



# Diet behavior of Employees at a Medical Sciences University in Tehran, Iran: Iran Health Day 2015

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## Abstract

**Introduction:** Diet behavior plays an important role in non-communicable disease (NCD). The theme of World Health Day 2015 was "improve food safety from farm to plate (always and everywhere)." The present study assessed the diets of employees at a medical university in Tehran, Iran on Iran Health Day 2015.

**Methods:** This cross-sectional study assessed the diets of 468 employees of a medical university in Tehran on World Health Day 2015. The subjects completed questionnaires on demographics and diet behavior. The data was analyzed using SPSS version 22 software. Independent samples *t* test or its non-parametric equivalent were used to compare groups.

**Results:** The mean age of the subjects was 33.45 (SD: 13.19) years. Of these 52.7% were male, 50.8% had university degrees and 42% were obese or overweight. The mean score of the diet questionnaire was 26.15 ( $\pm 4.46$ ). The highest score was 36 and the lowest was 15. Although the diet questionnaire score was significantly higher for female subjects, there was no significant relationship between educational level and diet questionnaire score.

**Conclusion:** This study showed that few employees ate breakfast and more than 50% did not restrict their use of sugar and sweets. Female employees scored higher on the diet questionnaire. Overall, diet should be improved through attractive types of continuous education.

**Keywords:** Diet, Behavior, Lifestyle, Iran, Global health

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## Introduction

Worldwide, the burden of communicable disease and maternal, neonatal, and nutritional disorders declined between 1990 and 2013, whereas the burden of non-communicable disease (NCD) increased.<sup>1,2</sup> A sustainable development goal is a global framework to reduce premature deaths from NCDs by one-third. Nutrition-related NCD is important because remarkable transformations of food systems have resulted in a rapid increase on NCDs in low- and middle-income countries.<sup>3</sup>

Diet plays an important role in NCDs such as cardiovascular disease,<sup>2,4-13</sup> diabetes,<sup>2,5,8,12</sup> cancer,<sup>2,12,14</sup> mental disorders,<sup>15-17</sup> and chronic obstructive pulmonary disease.<sup>18</sup> Unhealthy diet increases the risk of NCDs and provides an opportunity to intervene perfectly, appropriately, and synergistically on

more than one risk behavior concurrently to prevent NCDs as a whole.<sup>12</sup> It has been recommended that the workplace is an appropriate field to evaluate lifestyle intervention such as promotion of a healthy diet because many adults, regardless of socio-economic status, lifestyle, and risk profile can be targeted at once.<sup>9</sup>

Globalization of the food supply has increased the need to strengthen food safety. For this reason, the World Health Organization (WHO) is promoting efforts to improve food safety by making the theme of World Health Day 2015 "improve food safety from farm to plate (always and everywhere)."<sup>19</sup> The first step to promoting a healthy diet in a given society is to assess diet behavior; thus, the present study assessed the diet behavior of employees at a medical sciences university in Tehran on Health Day 2015.

## Methods

This cross-sectional study was carried out from April 21, 2015 to April 27, 2015 (Iranian Health Week) at a medical university in Tehran. The De Morgan table was used to calculate the sufficient number of cases as 364 and non-probability sampling used. The subjects were employees of the university who completed demographic and diet behavior questionnaires. Demographic questionnaire consisted of variables such as age, gender, educational level, weight and height.

The diet behavior questionnaire included questions about the consumption of sugar and sweets, bread, cereals, and similar foods, fruits, vegetables, dairy products, proteins such as meat, fish, chicken, eggs and nuts and whether or not the subject read food product labels and ate breakfast. This questionnaire was the Persian version of the health-promoting lifestyle profile (HPLP) validated by Zeidi et al.<sup>20</sup> The questionnaire contained nine questions, with possible responses of 1 (never), 2 (sometimes), 3 (often) and 4 (routinely). The highest score on the diet behavior questionnaire was 36 and the lowest was 9. A higher score indicates better diet behavior.

## Statistical Analysis

The data was analyzed using SPSS version 22. *P* value lower than .05 was considered significant for all analyses. Normal distribution was tested by one-sample Kolmogorov-Smirnov test. The independent samples *t* test and its non-parametric equivalent were used to compare age, body mass index (BMI) and diet behavior score by gender and educational level.

## Results

Of the 468 participants, 52.7% were male, 50.8% had university degrees and 42% were obese or overweight. The mean age ( $\pm$  SD) of subject was 33.45 ( $\pm$ 13.19). The mean ( $\pm$  SD) diet behavior questionnaire score was 26.15 ( $\pm$ 4.46). Tables 1 and 2 show the descriptive data.

The diet behavior questionnaire scores and age were significantly higher in female subjects whereas the BMI was

**Table 1.** Demographics and Diet Behavior Score of Participants

	Mean $\pm$ SD
Age (y)	33.45 $\pm$ 13.19
BMI (kg/m <sup>2</sup> )	24.20 $\pm$ 3.44
Diet behavior score	26.15 $\pm$ 4.46

**Table 2.** Gender, Educational Level and Weight of Participants

	No.	Validity (%)
Gender		
Male	235	52.7
Female	211	47.3
Education level		
University degree	233	50.8
High school diploma or less	226	49.2
Weight		
Obese or overweight	178	42
Normal	246	58

significantly higher in males (Table 3).

Although there was no significant relationship between education level and diet behavior questionnaire score, age and BMI were found to be significantly higher in employees who had a high school diploma or fewer years of education (Table 4).

## Discussion

The results showed that only 58% of participants had a normal BMI and that the diet behavior scores were higher for females. There was no significant relationship between diet behavior score and education level.

Kim et al<sup>21</sup> reported that education and gender are significant determinants of health-promoting lifestyles among Arabs and Koreans in the United Arab Emirates. Fincham et al<sup>22</sup> showed that demographic variables such as gender could explain a health-promoting lifestyle. Shaheen et al studied health-promoting behavior at a university in Jordan. The mean ( $\pm$ SD) score of HPLP nutrition subscale of students was 20.66 ( $\pm$ 4.37) which was lower than for the subjects of the present study. They also found that gender could be a determinant of a health-promoting lifestyle.<sup>23</sup>

Mohammadian and Mousavi studied the lifestyles of university students in Kashan, Iran and found a significant relationship between gender and the nutritional status of subjects.<sup>24</sup> Geok et al<sup>25</sup> asked student nurses in Malaysia to complete the HPLP and found that the spiritual growth, interpersonal relations and stress management had highest score respectively while the physical activity, health responsibility and nutrition had lowest score respectively.

Hwang et al<sup>26</sup> studied predictors of health behavior in Korean blue-collar workers and showed that education level was a significant predictor. Shafieyan et al studied the lifestyle of patients referred to health care centers in Ilam, Iran in 2014. They reported the mean ( $\pm$ SD) of the HPLP nutrition scale to be 26.35 ( $\pm$ 3.47) for hypertensive patients and 26.65 ( $\pm$ 3.74)

**Table 3.** Comparison of Age, BMI and Diet Behavior Score by Gender

	Gender	Mean $\pm$ SD	<i>P</i> Value
Age	Male	30.97 $\pm$ 11.15	<.0001
	Female	36.16 $\pm$ 14.79	
BMI	Male	24.65 $\pm$ 2.90	.007
	Female	23.69 $\pm$ 4.00	
Diet behavior score	Male	25.22 $\pm$ 4.24	.0001
	Female	27.55 $\pm$ 4.35	

Abbreviation: BMI, body mass index.

**Table 4.** Comparison of Age, BMI and Diet Behavior Score by Educational Level

	Educational Level	Mean $\pm$ SD	<i>P</i> Value
Age	High school diploma or less	35.45 $\pm$ 15.30	.002
	University degree	31.56 $\pm$ 10.48	
BMI	High school diploma or less	24.83 $\pm$ 3.38	<.0001
	University degree	23.60 $\pm$ 3.41	
Diet behavior score	High school diploma or less	26.12 $\pm$ 4.47	.796
	University degree	26.23 $\pm$ 4.48	

Abbreviation: BMI, body mass index.

for the control group. There was no significant difference between the hypertensive and control groups.<sup>27</sup> This result is compatible with the findings of the present study.

Mahdipour et al studied the effect of educational intervention on a health-promoting lifestyle and reported that although nutrition was one dimension of lifestyle, its score did not change significantly after educational intervention.<sup>28</sup> Safabakhsh et al<sup>29</sup> examined the effect of health-promoting programs on patient lifestyle after coronary artery bypass surgery and found that the HPLP nutrition subscale score increased significantly after intervention in the experimental group (19.7±0.135 versus 31.3±0.258). The HPLP nutrition subscale score of these patients before intervention was lower than that of the present study, although the score was higher after intervention.

Chen et al found an association between breakfast eating habits and health-promoting lifestyle on suboptimal health status in Southern China and showed that 90% of samples had a normal BMI and 19.6% of participants reported “scarce” breakfast eating habits. They found a significant association between breakfast eating habits and healthy lifestyle.<sup>30</sup> In the present study, 57.7% of personnel always ate breakfast and 58% had a normal BMI. Inal et al<sup>31</sup> found that only 26.6% of subjects ate breakfast as a family and 57.8% ate breakfast at home. They reported that 68% of mothers had a normal BMI. These results are somewhat compatible with the results of the present study.

## Conclusion

The present study showed that, although diet is an important factor in NCDs, diet behavior was not compatible with a healthy diet. The results indicate that females paid more attention to a healthy diet. Eating breakfast daily is important and other healthy diet behaviors must be encouraged.

## Authors Contributions

All authors contributed equally to the preparation of this paper.

## Conflict of Interest Disclosures

No conflict of interest.

## Ethical Approval

Not applicable.

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## Research Highlights

### What Is Already Known?

Diet behavior plays an important role in NCD. Healthy diet could prevent risks of many NCDs.

### What This Study Adds?

Although diet is an important factor in NCDs, diet behavior was not compatible with a healthy diet. Women pay more attention to a healthy diet. Eating breakfast daily is important and other healthy diet behaviors must be encouraged.

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