A survey of cardiovascular condition, risk factors, and general health of university staff employees

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ABSTRACT

The purpose of this descriptive research was the examination of cardiovascular conditions of 90 university staff employees, though Risko and GHQ-28 questionnaires.

The variables of the research include: age, heredity, weight, physical exercises, cholesterol, systolic pressure, sex and General Health Questionnaire (GHQ-28). The analysis of the data showed that 74.4% of the subjects were from 2.7 to 29.5 kg overweight. 91.1% of them, according to their own claim, were not addicted to any kind of drugs or cigarettes. The amount of cholesterol of 58.9% of the subjects ranged from 206 to 230 and the systolic pressure of 62.2% of them was 120 mmHg. 53.3% of the subjects were in Risk General Average condition. 1.1% of them were in Risk at Dangerous Level condition.

Finally, the observed Pearson's correlation between the two variables of Risko and GHQ-28 was -0.036, which, according to the critical table (chart), means there is no significant correlation between these two variables.

Key words: Risko, GHQ-28, cardiovascular.

INTRODUCTION

Physical health includes the optimum functioning of every single cell or every single body part and their coordination with other cells or other body parts. The soundness of all bodily systems is very important. Cardiovascular system is one of those systems whose soundness guarantees the continuation of life. Therefore, the removal of risk factors of cardiovascular system is of special significance and is the first stage in keeping the blood circulation system sound and safe.

Nowadays, the death rate resulting from cardiovascular diseases is increasing rapidly. The treatment of cardiovascular diseases has its own limitations and most of the times the therapeutic methods have undesirable consequences. Therefore, one of the best solutions to cardiovascular problems is the prevention of the disease which would be possible by balancing the factors susceptible to cardiovascular disease and paving the way for them. However, the identification of susceptible factors or risk factors may be the first stage in balancing them and subsequently in the prevention of the cardiovascular diseases. The susceptible factors or the factors setting the stage for the cardiovascular diseases are those factors which have a major role in causing problems in the blood circulation system and in medical terminology, are called risk factors. These factors include: hypertension, high cholesterol, high triglyceride, overweight, smoking and stress. These factors, in addition to heredity, age and sex are usually known as the threatening factors relevant to heart attack, or factors causing problems which threaten cardiovascular system. Most of the studies and researches done on the effects of risk factors on the cardiovascular system support the fact that the presence of one or some of the risk factors, specially in the long term, causes blood circulation diseases such as cardiac muscle anemia, coronary heart

disease, heart attack, etc. For instance, a combination of lack of physical activities, smoking and high-fat nutrition increases the risk of cardiac diseases much more than the risk each of these factors may pose individually.

A person who has achieved cardiovascular Fitness has a very efficient blood-pumping system because the heart is a muscle, it can actually grow longer and stronger when it is exercised regularly. A fit heart is a more efficient heart doing its job with less effort. Over a year, a fit person heart beats 15,768000 fewer times than a sedentary person heart. A lower pulse rate in adults means that their hearts can do the same amount of work with fewer beats. That gives the heart more time rest between beats and means that a stronger heart can supply more oxygen to organs and muscles during strenuous exercise[3].

Coronary Artery Disease (CAD) is characterized by a variety of physiological condition. The primary result of CAD is obstruction to the blood flowing through the arteries that supply nourishment to the heart muscle. These conditions include atherosclerosis, arteriosclerosis, arthritis, coronary artery spasms, coronary thrombosis, coronary embolus and infectious diseases. Hypertension plays a major role in causing the disease, with atherosclerosis and hypertension being the most prevalent syndromes leading to CAD[3].

It is not widely recognized that the common cause of death in Women, us well as men, are coronary artery disease. The only difference between the sexes is that women have clinical symptoms about ten years later than men. Because of this, CAD in women has been considered an elderly woman's problem[3]. Three risks are considered in coronary artery disease: These are hypertension, elevated serum cholesterol, and cigarette smoking. Some factors can not be changed or modified, such as: age, gender, ethnicity, and heredity[3]. Hypertension, often called the silent disease, is one of the major contributors to coronary artery disease. In adults, the definition of Hypertension is when the systolic pressure is 140 mm Hg or above and the diastolic pressure is 90 mm Hg or above. You will recall that the systolic pressure is the pressure against the walls of the arteries during the contraction of the heart and diastolic is the pressure when the heart is at rest[3].

Platelet aggregation and thrombosis are increased in smokers, leading to a decreased diameter of the arterial lumen and causing move damage. The High Density Lipoproteins (HDLS) are also lowered by smoking[3]. Obesity is defined as an excessive accumulation of fat on the body. Closely associated with obesity are hypertension, hypercholesterolemia, elevated triglycerides, increased blood glucose levels, reduced carbohydrate tolerance, sedentary lifestyle, and reduced HDL levels[3]. Another factor related to cholesterol and obesity is a diet high in Saturated fat. Saturated fat is dietary fat derived primarily from animals. It is present in meats, dairy products, coconut oil, palm oil, chocolate, nondairy whipped toppings and coffee creamer. Saturated fat contributes significantly to increasing the LDL (Low-Density Lipoprotein) levels of cholesterol[3].

Regular exercise reduces the incidence of atherosclerosis, causes the regression of atherosclerosis[7,15,18,19] and even corrects the endothelial function in patients with coronary artery disease[11,23]. Exercise training in known to exert beneficial effects on blood vessels of both normal and atherosclerotic animals[4, 24]. Several possible mechanisms of exercise-induced atheroprotective effect have been proposed, such as an increase in HDL cholesterol level[12, 2] decreases in total cholesterol levels or oxidation of LDL cholesterol, a decrease in the production of atherogenic cytokines, and an increase in the production of atheroprotective cytokines[20].

Men have more skeletal muscle than women and that these gender differences are greater in the upper body. Independent of gender, aging is associated with a decrease in skeletal muscle mass that is explained, in large measure, by a decrease in lower body skeletal muscle occurring after the fifth decade[13].

Significant changes in total lipoprotein cholesterol were only observed in the high-intensity group. These data suggest that high-intensity training is more effective in improving cardiorespiratory fitness than moderate intensity

training of equal energy cost. These data also suggest that changes in coronary heart disease risk factor are influenced by exercise intensity (8). Nonetheless, most evidence suggests that exercise and weight loss affect blood pressure (10). In the current trial, weight loss correlated more strongly with reduction in both systolic and diastolic blood pressure than did exercise, though exercise alone also had positive effects[21].

General Health Questionnaire (GHQ) 28 the most used self-report instrument of assessing mental health in epidemiological studies, scored dichotomously (17).The GHQ –28 is a widely used instrument for detecting psychological distress associated with acute problems in medical settings. The 28 items yield four robust factors with acceptable psychometric properties: Somatic Symptoms, anxiety and insomnia, social dysfunction, and severe depression. High internal consistency has been reported with ranging from 0.82 to 0.93, reliability coefficients as high as 0.90 have also been reported[9].

Trait anxiety scores were higher in women (but lower than those reported in two previous studies[22,1] and the most significant gender difference was found in sensitivity to reward, which corrected with anxiety and psychological distress in females. men appeared to be more disposed to engage in behaviors that they considered gratifying. On the other hand, sensitivity to punishment scores correlated strongly with psychological dysfunction anxiety scores in both genders, the most avoidant and fearful subjects had poorer health[17].

Stressful stimuli in personal life can rang from socio-economic disadvantage or health problems to lack of social support or sentimental frustrations. Although more studies are necessary to assess the weight of these different factors in the perception of stress in personal life, there is evidence that socio-economic factors have a well-defined influence on emotional status, behaviors and health[6,14,16].

Methods and Procedures

Ninety subjects (8 females and 82 males) took part in this academic research. The subjects were the university staff employees working in different administrative parts of the university. An attempt was made to create a calm and peaceful environment for the employees to fill out the Risko and GHQ-28 questionnaires. Risko questionnaire is about cardiovascular health and GHQ-28 questionnaire is about general health. Both of these questionnaires, in their own right, are valid and creditable enough.

Given the fact that the variables in this research are described as they exactly are, and no interference or modification is made by the researchers, a descriptive method of research was used. The variables of the research are as follows:
1. Age group: including six age groups from 10 to 70.
2. Heredity: by which the past record of cardiovascular diseases in the subject's family is meant.
3. Weight: which was calculated using the following formula

$$P = T - 100 - \frac{T - 150}{4} \qquad olrene$$

4. Smoking
5. Physical exercises
6. Cholesterol or the percentage of fat in the meals is reported according to the statements of the subjects.
7. Systolic and diastolic pressures were measured using a sphygmomanometer.
8. The sex of the subjects.
9. General Health Questionnaire (GHQ-28), including: physical symptoms, anxiety and insomnia, severe depression.

In order to analyze the collected data statistically, the SPSS software was used.

RESULTS AND DISCUSSION

A permanent long-time mental pressure, which has existed for many days and years, has been recognized as a dangerous factor resulting in cardiovascular diseases. Mental pressure is sometimes accompanied with other dangerous factors such as blood pressure, overweight, smoking and inactivity, which, in this case, its effect its intensified[5].

All of us are sometimes under mental pressure or stress. Stress may not necessarily be bad but what is important is the way we handle stress. People, who are impatient in the dealing with stress, and fuss over doing things, are more exposed to coronary heart diseases. On the contrary, people who do not hurry at all and are more carefree and easygoing are less subject to coronary heart diseases than other people. The information obtained from the research showed that the largest frequency 54.4% existed in the range of 31 to 40 years of age and 98.9% of the subjects were below 50 (Table 1).

Table - 1: The information about blood pressure of the subjects.

B. P. (mm Hg)	N	Percent of subjects
120	56	62.2
140-160	8	11.1
Below 120	24	26.7

According to the obtained information, 45.6% of the subjects had no past record of cardiovascular diseases in their families and 37.8% of them had, in their families, at least one person with a cardiovascular diseases record. Also 25.6% of the subjects deviated ± 2.27 kg from the standard weight. 31.1% of the subjects were from 16.3 to 22.7 kg overweight. 4.4 % of them were from 23 to 29.5 kg overweight. 74.4% of the subjects of the research were from 2.7 to 29.5 kg overweight.

Regarding smoking, 91.1% of the subjects of the research, according to their own claim, have not been addicted to any kind of drugs or cigarettes. 2.2% of the subjects smoked from one to two cigarettes a day and 5.6% of them smoked, at the most, ten cigarettes a day. Only 1.1% of the subjects smoked at least twenty cigarettes a day (Table 2).

Table - 2: The final analysis of the information obtained from the subjects according to the scores of the Risko table.

Position	N	Percent of subjects
Risk well below average	1	1.1
Risk below average	20	22.3
Risk generally average	48	53.3
Risk moderate	20	22.1
Risk at dangerous level	1	1.1
Dangerous, urgent, see your doctor now	0	0

The subjects of the research could voluntarily take part in sporting activities two times a week and each time, at the most, for three hours. 34.4% of the subjects have been involved in semi-active jobs and have taken part in sporting activities just by chance. Also, 31.2% of them had inactive jobs and did not take part in any of the sporting activities at all. According to the obtained information, the amount of cholesterol for 58.9% of the subjects was from 206 to 230.

76.6 % of the subjects were in a good acceptable position with regard to the threatening cardiovascular indices. Finally, the observed Pearson's correlation between the two variables of Risko and FHQ-28 was -0.036, which, according to the critical table (chart), means there is no significant correlation between these two variables.

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