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Prevention of Heart Disease

Awareness, knowledge, healthy lifestyle behaviors, and their correlates to coronary heart disease among working women in Singapore

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ABSTRACT

Objectives: The objectives of the study were to investigate awareness, knowledge, healthy lifestyle behaviors, and their correlates to coronary heart disease (CHD) among working women in Singapore.
Background: CHD is the leading cause of death for women globally, yet women are unaware of this or the associated risk factors that make them vulnerable to CHD.
Methods: A cross-sectional descriptive study with a quota sample of 200 working women was conducted in Singapore. Data were collected using self-administered questionnaires, including the Heart Disease Fact Questionnaire-2, Behavioral Risk Factor Surveillance System, and a section on Awareness of CHD.
Results: Participants demonstrated suboptimal awareness of CHD being the leading cause of death among women and the risk factors associated with morbidity. Healthy lifestyle behaviors were found to be affected by age, ethnicity, marital status, income status, presence of chronic diseases, and working groups.
Conclusion: Health care providers should systematically evaluate women at risk for CHD and provide both gender-sensitive and age-specific education.

Introduction

The portrayal of coronary heart disease (CHD) as predominantly affecting men has influenced clinical practice as well as the public's mindset.[1] Gender inequalities in clinical assessment and the diagnosis of this disease in women, along with inadequate knowledge of the disease, has resulted in an unintentional reinforcement among women regarding their invulnerability for developing CHD.[2] It is a staggering fact that 8.6 million women will lose their lives yearly due to CHD, which accounts for one-third of all deaths worldwide.[3] Despite CHD being the leading cause of death for women globally, most women are unaware of the magnitude of the disease.[4] This misperception has led to inferior outcomes, which has been reflected in the literature.[1,5–7]

Past studies have reported that competing needs, stemming from women's multiple roles of being a mother, a spouse, an employee, and a caregiver, have led to poorer health statuses and health-related behaviors related to CHD.[8–10] In Singapore, women are called to be productive both at work and at home due to economic and labor market pressures.[11] Just like many Western nations, Singapore is facing problems of low fertility rates, an aging population, and a tight labor supply; therefore, women are encouraged to work and, at the same time, to produce more children.[11] It has also been reported that working women in Singapore were spending an increasing amount of hours at work, and that their work overload was becoming increasingly common.[12] While women are making contributions to the economy at the national level, they also internalize society's values and view themselves with the primacy of traditional roles in taking care of the family.[11,12] In a society with a collectivistic culture like Singapore's, sacrificing family time for work is sometimes viewed as a self-sacrifice for the benefit of the family.[12] Because of these competing demands from

Abbreviations: CHD, coronary heart disease; HDFQ-2, Heart Disease Fact Questionnaire-2; BRFSS, Behavioral Risk Factor Surveillance System; CVI, content validity index.

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Conflicts of interest: None.

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their work and a deep sense of family obligation, working women in Singapore are particularly vulnerable to suffering from work and family stress, which may potentially result in neglect for their own health. Therefore, it is important to facilitate healthy behaviors and lifestyles among working women to promote their health.

Personal risk perception for diseases such as CHD is necessary for women to adopt preventative behaviors and prevent serious illness.[13–15] Because CHD is primarily a lifestyle disease, modification of risk factors requires a change in lifestyle informed by knowledge.[16] In Singapore, the Health Promotion Board (HPB) has introduced posters and healthier choice symbols to remind the public to adopt a healthier lifestyle by engaging in healthier behaviors, such as taking up more regular exercise and making healthier food choices.[17] Nevertheless, it remains unclear if such messages are reaching working women. Awareness and knowledge are related to risk perceptions, which are the fundamental prerequisite for adopting a healthy lifestyle and motivating behavioral changes.[18,19]

Understanding the factors that motivate, initiate, maintain, and reinforce healthy behaviors is important for facilitating healthy lifestyle behaviors. It is also crucial to understand working women's awareness and knowledge of CHD risk factors, as that can provide valuable insights for the development of gender-specific health promotion strategies.[20] Our recent review of the current literature[21] indicated that, despite the fact that a number of studies have been conducted examining women's awareness and knowledge of CHD, no study has been done on the perspectives of Asian women. A generalization of those findings to Asian populations is limited because of vast cultural, economic, and social differences. Therefore, the current study was designed to close this gap by investigating awareness, knowledge, and healthy lifestyle behaviors related to CHD, as well as outcome differences based on sociodemographic factors, among working women in Singapore.

Methods

Study design and sample

A cross-sectional descriptive study was conducted at a tertiary university in Singapore. To represent women in working environments of varying socioeconomic statuses, a non-probability quota sample of 50 participants from an Academic Group, 80 participants from an Administration Group, and 70 participants from an Ad-hoc Group was obtained, forming a sample size of 200 participants.

The number of participants in each stratum was established to approximate the occupational distribution in Singapore's labor force.[22] Following the Singapore Standard Occupational Classification, the Academic Group consisted of participants whose occupations fell under the category of "professionals," including those working as teaching professionals (e.g., university lecturers and tutors), financial professionals (e.g., accountants, auditors, and financial analysts), and social science professionals (e.g., political scientists and economists). The Administrative Group consisted of participants whose occupations fell under the categories of "Associate Professionals and Technicians" and "Clerical Support Workers," which included those working as information and communication technicians, extra-curriculum instructors, translators and interpreters, clerical supervisors, general and keyboard clerks, customer service clerks, and other clerical support workers (e.g., librarians). The Ad-hoc Group consisted of participants whose occupations fell under the categories of "Service and Sales Workers" and "Cleaners, Laborers, and Related Workers." Participants in this group worked as personal service workers, sales workers (e.g., stall sales workers, shop sales persons, cashiers, and ticket clerks), security officials, cleaners, and housekeepers and attendants.[23]

The inclusion criteria included participants who were: 1) aged 21–65 years old; 2) full-time working women; 3) fluent in the English language; and 4) not medically diagnosed with CHD. Those who had a medical knowledge background and those who had prior/current mental disorder(s) that would impair their understanding of the study procedure and study questions were excluded.

Instruments

A self-administered written questionnaire was utilized as the data collection tool for this study. The questionnaire consisted of sociodemographic data, questions on participants' awareness and knowledge on CHD, as well as questions on their healthy lifestyle behaviors.

Sociodemographic data

A sociodemographic datasheet was used to collect sociodemographic characteristics, including each participant's age, ethnicity, marital status, education level (i.e., tertiary level, secondary level, or lower level), individual monthly income level, years of working experience, presence of chronic diseases, family history of CHD, and caregiving responsibilities. Caregiving responsibilities were measured by five multiple-choice questions assessing the participants' extent of involvement in the care of a friend/family member, the hours they spent on caregiving responsibilities each week, and whether and to what extent those care responsibilities impacted their health.

Awareness of CHD

The participants' awareness of CHD was measured by a mixture of five dichotomous or multiple-choice knowledge questions. These questions were adapted from the Singapore Heart Foundation's Go Red for Women 2013 surveys.[24,25] The question, "Is CHD the leading cause of death in women in Singapore?," which generated two possible responses of either true or false, was used to determine participants' awareness of CHD as the leading cause of death. The question, "Which of the following do you consider the greatest health problem for women?" had five possible responses, namely cancer (in general), heart disease/heart attack, diabetes, breast cancer, and cervical cancer. The question, "In Singapore, does breast cancer claim more lives than CHD?" yielded true or false responses. The two aforementioned questions were used to measure the participants' perception of CHD in light of other female-related diseases. Two additional questions determined the participants' sources of information related to CHD in the past 12 months.

Knowledge of risk factors for CHD

Knowledge of the risk factors related to CHD was assessed using the 27-item Heart Disease Fact Questionnaire-2 (HDFQ-2), which measures respondents' knowledge of the major risk factors for the development of CHD in people with diabetes.[26] The domains of risks assessed included age, gender, family history, cigarette smoking, glycemic control, lipids, blood pressure, physical activity, weight, the unique role of gender in diabetes-related CHD, and whether a person necessarily knew if heart disease was present. Scores were calculated by adding up the number of correct answers out of a total of 27 items. The HDFQ-2 has been demonstrated to have good internal consistency and test-retest reliability, with a Cronbach's alpha of 0.84 and an intraclass correlation coefficient (ICC) of 0.89.[27] In our study, the internal consistency was satisfactory, with a Cronbach's alpha of 0.86.