An investigation of risk factors for coronary heart disease in a greek population

Kiritsi Freideriki[1], Tsiou Chrisoula[1], Gouvelou-Deligianni Georgia[2], Stamou Ageliki[2]

1. Assistant professor of Nursing, Technological Educational Institute of Athens, Department of Nursing.
2. Professor of Clinical Practice, Technological Educational Institute of Athens, Department of Nursing.

ABSTRACT

Aim of the study: The aim of this study was to investigate the existence of predisposing factors for coronary heart disease in an urban population. It is hoped that an indirect result of this study will be the prevention of cardiovascular diseases in the community.
Background: Coronary heart disease is a multifactorial disease. There are various predisposing risk factors for coronary heart disease, such as lipidemia, hypertension, smoking, obesity and heredity.
Design/Methodology: This was a clinical study carried out in the Municipality of Kallithea in Athens. The sample consisted of 235 people who were users of the Primary Health Care Units in Kallithea. The sample population was informed of and agreed to participate in the study. Research material was collected by taking a medical history, body measurements and blood tests.
Findings: It was established that: a) the mean total cholesterol level for the entire study population was 214.48 mg/dl, while a large proportion of the population (42.98%) had cholesterol higher than 230 mg/dl; b) the women also had higher total cholesterol and HDL levels than the men (P<0.001), and consequently had a lower atheromatic index; c) individuals aged 61-70 had higher lipoprotein levels; d) those with hypertension and the obese had worse lipoprotein levels than those with normal blood pressure and weight; f) individuals in manual occupations had lower HDL (48.88 mg/dl) than office workers (53.76 mg/dl) or those in other occupations (53.28 mg/dl) (P<0.001); f) street cleaners differed statistically (significant) from the rest of the population (P<0.050), displaying worse mean blood lipid levels, a higher proportion of family history and a higher proportion of addiction to smoking.
Conclusions: This research provides useful information about the health characteristics of the urban population and indirectly contributes to preventive health care planning in the community.

Keywords: community care, coronary heart disease, health promotion, vascular disease, public health nursing, quality of life, lipidemia

Correspondence:
Chrisoula Tsiou, 16 Iliados St, Pangrati, Athens
11633, Greece
Tel: 210-7524667, Mobile 6976882995

Pages 41-50
ISSN:1108-7366

INTRODUCTION

Cardiovascular diseases are the most significant cause of early death and morbidity among the European population. Similarly, in Greece, coronary heart disease is one of the principal causes of death [1, 2].

Coronary heart disease is caused by atherosclerosis and a number of other factors. The disease is considered multifactorial and the associated factors are called risk factors [3].

BACKGROUND

The risk factors that can be modified are smoking,hypertension, hypercholesterolemia, obesity, a sedentary lifestyle, diabetes, low consumption of fruit and vegetables, and stress. Non-modifiable factors of course include heredity, gender and age [4,5,6,7,8].

It is believed that the modification or elimination of risk factors may reduce mortality and morbidity associated with cardiovascular diseases [1].

European associations concerned with atherosclerosis, cardiology and hypertension have been working together for many years to establish guidelines aiming at the prevention of cardiovascular diseases. Their guidelines focus on dealing with risk factors [9]. Specific recommendations include: A change of lifestyle, with the goal of avoiding negative feelings, giving up smoking, changing dietary habits, increasing physical activity, controlling body weight, controlling blood pressure, controlling plasma lipids and raising the awareness of people with a family history [1].

THE STUDY

Aim of the study

The primary aim of the study was to identify and record risk factors for cardiovascular disease in a specific urban population. Indirectly, the knowledge of risk factors is useful in the planning of preventive health care programmes in the community.

Design/Methodology
Sample/Participants

This was a clinical study carried out in the Municipality of Kallithea in Athens in 2004. The sample consisted of 235 people (108 men and 127 women) who were users of the Primary Health Care Units in Kallithea. The sample population was informed of the study and agreed to participate in it. The study had the character of a programme of preventive checks.

Data collection

Research material was collected (a) by taking and recording the medical history, (b) by measuring blood pressure, weight and height, and (c) by blood tests.

In more detail, all the people in the sample were informed of the study a few days beforehand. Once they had signed that they agreed to be included in the research they went to a scheduled appointment with the municipal doctor without having eaten. All the measurements were taken from each person in the course of about 30 minutes, blood pressure always being measured before collection of the blood specimen. The number of people coming/scheduled for testing was no more than 30 per working day. The same measuring instruments were used for the entire sample population. Medical histories and interviews were taken by the same individuals, who had been appropriately trained so as to be able to participate in the programme.

The histories included general questions concerning age, gender, occupation, family status and nationality. Specific questions were also included concern current medical history, any family history of cardiovascular diseases, and smoking.

Blood was taken in order to test plasma lipoproteins (i.e. total cholesterol, LDL, HDL and atheromatic index).

Height and weight were measured in order to calculate Body Mass Index (BMI). BMI is currently the most widespread method of assessing obesity. Each person’s Body Mass

ISSN:1108-7366

Index was calculated on the basis of the formula: BMI = Weight (kg) / height $(m)^2$.

Data analysis

After all the research and laboratory material was collected, the general and specific characteristics of the population were correlated with the lipidemia test results. Thus, lipidemia was examined in terms of its relationship to gender, age, occupation, family status and nationality. Lipidemia was then examined in terms of its relationship to hypertension, obesity and smoking. Finally, two population subgroups (blind people and street cleaners) were isolated and their differences from the general population were examined with regard to lipidemia, family history and smoking.

For the statistical analysis of the data, the Statistical Package for the Social Sciences (SPSS) 13.0 for Windows and the Pearson correlation Sig. (2-tailed) test were used.

RESULTS/FINDINGS

Population characteristics (Table 1)

Gender: 46% of the sample were men, and 54% were women.

Table 1. Description of the sample population

Characteristics	Number of people	Percent (%)
Men	108	46
Women	127	54
Aged 20-30	12	5.1
Aged 31-40	14	6
Aged 41-50	42	17.9
Aged 51-60	48	20.4
Aged 61-70	56	23.8
Aged >71	63	26
Married	148	62.9
Single	42	17.9
Widowed	30	12.8
Divorced	15	6.4
Manual work	93	39.57
Office work	54	22.98
Other work e.g.housewives, pensioners, etc.)	88	37.45
Greek	188	80
Foreign	47	20
Normal blood pressure (<140/90 mm Hg)	139	59.1
Hypertension (>140/95 mm Hg)	70	29.8
Hypotension (≤100 mm Hg)	17	7.2
Normal weight (BMI = 18.5-24.9 kg/m^2)	53	22.5
Overweight/obese (BMI>25 kg/m^2)	168	71.5
Underweight (BMI <18.5 kg/m^2)	14	6
Smokers	68	28.9
Non-smokers	167	71.1
General Kallithea population	197	83.9
Blind Kallithea residents	26	11.0
Kallithea street cleaners	12	5.1
Family history of cardiovascular diseases	131	55.7
Mean total cholesterol 214.48±38.74.	235	100
High total cholesterol over 230 mg/dl	91	42.98

Age: The sample population covered six age categories: 20-30, 31-40, 41-50, 51-60, 61-70 and 71 and above. Age band 20-30 accounted for 5.1% of the population. Age band 31-40 accounted for 6% of the population. Age band 41-50 accounted for 17.9% of the population. Age band 51-60 accounted for 20.4% of the population. Age band 61-70 accounted for 23.8% of the population and finally, the over-71 age band accounted for 26.9% of the population. The majority of the population under study (71.1%) was over 51.

ISSN:1108-7366

Occupation: For practical reasons, the occupations of the population under study were divided into three categories: manual, office and 'other' (e.g. pensioners, housewives, etc.). The statistics revealed that 39.57% of the sample performed manual work, 22.98% office work, and 37.45% various 'other' occupations.

Family status: In terms of family status, 62.9% of the sample were married, 17.9% were unmarried, 12.8% were widowed and 6.4% were divorced.

Nationality: Classification of the population according to nationality showed 80% of the sample to be Greek and 20% to be foreigners of various nationalities.

Blood pressure: The results of the measurements revealed that 59.1% of the population had normal blood pressure, 29.8% had hypertension and 7.2% had hypotension.

Body Mass Index: Calculation of the BMI for each person showed that 22.5% of the sample were of normal weight, 71.5% were overweight/obese and 6% were underweight.

Smoking: Smokers accounted for 28.9% of the population and non-smokers for 71.1%.

Social differentiation: Using the data obtained during the interviews, the population was divided into three social groups. The first group was the largest (83.9%) and represented the general population of users of the Municipality's services. They appeared to have no other particular social characteristic. The second group comprised 11% of the sample and consisted of blind people. The third group comprised just 5.1% of the sample and consisted of Municipality of Kallithea street cleaners.

Cholesterol levels: The mean total cholesterol level of the sample population was 214.48±38.74 and 42.98% of the sample had total cholesterol levels above 230 mg/dl.

The relationship of lipidemia to gender

Table 2 shows that the women in the sample displayed a higher mean total cholesterol level (216.93±42.192) than the men (203.11±38.883) P<0.001.

Table 2. The relationship of lipidemia to gender

Gender:	Total cholesterol #MV±SD	HDL #MV±SD	LDL #MV±SD	Atheromatic index #MV±SD
Men	203.11±38.885	46.75±19.379	128.44±34.618	4.77±1.552
Women	**216.93±42.192***	57.02±15.699	130.03±39.711	4.07±1.782

The relationship of lipidemia to age

Blood lipid levels were higher in the 61-70 age band (P<0.001) according to Table 3.

Table 3. The relationship of lipidemia to age

Age	Total cholesterol #MV±SD	HDL #MV±SD	LDL #MV±SD	Atheromatic index #MV±SD
20-30	122.00±20.000	51.08±15.132	90.36±26.383	3.85±2.340
31-40	201.79±30.167	45.21±12.729	114.00±32.938	5.29±3.832
41-50	205.44±36.949	51.60±14.789	124.24±30.134	4.23±1.387
51-60	214.77±48.777	**51.10±13.117***	**134.96±40.878***	4.44±1.374
61-70	221.63±40.886	**52.40±17.907***	**137.25±41.346***	**4.51±1.681***
71 and over	210.60±35.415	53.15±14.134	**126.72±33.242***	**4.25±1.144***

#MV: Mean Value, SD: Standard Deviation. *No Significant (P>0.001), Pearson correlation Sig. (2-tailed)

ISSN:1108-7366

The relationship of lipidemia to occupation

Table 4 establishes that a lower mean HDL lipoprotein level (48.88±12.299) was observed in manual workers than in office workers (53.76±14.568) or those in 'other' occupations (53.28±17.535) (P<0.001).

Furthermore, a higher mean total cholesterol level (216.70±37.956) was observed in those in 'other' occupations than in office workers (204.19±40.578) and manual workers (207.98±43.924).

Table 4 The relationship of lipidemia to occupation

Type of work	Total cholesterol #MV±SD	HDL #MV±SD	LDL #MV±SD	Atheromatic index #MV±SD
Manual	207.98±43.924	**48.88±12.299** *	129.83±37.935	4.45±1.388
Office	204.19±40.578	53.76±14.568	126.23±35.479	4.09±1.404
Other	216.70±37.956	53.28±17.535	130.85±38.533	4.56±2.134

#MV: Mean Value, SD: Standard Deviation. *No Significant (P>0.001), Pearson correlation Sig. (2-tailed)

The relationship of lipidemia to family status

Table 5 shows the blood lipid levels of people with different family status (married, unmarried, etc.). However, no statistically significant differences between people with different family status were observed.

Table 5. The relationship of lipidemia to family status*

Family status	Total cholesterol #MV±SD	HDL #MV±SD	LDL #MV±SD	Atheromatic index #MV±SD
Married	214.21±40.117	49.58±13.474	133.85±37.590	4.61±1.910
Single	197.45±44.463	52.03±13.844	115.05±35.681	4.02±1.300
Widowed	209.70±28.970	57.21±14.527	123.72±28.359	3.93±1.143
Divorced	213.27±57.289	57.75±24.941	132.29±52.550	4.14±1.351

#MV: Mean Value, SD: Standard Deviation. *No Significant (P>0.001), Pearson correlation Sig. (2-tailed)

The relationship of lipidemia to nationality

Table 6 shows that foreigners had higher mean total cholesterol levels (216.34±48.287) than Greeks (207.67±42.775).

Table 6. The relationship of lipidemia to nationality*

Nationality	Total cholesterol #MV±SD	HDL #MV±SD	LDL #MV±SD	Atheromatic index #MV±SD
Greek	207.67±42.775	52.57±15.626	127.39±35.411	4.31±1.782
Foreign	216.34±48.287	50.87±13.567	135.83±43.454	4.52±1.304

#MV: Mean Value, SD: Standard Deviation. *No Significant (P>0.001), Pearson correlation Sig. (2-tailed)

ISSN:1108-7366

The relationship of lipidemia to hypertension

Table 7 shows that hypertensive people had ower mean total cholesterol levels (212.20±43.117), HDL (50.20±13.392), LDL (131.96±39.171) and atheromatic index (4.45±1.385) than people with normal blood pressure. In contrast, people with hypotension had the best and most desirable lipid levels.

Table 7. The relationship of lipidemia to hypertension*				
Blood Pressure	**Total cholesterol #MV±SD**	**HDL #MV±SD**	**LDL #MV±SD**	**Atheromatic index #MV±SD**
Normal	208.89±39.425	54.00±14.613	128.19±38.970	3.85±1.032
Hypertension	212.20±43.117	50.20±13.392	131.96±39.171	4.45±1.385
Hypotension	199.88±44.096	54.12±11.999	117.06±37.987	3.82±1.286
#MV: Mean Value, SD: Standard Deviation. *No Significant (P>0.001), Pearson correlation Sig. (2-tailed)				

The relationship of lipidemia to obesity

Table 8 shows that worse mean total cholesterol (213.06±40.048), HDL (50.67±14.89), LDL (131.90±35.951) and atheromatic index (4.50±1.548) were observed in overweight/obese people than in people of normal weight. Underweight people, like those with hypotension, also had much better lipid levels.

Table 8. The relationship of lipidemia to weight*				
Weight	**Total cholesterol #MV±SD**	**HDL #MV±SD**	**LDL #MV±SD**	**Atheromatic index #MV±SD**
Normal	201.14±43.544	54.0±13.448	122.20±38.970	3.82±1.029
Overweight	213.06±40.048	50.67±14.89	131.90±35.951	4.50±1.548
Underweight	192.50±34.189	54.21±9.585	110.50±25.976	3.86±1.099
#MV: Mean Value, SD: Standard Deviation. *No Significant (P>0.001), Pearson correlation Sig. (2-tailed)				

The relationship of lipidemia to smoking

Table 9 shows that among smokers, the mean HDL cholesterol level was significantly lower (48.94±13.399) than among non-smokers (52.67±15.451), without this being a statistically significant difference (= no significant) (P>0.050).

Table 9. The relationship of lipidemia to smoking*				
Relationship with smoking	**Total cholesterol #MV±SD**	**HDL #MV±SD**	**LDL #MV±SD**	**Atheromatic index #MV±SD**
Smoker	202.70±36.984	48.94±13.399	126.19±33.465	4.54±1.726
Non-smoker	213.13±42.102	52.67±15.451	130.52±38.888	4.32±1.704
#MV: Mean Value, SD: Standard Deviation. *No Significant (P>0.001), Pearson correlation Sig. (2-tailed)				

ISSN:1108-7366

Differences between the general population and the social subgroups

As can be seen in Table 10, the group of blind people did not differ statistically from the general population (=no significant). In contrast, street cleaners (Table 11) displayed the worst blood lipid levels, which had a statistically significant difference (=significant) to those of the general population (P<0.050). A very high proportion of them (81.8%) had a family history of coronary heart disease and the majority of them (90.9%) were smokers

Table 10: Differences between the general population and the blind group

	General population	Blind	Level of significance (P)
Total cholesterol (MV±SD)	211.75±41.82	205.08±42.09	N.S.
LDL (MV±SD)	130.04±38.43	129.65±32.63	N.S.
HDL (MV±SD)	52.93±14.48	51.73±14.58	N.S.
Atheromatic index (MV±SD)	4.24±1.44	4.20±1.20	N.S.
Family history	51.8	57.7	N.S.
Dependence on smoking	28.7	34.6	N.S.

N.S. = No Significant (P>0.001), Pearson correlation sig. (2-tailed)

DISCUSSION

An analysis of the results revealed that the mean total cholesterol level of the study population (214.4mg/dl) was considerably lower than that previously found in a Greek urban population (239.4mg/dl) [10]. However, the results are not reassuring, given that 42.98% of the sample has total cholesterol greater than 230mg/dl and also displays one or more risk factors, which multiplies the relative risk of coronary heart disease (Table 1) [11].

The findings by gender (Table 2) show that while the women displayed higher mean total cholesterol and LDL levels than the men, they also had higher HDL. In contrast, the men had lower HDL. Consequently, the women displayed a smaller risk of atheromatosis, which is also demonstrated by their lower atheromatic index. These conclusions correspond with international studies which maintain that the high total cholesterol level in women is not a strong risk factor for coronary heart disease. However, it should be remembered that obesity, hypertension, a sedentary lifestyle, menopause and depression are more significant risk factors in women than in men [12]. The most significant risk factors among men are smoking, the presence of hypercholesterolemia, and heredity [11].

Increased age is a proven factor in increased cholesterol [4]. This is also confirmed by the present study (Table 3), as persons over the age of 51 had higher total cholesterol and HDL levels. They thus had a mean atheromatic index <5, while the mean HDL cholesterol level was high (> 50 mg/dl).

Among manual workers (Table 4), a lower mean HDL level (48.88mg/dl) was recorded than among office workers (53.76mg/dl) or among those in other occupations (53.28mg/dl). This finding contradicts previous authors, who argue that manual work and exercise increase HDL levels [13]. This particular finding may be related to gender, as in the present study manual occupations were performed principally by men who were smokers, while the 'other

ISSN:1108-7366

occupations' category included many housewives. Gender and smoking are known to have a negative effect on HDL cholesterol [14], despite the beneficial physical effect of exercise that manual work involves. In consequence, this finding suggests that when various risk factors co-exist or when manual work is carried out under conditions of psychological pressure, the benefits of manual work are reduced.

Lower total cholesterol levels were recorded among Greeks (207.67mg/dl) than among foreigners (216.34 mg/dl), a finding (Table 6) probably related to adherence to a Mediterranean diet, which has been proven to improve blood lipid levels and protect against cardiovascular disease [15,16].

The proportion of participants with hypertension (29.8%) (Table 1) coincides with previous studies in which one in four adults have hypertension [17].

The high proportion of obese participants (71%) (Table 1) is close to levels seen in the USA, where 2/3 of adults are overweight or obese [18].

Participants with hypertension and obesity had worse blood lipoprotein levels than participants within the normal ranges of arterial pressure and weight (Tables 7, 8). This result is also confirmed by a previous study of 2016 Athenians, in which a low level of cholesterol was associated with a lower incidence of hypertension, blood glucose (≥120 mg/dl) and Body Mass Index (>27) [19].

The proportion of smokers in the sample (28.9%) (Table 1) is lower than the general proportion of Greek smokers [20].

In our study, 55.7% of the sample had a family history of cardiovascular diseases (Table 1). As this figure is very high, it is noted that people with a family history should improve their quality of life in order to limit the relative risk [1,6,11,15].

The study's findings concerning the group of street cleaners (Table 11) are of interest. Street cleaners display the worst blood lipid levels but also the highest instances of family history and habitual smoking. The fact that street cleaners are engaged in purely manual work again supports the aforementioned hypothesis that manual workers who perform their jobs under unfavourable conditions do not benefit from physical exercise [21]. Our findings regarding street cleaners show generally that individuals of a low socio-economic and educational level are probably at greater risk of coronary heart disease [22]. Although these findings are worth noting, the small size of the sample of street cleaners does not allow further conclusions to be drawn. Further investigation of social groups engaged in difficult and unhygienic occupations is obviously required.

There appear to be no differences between blind people and the general population of the sample (Table 10). We assume that blind people do not differ from the general population because they live according to the desires and habits of their sighted carers.

CONCLUSIONS

This research shows that the risk factors for coronary heart disease are increased in the study population. Preventive intervention should include tackling risk factors associated with coronary heart disease.

In groups of a low educational and socio-economic level, further investigation is proposed as they appear to display a higher proportion of risk factors.

As coronary heart disease is multifactorial, the role of the community nurse is multifaceted and the development of health education programmes essential.

Acknowledgements

The authors wish to thank the staff of the Hellenic Red Cross Training Health Centre in the Municipality of Kallithea, who helped collect the research material for this study.

BIBLIOGRAPHY

1. Arapoyanni A. Prosfates exelixeis stin prolipsi ton kardiangeiakon pathiseon [Recent developments in the prevention of cardiovascular diseases]. The Hellenic Cardiology Foundation: Stous rithmous tis kardias [In the rhythms of the heart]. 2004,13(145):67-68.
2. Panayotakos D. Yinaikes kai stefaniaia nosos [Women and coronary heart

disease]. The Hellenic Cardiology Foundation: Stous rithmous tis kardias [In the rhythms of the heart]. 2004,13(143):35-36.
3. Gensini GF, Comeglio M, Colella A. Classical risk factors and emerging elements in the risk profile for coronary artery disease. Eur Heart J, 1998,19 (Suppl A):53-61.
4. American Heart Association. Heart and stroke facts: 1995 statistical supplement.1996, Dallas: Author.
5. He J, Whelton PK. Elevated systolic blood pressure as a risk factor for cardiovascular and renal disease. J Hypertens 1999, 17(2):7-13.
6. He J, Ogden LG, Vupputuri.S, Bazzano LA, et al. Dietary Sodium intake and subsequent risk of cardiovascular disease in overweight adults. JAMA 2000 April 19:283(15):1957-8.
7. Torgerson JS, Hauptman J, Boldrin MN, Sjostrom L. XENical in the prevention of diabetes in obese subjects (XENDOS) study: a randomized study of orlistat as an adjunct to lifestyle changes for the prevention of type 2 diabetes in obese patients. Diabetes Care, 2004,27:155-161.
8. Virgil Brown W, Smith D. Nutrition and Heart Disease. In Total Nutrition. Herbert V, and Subak-Sharpe G (Eds). St Martin's Press. New York 1995.
9. Steffen LM, Jacobs DR, Steven J, et al. Association of whole-grain, refined-grain, fruit and vegetable consumption with risks of all-cause mortality and incident coronary artery-disease and ischemic stroke: the Atherosclerosis Risk in Communities (ARIC) Study. Am J Clin. Nutr.2003 Sep:78(3):383-90.
10. Klandidi A, Tzonou A, Toupadaki N, Lan SJ, Koutis C, Drogari P, Notara V, Hsieh CC, Toutouzas P, Trichopoulos D. A case-control study of coronary heart disease in Athens Greece. Int. J Epidemiology 1992, 21:1074-1080.
11. Anthopoulos L. I paragontes kindinou tis ischaimikis kardiopatheias [The risk factors for ischemic cardiopathy], in: Toutouzas P. I kardia [The heart]. The Hellenic Cardiology Foundation Athens 1996:40-41.
12. Kranidis A. I idiaiterotites tis stefaniaias nosou stis yinaikes [The particularities of coronary heart disease in women]. Stous rithmous tis kardias [In the rhythms of the heart]. 2002,11(119):35-36.
13. Tokmakidis S. Askisi kai kali cholisterini [Exercise and good cholesterol]. The Hellenic Cardiology Foundation: Stous rithmous tis kardias [In the rhythms of the heart]. 2005,14(161):142.
14. Zhu S, Wang Z, Shen W, Heymsfield SB, Heshka S. Percentage body fat ranges associated with metabolic syndrome risk: results based on the third National Health and Nutrition Examination Survey (1988-1994). Am J Clin Nutr 2003,78:228-35.
15. Trichopoulou A, Costacou T, Bamia C, et al. Adherence to a Mediterranean diet and survival in a Greek population. N. Engl J Med. 2003, Jun 26:348(26):2599-608.
16. Knoops KT, De Groot LC, Kromhout D, et al. Mediterranean diet, lifestyle factors, and 10-year mortality in elderly European men and women: the HALE project. JAMA, 2004 Sep:22:292(12)1490-2.
17. Srinath Reddy K, Katan MB. Diet nutrition and the prevention of hypertension and cardiovascular diseases. Public Health Nutrition.2004 Feb:7(1A):167-86.
18. Kioses Y. Parakolouthontas tin pankosmia afxisi tis pachysarkias. The Hellenic Cardiology Foundation: Stous rithmous tis kardias [In the rhythms of the heart]. 2004,13(151):166.
19. Adamopoulos PN, Yermanidis I, Kalikakis Y, Moulopoulos S, et al. Times cholesterinis orou aimatos se sischetismo me allous prodiathesikous paragontes tis stefaniaias nosou [Sreum cholesterol levels in relation with other predisposing factors for coronary heart disease]. Study of Athens. Meteria Medica Creca 1986 14(5):443-446.
20. Pitsavos C., Toutouzas P., Panayotakos D., et al. O rolos tou kapnismatos sto aitiologiko simplegma tis stefaniaias nosou [The role of smoking in the causal complex of coronary heart disease]. 1st Panhellenic Cardiological Congress of Preventive Medicine 2001:45.

ISSN:1108-7366

21. Adali E., Lemonidou Ch., Priami M., Plati Ch. Environmental factors contributing to the development of nursing burnout. Helliniki Iatriki, 2000, 66: 398-406

ISSN:1108-7366