Health Promoting Lifestyle Behaviors among Women at High Risk for Cardiovascular Diseases

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Abstract

Introduction: Cardiovascular disease (CVD) is number one killer in women in the developed countries. Women are more likely than men to have multiple risk factors for CVD. Assessment of women's CVD risk will help in early detection and prevention of such devastating mortality and morbidity. Risk-reducing behaviors in women are difficult to measure because the small percentage of women included in the previous studies. Little is known about why women do not practice a healthy promoting behavior. More knowledge is needed about women health promotion behavior and characteristics that influence a healthy lifestyle so that nurse can help women at high risk to reduce their risk and ultimately prevent the development and progression of CVD. Thus the aims of the study were to: 1- To determine the health-promoting behaviors of women at high-risk for cardiovascular diseases; 2- Explore the relationship between women' cardiovascular risk score and their health promoting lifestyle behaviors; and 3- Examine to what extent demographic variables such as, age, marital status, level of education, income, explain women’ health promoting behaviors.

Subjects and Methods: A correlational cross-sectional design was used. A convenience sample of 70 women participated in the study. The study was conducted at different outpatients clinics at Menofia University teaching hospital. Cardiovascular Diseases Risk Profile was calculated using Framingham CVD prediction points to assess the subjects' actual cardiovascular disease risk. The Health-Promoting Lifestyle Profile II (HPLP II) used to measure current health promoting practices.

Results: The majority of the women had Diabetes Miletus 74%, hypertension 71% and 10% were obese. Regarding the CVD risk scores, 51% of the women in the sample were classified as high-risk subjects. The mean item score of HPLP II was 2.44, indicating that women did not practice health promoting behaviors. Women in the present study reported the highest scores in the subscale of nutrition 2.83 and the lowest scores in the subscale of physical activity 1.77.

Conclusions: Women do not practice health promoting behaviors on a regular basis. The identification of hindrances to healthy cardiovascular behaviors is the first step for the achievement of effective risk reduction interventions targeted and tailored to women at high risk for CVD. Health care providers must be influential in risk factor reduction and promoting cardiovascular health for women of all ages.

Key Words: Health promoting lifestyle behavior — Women — Cardiovascular diseases.

Introduction

CARDIOVASCULAR Disease (CVD) is the most serious, neglected health problem for women in both the developing and the developed world. According to the American Heart Association, (2009) [ii more than 500,000 women will die from CVD including Myocardial Infarction (MI), heart failure and strokes annually. In developing countries, half of all deaths of women over age 50 are due to CAD and stroke [2]. CAD is the largest single cause of mortality among women, accounting for one-third of all deaths in women worldwide [31].

According to the American Heart Association (2004) [4], risk factors of CAD was classified as modifiable, those can change and non modifiable risk factors which cannot change. The non modifiable risk factors include gender, age, family history and genetic factors. The major non modifiable risk factors cannot be modified or controlled but help in predicting the risk of developing CAD [5]. Modifiable or partially modifiable risk factors include smoking, high cholesterol level, lack of physical activity, obesity, hypertension, and diabetes mellitus [6].

Women are more likely than men to have multiple risk factors for CVD. Women's knowledge of risk factors contributing to Cardiovascular Diseases is limited. This lack of knowledge about CVD risk is alarming given the following statistics: 55% of women aged 55-75 years are overweight; 42.5%-49.5% of women report no regular physical
activity [7]; 44.2% of women aged 55-64 years have hypertension; 40% of women aged 55 years have a high cholesterol level [8] and less than 40% of all women know their cholesterol level. Prevention and risk reduction cannot occur if those at risk are not identified.

Many of these risk factors are modifiable, that is why an increased emphasis on behavior change as a part of primary prevention was suggested by the WHO Regional Committee for Europe [9]. It has been recognized that primary prevention will be cost-effective if high-risk individuals are targeted for lifestyle changes and therapy. Assessment of women’s CVD risk will help in early detection and prevention of such devastating mortality and morbidity. Health professional and women need to recognize the existence of risk factors and the potential for developing future cardiovascular risk factors.

Health promotion, disease prevention, and a lifestyle of Wellness have been identified as issues that promote quality of life, and eventually reducing health care expenses. Health promoting behaviors are actions taken to promote health and prevent further decompensation of the existing disease state. Health promotion incorporates a number of self-initiated health behaviors and stresses the need to enhance each person’s responsibility and commitment to healthy lifestyle mi. These actions may include physical activity, nutritional strategies, lifestyle modification, maintaining a positive attitude, health responsibility behaviors, and seeking and receiving interpersonal support.

Health promotion is particularly important for middle-aged women, because healthy behaviors such as regular exercise and stress management can effectively reduce health problems [iii. Risk-reducing behaviors in women are difficult to measure because the small percentage of women included in the previous studies. Little is known about why women do not practice a healthy promoting behavior. More knowledge is needed about women health promotion behavior and characteristics that influence a healthy lifestyle so that nurse can help women at high risk to reduce their risk and ultimately prevent the development and progression of CVD. Thus the aims of the current study were to: 1- Determine the health-promoting behaviors of women at high-risk for cardiovascular diseases; 2- Explore the relationship between women’s cardiovascular risk score and their health promoting lifestyle behaviors; and 3- Examine to what extent demographic variables such as, age, marital status, level of education, annual income, explain women’ health promoting behaviors.

Research Questions:
1- What are the health promoting behaviors of women at high-risk for cardiovascular diseases?
2- Is there a relationship between women’s cardiovascular risk score and their health promoting lifestyle behaviors?
3- Is there a relationship between demographic variables such as, age, marital status, educational level, annual income, and women’ health promoting behaviors?

Subjects and Methods

A correlational cross-sectional design was used. A convenience sample of 70 women participated in the study. Women aged between 35 and 60 years who had no previous history of CVD were recruited to participate in the study. The study was conducted at different out-patients clinics (diabetic clinic, obesity clinic, internal Medicine clinic) at Menofia University teaching hospital. The study took place from January to June 2012. Demographic Sheet consisted of two parts: Part I: Demographic data including age, marital status, educational level, economic and employment status; Part II: Medical data including family history about the presences of CVD, diabetes mellitus, hypertension, and high cholesterol levels.

Cardiovascular Diseases Risk Profile: Was calculated using Framingham CVD prediction points to assess the subjects’ actual cardiovascular disease risk [12]. This risk assessment tool assigns points based on age, cholesterol level, presence of diabetes and blood pressure. Based on points, a 10-year CVD risk percentage will be assigned.

The Health-Promoting Lifestyle Profile II (HPLP II) used to measure the likelihood of individuals engaging in health promoting and related behaviors [13]. The HPLP II, developed within the framework of the Health Promotion Model [14] measures current health promoting behaviors using a 52-item, 4-point Likert scale. The items of HPLP II are categorized into six subscales: Exercise is about the amount of exercise needed for a healthy life. Self-actualization; is about a person’s positive approach to himself/herself and his/her abilities in terms of improving his/her talents and creativity to achieve his/her goals in life. Health responsibility; is about a person’s attention and sensibility for his/her own health. An interpersonal relation; is the ability to communicate with and sustain one’s
close environment. Nutrition; is about a person's eating habits and meal choices. Finally, stress management; is about knowing the factors that affect a person's stress level and their ability to control them. Desirable and undesirable behavior items are interspersed throughout the instrument in an attempt to reduce response set [15]. Responses range from 1 (never) to 4 (routinely) for each item on the profile, and the total possible scores range from 52 to 208. High scores indicate a healthy lifestyle in the relevant dimension. "The use of means rather than sums of scale items is recommended to retain the 1 to 4 metric of item responses and to allow meaningful comparisons of scores across subscales". The HPLP II has been used extensively in nursing research with high Cronbach's alph coefficients for both the total scale and subscales [16,13]. In the present study, the Cronbach's alph coefficient for the total scale and subscales are presented in (Table 1).

<table>
<thead>
<tr>
<th>Table (1)</th>
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</thead>
<tbody>
<tr>
<td><strong>Reliability Scale (Cronbach's Alpha Coefficient)</strong></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>( \alpha )</td>
</tr>
<tr>
<td>Health Promoting Lifestyle</td>
<td>0.899</td>
</tr>
<tr>
<td><strong>Subscales</strong></td>
<td></td>
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<tr>
<td>Physical Activity</td>
<td>0.802</td>
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<tr>
<td>Health Responsibility</td>
<td>0.677</td>
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<tr>
<td>Nutrition</td>
<td>0.631</td>
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<tr>
<td>Spiritual Growth</td>
<td>0.598</td>
</tr>
<tr>
<td>Interpersonal Relationships</td>
<td>0.593</td>
</tr>
<tr>
<td>Stress Management</td>
<td>0.570</td>
</tr>
</tbody>
</table>

**Results**

Eighty women who met the study inclusion criteria were approached to participate in the study over a 6-month period. Seventy women agreed to participate in the study, whereas 10 refused to complete the study. The reason for refusal was not having time to wait after the doctor appointment. The final sample included 70 women. The mean age of participants was 51.4 (10.4) years. Women in the sample were predominantly married 71.4% and illiterate 60% whereas only 6% had high school or higher educational level. The majority of the women were housewives.

77.4% and only 21% were employed. The majority of the women had Diabetes Miletus 74%, hypertension 71% and 10% were obese. Regarding the CVD risk scores, 51% of the women in the sample were classified as high-risk subjects (CVD) risk scores greater than 20%. The mean item score of HPLP II was 2.44, indicating that women did not practice health promoting behaviors. Women in the present study reported the highest scores in the subscale of nutrition 2.83 and the lowest scores in the subscale of physical activity 1.77 (Table 2).

Table (3) shows the correlation matrix between women' cardiovascular risk score and their health promoting lifestyle behaviors. Women's cardiovascular risk score was positively correlated to total HPLP (\( p = .05 \)), physical activity (\( p = .01 \)), and nutrition (\( p = .05 \)). CVD risk score was not correlated to health responsibility, spiritual growth, interpersonal relationship, or stress management subscales.

Health promoting behavior was not correlated to age, marital status, education, monthly income, or number of family members.

Table (2): Health promotion behavior mean item scores for the total scale and subscale scores in women at high risk.

<table>
<thead>
<tr>
<th></th>
<th>Mean item score</th>
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<tbody>
<tr>
<td>Nutrition (n=9)</td>
<td>2.83</td>
</tr>
<tr>
<td>Interpersonal Relations (n=9)</td>
<td>2.58</td>
</tr>
<tr>
<td>Health Responsibility (n=9)</td>
<td>2.52</td>
</tr>
<tr>
<td>Spiritual Growth (n=9)</td>
<td>2.45</td>
</tr>
<tr>
<td>Stress Management (n=8)</td>
<td>2.42</td>
</tr>
<tr>
<td>Physical Activity (n=8)</td>
<td>1.77</td>
</tr>
<tr>
<td>Total HPB (N=52)</td>
<td>2.44</td>
</tr>
</tbody>
</table>

Table (3): Pearson correlation between women' cardiovascular risk score and health promoting lifestyle behaviors.

<table>
<thead>
<tr>
<th>CVD Risk Score</th>
<th>HPB</th>
<th>Health Responsibility</th>
<th>Physical Activity</th>
<th>Nutrition</th>
<th>Spiritual Growth</th>
<th>Interpersonal Relationship</th>
<th>Stress Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td></td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPB</td>
<td>0.305*</td>
<td>0.863**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Responsibility</td>
<td>0.178</td>
<td>0.658**</td>
<td>0.496**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Activity</td>
<td>0.344**</td>
<td>0.732**</td>
<td>0.678**</td>
<td>0.273*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nutrition</td>
<td>0.275*</td>
<td>0.768**</td>
<td>0.545**</td>
<td>0.391**</td>
<td>0.408**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Spiritual Growth</td>
<td>0.174</td>
<td>0.833**</td>
<td>0.660**</td>
<td>0.410**</td>
<td>0.500**</td>
<td>0.705**</td>
<td>1.00</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>0.212</td>
<td>0.764**</td>
<td>0.530**</td>
<td>0.428**</td>
<td>0.439**</td>
<td>0.602**</td>
<td>0.617**</td>
</tr>
<tr>
<td>Stress Management</td>
<td>0.131</td>
<td>0.564**</td>
<td>0.530**</td>
<td>0.428**</td>
<td>0.439**</td>
<td>0.602**</td>
<td>0.617**</td>
</tr>
</tbody>
</table>

* \( p=0.05 \) (2-tailed). ** \( p=0.01 \) (2-tailed).
Discussion

Health promotion is receiving increasing attention because the important role it plays in health care. The high costs in health care have demand a shift in the emphasis of care to the prevention of diseases, rather than strictly the treatment of diseases [16]. The study findings indicated that women did not practice health promoting behaviors. This finding is similar to the findings of Oliver-McNeil and Artinian (2002) [17], who reported a mean item score in the HPLP II of 2.44 in women with known CHD and lower than the findings of Thanavaro, Moore, Anthony, Narsavage & Delicath (2006) [18], who reported a mean item score in the HPLP II of 2.62 in women without prior history of CHD. The poor health promoting behaviors in the present study can be explained by the fact that rural women may have different conceptions of health and personal responsibility toward health behaviors, when compared to urban women. According to Pierce, (2001) [19], rural women have been found to define health as the ability to work and carry out usual tasks, also, they are found to be less concerned with comfort, and life-prolonging aspects of care than their urban counterparts. In addition, rural women tend to have more chronic diseases, than their urban counterparts and they are more likely to have a lower socioeconomic status and both these factors contribute to making them less likely to adopt health protective behaviors [20-23].

In the present study, women had the highest mean item score in nutrition and followed by interpersonal relations, which is similar to the findings of Thanavaro, et al., (2006) [18]. Despite the fact that a number of studies have shown that physical activity had positive effects on menopausal symptoms and prevention of arthritis, osteoporosis and cardiovascular diseases [24-28], the level of physical activity reported by women in the present study was the lowest health promoting behaviors practiced, which is similar to the mean item score of physical activity among Iranian middle-aged women which was 1.7, indicating a low level of physical activity among them [29]. Also, similar to Shin, Lee, Lee, Song (2007) [30] findings that the least behaviors of Korean middle-aged women was physical activity. This finding can be supported by the National Center for Chronic Disease Prevention and Health Promotion (2003) [31] report that 56% of women do not have adequate physical activity. Also, women may not participate in physical activity because of household and caretaking responsibilities, comorbid conditions such as arthritis, lack of appropriate facilities and it may be due to cultural differences.

Women's cardiovascular risk score was positively correlated to the total health promoting behaviors scale, and HPLPII subscales of physical activity, and nutrition. These findings were similar to Speake, Cowert, and Pellet (1989) [32] who found that positive perceptions of present health were associated with higher scores of nutrition, interpersonal relationships, and self-actualization. Also, perceived health status and physical health has been shown to be related to the performance of physical activity, involvement in interpersonal relationships, good nutrition, and spiritual growth behaviors in older community-dwelling women [33]. However, finding differs from that of previous studies that reported no relationship between CVD risk and risk-reducing behaviors [17]. Findings of the current study can be explained by the fact that women at high-risk for CVD were probably well motivated to change their lifestyle and may have received preventive advice and medical treatment. This also supported by the notion that risk perception acting as a motivator for lifestyle change.

Health promoting behavior was not correlated to age, marital status, education, monthly income, or number of family members. These findings are similar to the findings of Oliver—McNeil & Artinian (2002) [17], who found no significant relationship between education and health—promoting lifestyle as well as no significant relationship was found between age and health—promoting lifestyle. However, findings are different from Lee & Wang (2005) [34] findings who reported a significant positive correlation between age and HPLP. Also there was a significant positive correlation between educational level and HPLP among Iranian middle-aged women [35] and [18], who reported that HPLP was related to education in women without prior history of CHD. This finding can be explained by the fact that the majority of women in this study were illiterate or had received only primary education.

Marital status did not show any correlation with HPLP. This finding is similar to Morowati-Sharifabad et al., (2006) [35] who reported no correlation between marital status and HPLP among Iranian middle-aged women. This can be explained by the fewer numbers of single women in this study and the fact that the majority of participants were married. This finding is not consistent with the study findings of Jordanian women who reported a higher level of HPLP among married women [36].
Limitations of the study:

The results of this study are limited in their generalizability because they were obtained using a convenience sample of women from one teaching hospital. Also, the study was limited to those women without previous history of CVD. Another limitation of the study is the use of questionnaires that are self-reported. Possible reactivity in completing the questionnaires in a socially desirable direction can occur. In addition, participants may have overestimate or underestimate their health promotion activity.

Conclusion:

The study findings provided new information about the health promoting behaviors among women in one of the rural areas in Egypt. Women do not practice health promoting behaviors on a regular basis. The identification of hindrances to healthy cardiovascular behaviors is the first step for the achievement of effective risk reduction interventions targeted and tailored to women at high risk for CVD. Health care providers must be influential in risk factor reduction and promoting cardiovascular health for women of all ages.

Recommendations and Implications:

The feature of HPBs among middle-aged Egyptian rural women as a developing country is different from industrialized developed and also non-Muslim countries, thus, it is crucial that health professionals should be aware of the special needs of middle-aged women to help them promote healthy lifestyles within their cultural context. This can be achieved by developing primary prevention programs to promote healthy lifestyles that are culturally appropriate for illiterate women with low socioeconomic status. Low-income women may be at particular risk for CVD, thus nurses are in the ideal position to assess socioeconomic status and design specific interventions for this group of women.

The role of physical activity in preventing and controlling CVD is well established. Nurses, acting as patients’ advocates, should educate women about the importance of establishing a habitual exercise pattern. Also, nurses can assist women to lose weight by designing a realistic and affordable dietary planning. Future study is recommended in order to explore barriers and facilitators of HPBs in middle-age women.

References

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