.69 (4.49)	9 - 36	17.66 (N.A.) <sup>e</sup>
Physical activity	14.85 (4.33)	8 - 32	15.55 (N.A.) <sup>e</sup>

<sup>a</sup> Becker & Levine (1987)

<sup>b</sup> Chan et al. (1988)

<sup>c</sup> Rankin, Galbraith & Johnson (1993)

<sup>d</sup> Cheung & Bagley (1998)

<sup>e</sup> Lee & Loke (2005)

<sup>#</sup> Not Available

### *Coronary Heart Disease Risk Factor Knowledge*

The CHD knowledge scores (Becker & Levine, 1987) were computed by summarizing the respondents' recognition of possible risk factors of CHD in Question 1 of the questionnaire. This was an open-ended question asking respondents to state as many common risk factors of CHD as they could think of. Respondents who gave answers relating to psychosocial aspects such as depression, hostility and anxiety were also awarded one point under the stress category because they were considered as psychosocial risk factors (Table 4.5). Ten respondents (6%) could not name any risk factors. Three other respondents (2%) could only provide answers that were incorrect. The possible range of the scores was 0 to 10 and the actual range of scores on this question was 0 to 9 (mean=2.45, SD=1.59).

Table 4.5: Knowledge of CHD Risk Factors

	Risk Factors	No. of persons giving the correct answer	%
1	Dietary fat or hyperlipidemia	81	48.2
2	Smoking	68	40.5
3	Obesity	50	29.8
4	Hypertension	49	29.2
5	Stress (including other psychosocial risk factors)	49	29.2
6	Sedentary lifestyle	48	28.6
7	Family history	38	22.6
8	Diabetes	23	13.7
9	Age	4	2.4
10	Sex	1	0.6

The most frequently suggested risk factor was dietary fat or hyperlipidemia (n=81,

48.2%), followed by smoking (n=68, 40.5%) and obesity (n=50, 29.8%). Age and sex were the least perceived risk factors for CHD. The mean score for CHD risk factor knowledge was compared with the Becker and Levine (1987) study of 42 siblings of newly diagnosed CHD patients. With the same measuring scale, the mean score of this sample was 2.45 (SD=1.59) as compared to 5.92 (SD=2.55) in Becker and Levine's study (Table 4.4).

#### *Coronary Heart Disease Risk Perception Index*

The 4-item CHD risk perception index score (Becker & Levine, 1987) was used to rate respondents' perception of the probability of having CHD themselves. The potential range of the perceived risk index was between 0 and 20, with higher scores indicating a higher level of concern and higher probability for having a CHD event. Based on the results of this study, the scores ranged between 1 and 19 (mean=10.35, SD=3.40). The mean score of the risk perception index was compared with the Becker and Levine (1987) study of 42 siblings of newly diagnosed patients with CHD. With the same measuring scale, the mean score of this sample was 10.35 (SD=3.40) as compared to 8.1 (SD not reported) in Becker and Levine's study (Table 4.4).

#### *Family APGAR*

The 5-item Family APGAR (Smilkstein, 1978) was used to measure respondents' perceived family functioning. Each question is scored 2, 1 or 0, corresponding to answers of "almost always," "some of the time," and "hardly ever," respectively. It has been proposed that an APGAR score of 7 to 10 suggests a highly functional family, a score of 4 to 6 suggests a moderately dysfunctional family, and finally, a score of 0 to 3 suggests a severely dysfunctional family. The actual range of scores obtained was from 0

to 10 (mean=6.26, SD=2.69). The mean score on the Family APGAR was compared with the Chan et al. (1988) study in Hong Kong with 269 aged 20 or above adults. With the same measuring scale, the mean score of this sample was 6.26 (SD=2.69) as compared to 7.06 (SD not reported) in the study done by Chan and colleagues (1988) in HK (Table 4.4).

*Health-Promoting Lifestyle Profile II (HPLP II)*

The dependent variable of this study, the 52-item HPLPII, was adopted to measure respondents' healthy lifestyles through six subscales (8-9 items each) that measure the dimensions of a health promoting lifestyle: spiritual growth, interpersonal relationships, nutrition, physical activity, health responsibility, and stress management (Berger & Walker, 1997). The HPLP II summated behavior-rating scale uses a 4-point ordinal response format to measure frequency of self-reported health promotion behavior. Each item had four possible responses: 1 (never), 2 (sometimes), 3 (often), and 4 (routinely) (Walker et al., 1987; Berger & Walker, 1997). The mean scores of the six subscales were presented (Table 4.6)

Table 4.6 Health-Promoting Lifestyle Profile II

Subscale	Mean (SD)	No. of items (possible range of scores)	Range of scores obtained in this study	Cronbach Alpha
Nutritional habits	21.57 (3.94)	9 (9-36)	9-34	.72
Health responsibility	17.69 (4.49)	9 (9-36)	9-28	.82
Physical activity	14.85 (4.33)	8 (8-32)	8-26	.83
Stress management	17.82 (3.35)	8 (8-32)	9-30	.71
Spiritual growth	21.81 (4.58)	9 (9-36)	9-34	.86
Interpersonal relationships	23.32 (3.78)	9 (9-36)	10-35	.81
HPLP II (total)	117.06 (18.82)	52 (52-208)	54-171	.94

The mean score on the HPLP II was compared with the Lee & Loke (2005) study in

Hong Kong with 140 female university students. With the same 52-item Chinese version of the HPLP II instrument, the mean score for this sample was 117.06 (SD=18.82) as compared to 119.72 (SD not reported) in Lee & Loke’s study. The mean scores on the six subscales of HPLP II were also compared with Lee & Loke’s study. With the same measuring scale, the highest and lowest subscale mean scores of this sample were in the same subscales as in the Lee & Loke study (Table 4.4).

In this study, among the 52 items, the best item score obtained was in the nutritional habit subscale: 39.3% often had breakfast (mean=3.1, SD=.83). The item with the lowest mean score was in the physical activity subscale asking about respondents’ habit of checking own pulse rate when exercising (mean=1.29, SD=.54): 74.4% of the respondents did not do so.

The item analyses of the subscales are shown in the following tables.

*Nutrition habits:* Among the 9 items, the highest mean score was 3.1 from the item of “Eat breakfast” and the lowest mean score was 1.74 from the item “Eat 2-3 servings of milk, yogurt or cheese each day” (Table 4.7).

Table 4.7 HPLP II Subscale: Nutrition habits

Item	mean	SD
Choose a diet low in fat, saturated fat and cholesterol	2.45	.72
Limit use of sugars and food containing sugar (sweets)	2.38	.68
Eat 6-11 servings of bread, cereal, rice and pasta each day	2.20	.81
Eat 2-4 servings of fruit each day	2.39	.78
Eat 3-5 servings of vegetables each day	2.62	.87
Eat 2-3 servings of milk, yogurt or cheese each day	1.74	.71
Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs and nuts group each day	2.42	.77
Read labels to identify nutrients, fats and sodium content in packaged food	2.27	.86
Eat breakfast	3.1	.83
Total	21.57	3.94

*Health responsibility:* Among the 9 items, the highest mean score was 2.34 from the item “Report any unusual signs or symptoms to a physician or other health professional” and the lowest mean score was 1.53 from the item “Attend educational programs on personal health care” (Table 4.8).

Table 4.8 HPLP II Subscale: Health responsibility

Item	mean	SD
Report any unusual signs or symptoms to a physician or other health professional	2.34	.88
Read or watch TV programs about improving health	2.31	.70
Question health professionals in order to understand their instructions	2.09	.85
Get a second opinion when I question my health care provider’s advice	2.16	.87
Discuss my health concerns with health professionals	1.80	.76
Inspect my body at least monthly for physical changes/danger signs	1.65	.75
Ask for information from health professionals about how to take good care of myself	1.74	.72
Attend educational programs on personal health care	1.53	.61
Seek guidance or counseling when necessary	2.08	.78
Total	17.64	4.49

*Physical activity:* Among the 8 items, the highest mean score was 2.49 from the item “Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking)” and the lowest mean score was 1.29 from the item “Check my pulse rate when exercising” (Table 4.9).

Table 4.9 HPLP II Subscale: Physical activity

Item	mean	SD
Follow a planned exercise program	1.79	.81
Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber)	1.71	.83
Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week)	2.18	.95
Take part in leisure-time (recreational) physical activities	1.70	.73



(such as swimming, dancing, bicycling)		
Do stretching exercises at least 3 times per week	2.13	.85
Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking)	2.49	.92
Check my pulse rate when exercising	1.29	.54
Reach my target heart rate when exercising	1.57	.68
Total	14.85	4.33

*Stress management:* Among the 8 items, two items shared the highest mean score of 2.38 in this subscale. They were “Get enough sleep” and “Take some time for relaxation each day.” The lowest mean score was 1.81 from the item “Practice relaxation or meditation for 15-20 minutes daily” (Table 4.10).

Table 4.10 HPLP II Subscale: Stress management

Item	mean	SD
Get enough sleep	2.38	.74
Take some time for relaxation each day	2.38	.76
Accept those things in my life which I cannot change	2.43	.74
Concentrate on pleasant thoughts at bedtime	1.88	.70
Use specific methods to control my stress	2.33	.69
Balance time between work and play	2.36	.70
Practice relaxation or meditation for 15-20 minutes daily	1.81	.78
Pace myself to prevent tiredness	2.26	.70
Total	17.28	3.35

*Spiritual growth:* Among the 9 items, the highest mean score was 2.73 from the item “I am aware of what is important to me in life” and the lowest mean score was 1.96 from the item “Feel connected with some force greater than myself” (Table 4.11).

Table 4.11 HPLP II Subscale: Spiritual growth

Item	mean	SD
Feel I am growing and changing in positive ways	2.52	.68
Believe that my life has purpose	2.61	.75
Look forward to the future	2.55	.69
Feel content and at peace with myself	2.50	.67
Work toward long-term goals in my life	2.39	.83

Find each day interesting and challenging	2.30	.71
I am aware of what is important to me in life	2.73	.79
Feel connected with some force greater than myself	1.96	.78
Expose myself to new experiences and challenges	2.25	.77
Total	21.81	4.58

*Interpersonal relationships:* Among the 9 items, the highest mean score was 2.83 from the item “Maintain meaningful and fulfilling relationships with others” and the lowest mean score was 2.27 from the item “Settle conflicts with others through discussion and compromise” (Table 4.12).

Table 4.12 HPLP II Subscale: Interpersonal relationships

Item	mean	SD
Discuss my problems and concerns with people close to me	2.49	.66
Praise other people easily for their achievements	2.72	.63
Maintain meaningful and fulfilling relationships with others	2.83	.62
Spend time with close friends	2.66	.67
Find it easy to show concern, love and warmth to others	2.64	.65
Touch and am touched by people I care about	2.74	.66
Find ways to meet my needs for intimacy	2.33	.73
Get support from a network of caring people	2.64	.64
Settle conflicts with others through discussion and compromise	2.27	.70
Total	23.32	3.78

On the whole, based on the total mean score of the subscales, respondents of this study did poorly in “physical activity” and achieved the highest score in “interpersonal relationships” in health promoting behavior.

*Center for Epidemiological Studies-Depression (CES-Depression)*

The 20-item CES-D was adopted to measure and screen for respondents’ levels of depressive symptomatology (Radloff, 1977). Scores at 16 and above have been used as indicators of depressive symptomatology (Radloff, 1977; Rankin et al., 1993). The range of scores obtained in this study was between 0 and 43 (mean=12.05, SD=9.64).

Over 29% of the respondents scored 16 points and above. In fact, 10% scored 26 points and above suggesting a high level of depressive symptomatology in this sample. The mean score for the CES-D was compared with the Rankin et al. diabetic patients study, and the Cheung & Bagley (1998) Chinese couples study in Hong Kong. Rankin & Galbraith's study subjects were Chinese patients with diabetes mellitus showing a higher level of depressive symptoms (mean=18.01, SD=12.2). In the Cheung & Bagley (1998) study, 138 couples in the community participated in the study and the results for the 138 females were compared (mean=12.34, SD=6.74) (Table 4.4).

Study Aim 2: To describe the associations among sociodemographic characteristics, family functioning, level of depression, CHD risk factor knowledge, perceived CHD risks and CHD preventive behavior in Chinese women living in Hong Kong.

*Research Question 2a:* What are the relationships among the sociodemographic characteristics, family functioning, depression, knowledge of CHD risk factors CHD perceived risks, and health promoting lifestyle in Chinese women living in Hong Kong?

Pearson correlation coefficient was performed to examine the relationships between different variables, including sociodemographic characteristics, family functioning, depression, knowledge of CHD risk factors, CHD perceived risks and health promotion lifestyle. Sociodemographic and health characteristics included age, self-reported BMI, educational attainment, economic activity status (with or without job), number of persons living in household, monthly household income, marital status (having partner or not) and religious status (with or without religion). The correlation matrix was shown in Table 4.13.

Correlations among risk factor knowledge, perceived risks and preventive behavior

of CHD: The CHD Risk Factor Knowledge Score was found to be positively and weakly correlated with CHD Perceived Risk Index ( $r=.183$ ,  $p=.017$ ), and HPLP II ( $r=.191$ ,  $p=.013$ ). However, there was no significant correlation between the Perceived Risks Index and HPLP II ( $r=-.085$ ,  $p=-.271$ ).

Correlations among family functioning, level of depression and preventive behavior of CHD: The Family APGAR score was moderately and negative correlated with the CES-D score ( $r=-.395$ ,  $p=.000$ ). The Family APGAR score was also moderately correlated with the HPLP II ( $r=.436$ ,  $p=.000$ ). A moderate and negative correlation was also found between CES-D and HPLP II ( $r=-.361$ ,  $p=.000$ ). The results suggest a better family functioning is related to less depressive symptoms. Better family functioning is also positively related to the practice of healthy lifestyles. Results indicated that the increased depressive symptoms were related to decreased levels of healthy lifestyles being practiced.

Correlations between sociodemographic characteristic and preventive behavior of CHD: Weak and positive correlations were found between HPLP II and educational attainment ( $r=.159$ ,  $p=.040$ ), number of people living in the same household ( $r=.248$ ,  $p=.001$ ), and having a partner currently ( $r=.175$ ,  $p=.023$ ).

Table 4.13 Pearson's Correlations between HPLP II, CHD risk factor knowledge score, CHD perceived risks index, Family APGAR, CES-D and sociodemographic characteristics

	1	2	3	4	5	6	7	8	9	10	11	12
1. HPLP II	1											
2. CHD risk factor knowledge score	.191*	1										
3. CHD perceived risks index	-.085	.183*	1									
4. Family APGAR	.436**	.221**	-.139	1								
5. CES-D	-.361**	-.037	.252**	-.395**	1							
6. Age	-.011	-.188*	.067	-.098	-.069	1						
7. BMI	-.090	-.055	.272**	-.099	.092	.082	1					
8. Educational attainment	.159*	.224**	-.135	.232**	-.152*	-.489**	-.234**	1				
9. Economic activity status <sup>a</sup>	.013	.107	-.145	.188*	-.093	-.324**	-.177*	.444**	1			
10. No. of persons living in household <sup>b</sup>	.248**	.146	-.005	.223**	-.217**	-.104	.171*	.025	.053	1		
11. Monthly household income	.145	.210**	.041	.323**	-.326**	-.019	-.003	.372**	.310**	.170*	1	
12. Marital status <sup>c</sup>	.175*	.167*	.078	.232**	-.082	-.232**	.178*	.149	.003	.343**	.150	1
13. Religious status <sup>d</sup>	.111	.100	.055	.028	-.085	.042	.019	-.029	-.044	.064	-.069	-.039

<sup>a</sup> Recoded into two groups: working vs. not working

Statistical significance: \* p < .05, \*\* p < .01

<sup>b</sup> Including respondent herself

<sup>c</sup> Recoded into two groups: partnered vs. non-partnered

<sup>d</sup> Recoded into two groups: believing in a religion vs. no religion

*Research Question 2b:* Do family functioning, level of depression and sociodemographic characteristics predict CHD risk factor knowledge in Chinese women living in Hong Kong?

This question was analyzed by multiple linear regression analysis. The independent variables included in the regression model were the eight sociodemographic characteristics and the Family APGAR and CES-D. The dependent variable was the CHD risk factor knowledge score. The model as a whole explained 13.6% of the total variance in CHD risk factor knowledge (Table 4.14). Based on the regression table, monthly household income had a unique contribution of 1.8% of the variance in the CHD risk factor knowledge, while religious status had 1.4% and family functioning had 1.6%.

Table 4.14 Multiple Regression Summary Table (Dependent variable: CHD risk factor knowledge score) (N=168)

Source	R <sup>2</sup>	beta	sr <sup>2</sup>	df	F	p
Overall	.136			10,157	2.481	.009
Age		-.111	.0079	1,157	1.447	.231
BMI		-.055	.0026	1,157	.469	.495
Educational attainment		.092	.0046	1,157	.843	.360
Economic activity status <sup>a</sup>		-.047	.0016	1,157	.289	.592
No. of persons living in household <sup>b</sup>		.077	.0048	1,157	.867	.353

Monthly household income	.163	.0182	1,157	3.294	.071
Marital status <sup>c</sup>	.066	.0034	1,157	.605	.438
Religious status <sup>d</sup>	.120	.0142	1,157	2.560	.112
Family APGAR	.149	.0164	1,157	3.003	.085
CES-D	.114	.0098	1,157	1.785	.183

<sup>a</sup> Recoded into two groups: working vs. not working

<sup>b</sup> Number including respondent herself

<sup>c</sup> Recoded into two groups: partnered vs. non-partnered

<sup>d</sup> Recoded into two groups: believing in a religion vs. no religion

*Research Question 2c:* Do family functioning, level of depression, and sociodemographic characteristics, predict perceived CHD risks in Chinese women living in Hong Kong?

This question was analyzed by multiple linear regression analysis. The independent variables included in the regression model were the eight sociodemographic characteristics and the Family APGAR and CES-D. The dependent variable was the CHD perceived risks index. The full model as a whole explained 17.2% of the total variance in CHD perceived risks index (Table 4.15).

Three variables that significantly contributed to the variance in CHD perceived risk index were self-reported BMI (3.3%), monthly household income (2.7%) and depression (5.3%). Therefore, increased BMI, higher monthly household income and more depression symptoms independently predict CHD perceived risks, controlling all the other variables.

Table 4.15 Multiple Regression Summary Table (Dependent variable: CHD perceived risks index) (N=168)

Source	R <sup>2</sup>	beta	sr <sup>2</sup>	df	F	p
Overall	.172			10,157	3.266	.001
Age		.012	.0001	1,157	.019	.890
BMI		.197	.0331	1,157	6.315	.013
Educational attainment		-.068	.0026	1,157	.486	.487
Economic activity status <sup>a</sup>		-.098	.0071	1,157	1.336	.249
No. of persons living in household <sup>b</sup>		-.025	.0005	1,157	.099	.754
Monthly household income		.202	.0279	1,157	5.285	.023
Marital status <sup>c</sup>		.073	.0042	1,157	.792	.375
Religious status <sup>d</sup>		.087	.0074	1,157	1.407	.237
Family APGAR		-.058	.0025	1,157	.471	.494
CES-D		.266	.0538	1,157	10.176	.002

<sup>a</sup> Recoded into two groups: working vs. not working

<sup>b</sup> Number including respondent herself

<sup>c</sup> Recoded into two groups: partnered vs. non-partnered

<sup>d</sup> Recoded into two groups: believing in a religion vs. no religion

*Research Question 2d:* Do knowledge of risk factors, perceived CHD risks, family functioning, level of depression and socio-demographic characteristics predict CHD preventive behavior in Chinese women living in HK?

This question was analyzed by multiple linear regression analysis.

Guidelines to determine which variables should be added to the model were based on the Theoretical Model for the study (Fig. 2.1 in Chapter Two). The model included



knowledge of CHD risk factors, perceived risks of CHD, family functioning, level of depressive symptoms and some sociodemographic characteristics. If independent variables that were found to be associated with the dependent variable with a coefficient of 0.2 or higher in the correlations were put into the multiple regression model, then in the sociodemographic characteristics only the “number of people living in the same household” would be put in the regression model. In order to have a clear picture of the extent to which each variable would play a role in predicting CHD preventive behavior, all the eight variables of the sociodemographic data were put in the regression model. Therefore, the independent variables included in the regression equation were (1) knowledge of CHD risk factors, (2) perceived risk of CHD, (3) family functioning, (4) level of depressive symptoms, (5) age, (6) number of people living in the same household, (7) marital status in terms of partnered or non-partnered, (8) monthly household income, (9) occupational status (having a job or not), (10) educational attainment, (11) self-reported BMI and (12) religion. The dependent variable was Health-Promoting Lifestyle Profile II (HPLP II). The model as a whole explained 28.6% of the total variance in health-promoting lifestyle which was interpreted as CHD preventive behaviour in the Chinese women living in Hong Kong. Two variables that significantly contributed to the variance in CHD preventive behaviour were family functioning (Family APGAR) (6.9%) and

depression score (CES-D) (2.9%). For CES-D, the beta showed a negative sign suggesting the more depressive symptoms one reported, the less CHD preventive behaviour would be found in that individual. To summarize, better family functioning and fewer depression symptoms were two important variables to predict practicing more CHD preventive behaviour.

Table 4.16 Multiple Regression Summary Table (Dependent variable: HPLP II) (N=168)

Source	R <sup>2</sup>	beta	sr <sup>2</sup>	df	F	p
Overall	.286			12,155	5.164	.000
CHD risk factor knowledge score		.091	.0067	1,155	1.464	.228
CHD perceived risks index		.004	.0000	1,155	.003	.995
Family APGAR		.309	.0692	1,155	15.054	.000
CES-D		-.203	.0292	1,155	6.320	.013
Age		.079	.0040	1,155	.872	.352
BMI		-.065	.0035	1,155	.746	.389
Educational attainment		.122	.0081	1,155	1.772	.185
Economic activity status <sup>a</sup>		-.092	.0062	1,155	1.339	.249
No. of persons living in household <sup>b</sup>		.136	.0146	1,155	3.168	.077
Monthly household income		-.082	.0044	1,155	.949	.332
Marital status <sup>c</sup>		.051	.0020	1,155	.434	.511
Religious status <sup>d</sup>		.061	.0036	1,155	.776	.379

<sup>a</sup> Recoded into two groups: working vs. not working

<sup>b</sup> Including respondent herself

<sup>c</sup> Recoded into two groups: partnered vs. non-partnered

<sup>d</sup> Recoded into two groups: believing in a religion vs. no religion

## **CHAPTER V**

### **DISCUSSION**

Coronary heart disease is the leading cause of death in American women and is a major cause of morbidity (Mieres et al., 2005; Mosca et al., 2000; Wenger, 2004).

With a situation similar to that in the U.S., Hong Kong has been facing the same challenge. A number of risk factors have been found to be associated with CHD, such as smoking, hypertension, diabetes mellitus, increased lipid concentration and physical inactivity. Adopting healthy lifestyles seems to be a way to prevent CHD.

The purpose of this study was to examine the relationship between knowledge of CHD risk factors, perceived risks and preventive behavior of CHD. Family function, the role of depression and socio-demographic characteristics such as age, education and monthly household income were explored in relation to CHD knowledge, perceived risks and preventive behavior. In this chapter, the findings of this study will be discussed along with the existing literature. The discussion of the results includes a summary of the major findings and discussion of the research questions. Limitations of the study will be addressed, implications for nursing will be outlined and further research directions delineated.

#### **Sociodemographic Information in Context**

Since the respondents of the study were recruited by means of convenience

sampling, the basic sociodemographic characteristics of the 168 Chinese HK women in the current study were compared with the general population using 2006 census data (Hong Kong Census & Statistics Department, 2007). The comparable characteristics included marital status, educational attainment, economic activity status, number of persons living in the same household and monthly household income. Regarding marital status among the female population in Hong Kong, 55.1% were married, 4.7% were divorced or separated, 9.4% were widowed and 30.7% were single (Hong Kong Census & Statistics Department, 2007). As the present study recruited only women aged 40 and above, it was reasonable to find that a higher proportion of them were married (71.8%). Concerning the educational levels of the overall population, 23% are at the tertiary level and above as compared with 6% of the present study's respondents at the same educational level. Compared with the census data, the respondents of this study tended to cluster in the secondary, primary and no schooling categories (53.6% in secondary and 35.1% in primary or no schooling, compared to 45.7% and 25.4% of the Hong Kong population) (Hong Kong Census & Statistics Department, 2007). Such an observation reflects the fact that more men than women achieve a high level of education in Hong Kong (Hong Kong Census & Statistics Department, 2006). In cultures where male children and adult males are favored in terms of food, education and work, such as the Chinese society

of Hong Kong, it is understandable that women tend to achieve a lower level of education (Lane & Cibula, 2000). A slightly higher percentage of women were involved in the labor force in this study when compared with the census data (59.5% vs. 52.4%). The average household size of the Hong Kong population was smaller than in the present study (3 persons vs. 4 persons) (Hong Kong Census & Statistics Department, 2007). As for total monthly household income, there were similarities at the lower end of income distribution between the Hong Kong population and the present study. But the higher end of the income groups was differently distributed. The median household income in 2006 by-census was HK\$17,250 (US\$2,211), which fell into the category of HK\$15,000 – HK\$19,999 (US\$1,923 – US\$2,564) in this study; and the median household income in the present study was also estimated within this range (Hong Kong Census & Statistics Department, 2007).

## Principal Findings

### *Knowledge of CHD Risk Factors*

This open-ended question was meant to examine the respondent's knowledge by asking her to name as many as possible of the risk factors for CHD. The answers were then compared to those suggested in Becker & Levine's study on "knowledge in siblings of people with premature coronary disease" in 1987. With reference to Becker & Levine's (1987) proposed ten risk factor answers, the mean knowledge

score in that study was 5.92 (SD=2.55), a higher score compared to the respondents in this study (mean=2.45, median=2, SD=1.59). In the present study, the highest score was 9, given correctly by only one respondent, followed by a score of 7 by another respondent. Just over 90% of the respondents were able to provide four correct answers with respect to the CHD risk factors. Although Becker & Levine's study was conducted twenty years ago, their respondents out-performed the respondents in this study on knowledge of CHD risk factors. One possible reason for such a difference could be that the sample in Becker & Levine's study was individuals whose sibling suffered from coronary disease, whereas the sample of this study were women dwelling in the community. The illness of an individual's sibling might increase the awareness of CHD among the respondents in Becker & Levine's study.

In addition, the overall mortality rate due to cardiovascular disease (CVD) in the US has been declining over the past several decades (Wilcox & Stefanick, 1999). Apparently, the CVD and CHD health education about primary prevention has contributed to this decline. It is believed that the health education and promotion of CHD prevention has successfully provided knowledge of CHD risk factors to the public in the US. The fact that the women in the present study identified dietary fat or hyperlipidemia and smoking as risk factors of CHD highlights the potential effectiveness of public healthy diet and anti-smoking campaigns undertaken by the

Hong Kong Department of Health in recent years (Hong Kong Department of Health, 2006).

With the emerging problems concerning obesity world-wide (Robertson, 2001; Stampfer et al., 2004) and the promotion of heart health in Hong Kong, people's knowledge about dietary fat or hyperlipidemia has increased in recent years.

However, with a potential of ten points as the total score, the mean score of 2.45 reflected a low level of CHD risk factor knowledge among the respondents in the present study. According to Murphy et al. (2005), women's knowledge of the cause of CHD may be an important factor contributing to a lack of awareness and action about the need to modify behavior to improve cardiac risk factors. The low level of CHD risk factor knowledge among the respondents of this study demonstrated a great need to improve health education on CHD prevention for the Chinese women in HK.

#### *Perceived CHD Risk*

The perceived risk measure was also adopted from Becker & Levine's study (1987). With the potential range of scoring from 0 to 20, the actual range was 1 to 19 with a mean of 10.35 (SD=3.4) as the Perceived CHD Risk Index in this study. In Becker & Levine's study, the perceived mean risk score was 8.1 and the actual range of scores was between 2 and 17 in that sample. The moderate perceived CHD risks of the present study may reveal something about how people see health and illness in

their everyday life. When no signs or symptoms have been observed, people still consider themselves as healthy. Illness seems to be a remote entity that there is no urgent need to tackle (Bury, 2005), and they do not think of spending time to explore the information concerned or consider themselves as being at risk for CHD.

However, the lifetime risk of developing CHD after age 40 years is 49% for men and 32% for women (Lloyd-Jones, Larson, Beiser, & Levy, 1999). The mean age of this sample was 49.5 and CHD rates in women after menopause are two to three times those of women the same age before menopause (American Heart Association, 2003; Kannel, Hjortland, McNamara, & Gordon, 1976; Rosano et al., 2006). The moderate level of concern would put these women at a greater risk of having CHD if they do not have a healthy lifestyle.

### *Family Functioning*

In this study, the mean score of the Family APGAR was 6.26 (SD=2.69) with the families considered to be “moderately dysfunctional” as described by Smilkstein (1978, 1980). This result was different from the study conducted by Chan et al. (1988) in HK where the mean score was 7.06 and the families were considered to be “highly functional.” The subjects in Chan et al. (1988) were adults aged 20 or above in the community of Sha Tin, which was a newly developed community with good facilities within the neighborhood areas. The samples in this study were women aged



40 and above , which might explain the difference. The difference was not much, but with the cut-off point of 7, the families in this study were still considered “moderately dysfunctional.”

The median of all 5 items on the Family APGAR was 1, indicating that most of the answers were “some of the time.” No item had a median score of 2 or “always.” Nearly 60% of the respondents in this study were working. In Hong Kong, this kind of working for a second income is usually due to economic necessity (Lee, 2003). However, such a dual role as a working wife and mother, could create tension in relation to care-taking with younger members of the family and housekeeping (Lee, 2003). As suggested by Lorber (2005), jobs and families are subjects that could have both positive and negative effects on the physical and mental health of men and women. Both entities can provide social support, which is beneficial to health. On the other hand, they may produce stresses and affect individuals’ general well-being. Women are especially vulnerable as the boundaries between work and family are permeable. Even when they have a full-time job, they are usually expected to take responsibility for child care and household maintenance (Lorber, 2005). Although there has been a rise in male unemployment, which has left many men staying at home during the day, joint conjugal roles in managing the household activities between spouses seem to be difficult to achieve. On the other

hand, the life of a full-time housewife is not automatically “better” than that of a working wife and mother, because household chores can be monotonous, boring and socially isolating, with no recognition, no specific working hours, no pay and low status (Doherty & Campbell, 1988; Rieker & Bird, 2000). On the whole, whether a woman is a working wife and mother, or a full-time housewife, the above situations may create conflict, stress, depression and negative feelings, which may decrease her satisfaction with family life. Family is an important place for socialization and it is also a place to provide protection and emotional support. Many research studies demonstrate that life stress, social and family support have a close relationship with the onset of and recovery from CHD (Campbell, 2003; Weihs et al., 2002).

#### *Level of Depressive Symptoms*

The CES-D mean score of this sample was 12.05 (SD=9.64). When compared to the Rankin et al. (1993) study mean score of 18.1 (SD=12.2) in 30 Chinese American diabetes patients, the score in this study was lower. The median score was 10 in this sample whereas it was 15 in Rankin’s study. It is reasonable to speculate that the diabetic patients would report more depressive symptoms because diabetes mellitus is considered a “chronic” disease and lifestyle modifications need to be lifelong. A diagnosis means a lifelong health problem for a Chinese living in an English speaking country and could explain the depressive mood of the respondents

(Chesla & Chun, 2005). When this study was compared to a study in HK, the mean scores were close to Cheung & Bagley's study (1998). Cheung and Bagley studied depressive symptoms in 138 couples in HK and the wives' mean score was 12.34 (SD=6.78), which was very close to the mean score of this study sample (12.05). The majority of women in this sample were currently married (72.6%), so they likely shared some of the common problems of the women in the other HK study.

About 29% of the respondents in this study scored 16 points and above, indicating depressive symptomatology, and those who scored 26 points and above accounted for 10%. Undoubtedly, as suggested in the previous section, daily hassles such as work stress, unequal pay at work, role conflict and family stress are detrimental to their health in general, and contribute to depression in particular (Lorber, 2005). In the Hong Kong Department of Health Healthy Living Survey in 1999, among 3,270 respondents, 54% had felt depressive symptoms in the past 12 months. In the past month before the survey, about half (49%) felt tense or under great pressure. The greatest source of pressure came from the career or job (39%), followed by finance (16%). Therefore, it is not surprising to find that 29% of respondents scored 16 points and above, showing depressive symptoms. According to Sherwood et al. (2007), in patients with heart diseases, symptoms of depression were associated with adverse prognosis. As stated by Rugulies (2002) and Whooley

(2006), depression is a risk factor for coronary heart disease events in healthy patients and for adverse cardiovascular outcomes in patients with established heart disease. Thus, it is important to identify women having depressive symptoms in non-clinical settings such as the community. From a more structural perspective, after the handover to China, Hong Kong suffered a series of disasters, i.e., the Asian financial property crisis, a property crash and the SARS epidemic. These external factors may in one way or another affect the daily lives of the general public. In turn, more people may reveal a certain degree of depressive symptomatology.

#### *Preventive Behavior of CHD*

In this study, the preventive behavior of CHD was described in terms of healthy lifestyle, which was measured by the Health-Promoting Lifestyle Profile II. The HPLP II has been widely used in nursing (Choi Hui, 2002). Lee and Loke (2005) translated the HPLP II into Chinese and conducted a study of 247 university students in HK. Among the 247 students, 140 were females and the mean scores of this group of female respondents were used for comparison with this study. Lee and Loke's 140 female university student respondents had slightly higher mean scores in five domains. The remaining domain, "Health Responsibility," had almost the same mean scores in this (17.69) and Lee and Loke's study (17.66).

Choi Hui (2002) also conducted a study using HPLP II (English version) to

understand the health-promoting lifestyles in university nursing students in HK with 169 respondents (160 females and 9 males). When comparing the present study with Lee and Loke (2005) and Choi Hui (2002), it is interesting to find that all had the highest score in the “Interpersonal Relationships” domain and the lowest score in “Physical Activity.” In fact, the high-to-low order of the domain mean scores was the same in all three studies (Interpersonal Relationships > Spiritual Growth > Nutrition Habits > Stress Management > Health Responsibility > Physical Activity). The results are more or less the same even though one group of subjects was university nursing students from all year levels (Choi Hui, 2002). The physical activity domain mean score was 1.85 in this study, 1.94 in Lee & Loke, and 1.78 in Choi Hui’s study. The health responsibility domain mean score was 1.96 in this study, 1.96 in Lee & Loke, and 2.0 in Choi Hui’s study (2002). It is interesting to note that the respondents in both the Lee and Loke (2005) and Choi Hui (2002) studies were university students and that the overall and individual domains scores corresponded to one another in all three studies.

In analyzing the health-promoting behaviors, only those who reported “often” (3 points) or “routinely” (4 points) employing each health practice item were considered as practicing health-promoting behavior. Those who reported “never” (1 point) or “some times” (2 points) were considered as not practicing the health-promoting

behavior. Therefore, since all the mean scores of each domain were below 3 points, none of the respondents were practicing health-promoting behavior. In the present study, the only item that scored 3 points was “Eat Breakfast.” It is also the only item that can be considered as “practicing health-promoting lifestyle” according to Lee and Loke (2005) and Pender et al. (2006).

*Nutrition habits.* In the nutrition habits domain, items about food consumption according to the food pyramid were asked. The item with the highest score was “eating breakfast.” This suggested that many respondents “always” had breakfast (mean=3.1, SD=.83). Dieticians consider skipping breakfast to be detrimental and routinely eating breakfast to be a healthy behavior. The present study did not ask the respondents to state the kinds of food they consumed during breakfast. However, according to a lifestyle survey done by Hong Kong Department of Health (Hong Kong Department of Health, 2006f), we could speculate to a certain extent how the respondents of the present study would behave. In that lifestyle survey of 1,109 females, 22.2% reported that 5 times or more a week they ate a breakfast that was not made at home and excluded bread that was bought from a bakery. An even higher percentage (36.5%) reported eating out for lunch. Generally, we can assume that diners in restaurants or fast food chains would consume food high in fat and cholesterol, especially foods cooked with trans fat. Many of the respondents were

wage earners, who may eat food not prepared by themselves. The health impacts of this lifestyle could be undesirable.

Another study implemented by the Hong Kong Department of Health, (2006d) found that among the 1,101 female respondents, 15.2% were overweight (BMI 23.0 – < 25.0) and 16.8% were obese (BMI  $\geq$  25). An attempt was made to compare the self-reported BMI obtained from the present study and those gathered by HKDH survey based on the WHO classification of BMI for adult Asians (Table 5.1).

Table 5.1 World Health organization classification of BMI for adult Asians in Hong Kong (Hong Kong Department of Health, 2006d)

BMI classification	Present study (%)	Hong Kong Dept. of Health (%)
Underweight (BMI < 18.5)	7.1	12.4
Normal (BMI 18.5 – < 23.0)	48.2	50.3
Overweight (BMI >23 – < 25)	20.2	15.2
Obese (BMI $\geq$ 25)	24.4	16.8
Unknown/missing/outliers	-	5.3
Total	100.0	100.0

From Table 5.1, it is clear that issues concerning overweight (20.2%) and obesity (24.4%) in the present study deserve attention. In this study, 48.2% of respondents' self-reported BMI was normal, and the BMI mean score was 22.66 (SD=3.17). Given that normal BMI range is 18.5 to 22.9, the BMI mean score reported by the respondents of this study was close to the upper limit. Although the body height

and weight were self-reported data, it can be considered relatively reliable because it is very easy to learn one's own height and weight. There are scales in all government clinics, and in almost all private practitioners' offices. The findings of this domain in the HPLP II suggested that further investigating the nutrition habits of females in HK is significant in developing health promotion policies aimed at this group of women.

Meanwhile, the lowest score item in this domain was about consuming dairy products, i.e., milk, yogurt and cheese. For the younger generation, these items are likely to be among their daily choices of foods. However, for the middle aged and older respondents, these food items may not be viewed as culturally appropriate for them to consume.

*Health responsibility.* This is the second lowest scored domain next to physical activity. The items in this domain could be considered as self-care behavior, which essentially consists of a layperson's preventing, detecting and treating (including consulting health care professionals) his or her health-related problems (Cockerham, 2007). When laypersons lack knowledge, competence or experience to proceed, or are simply more comfortable in allowing professionals to handle their health matters, they turn to health care providers. The lower scores in this domain may reflect such a situation.



In addition, Chinese tend to possess a stronger belief in external control than do Westerners, which is context-specific (Leung, 1996). In fact, powerful others such as medical professionals may reinforce the external sense of control among Chinese individuals. Based on this cultural tendency, many respondents may put their trust in their doctors without doing anything for self-care themselves, and may also decline to query, challenge or voice their own concerns to the powerful others. It is not surprising that their answers showed minimal interaction and discussion between respondents and health professionals.

*Physical activity.* Compared with the other domains in HPLP II, respondents in the present study achieved the lowest score in physical activity (overall mean=14.85, SD=4.33, item mean=1.85). Such findings have been echoed by a number of studies about physical activity and exercise. Despite the well-known benefits of performing physical activity, the majority of Hong Kong Chinese (76%) are not participating at a level by which they can achieve health benefits (Hui & Morrow, 2001). According to Fu (2001), over 60% of HK people did not engage in physical activity. Besides, middle-aged people are the least active group in performing exercise (King et al., 2001).

Based on the findings of the health survey conducted by the Hong Kong Department of Health (2006e) among the 1,101 female respondents, 23.2% had low,

and 52.9% had moderate levels of physical activity as measured by the International Physical Activity Questionnaire Scoring Protocol. In order to stay healthy, it was recommended that a person take at least 30 minutes of at least moderate intensity activity on five or more days a week (Health Evidence Bulletin Wales, 2006).

Apparently, there are barriers that prevent the general public and the respondents of this study from participating in physical activity and exercise (Cheng, Chou, Macfarlane, & Chi, 2006). Factors contributing to such barriers among this group of respondents should be examined so as to facilitate a healthy lifestyle in these women.

*Stress management.* In the stress management domain, the respondents generally indicated stressful lifestyles and could only “sometimes” get enough sleep and take some time for relaxation each day. The two lowest scored items in this domain were “practice relaxation or meditation for 15-20 minutes daily” and “concentrate on pleasant thoughts at bedtime.” Due to the aforementioned situations at work and in the family setting, many of the respondents seemed to experience difficulties in finding time to relax, even at bedtime. Those who had more resources might be able to find time to engage in stress-relieving activities (Cockerham, 2007).

*Spiritual growth.* In the present study, 42.3% of respondents claimed not to have any religion. However, the item mean score of this domain was the same as the nutrition habits domain, which was 2.39 (range 1-4), ranking second highest in all the

domains, following the domain of Interpersonal Relationships (item mean = 2.59).

Many respondents told the interviewer that they believed their lives had purpose and they worked toward long term goals in their lives, i.e., to take care of the family and bring up their children. Such a life goal could undoubtedly motivate them to strive hard despite unfavorable social situations.

*Interpersonal Relationships.* This is the domain which had the highest scores when compared with the other five domains. All items in this domain had scores over two. Compared with their male counterparts, females tend to be expressive and make friends more easily. They also may benefit from relationships with female friends and relatives and are less dependent on men for emotional support than men are on women (Campbell, 2003). These social support functions are crucial to women; through social interaction they can share their problems related to family and work setting and provide tangible and non-tangible support to each other. For example, the support could consist of practical services and material benefits; providing feedback that promotes self-esteem and validates identity; and showing affection, caring and nurturance. Through individual's interpersonal relationships and the resulting social networks, support could be given and sought in the process of networking (Faber & Wasserman, 2002). Network members may be able to suggest, for example, who would be the right person to talk to or a person they know who has the experiential

knowledge required. This is especially true when people look for jobs, share work experiences and child care.

### *Predictors of CHD Risk Factor Knowledge*

A multiple regression statistical analysis was performed to examine relationships between independent variables (family functioning, depression and sociodemographic variables) and a dependent variable (CHD risk factor knowledge). The multiple regression model indicated that socio-demographic variables, with family functioning and depression symptom measurement as a whole, explained 13.6% of the total variance in CHD risk factor knowledge ( $R^2=.136$ ,  $F=2.481$ ,  $p=.009$ ). However, no individual independent variable had a statistically significant value in the regression model. In the regression model, only three variables have a unique contribution over 1% to the variance of CHD risk factor knowledge. They are: monthly household income (1.8%), religion (1.4%), and family functioning (1.6%). Nevertheless, with all ten independent variables, the overlapping effect caused the  $R^2$  to be .136 in the overall model. In the study by Cheung et al. (1999) concerning knowledge of stroke in Hong Kong Chinese, the linear regression analysis revealed that the age group of 41 – 50 years old was the independent factor of the score for knowledge ( $p<.01$ ). In the present study, “age” had a unique contribution of 0.7% to the total variance of the CHD risk factor knowledge. The beta weight of the age variable was .111 and the

negative sign showed that with increased age, the knowledge score would be decreased. It is understandable that older people would not easily acquire new knowledge such as CHD risk factors. Based on the regression model, no particular independent variables showed a significant unique contribution to the overall variance in the CHD risk factor knowledge.

#### *Predictors of CHD Perceived Risks*

With the same multiple regression model but using CHD perceived risk as the dependent variable instead of CHD risk factor knowledge, the regression model also indicated that the eight socio-demographic variables, adding family functioning and depression symptoms measurement, explained 17.2% of the variance in CHD perceived risk ( $R^2=.172$ ,  $F=3.266$ ,  $p=.001$ ). Three independent variables showed a unique contribution to the overall regression model. They were BMI (3.3%), monthly household income (2.7%), and depression (5.3%). It is reasonable that women having a higher BMI would be more likely to expect having CHD in the future, especially when obesity is a world-wide problem (Rosamond et al., 2007). Increased depression is a risk factor for CHD (Rugulies, 2002) and it may contribute to the perceived risk. Each woman's perception of her own risk is important for her to begin considering the idea of risk factor modification (King et al., 2002). Perceptions of personal risk for CHD affect women's preventive health behavior.

With a moderate perceived CHD risk shown in this sample, the respondents might not have a great commitment to leading a healthy lifestyle.

#### *Predictors of CHD Preventive Behavior*

Considering all 12 independent variables, the multiple regression model indicated two variables that significantly contribute to the variance in CHD preventive behavior. These were family functioning (Family APGAR) (6.9%) and depression score (2.9%). The model as a whole, including variables of CHD risk factor knowledge, CHD perceived risk age, and the eight sociodemographic variables of educational attainment, number of people living in the household, monthly household income, marital status, self-reported BMI, economic activity status and religion, explained 28.6% of the variance in Chinese Hong Kong women's CHD preventive behavior ( $R^2=.286$ ,  $F=5.164$ ,  $p=.000$ ). The model indicated overlapping effects of different independent variables even though some of them did not make a significant unique contribution to the overall model. According to the correlation matrix, health-promotion behavior is associated with the knowledge of CHD risk factors, indicating better knowledge may be motivation for a more healthy lifestyle. A large body of research suggests that increased health knowledge would contribute to a healthy lifestyle (Ali, 2002; Lorber, 2005; Pender et al., 2006). Better family functioning, which is usually associated with having a partner, or other supportive

family members, is related to the health-promotion lifestyle. Education is another variable showing a correlation, indicating that higher education levels would increase the chance of healthy behavior (Chyun, Amend, Newlin, Langerman & Melkus, 2003; Health Evidence Bulletins Wales, 2006). However, there are a lot of barriers to CHD risk modification through a healthy lifestyle (Thanavaro, 2005). The barriers stated by Thanavaro included family commitments, laziness, lack of encouragement or self-discipline, work commitments, enjoyment of unhealthy foods and fatigue from exercising. Women need a lot of encouragement to lead a healthy lifestyle and they also need life skills and strategies to continue the commitment. Thus, the role of nurses is important to motivate and empower women with knowledge and skills to have a healthy lifestyle for CHD prevention.

#### *Family Functioning, Depression and CHD Preventive Behavior*

The role of family functioning is important in understanding CHD preventive behavior in the Chinese women of HK. Family has a unique role in providing emotional, instrumental, social and financial support to family members (Campbell, 2003). Depression is a clinically significant risk factor for developing CHD, especially in men and women aged 25 to 50 (Sundquist, Li, Johansson, & Sundquist, 2005). It is clear that family functioning plays an important role in predicting CHD preventive behaviors, which is described in terms of a health-promoting lifestyle.

According to Knaft & Gilliss (2002), nurses need to develop knowledge in understanding various patterns of family responses to illness. In addition, nurses also have to identify variables that are linked with different levels of individual and family functioning in families so that nurses can be better positioned to develop and test interventions that address the unique needs of families. Campbell (2003) also recommends a family approach in targeting chronic illness prevention, such as CHD and DM. Even though family functioning did not show a major unique contribution to CHD risk factor knowledge and perceived risks, the overlapping effect of family functioning with other independent variables should not be underestimated.

Depression, widely recognized as a risk factor for CHD (Sherwood et al., 2007), also demonstrated its unique contribution in predicting perceived CHD risk and preventive behavior (Table 5.2). Symptoms of depression were associated with an adverse prognosis in patients with CHD and heart failure (Sundquist et al., 2005).

Depression has been an important health problem and challenge in the HK community in recent years (Yip, Law, & Law 2003). The result of this CHD preventive behavior study also demonstrated that depressive symptoms would predict CHD preventive behavior. According to the Hong Kong Health and Lifestyle Survey (Hong Kong Department of Health & University of Hong Kong, 1999), 54% of respondents reported depressive symptoms in the past 12 months. The major reasons for the



depression symptoms were job stress and financial burden. Women, whether they are homemakers, or are part of the labor force, are still considered the informal caregivers at home. While family functioning is important for the health of women, external factors also play a part in affecting their general well being and physical health, such as CHD preventive behavior.

In conclusion, CHD is the single greatest cause of death among American women (Rosamond et al., 2007). Since the 1960's, CHD has been second to cancer as the most common cause of death in HK (Fu, 2001; Hong Kong Department of Health, 2006a). According to Chair, Lee, Lopez & Ling (in press), on average, one HK citizen dies of CHD every hour. In the West, many women do not perceive that CHD is a substantial health concern (Ali, 2002; Wilcox & Stefanick, 1999) and this may also be true for Chinese women, as indicated by this study. Knowledge of CHD risk factors is essential so that women can be empowered to commit to a healthy lifestyle to prevent CHD. Several CHD modifiable risk factors have been identified and their independent or additive contribution to the cause of CHD have been extensively researched and discussed (Unal, Critchley, & Capewell, 2005). Successful primary prevention of CHD requires optimizing behaviors that simultaneously control multiple risk factors such as smoking, blood pressure, lipid and cholesterol level, physical activity and weight (Chyun et al., 2003). The role of

family is important not only to provide protection and satisfaction. For example, children's lifestyles, health beliefs and behaviors are significantly influenced by parental modeling and parental influence on children's behavior lasts beyond adolescence (Norton, Froelicher, Waters & Carrieri-Kohlman, 2003). In this sample of 168 Chinese women, family function was considered to be "moderately dysfunctional" according to Smilkstein's work (1978), and depression occurred in about 29%. The sample in this study showed a very weak commitment to having regular physical exercise, which was echoed by the Hong Kong Health and Lifestyle Survey (Hong Kong Department of Health & University of Hong Kong, 1999). Even though the body weight and height were self-reported, the calculated body mass index was very close to the overweight margin ( $BMI > 23$ ), with the mean of this sample 22.66. As a whole, the sample in this study showed a low level of CHD risk factor knowledge and a moderate concern about CHD perceived risk. According to Critchley, Liu, Zhao, Wei & Capewell (2004), CHD has increased in Beijing, China, and it is anticipated that the rate of CHD will also increase in other parts of Mainland China. The CHD problem in the Chinese population has been studied (Dwyer et al., 2003) and gained more attention worldwide. The results of this study provide some information about CHD preventive behavior in Chinese women living in HK and indicate a need for health promotion work targeting healthy lifestyle promotion in the

HK community.

### Implication for Nursing

The ultimate goal of nursing is to promote health among the public. Nurses, as health educators, have a vital role in promoting health with efficient and effective strategies. In this study, we have seen that a number of women only showed limited knowledge of CHD risk factors. We also recognize that possessing knowledge in itself cannot motivate a person to practice healthy lifestyles. However, without knowledge, the path to acquire heart health is even more difficult. Therefore, nurses could give advice and provide knowledge concerning heart health to this group of women during clinical contacts. Based on our results, women who are old, living alone or with very few family members, have poor family relationships and/or are depressed are more vulnerable and could have a higher chance than their counterparts to develop CHD. Thus, nurses could pay attention to these particular groups among their clientele and give them additional support, especially relating to heart health. The role of family in prevention of CHD is very important. Family is the primary group in society. It provides shelter and support to individual members. Family functioning can play a crucial role in affecting members' everyday life, for example, the ways members relate to each other, kinds of food consumed, and ways to promote health and limit illness. A well functioning family can provide role modeling and

facilitate younger members to develop a healthy style of living for their future. Thus, nurses may not only target the mother or housewife but also need to consider promoting heart health among family members of clients, e.g., a weight reduction programme for children that involves parents as a support to their obese children. Finally, the term “healthy living” is value-laden. What we as professionals see as not “healthy” may be “healthy” from the client’s perspective. To provide support and facilitate changes effectively, we should begin from understanding the client’s values and beliefs, instead of from our health care professionals’ vantage point.

#### Recommendation for Future Research Directions

This is the first study in Hong Kong to investigate CHD risk factor knowledge in association with CHD perceived risks and preventive behavior in women. The present study has indicated some interesting findings gathered from a small group of women by means of convenience sampling. Future research could include a wider spectrum of the female population in Hong Kong so that the extent of the problems concerning these topics could be estimated. The need to develop a reliable instrument to measure CHD risk factors and preventive behavior is essential. Chinese people differ from Western people in their ways of preparing and consuming food. They also have different ways of expressing their emotions and giving social support (Gao, Ting-Toomey & Gudykunst, 1996; Russell & Yik, 1996). Therefore, it

is important to develop a culturally and contextually sensitive instrument to understand healthy lifestyle behavior in Chinese people. At the same time, in-depth studies to explore women's perception of CHD risk and barriers to adopt healthy lifestyles are also crucial. The qualitative information will provide researchers an understanding in context. Men were not included in this study. Their lifestyles related to health behavior also deserve to be examined. Moreover, how men interact with their wives concerning the family's health behavior and how the dynamic between the two parties affects individual members' health orientation could be further researched.

#### Limitations of the Study

Although the above findings are provocative, studies of this kind are not free from limitations. First, the body mass index is calculated based on the self-reported body weight and height at the point of the interview being conducted, which may result in a less accurate BMI. Affective and social factors can influence self-reported data. Second, the interpretation of findings is limited by the cross-sectional nature of the study and any conclusion about prediction does not allow for causality. Longitudinal studies are required to determine directionality of the relationship between variables. Third, respondents of this study were recruited through the method of convenience sampling of Chinese women living in HK through

three sites including a church environment. Although religion did not show up as a significant variable affecting the healthy lifestyle, the choice of more and different sites could provide findings with greater representation of the HK population. In addition, the present study uses the HPLP II, which is an instrument originated from the West, as an instrument to measure CHD preventive behaviour. The Western based instrument still contains some culturally biased factors affecting the findings of the instrument, e.g., the nutrition habit subscale asks about the consumption of dairy products, which may not be a very common practice in Chinese people, especially for older women. There is no good and reliable instrument to measure the knowledge of risk factors of CHD. Despite an appropriate sample size, as determined by the power analysis used in this study, the model explains only 13.6% of the variance of CHD risk factor knowledge and 17.2% of CHD risk perception. Chinese women's cultural eating practices may also be a factor affecting the healthy lifestyle and need to be investigated. A future study with a larger sample size might be useful to further explain the degree to which family functioning, depression and sociodemographic characteristics contribute to the understanding of CHD risk and prevention. Finally, this study only focused on Chinese women living in HK, neglecting the male gender, which comprises half of the population in HK communities.

## REFERENCES

- Agatista, P.K., Matthews, K.A., Bromberger, J.T., Edmundowicz, D., Chang, Y.F., & Sutton-Tyrrell, K. (2005). Coronary and aortic calcification in women with a history of major depression. *Archives of Internal Medicine*, 165(11), 229-36.
- Ali, N. S. (2002). Prediction of coronary heart disease preventive behaviors in women: A test of the Health Belief Model. *Women & Health*, 35(1), 83-96.
- American Heart Association.(2003). *Heart and stroke facts*. Retrieved January 6, 2007 from <http://www.americanheart.org/downloadable/heart/1056719919740HSFacts2003text.pdf>
- Anderson, J., & Kessenich, C.R. (2001). Women and coronary heart disease. *Nurse Practitioner*, 26(8), 12, 18, 21-23.
- Assmann, G., Carmena, R., Cullen, P., Fruchart, J.C., Jossa, F., Lewis, B. et al. (1999). Coronary heart disease: reducing the risk: a worldwide view. *Circulation*, 100, 1930-1938.
- Becker, D.M., & Levine, D.M. (1987). Risk perception, knowledge, and lifestyles in siblings of people with premature coronary disease. *American Journal of Preventive Medicine*, 3(1), 45-50.
- Berger, A.M., & Walker, S.N. (2004). Measuring healthy lifestyle. In M. Frank-Stromborg & S.J. Olsen (Eds.), *Instruments for clinical health-care research* (pp. 401-16). Sudbury, MA: Jones and Bartlett.
- Berkman, L.F. (2000). Social support, social networks, social cohesion and health. *Social Work in Health Care*, 31, 3-14.
- Booth-Kewley, S., & Friedman, H.S. (1987). Psychological predictors of heart disease: a quantitative review. *Psychological Bulletin*, 101(3), 343-362.
- Brislin, R.W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 1(3): 185-216.
- Bunker, S.J., Colquhoun, D.M., Esler, M.D, Hickie, I.B., Hunt, D., Jelinek, V.M., et al.

- (2003). "Stress" and coronary heart disease: psychosocial risk factors. *Medical Journal of Australia*, 178, 272-276.
- Burns, N., & Grove, S.K. (2005). *The practice of nursing research: conduct, critique, and utilization*. St. Louis, MO: Elsevier Saunders.
- Bury, M. (2005). *Health and illness: short introduction*. Cambridge: Polity.
- Campbell, T.L. (2003). The effectiveness of family interventions for physical disorders. *Journal of Marital and Family Therapy*, 29(2), 263-281.
- Centers for Disease Control and Prevention (2005). Cigarette smoking among adults: United States, 2004. *MMWR Morbidity and Mortality Weekly Report*, 54, 1121-1124.
- Chair, S.Y., Lee, S.F., Lopez, V., & Ling, E.M. (in press). Risk factors of Hong Kong Chinese patients with coronary heart disease. *Journal of Clinical Nursing*.
- Chan, D.H., Ho, S.C., & Donnan, P.B. (1988). A survey of Family APGAR in Shatin Private Ownership Homes. *The Hong Kong Practitioner*, 10(7), 3295-3299.
- Cheek, D., & Cesan, A. (2003). What's different about heart disease in women? *Nursing*, 33(8), 36-42
- Chen, Y.C., Chen, C.C., Hsu, S.H., & Lin, C.C. (1980). A preliminary study of Family APGAR index. *Acta Paediatr Sinica*, 21, 210.
- Cheng, S.T., & Chan, A.C.M. (2005). The Center for Epidemiologic Studies Depression Scale in older Chinese: thresholds for long and short forms. *International Journal of Geriatric Psychiatry*, 20, 465-470.
- Cheng, Y.H. (1997). Explaining disablement in modern times: hand-injured workers' accounts of their injuries in Hong Kong. *Social Science & Medicine*, 45(5), 739-750.
- Cheng, Y.H., Chou, K.L., Macfarlane, D.J., & Chi, I. (2006) *Identifying the pattern of physical exercise and determinants contributing to the engagement in physical exercise among Hong Kong older adults*. Final Research Report submitted to Grant Review Board, Health and Health Services Research Fund, The Hong Kong



SAR Government.

- Chesla, C.A., & Chun, K.M. (2005). Accommodating type 2 diabetes in the Chinese American family. *Qualitative Health Research, 15*(2), 240 - 255.
- Cheung, C.K., & Bagley, C. (1998) Validating an American scale in Hong Kong: the Center for Epidemiological Studies Depression Scale (CES-D). *Journal of Psychology, 132*(2), 169-186.
- Choi Hui, W.H. (2002). The health-promoting lifestyles of undergraduate nurses in Hong Kong. *Journal of Professional Nursing, 18*(2), 101-111.
- Chyun, D.A., Amend, A.M., Newlin, K. Langerman, S. & Melkus, G.D. (2003). Coronary heart disease prevention and lifestyle interventions: cultural influences. *Journal of Cardiovascular Nursing, 18*(4), 302-318.
- Clarke, D.E., Walker, J.R., & Cuddy, T.E. (1996). The role of perceive over protectiveness in recovery 3 months after myocardial infarction. *Journal of Cardiopulmonary Rehabilitation, 16*(6), 372-377.
- Cockerham, W.C. (2007). *Medical sociology*. Upper Saddle River, NJ: Pearson Prentice Hall.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum.
- Critchley, J., Liu, J., Zhao, D., Wei, W., & Capewell, S. (2004). Explaining the increase in coronary heart disease mortality in Beijing between 1984 and 1999. *Circulation, 110*, 1236-1244.
- Department of Health, U.K. (2004). *At least five a week. Evidence on the impact of physical activity and its relationship to health*. London: Department of Health.
- Doherty, W.J., & Campbell, T.L. (1988). *Families and health*. Beverly Hills, CA: Sage.
- Dunbar, S.B., Clark, P.C., Deaton, C., & Smith, A.L. (2005). Family education and support interventions in heart failure: A pilot study. *Nursing Research, 54*(3),

158-166.

Duvall, W.L. (2003). Cardiovascular disease in women. *Mount Sinai Journal of Medicine*, 70(5), 293-307.

Dwyer, T., Emmanuel, S.C., Janus, E.D., Wu, Z., Hynes, K.L., & Zhang, C. (2003). The emergence of coronary heart disease in populations of Chinese descent. *Atherosclerosis*, 67, 303-310.

ENRICHD Investigators. (2003). Enhancing recovery in coronary heart disease patients (ENRICHD) randomized trial: effects of treating depression and low perceived social support on clinical events after myocardial infarction. *Journal of American Medical Association*, 289(23), 3106-3116.

Ewart, C.K. (1991). High blood pressure and marital discord: not being nasty matters more than being nice. *Health Psychology*, 10(3), 155-163.

Faber, A.D., & Wasserman, S. (2002). Social support and social networks: synthesis and review. *Advances in Medical Sociology*, 8, 29-72.

Fisher, L., & Weihs, K.L. (2000). Can addressing family relationships improve outcomes in chronic disease? *Journal of Family Practice*, 49(6), 561-566.

Friedman, M.M., Bowden, V.R., & Jones, E.G. (2003). *Family nursing: research, theory & practice*. Upper Saddle River, NJ: Prentice Hall.

Froelicher, E.S., Miller, N.H., Buzaitis, A., Pfenninger, P., Misuraco, A., Jordan, S. et al. (2003). The Enhancing Recovery in Coronary Heart Disease Trial (ENRICHD): strategies and techniques for enhancing retention of patients with acute myocardial infarction and depression or social isolation. *Journal of Cardiopulmonary Rehabilitation*, 23(4), 269-80.

Fu, F. H. (2001). The prevalence of cardiovascular disease risk factors of Hong Kong Chinese. *Journal of Sports Medicine and Physical Fitness*, 41(4), 491-499.

Gahagan, J., Loppie, C., Rehman, L., Maclellan, M., & Side, K. (2007). "Far as I get is the clothesline": the impact of leisure on women's health and unpaid caregiving experiences in Nova Scotia, Canada. *Health Care for Women International*, 28(1),

47-68.

Gao, G., Ting-Toomey, S., & Gudykunst, W.B. (1996). Chinese communication processes. In M.H. Bond (Ed.), *The handbook of Chinese psychology* (pp. 280-293). Oxford: Oxford University Press.

Gilliss, C.L., Highly, B.L., Roberts, B.M., & Martinson, I.M. (1989). *Toward a science of family nursing*. Menlo Park, CA: Addison-Wesley.

Goldstein, M.G., & Niaura, R. (1992). Psychological factors affecting physical condition: cardiovascular disease literature review. *Psychosomatics*, 33, 134-154.

Good, M.D., Smilkstein, K.J., Good, B.J., Shaffer, T., & Aron, T. (1979). The family APGAR index: A study of construct validity. *Journal of Family Practice*, 8(3), 577-582.

Gullette, E.C., Blumenthal, J.A., Babyak, M., Jiang, W., Waugh, R.A., Frid, D.J. et al. (1997). Effects of mental stress on myocardial ischemia during daily life. *Journal of American Medical Association*, 277, 1521-1526.

Gupta, M., Singh, N., & Verma, S. (2006). South Asians and cardiovascular risk: what clinicians should know. *Circulation*, 113, 924-929.

Gwyther, R.E., Bentz, E.J., Drossman, D.A., & Berolzheimer, N. (1993). Validity of the family APGAR in patients with irritable bowel syndrome. *Family Medicine*, 25, 21-25.

Halm, M.A., & Penque, S. (2000). Heart failure in women. *Progress in Cardiovascular Nursing*, 15(4), 121-133.

Hart, P.L. (2005). Women's perceptions of coronary heart disease: an integrative review. *Journal of Cardiovascular Nursing*, 20(3), 170-176.

Health Evidence Bulletins Wales. (2006, March 21). Coronary heart disease, and healthy living. Retrieved August 16, 2006 from <http://hebw.cf.ac.uk/index.html>

Hilliard, R., Gierde, C., & Parker, L. (1986). Validity of two psychological screening measures in family practice: personal inventory and family APGAR. *Journal of*

*Family Practice*, 23(4), 345-349.

Hong Kong Census and Statistics Department (2006). *Women and men in Hong Kong: key statistics*. Hong Kong: Census and Statistics Department.

Hong Kong Census and Statistics Department (2007). *2006 population by-census: summary results*. Hong Kong: Census and Statistics Department.

Hong Kong Department of Health (2004). *Annual Report 2002-2003*. Hong Kong: Government Printer.

Hong Kong Department of Health (2006a) *Annual report 2004-2005*. Hong Kong: Department of Health, HKSAR.

Hong Kong Department of Health (2006b). Death rates of leading causes. Retrieved January 22, 2007 from  
[http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns\\_sumID=269&id=27&pid=10&ppid=](http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns_sumID=269&id=27&pid=10&ppid=)

Hong Kong Department of Health (2006c). Cigarettes smoking. Retrieved January 22, 2007 from  
[http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns\\_sumID=259&id=280&pid=10&ppid=](http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns_sumID=259&id=280&pid=10&ppid=)

Hong Kong Department of Health (2006d). BMI. Retrieved January 22, 2007 from  
[http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns\\_sumID=248&id=280&pid=10&ppid](http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns_sumID=248&id=280&pid=10&ppid)

Hong Kong Department of Health (2006e). Exercise. Retrieved January 22, 2007 from  
[http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns\\_sumID=253&id=280&pid=10&ppid=](http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns_sumID=253&id=280&pid=10&ppid=)

Hong Kong Department of Health (2006f). Eating out. Retrieved January 22, 2007 from  
[http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns\\_sumID=199&id=280&pid=10&ppid=](http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns_sumID=199&id=280&pid=10&ppid=) (Breakfast)  
[http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns\\_sumID=200&id=280&pid=](http://www.chp.gov.hk/data.asp?lang=en&cat=4&dns_sumID=200&id=280&pid=)

[10&ppid=](#) (Lunch)

- Hong Kong Department of Health and University of Hong Kong. (1999). *Report on healthy living survey 1999*. Hong Kong: Centre for Health Protection.
- Hong Kong Department of Health and University of Hong Kong. (2004). *Report on population health survey 2003/2004*. Hong Kong: Centre for Health Protection.
- Hong Kong Sports Development Board. (2003) *Sports participation survey 2001*. Hong Kong: Hong Kong Sports Development Board.
- Hui, S. C., & Morrow, J. R. (2001). Level of participation and knowledge of physical activity in Hong Kong Chinese adults and their association with age. *Journal of Aging and Physical Activity*, 9(4), 372-385.
- Hulley, J.S., Cummings, S., Browner, W., Grady, D., Hearst, H., & Newman, T. (2001). *Designing clinical research*. Philadelphia: Lippincott.
- Janus, E.D. (1997). *Hong Kong Cardiovascular Risk Factors Prevalence Study 1995-1996*. Hong Kong: Cardiovascular Risk Factor Prevalence Study Group.
- Juarez, G., Ferrell, B.R., & Rhiner, M. (2004). Measuring family outcomes. In M. Frank-Stromborg & S.J. Olsen (Eds.), *Instruments for clinical health-care research* (pp. 352-61). Sudbury, Massachusetts: Jones and Bartlett.
- Kannel, W.B., Hjortland, M.C., McNamara, P.M., & Gordon, T. (1976). Menopause and risk of cardiovascular disease: the Framingham study. *Annals of Internal Medicine*. 85, 447-452.
- King, A. C., Gillis, D., Haskell, W. L., Ritter, P. L., Mills, K. M., & Stewart, A. L. (2001). CHAMPS physical activity questionnaire for older adults: Outcomes for interventions. *Medicine & Science in Sports & Exercise*, 33 (7), 1126-1141.
- King, K.B., Quinn, J.R., Delchanty, J.M., Rizzo, S., Eldredge, D.H., Caufield, L. et al. (2002). Perception of risk for coronary heart disease in women undergoing coronary angiography. *Heart & Lung*, 31(4), 246-252.
- Knafl, K.A., & Gilliss, C.L. (2002). Families and chronic illness: a synthesis of

current research. *Journal of Family Nursing*, 8(3), 178-198.

- Knowler, W.C., Barrett-Connor, E., Fowler, S.E., Hamman, R.E., Lachin, J.M., Walker, E.A. et al. (2002) Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *New England Journal of Medicine*, 346, 393-403.
- Ko, G.T. (2000). Diagnosing diabetes mellitus in the Asian population. *Hong Kong Medical Journal*, 6(1), 53-59.
- Kokata, G. (2007, April 8). It's not a "plumbing problem": doctors also fight the popular misconceptions about the causes of heart disease. *New York Times*, pp. A1.
- Lane, S.D., & Cibula, D.A. (2000). Gender and health. In G.L. Albrecht, R. Fitzpatrick, & S.C. Scrimshaw (Eds.), *Handbook of social studies in health and medicine* (pp. 136-153). London: Sage.
- Lee, J., Heng, D., Chia, K.S., Chew, S.K., Tan, B.Y., & Hughes, K. (2001). Risk factors and incident coronary heart disease in Chinese, Malay, and Asian Indian males: the Singapore Cardiovascular cohort study. *International Journal of Epidemiology*, 30, 983-988.
- Lee, M.K. (2003). Women matters. In S.K. Lau, M.K. Lee, P.S. Wan, & S.L. Wong (Eds.), *Indicators of social development: Hong Kong 2001* (pp. 299-320). Hong Kong: Hong Kong Institute of Asia-Pacific Studies, Chinese University of Hong Kong.
- Lee, R.L.T., & Loke, A.J.T. (2005). Health-promoting behaviors and psychosocial well-being of university students in Hong Kong. *Public Health Nursing*, 22(3), 209-220.
- Lee, W.L., Cheung, A.M., Cape, D., & Zinman, B. (2000). Impact of diabetes on coronary artery disease in women and men: A meta-analysis of prospective studies. *Diabetes Care*, 23(7), 962-968.
- Leung, K. (1996). The role of beliefs in Chinese culture. In M.H. Bond (Ed.), *The handbook of Chinese psychology* (pp. 247-262). Oxford: Oxford University Press.

- Li, W.W., Stewart, A.L., Stotts, N., & Froelicher, E.S. (2006). Cultural factors associated with antihypertensive medication adherence in Chinese immigrants. *Journal of Cardiovascular Nursing, 21*(5), 354-362.
- Lichtenstein, A.H., Appel, L.J., Brands, M., Carnethon, M., Deniels, S. Franch, H.A. et al. (2006). Summary of American Heart Association diet and life style recommendations. Revision 2006. *Arteriosclerosis, Thrombosis, and Vascular Biology, 26*, 2186-2191.
- Lloyd-Jones, D.M., Larson, M.G., Beiser, A., Levy, D. (1999). Lifetime risk of developing coronary heart disease. *Lancet, 353*, 89-92.
- Lorber, J. (2005). Women get sicker, but men die quicker. In G.E. Henderson, S.E. Estroff, L.R. Churchill, N.M.P. King, J. Oberlander, & R.P. Strauss (Eds.), *The social medicine reader. V. 2. Social and cultural contributions to health, difference, and inequality* (pp.164-190). Durham: Duke University Press.
- Madan, S.K., & Froelicher, E.S. (2005). Psychosocial risk factors: assessment and management interventions. In S.L. Woods, E.S. Froelicher, S.A. Motzer, & Col. E.J. Bridges (Eds.), *Cardiac nursing* (pp. 825-837). Philadelphia: Lippincott Williams & Wilkins.
- McDaniel, S.H., Campbell, T.L., & Seaburn, D.B. (1990). *Family-oriented primary care: a manual for medical providers*. New York, NY: Springer-Verlag.
- McKay, J., & Mensah, G.A. (2004). *The atlas of heart disease and stroke*. Geneva: World Health Organization.
- Mieres, J.H., Shaw, L.J., Arai, A., Budoff, M.J., Flamm, S.D., Hundley, W.G. et al. (2005). Role of noninvasive testing in the clinical evaluation of women with suspected coronary artery disease: Consensus statement from the Cardiac Imaging Committee, Council on Clinical Cardiology, and the Cardiovascular Imaging and Intervention Committee, Council on Cardiovascular Radiology and Intervention, American Heart Association. *Circulation, 111*(5), 682-696.
- Mosca, L. (2004). Heart disease prevention in women. *Circulation, 109*, 158-160.
- Mosca, L., Ferris, A., Fabunmi, R., Robertson, R.M. (2004). American Heart

- Association. Tracking women's awareness of heart disease: an American Heart Association national study. *Circulation*, *109*, 573-579.
- Mosca, L., Jones, W.K., King, K.B., Ouyang, P., Redberg, R.F., Hill, M.N. (2000). Awareness, perception, and knowledge of heart disease risk and prevention among women in the United States: American Heart Association Women's Heart Disease and Stroke Campaign Task Force. *Archives of Family Medicine*, *9*, 506-515.
- Murphy, B., Worcester, M., Higgins, R., Le Grande, M., Larritt, P., & Goble, A. (2005). Casual attributions for coronary heart disease among female cardiac patients. *Journal of Cardiopulmonary Rehabilitation*, *25*(3), 135-143.
- Newton, K.M., & Froelicher, E.S. (2005). Coronary heart disease risk factors. In S.L. Woods, E.S. Froelicher, S.A. Motzer, & Col. E.J. Bridges (Eds.), *Cardiac nursing* (pp. 809-824). Philadelphia: Lippincott Williams & Wilkins.
- Norton, D.E., Froelicher, E.S., Waters, C., & Carrieri-Kohlman, V. (2003). Parental influence on models of primary prevention of cardiovascular disease in children. *European Journal of Cardiovascular Nursing*, *2*, 311-322.
- Oppenheimer, G.M. (2006). Profiling risk: the emergence of coronary heart disease epidemiology in the United States (1947-70). *International Journal of Epidemiology*, *35*, 720-720.
- Orth-Gomer, K., Rosengren, A., & Wilhelmsen, L. (1993). Lack of social support and incidence of coronary heart disease in middle-aged Swedish men. *Psychosomatic Medicine*, *55*, 37-43.
- Pasacreta, J.V. (2004). Measuring depression. In M. Frank-Stromborg & S.J. Olsen (Eds.), *Instruments for clinical health-care research* (pp. 376-400). Sudbury, Massachusetts: Jones and Bartlett.
- Pender, N.J., Murdaugh, C.L., & Parsons, M.A. (2006) *Health promotion in nursing practice*. Upper Saddle River, NJ: Pearson Prentice Hall.
- Powazki, RD. & Walsh, D. (2002). Family distress in palliative medicine: a pilot study of the family APGAR scale. *American Journal of Hospice & Palliative Care*, *19*(6), 392-396.



- Rankin, S.H., Galbraith, M.E., & Johnson, S. (1993). Reliability and validity data for a Chinese translation of the Center for Epidemiological Studies-Depression. *Psychological Report, 73*, 1291-1298.
- Rankin, S.H., Galbraith, M.E., & Huang, P. (1997). Quality of life and social environment as reported by Chinese immigrants with non-insulin-dependent diabetes mellitus. *The Diabetes Educator, 23*(2), 171-177.
- Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.
- Radloff, L.S., & Teri, L. (1986). Use of the Centre for Epidemiological Studies-Depression scale with older adults. *Clinical Gerontologist, 5*, 119-134.
- Rieker, P.P., & Bird, C.E. (2000). Sociological explanations of gender differences in mental and physical health. In C.E. Bird, P. Conrad, & A.M. Fremont (Eds.), *Handbook of medical sociology* (pp. 98-113). Upper Saddle River, NJ: Prentice Hall.
- Robertson, R. M. (2001). Women and cardiovascular disease. *Circulation, 103*, 2318-2320.
- Rosamond, W., Flegal, K., Friday, G., Furie, K., Go, A., Greenlund, K. et al. (2007). Heart Disease and Stroke Statistics-2007 Update: a report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation, 115*(5), e69-e171.
- Rosano, G.M., Vitale, C., & Tulli, A. (2006). Managing cardiovascular risk in menopausal women. *CLIMACTERIC, 9*(Suppl I), 19-27.
- Rosenberg, L., Palmer, J.R., & Shapiro, S. (1990). Decline in the risk of myocardial infarction among women who stop smoking. *New England Journal of Medicine, 322*, 213-217.
- Rugulies, R. (2002). Depression as a predictor for coronary heart disease: a review and meta-analysis. *American Journal of Preventive Medicine, 23*(1), 51-61.
- Russell, J.A., & Yik, M.S.M. (1996). Emotion among the Chinese. In M.H. Bond

- (Ed.), *The handbook of Chinese psychology* (pp. 166-188). Oxford: Oxford University Press.
- Sherwood, A., Blumenthal, J.A., Trivedi, R., Johnson, K.S., O'Connor, C.M., Adams, K.F. et al. (2007). Relationship of depression to death or hospitalization in patients with heart failure. *Archives of Internal Medicine*, *167*, 367-373.
- Smilkstein, G. (1978). The Family APGAR: A proposal for a family function test and its use by physicians. *Journal of Family Practice*, *6*(6), 1231-1239.
- Smilkstein, G. (1980). The cycle of family function: A conceptual model for family medicine. *Journal of Family Practice*, *11*(2), 223-232.
- Smilkstein, G. (1993). Family APGAR analyzed. *Family Medicine*, *25*(5), 293-294.
- Smilkstein, G., Ashworth, C., & Montano, D. (1982). Validity and reliability of the family APGAR as a test of family function. *Journal of Family Practice*, *15*(2), 303-311.
- Stampfer, M.J., Ridker, P.M., & Dzau, V.J. (2004). Risk factor criteria. *Circulation*, *109*, 3-5.
- Steine, S., Laerum, E., Eritsland, J., & Arnesen, H. (1996). Predictors of enhanced well-being after coronary artery bypass surgery. *Journal of Internal Medicine*, *239*(1), 69-73.
- Sundquist, J., Li, X., Johansson, S.E., & Sundquist, K. (2005). Depression as a predictor of hospitalization due to coronary heart disease. *American Journal of Preventive Medicine*, *29*(5), 428-433.
- Suzuki, S., Sakamoto, S., Koide, M., Fujita, H., Sakuramoto, H., Kuroda, T. et al. (1997). Hanshi-awayi earthquake as a trigger for acute myocardial infarction. *American Heart Journal*, *134*, 974-977.
- Talley, R.C., & Crews, J.E. (2007). Framing the public health of caregiving. *American Journal of Public Health*, *97*(2), 224-228.
- Tang, Y.Y., & Chen, S.P. (2002). Health promotion behaviors in Chinese family caregivers of patients with stroke. *Health Promotion International*, *17*(4),

329-339.

- Taylor, D., & Bury, M. (2007). Chronic illness, expert patients and care transition. *Sociology of Health & Illness*, 29(1), 27-45.
- Thom, T.J., Kannel, W.B., Silbershatz, H., D'Agostino, R.B. (2001). Cardiovascular disease in the United States and preventive approaches. In V. Fuster, R.W. Alexander, R.A. O'Rourke (Eds.), *Hurst's the heart, arteries and veins*. New York, NY: McGraw-Hill.
- Tones, K., & Green, J. (2004). *Health promotion: planning and strategies*. London: SAGE Publications.
- Thanavaro, J.L. (2005). Barriers to coronary heart disease risk modification in women without prior history of coronary heart disease. *Journal of the American Academy of Nurse Practitioners*, 17, 487-493.
- Tullmann, D.F., & Dracup, K. (2005). Knowledge of heart attack symptoms in older men and women at risk for acute myocardial infarction. *Journal of Cardiopulmonary Rehabilitation*, 25, 33-39.
- Unal, B., Critchley, J.A., & Capewell, S. (2005). Modelling the decline in coronary heart disease deaths in England and Wales, 1981-2000: comparing contributions from primary prevention and secondary prevention. *British Medical Journal*, 331(7517), 614-619.
- Walker, S.N., Sechrist, K.R., & Pender, N.J. (1987). Health-promoting lifestyle profile: development and psychometric characteristics. *Nursing Research*, 36(2), 76-81.
- Walker, S., Sechrist, K., & Pender, N. (1995). *The Health Promoting Lifestyle Profile II*. Omaha: University of Nebraska Medical centre, College of Nursing.
- Weihs, K., Fisher, L., & Baird, M. (2002). Families, health, and behavior. A section of the commissioned report by the Committee on Health and Behavior: Research, Practice, and Policy, Division of Neuroscience and Behavioral Health and Division of Health Promotion and Disease Prevention, Institute of Medicine, National Academy of Sciences. *Families, Systems & Health*, 20(1), 7-46.

- Wenger, N.K. (1997). Coronary heart disease: an older woman's major health risk. *British Medical Journal*, 315(7115), 1085-1090.
- Wenger, N.K. (2002). Coronary heart disease and women: magnitude of the problem. *Cardiology in Review*, 10(4), 211-213.
- Wenger, N.K. (2004). You've come a long way, baby: cardiovascular health and disease in women: problems and prospects. *Circulation*, 109(5), 558-560
- Whooley, M.A. (2006). Depression and cardiovascular disease: healing the broken-hearted. *Journal of American Medical Association*, 295, 2874-2881.
- Wilcox, S., & Stefanick, M. L. (1999). Knowledge and perceived risk of major disease in middle-aged and older women. *Health Psychology*, 18(4), 346-353.
- Wild, S.H., Laws, A., Fortmann, S.P., Varady, A.N., & Byrne, C.D. (1995) Mortality from coronary heart disease and stroke for six ethnic groups in California, 1985-1990. *Annals of Epidemiology*, 5, 432-439.
- Williams, R. Chesney, M., Cohen, S., Frasure-Smith, N., Kaplan, G., Krantz, D. et al. (1993). Behavior change and compliance: keys to improving cardiovascular health. Workshop VI. AHA Prevention Conference III. *Circulation*, 88, 1406-1407.
- Wilson, P.W.F. (1990). High-density lipoprotein, low-density lipoprotein and coronary artery disease. *American Journal of Cardiology*, 66, 7A-10A.
- World Health Organization (2003). *The World Health Report 2003*. Geneva: WHO.
- Yip, P.S.F., Law, C.K., & Law, Y.W. (2003) Suicide in Hong Kong: epidemiological profile and burden analysis 1981-2001. *Hong Kong Medical Journal*, 9(6), 419-426.
- Yue, K.M.K. (2005). People of Chinese descent. In N. Waxler-Morrison, J.M. Anderson, E. Richardson, & N.A. Chambers (Eds.), *Cross-cultural caring: a handbook for health professionals* (pp. 59-94). Vancouver: UBC Press.
- Zich, J., Attkisson, C., & Greenfield, T. (1990). Screening for depression in primary care clinics: The CES-D and BDI. *International Journal of Psychiatry in Medicine*, 20, 259-277.

## **APPENDICES**

Appendix A: UCSF CHR Approval

COMMITTEE ON HUMAN RESEARCH  
OFFICE OF RESEARCH, Box 0962  
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO  
www.research.ucsf.edu/chr/Apply/chrApprovalCond.asp  
chr@ucsf.edu  
(415) 476-1814

**CHR APPROVAL LETTER**

TO: Sally H. Rankin, R.N., Ph.D.  
Box 0606

Lai Har Wu, MS  
Box 0606,

RE: Knowledge, Perceived Risks and Preventive Behavior of Coronary Heart Disease in Chinese Hong Kong Women

The Committee on Human Research (CHR) has reviewed and approved this application to involve humans as research subjects. This included a review of all documents attached to the original copy of this letter.

Specifically, the review included but was not limited to the following documents:  
English Consent Form, Dated 8/13/06  
Chinese Consent Form, Dated 8/13/06

The CHR is the Institutional Review Board (IRB) for UCSF and its affiliates. UCSF holds Office of Human Research Protections Federalwide Assurance number FWA00000068. See the CHR website for a list of other applicable FWA's.

**APPROVAL NUMBER:** H1832-29684-01. This number is a UCSF CHR number and should be used on all correspondence, consent forms and patient charts as appropriate.

**APPROVAL DATE:** October 5, 2006


**EXPIRATION DATE:** October 5, 2007

**Expedited Review**

**GENERAL CONDITIONS OF APPROVAL:** Please refer to [www.research.ucsf.edu/chr/Apply/chrApprovalCond.asp](http://www.research.ucsf.edu/chr/Apply/chrApprovalCond.asp) for a description of the general conditions of CHR approval. In particular, the study must be renewed by the expiration date if work is to continue. Also, prior CHR approval is required before implementing any changes in the consent documents or any changes in the protocol unless those changes are required urgently for the safety of the subjects.

**HIPAA "Privacy Rule" (45CFR164):** This study does not involve access to, or creation or disclosure of Protected Health Information (PHI).

Sincerely,



Susan H. Sniderman, M.D.  
Chair, Committee on Human Research

c:



THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學

**MEMO**

**To :** WU Lai Har, School of Nursing

**From :** CHUNG Wai Yee, Chairman, Departmental Research Committee, School of Nursing

**Ethical Review of Research Project Involving Human Subjects**

I write to inform you that approval has been given to your application for human subjects ethics review of the following research project for a period from 20/12/2006 to 31/12/2007:

Project Title : Knowledge, Perceived Risk, and Preventive Behaviour of Coronary Heart Disease in Chinese Hong Kong Women

Department : School of Nursing

Principal Investigator : WU Lai Har

Please note that you will be held responsible for the ethical approval granted for the project and the ethical conduct of the research personnel involved in the project. In the case the Co-PI has also obtained ethical approval for the project, the Co-PI will also assume the responsibility in respect of the ethical approval (in relation to the areas of expertise of respective Co-PI in accordance with the stipulations given by the approving authority).

You are responsible for informing the Departmental Research Committee School of Nursing in advance of any changes in the research proposal or procedures which may affect the validity of this ethical approval.

You will receive separate notification should you be required to obtain fresh approval.

CHUNG Wai Yee  
Chairman  
Departmental Research Committee  
School of Nursing



NEBRASKA'S HEALTH SCIENCE CENTER

COLLEGE OF NURSING  
Gerontological, Psychosocial, & Community Health Nursing

Dear Colleague:

Thank you for your request and payment to use the *Health-Promoting Lifestyle Profile II*. As indicated in the enclosed form, you have permission to copy and use the enclosed *Health-Promoting Lifestyle Profile II* for non-commercial data collection purposes such as research or evaluation projects provided that content is not altered in any way and the copyright/permission statement at the end is retained. The instrument may be reproduced in the appendix of a thesis, dissertation or research grant proposal without further permission. Reproduction for any other purpose, including the publication of study results, is prohibited without specific permission.

We thank you for your interest in the *Health-Promoting Lifestyle Profile II* and wish you much success with your efforts.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan Noble Walker".

Susan Noble Walker, EdD, RN, FAAN  
Professor and Dorothy Hodges Olson Chair in Nursing

Encl.: Health-Promoting Lifestyle Profile II  
Scoring instructions  
Excerpt from unpublished manuscript  
List of publications reporting use of the original Lifestyle Profile

985330 Nebraska Medical Center / Omaha, NE 68198-5330  
402-559-6382 / FAX: 402-559-6379 / www.unmc.edu



Questionnaire No. \_\_\_\_\_

Date of Interview: \_\_\_\_\_

**Knowledge, Perceived Risks, and Preventive Behavior of Coronary Heart Disease (CHD) in Chinese Hong Kong Women**

Thank you for your participation. The information you provide will be useful for studying the knowledge and prevention of CHD in Hong Kong women.

**Part I – Knowledge and Perceptions of Coronary Heart Disease (CHD)**

1. Please state as many common risk factors of CHD you think of.

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

2. The following are questions concerning your perception of risk for CHD by yourself (CHD risk perception index)

	No concern at all				Very high level of concern	
	0	1	2	3	4	5
(a) The frequency of concern over having a CHD event yourself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Very low probability of having an event			Extremely high probability of having an event		
	0	1	2	3	4	5
(b) The estimate of the likelihood of having such an event in the next five years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(c) The estimate of the likelihood of having such an event in your life time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Much less	Less	Same	More	Much more	
	1	2	3	4	5	
(d) The estimate of your own CHD risk as compared to other people of your age and gender in the general population	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3. In general, how would you state your health condition?	Poor 1	Fair 2	Good 3	Very good 4	Excellent 5
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Part II – Your Perceptions of Your Family Relationship (Apgar Score for Family Measurement)**

Please indicate almost always, some of the time, or hardly ever for the following questions.

For each question, choose only one box

	Almost always	Some of the time	Hardly ever
1. I am satisfied that I can turn to my family for help when something is troubling me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I am satisfied with the way my family talks over things with me and shares problems with me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I am satisfied that my family accepts and supports my wishes to take on new activities or directions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I am satisfied with the way my family expresses affection and responds to my feelings, such as anger, sorrow, and love.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I am satisfied with the way my family and I share time together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Part III – Personal Habits**

The following items are statements about your **present** way of life or personal habits. Indicate the frequency with which you engage in each behavior.

	Never	Sometimes	Often	Routinely
1. Discuss my problems and concerns with people close to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Choose a diet low in fat, saturated fat, and cholesterol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Report any unusual signs or symptoms to a physician or other health professional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Follow a planned exercise program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- |   |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 5. Get enough sleep   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Feel I am growing and changing in positive ways  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Praise other people easily for their achievements  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Limit use of sugars and food containing sugar (sweets)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Read or watch TV programs about improving health   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Take some time for relaxation each day  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Believe that my life has purpose  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Maintain meaningful and fulfilling relationships with others  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Eat 6-11 servings of bread, cereal, rice and pasta each day   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Question health professionals in order to understand their instructions   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week)                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Accept those things in my life which I cannot change  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Look forward to the future  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Spend time with close friends   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. Eat 2-4 servings of fruit each day  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Get a second opinion when I question my health care provider's advice   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling)   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- |   |                          |                          |                          |                          |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 23. Concentrate on pleasant thoughts at bedtime   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 24. Feel content and at peace with myself   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 25. Find it easy to show concern, love and warmth to others   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. Eat 3-5 servings of vegetables each day   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Discuss my health concerns with health professionals  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Do stretching exercises at least 3 times per week   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. Use specific methods to control my stress   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. Work toward long-term goals in my life  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. Touch and am touched by people I care about   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. Eat 2-3 servings of milk, yogurt or cheese each day   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Inspect my body at least monthly for physical changes/danger signs  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators, parking car away from destination and walking) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. Balance time between work and play  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. Find each day interesting and challenging   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. Find ways to meet my needs for intimacy   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. Eat only 2-3 servings from the meat, poultry, fish, dried beans, eggs, and nuts group each day  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. Ask for information from health professionals about how to take good care of myself   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. Check my pulse rate when exercising   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Practice relaxation or meditation for 15-20 minutes daily   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- |  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 42. Am aware of what is important to me in life                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. Get support from a network of caring people                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 44. Read labels to identify nutrients, fats, and sodium content in packaged food | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 45. Attend educational programs on personal health care                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 46. Reach my target heart rate when exercising                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 47. Pace myself to prevent tiredness   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 48. Feel connected with some force greater than myself                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 49. Settle conflicts with others through discussion and compromise               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 50. Eat breakfast  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 51. Seek guidance or counseling when necessary                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 52. Expose myself to new experiences and challenges                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Part IV: About Your Mood**

Below is a list of the ways you might have felt or behaved. Please mark how often you have felt this way during the past week.

- |   | During the past week                           |   |  |                                 |
|---|--|---|--|---------------------------------|
|   | Rarely or none of the time (less than one day) | Some or a little of the time (1-2 days) | Occasionally or a moderate amount of time (3-4 days) | Most or all the time (5-7 days) |
| 1. I was bothered by things that usually don't bother me                                | <input type="checkbox"/>                       | <input type="checkbox"/>                | <input type="checkbox"/>                             | <input type="checkbox"/>        |
| 2. I did not feel like eating; my appetite was poor                                     | <input type="checkbox"/>                       | <input type="checkbox"/>                | <input type="checkbox"/>                             | <input type="checkbox"/>        |
| 3. I felt that I could not shake off the blues even with help from my family or friends | <input type="checkbox"/>                       | <input type="checkbox"/>                | <input type="checkbox"/>                             | <input type="checkbox"/>        |

- |  |                          |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 4. I felt I was just as good as other people         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. I had trouble keeping my mind on what I was doing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. I felt depressed                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. I felt that everything I did was an effort        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. I felt hopeful about the future                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. I thought my life had been a failure              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. I felt fearful                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. My sleep was restless                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. I was happy                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. I talked less than usual                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. I felt lonely                                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. People were unfriendly                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. I enjoyed life                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. I had crying spells                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. I felt sad                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. I felt that people dislike me                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. I could not “get going”                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Part V – True/False Statements**

- |   | True                     | False                    |
|---|--------------------------|--------------------------|
| 1. Heart disease is the number 1 cause of death in women.   | <input type="checkbox"/> | <input type="checkbox"/> |
| If it is false, then please name the number 1 cause of death in women: _____                        |                          |                          |
| 2. Hospitals have drugs that can reduce damage done to heart if acute myocardial infarction occurs. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Most heart attacks occur under the age of 65.  | <input type="checkbox"/> | <input type="checkbox"/> |

**Part VI – Personal Particulars of Respondent**

(a) Age: \_\_\_\_\_ years old

- 1  40 – 44
- 2  45 – 49
- 3  50 – 54
- 4  55 – 59
- 5  60 – 64
- 6  65 – 69
- 7  70 – 74
- 8  75 – 79
- 9  80 & above

(b) Height: \_\_\_\_\_ cm/ \_\_\_ feet \_\_\_ inches

(c) Weight: \_\_\_\_\_ Kg/ \_\_\_\_\_ pounds

(d) Marital status

- 1  Single
- 2  Married
- 3  Divorced/ Separated
- 4  Widowed

(e) Educational attainment

- 1  No formal education
- 2  Primary level
- 3  Secondary level
- 4  Matriculated
- 5  Tertiary & above

(f) Religion

- 0  None
- 1  Ancestor worshipping
- 2  Buddhist
- 3  Taoist
- 4  Catholic
- 5  Protestant
- 6  Others (please specify): \_\_\_\_\_

(g) Occupation

- 1  Home maker
- 2  Unemployed
- 3  Retired
- 4  Professional
- 5  Managerial and administrative
- 6  Clerical
- 7  Services or sales related
- 8  Skilled manual worker
- 9  Non-skilled worker
- 10  Others (please specify): \_\_\_\_\_

(h) If married, husband's education

- 1  No formal education
- 2  Primary level
- 3  Secondary level
- 4  Matriculated
- 5  Tertiary & above

(i) If married, husband's occupation

- 1  Home maker
- 2  Unemployed
- 3  Retired
- 6  Clerical
- 7  Services or sales related
- 8  Skilled manual worker

- 4  Professional  
5  Managerial and administrative  
9  Non-skilled worker  
10  Others (please specify): \_\_\_\_\_

(j) If married, number of children: \_\_\_\_\_

(k) Living arrangement

- 1  Living alone  
2  Living with spouse  
3  Living with spouse and children  
4  Living with spouse, children and parent/s  
5  Living with children  
6  Living with relatives and/or friends  
7  Other (please specify): \_\_\_\_\_

(l) Number of persons living in the same household (including yourself): \_\_\_\_\_

(m) Housing type

- 1  Private housing (whole flat) (own)  
2  Private housing (whole flat) (rented)  
3  Private housing (a room) (rented)  
4  Public housing estate (own)  
5  Public housing estate (rented)  
6  Public housing (home ownership scheme)  
7  Temporary housing area  
8  Other (please specify): \_\_\_\_\_

(n) Have you and your family received Hong Kong Government's Comprehensive Social Security Assistance?

- 0  No  
1  Yes. For how long you have been receiving? \_\_\_\_\_  
2  In the process of application

(o) Total monthly household income

- 1  Below HK\$5,000  
2  HK\$5,000 – HK\$7,999  
3  HK\$8,000 – HK\$9,999  
4  HK\$10,000 – HK\$14,999  
5  HK\$15,000 – HK\$19,999  
6  HK\$20,000 – HK\$29,999  
7   $\geq$  HK\$30,000

(p) Place of birth

- 1  Hong Kong  
2  Guangdong province  
3  Other provinces in China (please specify): \_\_\_\_\_  
4  Other (please specify): \_\_\_\_\_

(For answer 2, 3 or 4, how long have you been staying in Hong Kong? \_\_\_\_\_ years)





問卷編號：\_\_\_\_\_

訪問日期：\_\_\_\_\_

## 香港中國婦女對冠心病的知識，自感危機及預防行爲

很多謝各下的參與，你所提供的資料對探討香港婦女就認識及預防冠心病方面很有幫助。

### 甲部：冠心病的知識及感受

#### 1. 請你盡量講出一般引致冠心病的因素：

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

#### 2. 以下問題是有關你認為你患上冠心病的機會

全不關注

極度關注

##### (a) 你關注患上冠心病的機會

0	1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

##### (b) 就現在起的五年內 預計會有冠心病

會有冠心病的  
機會非常低會有冠心病的  
機會極高

0	1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

##### (c) 在你一生中預計會有冠心病

0	1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

##### (d) 比較其他同一性別及年紀相若的 人士，你預計你患上冠心病的風險

非常之少 少 差不多 大些少 很大

1	2	3	4	5
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### 3. 總體來說，你覺得你現時的健康狀況如何？

差 一般 好 好好

1	2	3	4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 乙部：你對你家庭關係的看法

請在下列各個問題選取總是如此，有時如此或從來沒有。

總是如此      有時如此      從來沒有

- |  |                          |                          |                          |
|--|--------------------------|--------------------------|--------------------------|
| 1. 當我覺得困擾時，我可以要求家人的協助和幫忙。                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. 我很滿意，家人與我討論事情的方法以及願與我討論任何的家庭問題。         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. 我很滿意，家人接受並支持我的意願，去接受新的活動與指示。            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. 我很滿意，家人對親情的表達及對我個人情緒變化(例如生氣、傷心、或愛護)的回應。 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. 我很滿意，家人願意撥出時間與我共處。                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

### 丙部：個人生活習慣

以下陳述是關於你現時個人生活習慣。請就每項陳述，選出你參與的頻率。

- |   | 從未                       | 有時                       | 時常                       | 例行                       |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. 會與親密的朋友討論我的問題及疑難。                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. 選擇含低脂肪、低飽和脂肪及低膽固醇之食譜。                            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. 報告任何不平常徵兆及徵狀，給與醫生或其他醫護人員知道。                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. 遵守一套計劃的運動課程。                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. 有足夠的睡眠。  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. 感覺到自己不斷成長及趨向正面積極的方向。                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. 易於欣賞別人的成就。                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. 少吃糖及含糖份的食物。(如糖果)                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. 閱讀或收看有關改善健康的電視節目。                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. 每星期做三次激烈的運動，每次最少做二十分鐘。<br>(例如 競步、踏單車、跳健康舞、玩踏步機) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. 每天抽出時間鬆弛自己。                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. 確信自己生活得有意義。                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. 與他人維繫及履行友好的關係。                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. 每天吃六至十一份量的麵飽、穀物、飽及麵。<br>(請參閱食物金字塔圖表)            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. 向醫護人員提問，以便明白他們的指引。                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

	從未	有時	時常	例行
16. 參與少量至中量的體能運動。(如每星期作五次或以上的持續步行運動，每次大約 30-40 分鐘)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. 接受生命中我不可改變的事情。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. 展望未來。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. 與好朋友暢聚。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. 每天吃二至四份量的水果。(請參閱食物金字塔圖表)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. 當我對醫護人員的意見有疑惑時，便會再諮詢其他專業人員的意見。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. 參與優閒 ( 康樂 ) 體能活動。(例如 游泳、跳舞、踏單車)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. 在睡眠前集中思索愉快的事情。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. 自己常感到滿足和心境平靜。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. 覺得容易去對別人表示關懷、愛心及溫馨。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. 每天進食三至五份量的蔬菜。 (請參閱食物金字塔圖表)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. 與醫護人員討論自己關心的健康問題。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. 每星期最少做三次伸展的運動。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. 採用某種特別方法去處理自己的壓力。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. 在我人生中向著長遠的目標進發。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. 我在乎我關心的人和我之間的接觸。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. 每天吃二至三份量的牛奶、酸乳酪或芝士 (請參閱食物金字塔圖表)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. 我至少每個月都檢查身體上的轉變 / 危險的病徵。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. 每天生活中都有運動。(例如中午步行、以步行代替乘電梯、把車停泊到遠處再步行 )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. 工作與娛樂時間得到平衡。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. 感受到每天的樂趣與挑戰。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. 尋找方法以達到個人親密關係的需要。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. 每天吃二至三份量的肉類、家禽、魚、乾豆類、雞蛋及堅果等食物。(請參閱食物金字塔圖表)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. 向醫護人員徵詢如何妥善照顧自己。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. 在運動時會量度自己脈搏。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	從未	有時	時常	例行
41. 每日用十五至二十分鐘作鬆弛運動或冥想。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. 知道在個人生命中什麼是重要的。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. 從一群關心自己的人中得到支持。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. 從包裝食物的標籤上確認食物所含的營養， 脂肪及鹽成份。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. 參加個人健康護理的教育課程。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. 在運動時達至自己期望的心跳速率。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. 舒緩自己以防止疲勞。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. 感覺自己被一些強大的力量連接著。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. 通過討論和妥協來與別人平息糾紛。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. 有吃早餐。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. 在有需要時，尋找指引及輔導。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. 開放自己接受新體驗和挑戰。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### 丁部：關於你的情緒

以下是一系列你會可能感受到或已行動的情況。請 ✓ 出每種情況在過去一週內的頻密程度。

	上週內			
	很少或沒有 不到一日	有時候 (1-2 日)	偶而 (3-4 日)	大部分時間 (5-7 日)
1. 一些通常不困擾我的事情困擾著我。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. 我不想吃東西；我的胃口不好。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. 雖有親戚朋友幫助，我覺得也無法 消除憂鬱。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. 我覺得我像其他人一樣好。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. 我無法集中精神做事。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. 我覺得憂鬱。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. 我覺得做每件事都很費力。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. 我對未來感到有希望。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. 我想我的人生是失敗。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. 我覺得恐懼。	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- |                |                          |                          |                          |                          |
|----------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 11. 我睡得不安。     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. 我是快樂的。     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. 我比往常少講話。   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. 我覺得孤單。     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. 人們是不友善的。   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. 我享受人生樂趣。   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. 我會大哭一陣。    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. 我覺得沮喪。     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. 我覺得人們不喜歡我。 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. 我無法做什麼事。   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

戊部：對 / 錯 題

你認為以下的句子正確嗎？

- |                 | <u>對</u>                 | <u>錯</u>                 |
|-----------------|--------------------------|--------------------------|
| 1. 心臟病是女性第一號殺手。 | <input type="checkbox"/> | <input type="checkbox"/> |

若填“錯”，請講出什麼是女性第一號殺手： \_\_\_\_\_

- |                                |                          |                          |
|--------------------------------|--------------------------|--------------------------|
| 2. 倘若患上急性心肌梗塞，醫院有藥物可以減少對心臟的影響。 | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. 許多突發性心臟病在六十五歲以下發生           | <input type="checkbox"/> | <input type="checkbox"/> |

己部：個人資料

(A) 年齡： \_\_\_\_\_ 歲

- 1  40-44
- 2  45-49
- 3  50-54
- 4  55-59
- 5  60-64
- 6  65-69
- 7  70-74
- 8  75-79
- 9  80 或以上

(B) 身高 \_\_\_\_\_ 厘米/ \_\_\_\_\_ 呎 \_\_\_\_\_ 吋

(C) 體重 \_\_\_\_\_ 公斤/ \_\_\_\_\_ 磅

(D) 婚姻狀況：

1  獨身 2  已婚 3  離婚/分居 4  鰥/寡

(E) 教育程度

- 1  未受教育
- 2  小學程度
- 3  中學程度
- 4  預科
- 5  大學或以上程度

(F) 宗教

- 0  沒有
- 1  拜祖先
- 2  佛教
- 3  道教
- 4  天主教
- 5  基督教
- 6  其他 ( 請註明： \_\_\_\_\_ )

(G) 職業

- 1  家務工作
- 2  失業
- 3  退休
- 4  專業
- 5  經理及行政人員
- 6  文職人員
- 7  服務及推銷人員
- 8  技術工人
- 9  非技術工人
- 10  其他 ( 請註明 \_\_\_\_\_ )

(H) 如已婚，丈夫的教育程度

- 1  未受教育
- 2  小學程度
- 3  中學程度
- 4  預科
- 5  大學或以上程度

(I) 如已婚，丈夫的職業

- 1  家務工作
- 2  失業
- 3  退休
- 4  專業
- 5  經理及行政人員
- 6  文職人員
- 7  服務及推銷人員
- 8  技術工人
- 9  非技術工人
- 10  其他 ( 請註明 \_\_\_\_\_ )

(J) 如已婚，子女數目： \_\_\_\_\_

(K) 居住安排

- 1  獨居
- 2  與配偶同住
- 3  與配偶及子女同住
- 4  與配偶、子女及父母同住
- 5  與子女同住
- 6  與親戚/朋友同住
- 7  其他 ( 請註明： \_\_\_\_\_ )

(L) 同一處所內的居住人數 ( 包括受訪者在內 ) \_\_\_\_\_

(M) 屋宇類型

- 1  私人樓宇 ( 全層 - 自置 )
- 2  私人樓宇 ( 全層 - 租 )
- 3  私人樓宇 ( 房間 - 租 )
- 4  公共屋村 ( 自置 )
- 5  公共屋村 ( 租 )
- 6  居者有其屋計劃
- 7  臨時房屋區
- 8  其他 ( 請註明： \_\_\_\_\_ )

(N) 你/妳家庭有否接受綜援？

- 0  沒有
- 1  有 ----- 至今接受了多久？ \_\_\_\_\_
- 2  在申請中



(O) 全家每月入息

- 1  HK\$5,000 以下
- 2  HK\$5,000 – HK\$7,999
- 3  HK\$8,000 – HK\$9,999
- 4  HK\$10,000 – HK\$14,999
- 5  HK\$15,000 – HK\$19,999
- 6  HK\$20,000 – HK\$29,999
- 7  HK\$30,000 或以上

(P) 出生地點

- 1  香港
- 2  廣東
- 3  中國其他省份 (請註明: \_\_\_\_\_)
- 4  其他 (請註明: \_\_\_\_\_)

(如答 2, 3, 或 4, 請問你在香港居住了多久? \_\_\_\_\_ 年)

(Q) 個人健康

你有沒有以下經醫生診斷的病症?

	有	沒有
糖尿病	<input type="checkbox"/>	<input type="checkbox"/>
高血壓	<input type="checkbox"/>	<input type="checkbox"/>
高膽固醇	<input type="checkbox"/>	<input type="checkbox"/>
肥胖/過重	<input type="checkbox"/>	<input type="checkbox"/>
其他, 請註明: _____		

(R) 你有否吸煙?

0  沒有, 但你有沒有吸過煙?

0  永不

1  有, 吸了多久: \_\_\_\_\_ (月/年)

1  有, 每天吸食多少支香煙?

\_\_\_\_\_

(S) 你家人(父母或兄弟姐妹)有沒有遇過心臟病突發或中風?

0  沒有

1  有, 他/她是誰: \_\_\_\_\_

✧ 問卷完結 ✧

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*Lai Han Wu*

Author Signature

*June 15, 2007*

Date