



# Cardiovascular Risk Perception among Iranian Women with type 2 Diabetes Mellitus

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## Abstract

**Objective:** Cardiovascular disease (CVD) is one of the fatal complications of diabetes mellitus. The mortality of CVD is higher in diabetic persons. Women are at a higher risk for CVD. The purpose of this study is to determine the perception of CVD risk among women with type 2 diabetes mellitus.

**Materials and Methods:** This cross-sectional study was conducted among 58 diabetic women with type 2 diabetes in a Diabetes clinic in Qaen, South Khorasan province, Iran. The attitude of participants towards CVD was assessed by a modified RPS-DD questionnaire. Data were analyzed with SPSS version 20.

**Results:** The participants aged from 31 to 66 years old. The mean duration of diabetic diagnosis was  $7 \pm 4.88$  years. Majority of them were literate (56.9%), married (89.7%), had low income (52%) and were housekeepers (94.8%). Almost half the participants believed they had personal control over cardiovascular risk. 69% had optimistic attitude towards not getting CVD and 60.3% had a moderate level of concerns about cardiovascular risks. Also 80% had knowledge about the cardiovascular risks.

**Conclusion:** Risk perception plays an important role in preventing CVD. A comprehensive educational program for changing the attitude toward CVD is recommended.

**Keywords:** Cardiovascular diseases, Diabetes mellitus, Health, Perception, Women

## Introduction

Cardiovascular disease (CVD) is the major cause of death in middle- and low-income countries and accounts for 80% of deaths in the world (1). In Iran, CVDs caused approximately 90 000 deaths in 2010. Since Iran does not have a classified death registration system, it is difficult to estimate the annual cause of cardiovascular deaths in this country (2,3).

Diabetes is defined as “a state of premature cardiovascular death” (4). Patients suffering from diabetes are at a higher risk for heart diseases (5). There is no valid statistics on diabetic population in Iran. However, according to the International Diabetes Federation, diabetic population in Iran was estimated to be over 4.3 million in 2013 and was predicted to increase until 2035 (6).

In middle-income countries as health policy is focused more on infectious diseases, women do not have enough knowledge on CVD (7). This concern becomes more significant as major causes of death in women worldwide are CVDs, which could be due to their greater life expectancy than men (8,9). Diabetes which is a chronic condition requires full understanding. However, health literacy is

very low among most of diabetic patients which can increase the diabetic related complications (10). According to health belief model perception of a risk is a key factor in decision making which will ultimately leads to behavioral changes that helps to reduce the risk factors such as weight loss and smoking cessation (11,12).

Although some research has been conducted on the perception of CVD in diabetic populations, little is known about the perception of diabetic women towards CVD in Iran. The purpose of this study was to determine the perception of cardiovascular risk among Iranian women with type two diabetes mellitus.

## Materials and Methods

This descriptive cross-sectional study was performed at a Diabetes clinic in Qaen, South Khorasan. Data were gathered from the patients attending the Diabetes clinic during February 2014. Fifty-eight women diagnosed with type 2 diabetes participated in this study. Data were gathered through random sampling. Data collection instrument was a 4-section questionnaire which included demographic, socioeconomic, health behavior and per-

Received 9 March 2015, Accepted 7 June 2015, Available online 1 July 2015

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ception risk for CVD. Demographic and socioeconomic information included age, educational level, marital status, working status, living place and income. Health behavior was assessed by two self-reported question asking about smoking and doing exercise. Perception risk for CVD was measured by a modified RPS-DD questionnaire which is a Likert scale for measuring patient's perception about the risk of getting CVD. This questionnaire includes general attitude toward getting CVD, patient's attitude toward health risk and risks of getting CVD for people in the general public. Both general attitude and patient's attitude scored between 1 to 4 while the last item which is risk of CVD in general public scored between 0 to 3. Participants were asked to circle the number in each question.

## Results

The participants aged from 31 to 66 years old. Characteristics of the 58 participant are shown in Table 1. The mean duration of diabetic diagnosis was  $7 \pm 4.88$  years. Majority were relatively literate (56.9%) and had passed the elementary level. Most of them were unemployed and housekeeper (94.8%). Also 65.5% did not do any exercise (Table 1). 56.9% of the participants believed they had personal control over cardiovascular risk. 69% had optimistic attitude towards not getting CVD and 60.3% had a moderate level of concerns about cardiovascular risks. Also 80% had knowledge about the cardiovascular risks.

## Discussion

In this study, most patients were optimistic about not getting CVD. They also believed they have enough knowledge on CVD risks and are able to control their disease. The result of this research is in opposition with the result

achieved from the survey by Allen et al (5) who believed that women with type 2 diabetes were overly pessimistic about their cardiovascular risk.

It is important to evaluate the patient's perception whether it is realistic or unrealistic. Mostly, perception toward a disease is considered to be different from the actual risk (5). Optimistic perception appears when people believe that they are at lower risk compared to others (12). It has been shown that unrealistic optimism is related with atherosclerosis (13). However, many other studies show that heart disease patients, who have an optimistic view, have a lower rate of myocardial infarction and mortality rate (14-16).

## Conclusion

Cardiovascular risk perception plays an important role in preventing CVDs. It is necessary for diabetic patients to understand their real risk of heart disease. This will help them to manage their disease and prevent further complications.

## Ethical issues

Informed consent were obtained from patients.

## Conflict of interests

The authors declare that they have no conflict of interests.

## Acknowledgments

We would like to thank clinical managers at Shohada hospital for their help and support.

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**Table 1.** Characteristics of the Participants

Characteristics	N = 58
Mean Diabetic age, years $\pm$ (SD)	7 (4.88)
Marital status	
Single	2
Married	52
Widowed	4
Living place	
City	53
Village	5
Income (IRR)	
Under 5 200 000	30
5 200 000	13
More than 5 200 000	15
Exercise	
Yes	20
No	38
Cigarette	
Yes	2
No	56

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