



AMERICAN UNIVERSITY OF BEIRUT

“A Woman’s Heart”  
Guard it with Care to Save it

by  
NOUR AHMAD SAID ABI ZAHR

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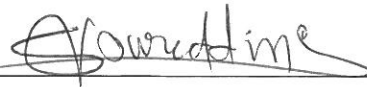
“A Woman’s Heart”

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# CHAPTER I

## INTRODUCTION

Cardiovascular disease is often thought of as “the men’s disease”. This belief was based on the perceived higher prevalence of heart disease noted among men than women. However, it is now known that the prevalence of heart disease becomes equal in men and women at older age. Moreover, mortality from heart disease is higher in women compared to men, due to the older age of occurrence and higher number of co-morbidities in women with heart disease, among other factors (Mendls, 2011).

### **A- Background and Significance**

According to The World Health Organization’s (WHO) International Cardiovascular Disease Statistics (2011), 17.3 million people around the world passed away from cardiovascular diseases in 2008; 7.3 million died from heart attacks, of whom 3.3 million were women. The Women’s Heart Foundation in 2007 reported that 267,000 American women die each year from heart attacks, which is six times more than those who die from breast cancer. This trend continues, as reported by the American Heart Association in 2013, where 1 in 30 deaths in women were attributable to breast cancer compared to 1 in 6.9 to coronary heart disease (Go et al., 2013).

In Lebanon, the WHO health profile data in 2010 showed that 27.44% of men and women die from coronary heart disease, which is ranked as number one cause of death among the first fifty causes of death from other communicable and non-communicable diseases, while breast cancer account for only 2.66% of the death rate. Cardiovascular disease, of which ischemic heart disease is the most common, was found



also as the leading cause of admissions to government hospitals in Lebanon, among both men and women (Ministry of Public Health, 2011).

According to the American Heart Association fact sheet in 2013, 64% of women who die suddenly from coronary heart disease do not have previous symptoms. It is, in fact, the hallmark symptom of “chest pain” that women do not usually experience as men do when presenting with myocardial infarction (MI). Data from an observational study of 1,143,513 registry patients (481,581 women and 661,932 men) from the National Registry of Myocardial Infarction data base between the years 1994 and 2006, showed significantly higher percentage of patients with MI presenting without chest pain among women than men (42.0% vs. 30.7%,  $p < .001$ ). This had led to misinterpretation of warning signs and symptoms for ischemic heart disease diagnosis, and thus patients without chest pain were less likely to receive immediate life-saving interventions such as thrombolytic therapy or primary percutaneous coronary intervention compared to those presenting with chest pain or discomfort ( $P < .001$ ). As a result, the in-hospital mortality rate was shown to be higher (14.6%) for women than for men (10.3%) (Canto et al., 2012). As a matter of fact, even when women do experience symptoms of MI, they present differently than men, with atypical characteristics like shoulder pain, dyspnea, nausea and vomiting, and palpitations, as shown in a Lebanese study of a convenience sample of 141 men and 63 women with acute coronary syndrome (ACS) (Noureddine et al., 2008).

Another aspect that puts women at risk for increased cardiac mortality is their noted delay in seeking care for an acute coronary event, which was documented in many studies (Barakat, Wilkinson, Suliman, Ranjadayalan, Timmis, 2000, Boccardi & Verde, 2003, Bouma et al., 1999, Johansson, I., Stromberg, A., Swahn, E. Peters et al.,

2004, O'Donnell, Condell, Begley, Fitzgerald, 2006, Sheifer et al., 2000). Two studies in Lebanon found women to delay seeking care for acute coronary events significantly more than men (Noureddine, Arevian, Adra, Puzantian, 2008, Sawaya et al., 1999). Investigators also found that knowledge of heart disease among women is low compared to men in Lebanon, which may partially explain their delay in seeking care for a heart attack (Noureddine et al., 2008). Thus, increasing awareness about heart disease risk factors, signs, symptoms, and prevention specifically for women is highly needed in order to fight heart disease in women. Several awareness campaigns were launched all over the world, the most universal being the international Go Red for Women initiative that was started in the US in 2001 and extended to over 40 countries to raise awareness about heart disease in women (World Heart Federation, 2013).

In Lebanon, the Ministry of Public Health does not provide awareness campaigns regarding heart disease, as is the case for breast cancer and immunizations. Moreover, throughout my experience as registered nurse working in a cardiac care unit, I have taken care of patients presenting with heart diseases. I have listened to different stories and noticed that women, in specific, do not realize their symptoms are related to the heart and are not aware of their risks for having MI. The purpose of this project is to propose an awareness campaign about heart disease targeting Lebanese women. Raising awareness is the first step towards secondary prevention of heart disease in this vulnerable population, so that they can better detect a heart attack when it happens to them and respond to it appropriately.

## CHAPTER II

### LITERATURE REVIEW

As a prerequisite for developing educational material for an awareness campaign, the peculiarities of heart disease in women ought to be identified. This chapter reviews the literature on risk factors, signs and symptoms of heart disease in women and what is known about their seeking care behavior in response to heart attacks. Awareness campaigns conducted for women are also reviewed.

#### **A- Risk factors of Myocardial Infarction in Women**

Men and women do share similar risk factors for coronary artery disease (CAD), yet the distribution and weight of these risk factors differ by gender. These differences led to diverse risk stratification schemes by cardiovascular organizations as reflected in the different charts used for risk assessment for men and women, such as the Framingham risk charts (National Heart Lung and Blood Institute, 2013) and the SCORE charts (European Society of Cardiology, 2012). As stated by the World Heart Federation in 2013, some risk factors are non-modifiable which can't be changed such as gender, family history, age, and ethnicity; while others that can be changed are modifiable like tobacco smoking, hypertension, high cholesterol, obesity, physical inactivity, diabetes, unhealthy diets, and harmful use of alcohol). According to the World Heart Federation's fact sheet of 2013, tobacco and alcohol use, hypertension, diabetes, high cholesterol, obesity, sedentary lifestyle, and unhealthy food regimen are the common risk factors for heart disease in women. Obese females have 2.48 times

more risk of coronary heart disease compared to females with normal weight. Women with hypertension have 3.5 times more risk of developing coronary heart disease than those with normal blood pressure. Moreover, there is double risk of heart attack in women with diabetes compared to non-diabetic women (Women's Heart Foundation fact sheet, 2013).

A recent American Heart Association's (AHA) guideline update suggests evaluating each woman's cardiovascular disease risk. In 2011, AHA's cardiovascular diseases' risk classification placed women into one of three risk groups: high risk, at risk, and ideal cardiovascular health in order to use proper algorithm for preventive measures. The high risk group includes those with one or more of these factors: clinically manifest CAD, cerebrovascular disease (CVA), or peripheral artery disease (PAD); abdominal aortic aneurysm, diabetes mellitus, chronic or end-stage renal disease, 10-year predicted risk of cardiovascular disease (CVD)  $\geq 10\%$ . Moreover, women who are smokers, obese especially central adiposity, have BP  $\geq 120/80$  mm Hg or are treated for hypertension, total cholesterol  $\geq 160$  mg/dL, high-density lipoproteins (HDL) cholesterol  $< 50$  mg/dL, or treated dyslipidemia, have poor diet, are physically inactive, have history of premature CVD in a first-degree relative ( $< 55$  years for men and  $< 65$  for women), metabolic syndrome, evidence of advanced subclinical atherosclerosis, poor exercise tolerance on a treadmill test, systemic autoimmune disease, or a history of preeclampsia, gestational diabetes, or pregnancy induced hypertension (PIH) are placed in the "At Risk" group. Thus, to have an ideal cardiovascular health, women should: be non-smokers, have total cholesterol  $< 200$  mg/dL, untreated blood pressure  $< 120/80$  mm Hg, untreated fasting blood glucose  $< 100$  mg/dL, body mass index  $< 25$  kg/m<sup>2</sup>, and follow a healthy diet (rich in fruits and

vegetables; whole-grain, high-fiber foods; and fish, at least twice a week; with limited intake of saturated fat, cholesterol, alcohol, sodium, and sugar; and avoidance of trans-fatty acids), as well as be exercising  $\geq 150$  minutes per week at moderate intensity or  $\geq 75$  minutes per week at vigorous intensity or a combination (Mosca et al., 2011).

In Lebanon, a descriptive study was done in a convenience sample of 83 Lebanese-Armenian women in order to investigate the risk factors for coronary artery disease through a sequence of group discussions about risk factors for CAD. Data collected from the prepared interviews and clinical/laboratory studies indicated significant percentage of the sample with marked risk factors including “age, menopausal status, hypertension, hypercholesterolemia, high levels of low-density lipoproteins (LDL), low levels of HDL, and being overweight (Arevian et al., 2004). Another study that included 232 Lebanese females with no history of CAD (Noureddine, Massouh&Froelicher, 2013) documented a significant CVD risk profile, with 25.9% of these women were hypertensive, 13.6% having diabetes mellitus, 18.7% elevated blood cholesterol, 46.5% reporting smoking, 25% having a sedentary life style, 38% overweight and 17.2% obese, in addition 54.6% reporting family history of heart disease in a first degree relative, with significantly older age and higher frequency of hypertension and elevated cholesterol but less smoking among women compared to men (unpublished data). The gender differences in CVD risk profile replicated those of a study of 212 Lebanese patients hospitalized with ACS (Noureddine et al., 2008). Investigators in Iran (Abbasi et al., 2012) examined gender differences regarding the risk of coronary artery disease among 44,820 patients who underwent coronary angiography between years 2005 and 2010. Pre and post-angiography data were collected and compared between men and women such as: demographics, CAD risk

factors, presenting symptoms, and laboratory tests. Results showed that 37,358 patients (11,995 women) who underwent coronary angiography had coronary artery disease out of the 44,820 patients (16,378 women). The females out of the ones with CAD were significantly older, less educated, and more overweight than were the males. Women also had significantly ( $P < 0.001$ ) higher levels of triglyceride, cholesterol, LDL, HDL and fasting blood sugar than men. Moreover, among all the risk factors, hypertension and diabetes mellitus were shown to have the strongest association with CAD among the females (OR=3.45, 95%CI: 3.28-3.61 and OR=2.37, 95%CI: 2.26-2.48, respectively). It was also shown that ACS was more significantly common in men (76.1% vs. 68.6%,  $P < 0.001$ ), while chronic stable angina was more significantly prevalent in women (31.4% vs. 23.9%,  $P < 0.001$ ). Finally, suggestions for non-invasive modalities and medical treatment were significantly ( $P < 0.001$ ) more frequent in the females (20.1% vs. 18.6%) (Abbasi et al., 2012).

The relationship between menopause and CVD risk in women was also the focus of many studies. One prospective SWAN (Study of Women's Health Across the Nation) done in 2009 examined the changes of CVD risk factors within a year of final menstrual period compared to pre and post this period. It included 1,054 of different ethnic minorities (African American, Hispanic, Japanese, or Chinese) and Caucasian women, who had achieved their final menstrual period (FMP) after 10 yearly examinations not caused by surgery or hormone therapy use. Results showed total cholesterol, LDL cholesterol, and apolipoprotein B increase within the 1-year interval before and after the FMP in congruence with menopause-induced changes; however, the other risk factors were increasing in a linear fashion with chronological aging (Derby et al., 2009).

Some risk factors like age and family history cannot be changed. On the other hand, different studies were done about the reduction in modifiable risks of heart disease in women. One prospective study considered adherence to healthy lifestyle and its effect on the risk of sudden cardiac death. Investigators (Chiuve et al., 2011) assessed the low-risk lifestyle factors in a cohort of 81,722 US women in the Nurses' Health Study by distributing questionnaires every 2 to 4 years between June 1984 and June 2010. The lifestyle factors measured, namely not smoking, body mass index of less than 25, exercise duration of 30 minutes/day or longer, and top 40% of the alternate Mediterranean diet score highlighting high intake of vegetables, fruits, nuts, legumes, whole grains, and fish and moderate intake of alcohol, were found to be significantly and independently related to a low risk of sudden cardiac death (SCD). Moreover, the absolute risk of SCD decreased as women adhered to more low-risk lifestyle behavior, from 22 cases/100 000 person-years among women with 0 low-risk factors compared to 17 cases/100 000 person-years with 1 low-risk factor, 18 cases/100 000 person-years with 2 low-risk factors, up to 16 cases/100 000 person-years with 4 low-risk factors. On the other hand, smoking, inactivity, overweight, and poor diet attributed to 81% (95% CI, 52%-93%) of the risk for SCD (Chiuve et al., 2011).

Thus, women must be enlightened about their gender-specific risk factors for myocardial infarction in order to stop their denial of the fact that they are vulnerable to heart disease as men are. Awareness should be also raised on evidence-based preventive measures that women can follow to reduce the risk of cardiovascular diseases as recommended by AHA clinical guidelines for CVD prevention in women 2011; such as lifestyle changes as smoking, physical activity, and diet; treating blood pressure,

diabetes mellitus, hyperlipidemia; and use of preventive drugs as Omega 3-fatty acids (Mosca et al., 2011).

### **A- Signs and Symptoms of Myocardial Infarction in Women**

Usually, as someone hears about “A heart attack”, he/she imagines the “Hollywood heart attack” scene of someone grasping his/her chest in pain and tumbling down on the ground. However, women experience symptoms differently before and during a heart attack. The most frequent symptoms reported by women, one month before a heart attack, are: “Unusual fatigue (71%), sleep disturbance (48%), shortness of breath (42%), indigestion (39%), anxiety (36%), heart racing (27%), arms weak/heavy (25%), and chest discomfort (29.7%). Then, during the heart attack they mostly experience: Shortness of breath (58%), Weakness (55%), unusual fatigue (43%), cold sweat (39%), dizziness (39%), nausea (36%), arms weak/heavy (35%), with absence of acute chest pain noted in 43% (McSweeney et al., 2003).

Although similar symptoms are experienced by men and women during a heart attack, the frequency of symptoms differs, and women tend to experience more atypical symptoms compared to men. In a study comparing symptoms of MI in 212 Lebanese patients with ACS, women were found more likely to experience dyspnea (57% vs. 41%, odds ratio [OR] 1.92, CI = 1.06 – 3.49), shoulder pain (32% vs. 19%, OR = 2.01, CI = 1.03 – 3.93), nausea and vomiting (35% vs. 19%, OR = 2.32, CI = 1.2-4.49) and palpitations (19% vs. 5%, OR=4.15, CI 1.6-10.73) (Noureddine et al., 2008). Iranian researchers also studied gender differences in symptoms of MI in 169 patients who were diagnosed with acute MI and had been admitted in coronary care unit (CCU) of Imam Reza Hospital. Atypical symptoms were present in females as they showed odds ratio of



2.76 for weakness, 1.96 for vomiting, 2.47 for fatigue, 2.2 for anxiety and 2.27 for hiccups compared to men; in addition in the odds of having jaw pain was 3.49, neck pain 2.78, throat pain 3.24, and shoulder pain 2.43 and the left scapula pain 2.83 (Nia et al., 2011).

The findings are consistent with those found in the Western literature. For instance, in Chicago, symptoms of unstable angina (UA) were compared between men and women in a convenience sample of 50 women and 50 men (Devon & Zerwic, 2003). Data was collected using the Unstable Angina Symptoms Questionnaire (UASQ), the Hospital Anxiety and Depression Scale (HADS), and the Canadian Cardiovascular Society (CCS) classification of angina. The results showed that women experienced significantly more “shortness of breath (74% vs. 60%), weakness (74% vs. 48%), difficulty breathing (66% vs. 38%), nausea (42% vs. 22%), and loss of appetite (40% vs. 10%) than men ( $p < 0.05$ ). The symptoms remained significantly different even after controlling for age, diabetes, anxiety, depression, and functional status, as women reported more weakness ( $p = 0.03$ ), difficulty breathing ( $p = 0.02$ ), nausea ( $p = 0.03$ ), and loss of appetite ( $p = 0.02$ ) than men. Moreover, women experienced more atypical symptoms ( $p < 0.05$ ); like upper back pain (42% vs. 18%), stabbing pain (32% vs. 12%), knife-like pain (28% vs. 12%), and had significantly higher incidence of depression (22% vs. 2%,  $p < 0.01$ ) than men (Devon & Zerwic, 2003).

Devon et al. (2008) also examined gender differences in symptoms in 112 women and 144 men diagnosed with ACS; while controlling for age, diabetes, functional status, anxiety, and depression. The findings showed that women regardless of the clinical diagnostic category (unstable angina or MI) reported significantly more indigestion ( $\beta = 0.25$ ; confidence interval [CI] = 0.01-0.49), palpitations ( $\beta = 0.31$ ; CI =

0.06-0.56), nausea ( $\beta = 0.37$ ; CI = 0.10-0.65), numbness in the hands ( $\beta = 0.29$ ; CI = 0.02-0.57), and unusual fatigue ( $\beta = 0.60$ ; CI = 0.27- 0.93) than men, but no difference in chest pain was reported. Likewise, differences in symptoms of dizziness, weakness, and new-onset cough between males and females were not related to clinical diagnosis (Devon et al., 2008). Similar findings were reported by Arslanian-Engoren and her colleagues in 2006, so they recommended considering gender upon evaluating patients presenting with ACS symptoms.

There is lack of adequate knowledge of cardiac symptoms in women, which may lead to unsuitable reaction to these symptoms that often results in delay in seeking proper intervention. In a clinical sample of 212 Lebanese patients with ACS, women were less likely to know symptoms and signs of MI ( $p = 0.03$ ) and they delayed coming to the hospital more than men (22.08 vs. 14.64 hours,  $p = 0.06$ ). This lack of knowledge was also shown in a descriptive survey of 399 visitors of two hospitals in Beirut with no history of heart disease (Noureddine, Froelicher, Sibai, Dakik, 2010). Results revealed that 94% of the sample properly recognized chest pain and dyspnea as the main symptoms of heart disease. However, 68% have also stated irritability and 52% muscle cramps as symptoms associated with heart disease. In response to a scenario of having heart attack, only 21% stated that their first reaction would be to seek emergency care. Although the knowledge of symptoms did not differ between men and women in this study nor their response to the scenarios, the higher CVD risk in the women participants raises concern about their potential response in case they experienced an actual acute coronary event (Noureddine et al., 2010). These findings suggest that campaigns are needed to raise women's awareness about their different symptoms characteristics of MI in Lebanon.

### **C- How Women Respond to Myocardial Infarction**

Most of the studies discussed previously in the section about “Symptoms of Myocardial Infarction in Women” point out to a one conclusion: “women with ACS are less likely to present with typical chest pain, but rather experience prodromal and atypical symptoms”. Thus, women do not recognize they have ACS in order to seek immediate medical help. This delay results in women being deprived from optimal treatment. For instance, Albarran et al. (2007) explored the symptoms experienced by a purposive sample of 12 women before and during their MI while they were still in hospital. The participants described, through semi-structured interviews, three interrelated themes including “gradual awareness, not having pain in the chest and reactions to symptoms.” Thus, it was concluded that the difference in symptom presentation of MI among women might be misperceived by the women themselves, which affect their reaction in seeking medical care and mislead healthcare professionals.

Rosenfeld et al. (2005) described the decision pathways and subsequent cognitive, affective, and behavioral responses to the symptoms of MI, from the time of symptoms onset till the time of deciding to seek medical care in a sample of 52 women. Six common patterns of behavior during the decision time were identified. Some women were aware that something was wrong, took a decision to seek care, and acted on their decision within a relatively short time, this group was called “the knowing and going” group. Other trajectories lead to delay in decision making and seeking care. For example, “the knowing and letting someone take over group” included women who did not always know that their symptoms were related to the heart and did not even clarify what they were feeling. Their reaction was seeking someone else to interpret their symptoms and following his recommendations to seek medical care. Then comes “the

knowing and going on the patient's own terms" group, in which women recognized symptoms and sought advice. However, they did not follow the advice and chose to reach medical care in other ways that took a longer time, such as calling their primary physician rather than immediately going to the hospital. The "knowing and waiting" group included women who were aware they needed help but delayed seeking treatment for a suitable time as they thought they would cause disturbance to others during the nights or weekends. There is also the "managing an alternative hypothesis" group, in which women presumed that their symptoms were caused by gastrointestinal problems and managed them accordingly by taking antacids, baking soda and water, food, and carbonated beverages. Finally, the "minimizing" group of women ignored their symptoms and just hoped they would disappear. These women didn't recognize that their symptoms were cardiac-related. So, they did not seek treatment until symptoms became severely worsened or someone else came and decided for them. Thus, it was concluded that whatever trajectory the women belonged to, there was a delay in time of recognizing symptoms, taking the decision, and seeking medical treatment caused by fear (Rosenfeld et al., 2005).

In China, treatment-seeking delay behavior was studied in 250 patients (159 men and 91 women) within 48 hours of hospital admission with acute MI (Wang & Hsu, 2012). It was found that patients with MI need an average of 130 minutes to make a decision of seeking medical treatment. As for women, they took 240 minutes to pursue treatment, which is significantly longer than men who took 120 minutes (Wang & Hsu, 2012).

Moreover, few studies examined the delay in seeking care for MI in women. Results raise concerns about women not receiving optimal treatment due to this delay.

A number of predictors of delay in seeking care for women were identified by Moser et al. (2005). These included older age, prior history of acute MI, not wanting to trouble others and not knowing about thrombolytic therapy. In Lebanon, waiting for symptoms to go away and experiencing dyspnea predicted delay in women and the most initial common responses to symptoms were telling someone, trying to relax or doing some self-help measure, rather than seeking medical help (Noureddine et al., 2008). Thus public education is required on the importance of “time to treatment” and the benefits of ambulance transport as the first medical contact for early treatment, and not only for as a way of transportation.

#### **D- Awareness/educational campaigns**

The American Heart Association (AHA) developed an updated Guide in 2013 that included a complete list of evidence-based goals, strategies, and recommendations aimed at cardiovascular diseases and stroke prevention in the community. Their goal was to increase awareness of all communities about CVD and stroke as the leading causes of death. So, their list of recommendations included providing evidence-based data to all lay people about CVD causes and symptoms and how to reach emergency medical care through mass media, web-site programs, and public education campaigns. Moreover, schools were recommended to include lessons and materials that teach children about healthy lifestyle (diet, physical activity, smoking behaviors) and risks for cardiovascular disease through lifetime. Parents can also participate in preparing healthy meals for their children. Basic instructions about cardiopulmonary resuscitation and how to activate the emergency medical system can also be taught to students in schools. Also, educational materials should be provided for employees at the work sites to

encourage employee safety through adopting healthy cardiovascular lifestyles and heart-healthy behaviors at work (Pearson et al., 2013).

Other health awareness strategies proposed include health care facilities making research-based educational materials about risk factors, symptoms, and preventable measures available to assure access to screening, counseling, and referral services for CVD and stroke risk factors for all persons. Moreover, educational materials should be tailored for limited literacy and for various cultures and languages. Tobacco users should also be provided with access to cessation counseling. The AHA also recommends that cardiac rehabilitation and preventive cardiology services must be accessible for out-patients and covered by health insurance plans. At the environmental level, food markets and grocery stores should select heart-healthy products with reasonable prices. Furthermore, dishes that meet nutritional guidelines should be offered in restaurants and in cafeterias at schools and work sites. Finally, physical activity education should be supported in school programs and community activity centers (Pearson et al., 2013).

In 2001, seventy specialists in women's health met and agreed on developing a national action strategy in order to decrease the dangers of heart disease on American women's health. So, with the help of the National Heart, Lung, and Blood Institute (NHLBI), part of the National Institutes of Health, and the U.S. Department of Health and Human Services (DHHS), an educational campaign to create national awareness for heart disease was initiated in 2002 to provide a cry out to all American women. It aimed to highlight the concern of women and heart disease in order to warn them about heart disease risk to take actions and was named "The Heart Truth®". This campaign gave women the chance to share their real life experiences and stories about how heart

disease have changed their lives and attitudes to others in order to spread out their voices to all other women out there about the importance of taking steps to protect their hearts.

In 2003, NHLBI, AHA, and other health care organizations that are concerned about women's health designated the "Red Dress" as the national symbol for women and heart disease awareness, which was able to get attention, express the significance of heart disease, and change the perception that it is only a man's concern. The first Red Dress Collection was launched at Mercedes-Benz Fashion Week in February 2003. Since then, there was an annual participation of the majority of the top designers, models, and celebrities in "The Heart Truth Red Dress Collection" at New York Fashion Week; in addition to events held in hospitals and universities in different states. The first Friday of February is also labeled as the "National wear day" as all men and women can participate by showing off a favorite red dress, shirt, or tie, or by wearing "The Red Dress Pin" (NHLBI, 2013). Similar campaigns were endorsed in Canada by The Heart and Stroke Foundation in February 4, 2008.

Similarly, in 2010, AHA has called for increasing the awareness of American women to challenge their number one killer, heart attack, as it is still taking the lives of thousands of American women without noticing. Thus, AHA launched the Go Red for Women campaign using the red dress as their symbol. This campaign aimed for binding the powers of all women to be more conscious about heart disease risks and actions taken to save their own lives. Research, education, and community programs were implemented to increase awareness through funds raised from local and National "Go Red for Women" activities. Awareness campaigns for women heart disease were spread among the continents. In Asia, the Australian Heart foundation launched several

activities to empower women's knowledge about their hearts. These activities include: "Movie nights, Runs and walks, Diffusion of a viral email and production of material including a Go Red DVD, Activities to celebrate a Go Red for Women day, awareness survey, Promotion and website, Media partnership" and many more. Similarly in Europe, campaigns were launched in several countries aiming to increase women's awareness regarding heart diseases, which includes: "advertising tips for a healthy lifestyle & heart-healthy recipes". Moreover, in Africa awareness projects were conducted in several countries. These projects included: "Fashion show, Concert, Screenings, "Heart walk", Dinner with celebrities. In South America, Argentine Heart Foundation & Argentine Society of Cardiology started several activities in the media, shopping centers, schools and hospital to encourage women's care about their hearts (World Health Federation, 2013).

Latino women were also targeted by the "Make the Call. Don't Miss a Beat." campaign is developed by U.S.DHHS's Office and launched in February 2011. The campaign targets the national public in English and Spanish in order to teach women and their families about the seven common symptoms of a heart attack and empower them to call 9-1-1 as soon as those symptoms come up. They have developed educational materials, flyers, and events in schools and universities; in addition to a choreographed dance that conveys a message of recognizing the common symptoms of heart attacks in women and was presented on media at Day of Dance events in support of the campaign (Women's Health Organization, 2012). A video was also developed as part of this campaign and is available on YouTube; it shows a middle aged woman having a heart attack and continuing on with her activities, minimizing her symptoms.



In Europe, the “Women at Heart” campaign was set up by The European Society of Cardiology (ESC) to raise women’s awareness of cardiovascular disease. Research studies, conferences, educational training programs, and assemblies were encouraged in England, Sweden, Stockholm, and Poland targeting women’s heart health. Moreover, Swedish girls and women were encouraged to lead an active lifestyle to reduce heart disease risks by practicing football. Thus, a campaign was launched by “Women's football development program” (AlisterBignell, 2013).

The content of such awareness campaigns is exemplified in a worksite program tested in Alabama on municipal women employees (Jones, Weaver & Friedmann, 2007). The program included five sessions. The first session provided an overview of heart disease in women modeled after the ‘Heart Truth’ campaign, stressing the importance of this topic for women and the need for them to know their cardiac risk factors. The second session addressed risk factors with emphasis on blood pressure, cholesterol and obesity. The third session addressed nutrition and healthy eating. The fourth session addressed physical activity and the last session covered stress management. In this one group quasi-experimental design study, 58% of participants improved their knowledge of heart disease and 50% increased their perception of susceptibility to heart disease (Jones et al., 2007).

Other awareness campaigns were community projects aimed at reducing delay in seeking care for MI; they were not necessarily targeting women only. So they will be briefly reviewed to provide examples of what can be done in Lebanon. For instance, in 1982, Rowley et al. tested the effect of patient education on early reporting of myocardial infarction on 13,828 individuals selected from three practices near Nottingham. Participants were invited to benefit from a system designed to offer early

help in the diagnosis and management of suspected MI. The “HEARTWATCH” campaign was based on using motivational techniques such as a letter outlining the importance of early help in assumed heart attack that drew the attention to the significance of chest pain of duration longer than 10 minutes. The LOGO of the campaign as well focused on the availability of a hospital-based team for patients with persistent chest pain to contact through an easy-to-remember number that functioned as a direct telephone line to the hospital coronary care unit (CCU). Patients were also given stickers of the number to put on the telephone or first-aid cabinet, in addition to a card to carry in a wallet or handbag. Information was put in a blue envelope to provide a positive approach and avoid fear. Calls were received by a member of the nursing staff in CCU called “the dispatchers” who were provided with a written protocol that necessitates them to find the caller’s location, if patient was experiencing chest pain or other symptoms, and if the patient was registered with one of the study practices. Thus, in case the patient was registered with a study practice but the symptoms did not suggest a myocardial infarction or if the patient was not registered with one of the practices; then the dispatcher arranges an appointment for the patient with a general practitioner as soon as possible. However, if the symptoms actually proposed infarction; but either the dispatcher of the team was unreachable, or the car or equipment were under repair, or the patient was not at home; then an ambulance would be sent to the scene to bring the patient to the hospital. If the team was sent to the patient’s home, they make a clinical assessment, record an electrocardiogram (ECG), and give any necessary treatment. The patient is then left at home under care of general practitioner in case, at the end of two hours, the patient was socially and medically fit for home care according

to previously published criteria. Otherwise, the patient was admitted to the hospital under the care of the trial team.

After a year of the original contact, a second letter with telephone number cards was sent to 13,250 of the original group (where 578 were deleted from the original mailing list because of inaccuracies in the age/sex register) as a reminder of the service existence. Results showed that a greater percentage of calls were received by the Heartwatch line than by the general practitioners (580 direct calls to heartwatch at one hour from onset as opposed to 45 calls to the general practitioner) at various intervals from the onset of symptoms up to four hours. Moreover, the time between chest pain onset and the first call for help was shortened by sending a letter to men and women aged 40 and over in three general practices in Nottingham. Moreover, some patients in the study practices called their general practitioner earlier after receiving Heartwatch information (37% had called by 30 minutes from onset of symptoms compared with 24% before Heartwatch;  $p < 0.05$ ). Other participants complied with one of the letter suggestions (to call early if they had chest pain) but rejected to use the direct telephone number, choosing instead to seek help from their own physician (Rowley et al, 1982).

In addition, in 1989, Herlitz et al studied the effect of a media campaign on delay times and ambulance use in suspected acute MI” through starting a 3-week media campaign in Goteborg, Sweden targeting patients admitted to Sahlgrenska Hospital and the general population. Specialized media used motivational techniques through spreading printed material in order to teach evaluating self for symptoms of MI, and steps to follow to obtain help. The slogan used was “HeartPain-90.000”, which is the number to call for an ambulance for chest pain lasting more than 15 minutes. All patients presenting with chest pain or symptoms suggesting MI, between February 15,

1986 and November 9, 1987, were evaluated and classified into four categories by the emergency room physicians using a specific protocol (such as obvious acute myocardial infarction [AMI] and strong suspicion of AMI as there is EKG changes, vague suspicion of AMI defined by chest pain without EKG changes, and no suspicion of AMI).

Similarly, patients admitted to emergency room between 10<sup>th</sup> of November, 1987 and 9<sup>th</sup> of March, 1988 for symptoms of MI and heart failure, were asked while in coronary care unit if they were aware of the campaign and its influence on their decision. Moreover, 400 people randomly chosen in Goteborg were called and asked if they were aware of the campaign as well. Results showed that 60% of admitted patients to coronary care unit and 60% of the general population stated awareness of the campaign, out of which 25% conveyed that it has convinced them to seek medical help faster. Moreover, 45% of patients arrived to hospital within two hours of onset of chest pain during the campaign and up to three years afterwards, while the percentage was 40% before the campaign. Also, educational media campaigns significantly reduced the delay times in seeking medical help in patients with confirmed symptoms of MI. In particular, delay time in seeking medical care in women decreased from 3 hours and 30 minutes before the campaign to 2 hours and 45 minutes afterwards (Herlitz et al, 1989).

In summary, awareness campaigns must tackle all the cognitive, emotional, or clinical predictors for the delay in seeking medical care, and preventive education must be provided for women regarding risk awareness, symptom recognition, and quick appropriate reaction for best survival results. Multiple modalities need to be used for a significant effect to be achieved. In March 2013, a women heart health center was inaugurated in Baabda, Lebanon under the patronage of the first lady WafaaSleiman in

coordination with a new organization “Yaduna”, which is a collaborative project between with “American University of Beirut Faculty of Medicine” and “St. Joseph University Faculty of Medicine”. They have signed an agreement altogether to establish this heart center for women in order to spread the awareness on cardiovascular diseases among women. The center’s services focus on screening, improving diets, helping quit smoking, research and lobbying for the prevention and early detection of CAD in women (Faddoul M., 2013).

## CHAPTER III

### PROPOSED EDUCATIONAL CAMPAIGN

The educational campaign shall include a video on a woman experiencing a heart attack who consented to being filmed, a poster that depicts the main manifestations of a heart attack, and a brochure that includes risk factors for coronary artery disease, manifestations of ACS and what to do in case they occur, in addition to preventive measures that target middle aged women population. Motivational approach, a method of motivation to experience positive outcomes, was used in each of the proposed educational materials in order to reduce fear and denial among women and teach them self-evaluation of their own symptoms of heart attack with the right steps to follow in order to save their lives. With this approach, messages that appeal to causing fear in women for not seeking help for a heart attack are not used. Instead, women are guided towards what is the right response to a heart attack and the health behaviors they can do to prevent coronary events.

The material was prepared based on the literature, the Go Red for women campaign, and taking into consideration the Lebanese culture. The logo for the campaign shows a home within a heart with the slogan 'Your Heart Your Home: Take Care of It'. This logo was chosen so that women can easily identify with it as the major priority of middle aged Lebanese women, who are the target of the campaign, is to take care of their homes and families.

## **A- Video**

The proposed video describes major heart attack symptoms that are commonly experienced by women but not commonly known to them. It highlights how women tolerate their own pain and ignore their symptoms for the sake of taking care of their homes and families. The woman is a Lebanese housewife bringing groceries from the market coming in with severe sweating and chest discomfort. She has to take the stairs since the electricity is off and her symptoms exacerbate. She gets more dyspneic, so she rests for brief periods only to resume her housework when she feels better. She tries soda for her heartburn. Then she continues with preparing a meal and after a brief rest goes on to vacuuming. The woman's behavior shows how women tend to postpone being transferred to the hospital. In fact the woman eventually calls the Red Cross to report her symptoms, but when they say they are on the way, she acts disappointed for being concerned about the mess at home and finishing her house chores.

Thus, this video is considered to be a wake-up call for women who tend to ignore common symptoms for being busy with their duties at home and towards their families. The scenario used in the video is based on the findings of a qualitative study on decision making processes of women experiencing symptoms of acute MI (Noureddine, unpublished results). The video was filmed by a professional video photographer in a real house of a woman. The ideas of the scenes about the symptoms were taken from real patients' stories. However, they were directed by a health care professional, the project director, in order to focus more on the medical part of the issue and show women what are the "symptoms of heart attack", in addition to how they think about their symptoms, which can affect their cardiac health, and so delivering the message of how they should react.

The video was shown to thirty middle aged women in the community who are not related to the medical field and did not experience any heart attack symptoms before. Their feedback was taken regarding its clarity, attractiveness, duration and the take home message. Common comments were that the video looked very natural, simple, stimulates curiosity, grabs attention, makes one smile instead of inducing fear, and close to Lebanese women, which facilitated the message delivery as they saw themselves in the actor and the things she was doing. Moreover, symptoms were expressed clearly and they all agreed for the fact that they would think and react in the same way; thus, they were reassured at the end of the video about one simple right way of how they must react in order to protect their health for the sake of their families.

#### **B- Poster**

The poster was created with the help of a professional graphic designer. It is directed towards women highlighting their common symptoms of heart attack which they are unaware of. The poster draws the attention towards the importance to be aware of women's symptoms of heart attack rather than just guessing them or wondering to what they are related. So, in order for them to take these symptoms seriously, a "Hangman" game was used in the poster, which is a word-guessing game and the player would complete the hanged man figure for not guessing the correct word. The guessed letters are in bold and the non-guessed are only outlined. Thus, the message of the poster is that knowing the symptoms and realizing that they indicate a heart attack is not a guessing game, but will affect women's lives. At the bottom of the poster the message is clear, and leads the women to call number 140, the Red Cross number, when they experience these symptoms (Appendix A). The poster was shown to thirty women in the



community. Whether they knew the “Hangman” game or not, the majority realized that it is a guessing game as they were excited while trying to read the symptoms which raised their interest to figure out to what they are related. The message then was completed for them as they read down that this is an educational campaign for symptoms of heart attack in women.

### **C- Brochure**

The brochure was also created with the help of a professional graphic designer. It provides education about the risk factors of heart attack among women, the common symptoms, what to do when experiencing these symptoms, and how to prevent myocardial infarction in women. The cover of the brochure includes the Logo of the campaign as the big title and everything contained in the brochure was put as small phrases creating a design of rows and columns so that one can expect the data contained in the brochure. The first page includes information about risk factors, while symptoms are listed in the second page. The third page stresses on calling Red Cross on the number 140 “FIRST” before asking help from family members, neighbors, or family physician; in addition to advising the woman to relax and take deep breaths while waiting for help. Then the fourth page provides tips about how to prevent heart attack through lifestyle changes such as: exercise, diet, quit smoking. Finally, the last page includes few website which a woman can visit to get more data and tips about heart health (Appendix B).

### **D- Implementation of the Campaign**

The educational material will be run by cardiologists to get their support for the campaign. The campaign will be piloted by joining other groups that are committed to

women's issues or women's health and already include a large group of women (such as YADUNA, Ahluna, KAFA...) to create a national wake-up call for women in Lebanon about heart attack. A center such as a primary health center or the Women's Heart Health Center will be chosen as a location to launch the piloting of the campaign where posters will be displayed after taking permission. Women, whether healthy or with history of a myocardial infarction coming to the center will be first introduced to the objectives of the campaign. The video would be presented to a group of women in the center, in addition to playing it all over on center televisions. Then brochures will be distributed and explained to them during piloting period. Group discussions would be done after all materials are read and displayed. Then, a survey later on would be distributed for evaluation.

Another intervention would be done in hospitals or private cardiology clinics, where after taking the approval of the administration posters would be displayed and brochures would be distributed to women entering the cardiac services (floors or clinics) and obstetric gynecology services.

Moreover, at the national level, the chair of the Task Force on Cardiovascular Health will be contacted about the campaign. A task force from the Ministry of Health, the Lebanese Red Cross and Lebanese Society of Cardiology will be formed under the Ministry's auspices and meetings would be held to plan the launching of the campaign nationwide. Meetings with Red Cross members would be done to explain symptoms of heart attack in women and raise their awareness about their vital role when receiving calls for such symptoms as the campaign directs women to call 140.

## CHAPTER IV

### EVALUATION AND CONCLUSION

Evaluation of such a campaign can be done at a small and large scale. First once the group of women is identified where the campaign will be launched, the Acute Coronary Syndrome Index will be administered at baseline to assess their knowledge and attitudes related to heart disease. The ACS response index measures knowledge, attitudes, and beliefs about ACS (Riegel et al., 2007). The ACS response index includes a 21-item knowledge subscale that asks participants whether or not each of a list of 21 symptoms is a symptom of heart attack; a 5-item attitude scale that addresses how sure the participant is of recognizing ACS symptoms and getting help if that happened to him/herself or someone else; and a 7-item beliefs subscale that tackles the participants' beliefs about what they might do if they experienced a heart attack. Summative scores are calculated for each subscale. The psychometric properties of the scale were tested on a sample from the US, Australia, and New Zealand. Factor analysis of the knowledge subscale yielded four factors: stereotypical symptoms; other common symptoms; incorrect symptoms; and symptoms associated with a stroke but not ACS, together explaining 43.7% of the variance in the items. The 21 symptom items were grouped into two categories: correct (the items of the first two factors) and incorrect symptoms (the third and fourth factors items). The attitude subscale yielded two factors: symptoms recognition and help seeking, together explaining 43% of the variance. The beliefs subscale yielded two factors: expectation and action. Cronbach's alpha coefficient for the subscales was 0.71 to 0.78 (Riegel et al., 2007). The ACS index was translated to

Arabic and tested in a sample of 50 patients with MI in Lebanon (Noureddine, unpublished data). Reliability coefficients of the subscales ranged from 0.52 to 0.83. The ACS index will be administered to the women again 6 months after the launching of the campaign in the health center or women organization where it will be implemented.

Another means of evaluating the impact of such a campaign if it goes national would be by keeping a registry of the number of calls made to the Red Cross and calls received by cardiologists from patients as soon as they feel the symptoms before and after launching the campaign. In addition, records from the emergency departments will be examined about patients arriving with such symptoms for delay time and means of transmission.

This project developed the material needed and proposed an educational campaign targeting women and aiming to reduce their delay in seeking care for acute coronary events. It is hoped that the campaign gets implemented to reduce the leading cause of mortality in Lebanese women.

## REFERENCES

- Abbasi SH, Ponce De Leon A, Kassaian SE, Karimi AA, Sundin Ö, Soares J, et al (2012). Gender Differences in the Risk of Coronary Artery Disease in Iran. *Iranian J Publ Health*,41(3):36-47.
- Albarran, J., Clarke, B., Crawford, J. (2007). 'It was not chest pain really, I can't explain it!' An exploratory study on the nature of symptoms experienced by women during their myocardial infarction. *Journal of Clinical Nursing*. Volume 16, Issue 7, pages 1292–1301, July 2007. Article first published online: 19 JUN 2007. DOI: 10.1111/j.1365-2702.2007.01777.x
- Arslanian-Engoren, C., Patel, A., et al. (2006). Symptoms of Men and Women Presenting With Acute Coronary Syndromes. *Next » American Journal of Cardiology*. Volume 98, Issue 9, Pages 1177-1181, 1 November 2006.
- Arevian, M.; Adra, M.; Kubeissi, L. (2004) Risk factors for coronary artery disease (CAD) in Lebanese-Armenian women. *Health care for women International*. DOI: 10.1080/07399330490508631
- Barakat K, Wilkinson P, Suliman A, Ranjadayalan K, Timmis A. (2000). Acute myocardial infarction in women: contribution of treatment variables to adverse outcome. *American Heart Journal*, 140(5), 740-746.
- Bignell, A., (2013). UEFA and the World Heart Federation tackling heart disease. Accessed at: <http://www.sportanddev.org/en/newsviews/news/?5407/1/UEFA-and-the-World-Heart-Federation-tackling-heart-disease%60>
- Boccardi, L., Verde M. (2003). Gender differences in the clinical presentation to the emergency department for chest pain. *Italian Heart Journal*,4(6), 371-373.
- Bouma, J., Broer, J., Bleeker, J., van Sonderen, E., Meyboom-de Jong, B., DeJongste, M. J. (1999). Longer pre-hospital delay in acute myocardial infarction in women because of longer doctor decision time. *Journal of Epidemiology and Community Health*,53(8), 459-464.
- Canto, JG, Rogers, WJ, Goldberg RJ, et al (2012). Association of age and sex with myocardial infarction symptom presentation and in-hospital mortality. *JAMA*. 2012 Feb 22;307(8):813-22. doi: 10.1001/jama.2012.199.
- Chiuve, S., Fung, T., Kathryn, R., et al. (2011). Adherence to a Low-Risk, Healthy Lifestyle and Risk of Sudden Cardiac Death Among Women. *JAMA*. 2011;306(1):62-69. doi:10.1001/jama.2011.907.
- Derby, C., Crawford, S., Pasternak, R., et al. (2009). Lipid Changes During the Menopause Transition in Relation to Age and Weight. *The Study of Women's*

- Health Across the Nation. *Am. J. Epidemiol.* (2009) 169 (11): 1352-1361. doi: 10.1093/aje/kwp043.
- DeVon, H., Ryan, C., (2008). Symptoms Across the Continuum of Acute Coronary Syndromes: Differences Between Women and Men. *Am J Crit Care* January 2008 vol. 17 no. 1 14-24.
- Devon, H., Zerwic, J., (2003). Differences in the Symptoms Associated With Unstable Angina and Myocardial Infarction. *Progress in Cardiovascular Nursing*. Volume 19, Issue 1, pages 6–11, Winter 2004.
- European Society of Cardiology (2012). Score Risk Charts. Accessed at: <http://www.escardio.org/communities/EACPR/toolbox/health-professionals/Pages/SCORE-Risk-Charts.aspx>
- Faddoul, M. (2013). First lady inaugurates women’s cardiovascular health center. <http://www.dailystar.com.lb/News/Local-News/2013/Jun-21/221089-first-lady-inaugurates-womens-cardiovascular-health-center.ashx#!>
- Go, A. S., Mozaffarian, D., Roger, V. L., Benjamin, E. J., Berry, J. D., Borden, W. B., Turner, M. B. on behalf of the American Heart Association Statistics Committee and Stroke Statistics (2013). Heart Disease and Stroke Statistics - 2013 Update: A Report From the American Heart Association, *Circulation*, 127, e6-e245.
- Hamid, S., Nia, S., et al. (2011). Difference in Clinical Symptoms of Myocardial Infarction between Men and Women. *Iranian Journal of Critical Care Nursing* Spring 2011, Volume 4, Issue 1; 33 – 38.
- Herlitz, J., Hartford, M., et al. (1989). Effect of a media campaign on delay times and ambulance use in suspected acute myocardial infarction. *The American Journal of Cardiology*, 64(1), .
- Johansson, I., Stromberg, A., Swahn, E. (2004). Factors related to delay times in patients with suspected acute myocardial infarction. *Heart Lung*, 33, 291–300.
- Jones, D., Weaver, M. T., Friedmann, E. (2007). Promoting Heart Health in Women: A Workplace Intervention to Improve Knowledge and Perceptions of Susceptibility to Heart Disease. *AAOHN Journal*, 55(7), 271-276.
- McSweeney, J., Cody, M., O’Sullivan, P. (2003). Women’s Early Warning Symptoms of Acute Myocardial Infarction. *Circulation*, 2003; 108: 2619-2623. Published online 2003: doi: 10.1161/01. CIR 0000097116.29625.7C
- Mendis, S., Puska, P., & Norrving, B. (Eds.) (2011). *Global Atlas on Cardiovascular Disease Prevention and Control*. Geneva, Switzerland: World Health Organization.

- Moser, D. K., McKinley, S., Dracup, K., Chung, M. L. (2005). Gender differences in reasons patients delay in seeking treatment for AMI symptoms. *Patient Education and Counseling*, 56(1):45-54.
- Mosca, L., Benjamin, E.J., Berra, K. (2011). Effectiveness-Based Guidelines for the Prevention of Cardiovascular Disease in Women—2011 Update. A Guideline From the American Heart Association. *Circulation*. 2011; 123: 1243-1262  
Published online before print February 14, 2011, doi: 10.1161/CIR.0b013e31820faaf8
- Ministry of Public Health (2011). Accessed at:  
<http://www.moph.gov.lb/statistics/pages/default.aspx>
- National Heart, Lung, and Blood Institute (2013). Framingham Heart Study. <http://www.framinghamheartstudy.org/>
- National Heart, Lung, and Blood Institute (2013). Go Red For Women. National Wear Red Day. Accessed at:  
<http://www.nhlbi.nih.gov/educational/hearttruth/events/wear-red.htm>
- Noureddine, S., Arevian, M., Adra, M., Puzantian, H. (2008). Response to signs and symptoms of acute coronary syndrome: Differences between Lebanese men and women *American Journal of Critical Care*, 17, 26-35
- Noureddine, S., Froelicher, E. S., Sibai, A., & Dakik, H. (2010). Response to a Cardiac Event in Relation to Cardiac Knowledge and Risk Perception: A Descriptive Study in a Lebanese Sample. *International Journal of Nursing Studies*, 47(3), 332-347. (Journal IF = 2.178, 5 year IF = 2.586) Program of research
- Noureddine, S., Massouh, A., & Froelicher, E.S. (2013). Cardiac illness perceptions in a Lebanese community sample. *European Journal of Cardiovascular Nursing*, 12, 56-63. DOI: 10.1177/1474515111430899 Journal IF: 2.042 Program of research
- O'Donnell, S., Condell, S., Begley, C., Fitzgerald, T. (2006). Prehospital care pathway delays: gender and myocardial infarction. *Journal of Advanced Nursing*, 53, 268-76.
- Perers, E., Caidahl, K., Herlitz, J., et al. (2004). Spectrum of acute coronary syndromes: history and clinical presentation in relation to sex and age. *Cardiology*, 102(2), 67-76.
- Pearson, T., Palaniappan, L., Artinian, N., et al. (2013). American Heart Association Guide for Improving Cardiovascular Health at the Community Level, 2013 Update. A Scientific Statement for Public Health Practitioners, Healthcare Providers, and Health Policy Maker. *Circulation*. 2013; 127: 1730-1753  
Published online before print March 21, 2013, doi:10.1161/CIR.0b013e31828f8a94.

- Rosenfeld, A., Lindauer, A., Darney, B., (2005). Understanding Treatment-Seeking Delay in Women with Acute Myocardial Infarction: Descriptions of Decision-Making Patterns. *Am J Crit Care* July 2005 vol. 14 no. 4 285-293.
- Rowley, J.M., Hill, J.D., et al (1982). Early reporting of myocardial infarction: impact of an experiment in patient education. *British Medical Journal*, 284(6331),1741–1746.
- Riegel, B., McKinley, S., Moser, D. K., Meischke, H., Doering, L., & Dracup, K. (2007). Psychometric evaluation of the acute coronary syndrome (ACS) response index. *Research in Nursing & Health*, 30, 584-594.
- Sawaya, J. I., Jazra, C., Eid, E. V., Sabra, R. (1999). Gender differences in the diagnosis and treatment of acute myocardial infarction in Lebanon. *Lebanese Medical Journal*, 47(1), 2-6.
- Sheifer, S. E., Rathore, S. S., Gersh, B. J., Weinfurt, K. P., Oetgen, W. J., Breall, J. A., Schulman, K. A. (2000) Time to presentation with acute myocardial infarction in the elderly: associations with race, sex, and socioeconomic characteristics. *Circulation*, 102, 1651–6.
- Wang, X., Lihwa L., Treatment-seeking delays in patients with acute myocardial infarction and use of the emergency medical service. *Journal of International Medical Research* February 2013 vol. 41 no. 1 231-238. Published online before print January 23, 2013, doi: 10.1177/0300060512474567.
- World Heart Federation (2013). Go Red for Women. Accessed at: <http://www.world-heart-federation.org/what-we-do/awareness/go-red-for-women/>
- Women's Health Organization (2012). "Make the Call. Don't Miss a Beat." Accessed at: <http://www.womenshealth.gov/heartattack/>



## Appendices

### A- Poster



قلبك بيتك.. حافظي عليه

ض ي ق ة / ن ف س  
ض غ ط / ص د ر  
و ج ع / ك ت ف / ض ه ر  
ح ر ق ة / م ع د ة  
د و خ ة  
ت ع ب / غ ي ر / ع ا د ي  
ل ع ي ا ن

**القصة مش لعبة.. اتصلي بـ 140**  
حملة توعية لعوارض **الذبحة القلبية** عند النساء

قلبك بيتك.. حافظي عليه

© Nour Abi Zahr 9/10/2013

## B- Brochure

**العوارض!**

- ضغط مزيج أو وجع في وسط صدرك
- خبيثة نفس مع أو بدون وجع صدر، خصوصاً إذا كنت ما عمتعلاً مجهود.
- وجع في الذراع أو الظهر أو الرقبه أو الحناك
- وجع في رأس المعدة، حرقه أو ليمان نفس حومه أو عرق بارد كثير.
- أثنا، الخبيثة، النسا، بصر عندهم خبيثة نفس، ليمان ووجع ظهر أكثر من الرجال.

إذا كان تحرك أي من هذه العلامات، لا تنتظر أكثر من خمس دقائق قبل استعدا، للحدوث على المساعدة، استعدا، **140** والوصول إلى المستشفى على الفور.

بدك تعرفى أكثر، زورى المواقع التالية:

<http://www.redcross.org.lb/indexAr.aspx?pageid=487>

<http://www.heartfoundation.org.au/driving-change/go-red-for-women/Pages/welcome.aspx>

<http://www.cdc.gov/nutrition/ever-yone/basics/fat/saturatedfat.html>

<http://www.mayoclinic.com/health/heart-healthy-diet/HB00039>

<http://www.cdc.gov/tobacco>

graduation project for Masters in Adult health specializing in heart diseases

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## حمى حالك!

وقفي التحذير، السجارة والأرجيلة لأم توفيقم كليا. تخفيف عدد السجائر ما يكفي لأم توفيق تام.

**مارسي نشاط بدني:** مثلاً امشي كل يوم حوالي نصف ساعة، ممكن تمشيم مره واحدة أو تقسيمهم إلى فترات قصيرة حسب قدرتك. بلشي بـ دقائق وارجعهم تدريجياً. استعملي الدرج بدل المصطور، هيدا كمان يساعد النشاط.

**أتبعي نظام غذائي صحي:** تناولي حصصه كل يوم (مثلاً سلطه) وفواكه (صغيره أو اثنين مثل تفاح أو موز). خففي تناول اللحمة الحمراء واستبدليها بالدجاج والسلمك. تناولي الحبوب مثل العدس، الحمص والمضغون. ما تكثري الملح في الطبخ وما تستعملي ملح على طاولة الأكل. استبدلي الملح باليوسم والبهارات اللذيذة لتحسين نكهة الأكل. ما تستعملي السمن بالخبز والخبز واستبدليه بالزيت النباتي. استعملي زيت الزيتون بالسلطة بين مثل الخبز. خففي أكل الحلويات والمشروبات الغازية مثل البيبسي.

**حافظي على وزنك** من خلال النشاط البدني والأكل الصحي تأمعي عمل فحوصات روتينية، فبسي ضغط الدم، امحصي مستوى السكرى والكوليسترول والدهنيات مره كل سنة إذا كان عندك ضغط أو سكري، ما توفمي أخذ ادويةك إلا بإذن من طبيبك.

## شوو العمل؟

إذا اختبرت بعض هالصعاب واستمرت أكثر من ٥ دقائق، اتصلي بال 140

**معلومات عن الصليب الأحمر:** بدأ العمل في فريق الإسعاف الأولي في الصليب الأحمر اللبناني سنة ١٩٣٤. يقوم منظمو فريق الإسعاف الأولي بتأمين خدمة الإسعاف والطوارئ، على الأراضي اللبنانية كافة ٢٤/٢٤ على مدار أيام السنة، و من أحد الخدمات التي تقدمها، إسعاف ونقل طارئ، للمصابين في حوادث الطرق والجراح والحوادث المنزلية، إسعاف أولي لخصايا الثوب الفلبينية يتم تسويق العمل الصليب احمر في الاسعاف والطوارئ، بواسطة فريق عمليات تونلي توجيه الفرق إلى مكان الحادث ومراقبة سير المعالجة وتأمين الاتصال بالمستشفيات والتنسيق مع الجيش اللبناني وقوى الأمن الداخلي والدمع المدني وفوج الشرطة وبقية الاجصره المعنية وفقاً للحوادث.

ما تجاوري تروصي إلى المستشفى، مثلاً ما:

تجبري جار تك  
تتصلي بملائتك  
تتصلي بحكيم المية  
أو تاجليا لبروح روجك علييت  
قبل ما تتصلي بال 140، رايح و خذي نفس عميق حتى وصول المساعدة،  
كل ما وصلت بسرعه إلى المستشفى، كل ما تلفيت العلاج الفعال بالوقت المناسب، من جون ما يحير معك مضاعفات أو مشاكل.

## مين معرض؟

شو هي الذبحة أو الجرحه الفلبينية؟ الذبحة هي جرح صعب القلوب بسبب انسداد الشرايين التي تغذيه الدم جز، من عضله القلب يخسر قدرته على ضخ الدم بسبب نقص الأكسجين والغذاء، التي ببوسوا له، الذبحة ممكن تصيب النساء، مثل الرجال، العواض التي تعرض للذبحة هي:

**التدخين:** السجارة والأرجيلة بسببوا يخيق شرايين القلب، يبصلوا وخطات وينقصوا كمية الأكسجين التي بوصول للقلب.

**ضغط الدم العالي:** الضغط بسبب تعب عضله القلب، ارجاع مستوى الكوليسترول والدهنيات في الدم، يتجمعوا في شرايين القلب ويضيقوها منكمه كمية الدم التي جابه للقلب.

**السكري:** ارتفاع نسبة السكر في الدم بسبب مشاكل في الشرايين خصوصاً شرايين القلب مثل خطات فبريد التعرض للذبحة.

**الوزن الزائد:** يزيد خطر ارتفاع ضغط الدم والسكري والدهنيات في الدم وعن طريقهم التعرض للذبحة لأن القلب بحير لازم يتقبل أكثر.

**قلة النشاط البدني:** يزيد تعاقم العواض الأخرى مثل ارتفاع ضغط الدم والسكري والدهنيات في الدم والوزن الزائد فبريد خطر التعرض للذبحة.

**تمصيب وقلق:** اختبار قلق وتمصيب بشكل مستمر يزيد خطر التعرض للذبحة بسبب ضيق في الشرايين.



**C- Video**

CD Attached

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