Early Detection of Cardiovascular Diseases Risk Factors among Jordan University Students

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Abstract

Background: Understanding the extent of risk factors of cardiovascular diseases among university youth students is essential for early detection and prevention. The purpose of this study was to estimate the prevalence of risk factors of cardiovascular diseases among the university students.

Methods: This quantitative exploratory study has been carried out with a convenience sample of 403 undergraduate students at the University of Jordan.

Results: The results showed that male students were overweight and more obese than females (22% and 10.6%, respectively), students consume more tea and coffee, smoke, exercised irregularly, had stress and 17% of females had irregular sleep.

Conclusion: The study concluded that the majority of university students are exposed to risk factors contributing to the disease.

Keywords: Risk Factors, University Students, Lifestyle, and Cardiovascular Diseases.

Introduction

Cardiovascular Diseases (CVDs) are the major contributor to the global burden of disease among the non-communicable diseases. The World Health Organization (WHO) has currently attributed one-third of all global deaths (15.3 million) in both developing countries and low-to- middle income countries to CVDs. [1] In the next two decades, the increasing burden of CVDs will be born mostly by developing countries. [2] As a matter of fact, it has been reported that cardiovascular diseases are the leading cause of mortality in the United States among both men and women and in every major ethnic group. It accounts for nearly 1 million deaths per year and was responsible for one in five deaths in 2001. [3]

Cardiovascular diseases in Jordan are considered one of the major causes of death. However, there are no specific studies that identify the size of the problem neither address the relationship between lifestyle and cardiovascular diseases. [4] Old CVDs available statistics indicated that CVDs were responsible for 34% of female mortality and 43% of male mortality (Jordanian Ministry of Health statistics, 1998). [5]

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However, no up-to-date data are available on the prevalence of overweight and obesity in relation to CVDs risk factors among young adults. Recent data by the World Health Organization indicated worldwide increasing rates of adult morbidity and mortality due to cardiovascular diseases. [1]

In addition, cardiovascular diseases in Jordan impose a great financial burden on the health care systems and practitioners. It also has a tremendous impact on the life of the individual's spouse and family. Rates of readmission to hospitals ranging from 29% to 47% within 3-6 months of initial discharge. [6] Therefore, the challenge of promoting health for individuals should include enhancing the individual's general physical, social, emotional and spiritual well-being. [7]

Background

The second half of the 20th century witnessed major shifts in the patterns of diseases, in addition to improvements in life expectancy; this period is characterized by profound changes in the diet and lifestyles which in turn have contributed to an epidemic of non-communicable diseases. This epidemic is now emerging, and even accelerating, in most developing countries, while infections and nutritional deficiencies are reported as leading contributors to death and disability.

In developing countries, the effect of nutrition transition and concomitant rise in the prevalence of cardiovascular diseases will be widening to mismatch between health care needs and resources. Unbalanced diet, obesity and physical inactivity all contribute to heart diseases, addressing these, along with tobacco use, can help to stem the epidemic. A different measure of success in this area has already been demonstrated in many industrialized countries. [2]

Rest and Sleep

A study conducted by Nilsson et al. (2001) investigated the impact of sleep problems and resting heart rate in a large sample of self-reported, healthy middle-aged men and women in

long term mortality. The sample consisted of 22444 men and 10902 women who participated in the study population-based health screening, including blood sampling and examination of Blood Pressure (BP) and pulse rate after 10 minutes supine rest. A self-administered questionnaire on sleep problems was used. The study revealed that mental strain caused by stressful stimuli can manifest itself in various ways and this leads to increased heart rate and symptoms of anxiety. This study also revealed the effect of psychosocial stress and less healthy lifestyle habits on sleep disturbances and bad health for some people. Also, an increased heart rate is known to be a marker of Sympathetic Nervous Activation (SNA), as elevated by direct micro neuropathy and measurement of catecholamine concentration, it has also been found to be a marker of an increased cardiovascular diseases risk. [8]

Smoking Habits

Rafetto et al. (2004) conducted a study which revealed that heart disease is currently the first cause of death of men and women in the United States and in many other western countries. The study showed that nine factors contributing to a significant percentage of heart attacks, smoking is the first of these factors. [9] In another study conducted by Fisberg et al. (2001), the researchers described the lipid profile of nutrition to verify its relationship with cardiovascular diseases risk factors in students at a public university in Sao Paulo in Brazil; the results showed smoking in 6.7% of the subjects. [10] Bothmer and Fridlund (2005) investigated gender differences in students' health habits and motivation for a healthy lifestyle among Swedish university students. The sample compromised 479 students, 49% were women and 51% were men, the smoking rate was 22%, (20% for female students, and 24% for male students). [11] In a cross sectional survey done by Musaiger et al. (2003) on 300 male university students (18-25 years) in the United Arab Emirates to investigate the relationship between obesity and some lifestyle factors. The percentages of smoking among the students were 19.6% among obese, 13% among non-obese and the Relative Risk (RR= 1.35). [12]

Stress

Many studies mentioned a psychosocial stress as a risk factor for cardiovascular diseases, one of these, the study of Rafetto et al. (2004) reported the stress as one of the nine risk factors which the study included- contributing to a significant percentage of heart attacks. [9]

A study by Everson-Rose and Lewis (2005) tested a hypothesis stating: psychosocial factors are related to morbidity and mortality due to cardiovascular diseases. They concluded the following psychological domains: (a) negative emotional status-here defined as depression, anger and hostility and anxiety; (b) chronic psychosocial stressors as occupation or work related stress and acute life stress; and (c) social factors- specially social ties, social support and social conflict, which have been significantly associated with cardiovascular diseases. [13] In the study of Bothmer and Fridlund (2005), the results revealed that 27% of the student population indicated a high level of stress. [11]

Obesity and Dietary Practices

Many researches focused on the obesity among university students as a risk factor for cardiovascular diseases. Bertsias et al. (2003) studied the prevalence of overweight and obesity in relation to cardiovascular diseases risk factors among 989 third year medical students (527 men, 462 women) at the University of Crete. The relationship between Body Mass Index (BMI) and cardiovascular diseases risk factor variables (blood pressure, glucose, and serum lipoprotein) were investigated. Approximately, 40% of men and 23% of women had BMI≥ 25. [14] The study of Bothmer and Fridlund (2003) indicated that male students were more overweight and obese than female students, with 30% being overweight and obese compared to 13% among female students. This study also showed that health behaviors in early life influences later risks of lifestyle related disorders. [11]

As dietary practices are emerging as one of the major aspects of lifestyle, several studies were conducted to evaluate dietary habits in young adults particularly university students. An international study of health behaviors in 16,000 students from 21 European countries was conducted by Wardle et al. (1997), the study shows that young people's diet posed particular challenge, because risk factors for serious illnesses such as coronary heart disease can be identified in childhood and has implications for health in later life. A broad survey was used to assess (a) frequency of consumption of red meat (b) frequency of consumption of fruit (c) addition of salt to diet (d) trying to eat fibers. The results indicated that in all the 21 countries, more women reported eating fibers (50% vs.32%). Fruit consumption was a minority practice for men (43%) and somewhat higher among women (62%). For adding salt to food, compared with other behaviors, more participants reported moderation in the use of salt, regarding red meat consumption, women reported lower level than men in every country. [15]

Rafetto et al. (2004) study showed that low daily fruit and vegetable intake are risk factors contributing to a significant percentage of cardiovascular diseases, caffeine and coffee consumption affect these factors: cholesterol and other lipid levels, blood pressure and stress level which in turn, increase the risk of heart diseases. [9] Fisberg et al. (2001) study identified eating habits regarding the amount of sodium in the students' diet; it was much higher than recommended (42%). Fiber consumption had the lowest level of adequacy among the students (51%). [10]

As for alcohol consumption, a study by Bothmer and Fridlund (2005) revealed that female students practice healthier habits. The overall mean of alcohol intake was four drinks per occasion and the mean frequency was two to three times a month, which matched 2, 22 units per week for female students and 4.79% units per week for male students. [11]

Exercise

In relation to lack of exercise, Rafetto et al. (2004) reported lack of exercise as a risk factor of cardiovascular diseases. [9] Another study was conducted by Musaiger et al. (2003) indicated a

lack of exercise as a lifestyle factor associated with obesity among male university students, the results showed that 8.4% of obese students practice sports, while 17.1% of non-obese students practice sports and the relative risk was (RR=1.77). [12] The study of Bothmer and Fridlund (2005) that included physical activity as a healthy lifestyle among Swedish university students, the results showed that 71% of students exercised regularly, 65% of female students practice a high level of physical activity while male students- who experience low social support- practice exercises at a lower level. [11]

Koutobi and Humffan (2002) studied coronary heart disease risk factors among tri-ethnic college students at Florida International University; the results showed that significant gender differences were found regarding activity index as males have more vigorous activity (20%) as compared with only (7.8%) of females. [16]

In the absence of data in Jordan, this study aimed at estimating the prevalence of risk factors of cardiovascular diseases among youth University students in order to establish a baseline data for future programs toward healthy lifestyle and early detection of cardiovascular diseases.

Methods

Setting and Sample

A quantitative descriptive survey study design was used to explore the prevalence of risk factors of cardiovascular diseases among University students. This study was conducted at the University of Jordan in Amman. A convenient sample of four hundred and three (403) undergraduate students aged between 18-25 years was selected from a randomly chosen list from different faculties with cooperation of all departments at the University of Jordan who posted a special research advertisement. The advertisement included the purpose of the study and requested voluntary participation of students without remuneration for their participation. Interested students were asked to come on specific date and time to the research office in order to complete a consent form and a questionnaire. In addition, height, weight and blood pressure measurements were taken for all those who showed interest. Trained graduate student nurses collected the data in two days a week and saw twenty students a day.

Data Collection

Instrument

Data were collected during the months of January till March in 2007. A self-administered structured questionnaire which was constructed by the researchers was utilized. The questionnaire was tested for its content validity by five research experts in the field of nursing. Judges feedback regarding content clearance and accuracy was considered in the development of the final version of the tool. Participants were interviewed within the University campus at the Faculty of Nursing and were asked to complete the self-administered questionnaire. The questionnaire was based on multiple- choice format and consisted of 32 questions that required 10-15 minutes to complete. It included items on demographic data, history of cardiovascular diseases, questions reflected healthy habits and lifestyles including smoking history, consumption of caffeine, alcohol, fat and salt, number of sleeping hours, exercise and activities, manifestation of stress, measurement of weight, height, body mass index and blood pressure.

Procedure

The study was approved by the relevant research ethics committee; thus, the sample was selected after the approval of the departments at the University of Jordan. All participants completed and signed an informed consent form which included the purpose of the study and participant's right to quit from participation at any time. Each student was assigned a study number for purposes of ensuring participant's privacy and confidentiality. Participating students were also informed that they can contact the researchers after completing the study to know the results of the study.

Data Management and Analysis

All data were coded based on the theoretical component, and entered into the computer. Using Statistical Package for Social Sciences (SPSS), version 13. Descriptive and Inferential Statistics were used to analyze the data (frequency, percentages, means, standard deviation, Chi-square and Pearson correlation).

Results

The characteristics of the study sample presented in table (1). It revealed that the mean age of participating students was 20.8 years (standard deviation 1.8) with the mean age of male 20.6 (standard deviation 1.7), and the female mean age was 21.3 (standard deviation 2.1). Significant differences between male and female students were observed with males being higher in body weight and height as male mean weight was 74.2 kg (standard deviation 14.5) and mean height was 176.4 cm (standard deviation 7.4), on the other hand, the female mean weight was 59.8 kg (standard deviation 10.4) and their mean height was 163 cm (standard deviation 6.8).

Obesity and Dietary Practices

As presented in table (2), Body Mass Index (BMI) was compared by gender. Male students were more overweight and obese than female students. Twenty two percent of males were overweight (n=60) and (10.6%) were obese (n=29), while (16.9%) of females were overweight (n=22) and 2.3% of them were obese (n= 3).

The results in table (3) illustrate that around sixty percent of the sample mentioned that they moderately add salt to their diet, while (1.7%) of the sample don't use it in their diet. Around two third of the sample prefer to have lunch as a meal time and only (8.4%) of the sample prefer breakfast. The results in table (3) reflected that (65.3%) of the sample drink tea; (24.5%) of the respondents drink tea at the age of 20 years and (17.8%) of the respondents drink tea in their second year of study. In table (4) Pearson correlation showed significant association

between drinking tea in relation to age (P=.017) and educational level (P=.055). The results also showed that (59.6%) of students preferred coffee, while alcohol consumption was the least (3%). Pearson correlation showed significant association between alcohol consumption in relation to income (P<.000); where (9.2%) of those who drink alcohol have an income equal or more than 1000 JD / month.

Smoking Habits

Other habits that are related to lifestyle showed that nearly one fourth of the sample are smokers (26.8%), (19.8%) of them are smokers for less than 5 years and (7%) of them have been smokers for 5-10 years. Around one fifth of the samples (15.9%) smoke cigarettes. Pearson correlation showed significant association between smoking and gender (P< .000) also smoking and educational level (P<.000), where (38.5%) of male students smoke, there were 36.3% of them who smoke in their third year of study. Table (5) represents the relationship between smoking and gender and the results were significant (X^2 =55.88, p<.000).

Stress and Sleep

Ninety one percent of the students' sample reported to have stress and as presented in table (5) they cope to stress by sleeping (X^2=7.50,p<.006). Moreover, table (3) reflected that nearly 80% of students sleep 1-9 hours per day. Pearson correlation showed significant association between sleeping hours and gender (P=.016), (83.2%) of male students sleep from 1-9 hours /day, while (17%) of female students had irregular sleep meaning not having a routine/regular 8- hour of sleep.

Exercise

Regarding exercise activity, more than half of the sample exercised irregularly (55.1%), which indicates not following a systematic pattern of exercise, while the rest had reported regular exercises, (18.6%) exercise daily, (20.1%) exercise weekly and (6.2%) exercise monthly.

The results also reflected that most of the sample preferred walking (61.3%). Pearson correlation showed significant association between performing exercise and gender (P= .003), males perform exercise more than females, (22%) of the male students perform exercise weekly, (20.9%) daily and (49.1%) irregularly. While (67.7%) of female students perform exercise irregularly. Table (5) illustrates a significant relationship between performing exercise and gender $(X^2=14.05, p<.003)$.

Table (1): Characteristics of Participants. (N=403)

Variable	Total N= 403 Mean, Std.D	Male N=273 Mean , Std.D	Female N= 130 Mean , Std.D
Age (Y)	20.8 ± 1.8	20.6 ± 1.7	21.3 ± 2.1
Weight (kg)	69.5 ± 14.9	74.2 ± 14.5	59.8 ± 10.4
Height (cm)	172.1 ± 9.6	176.4 ± 7.4	163.0 ± 6.8

Table (2): BMI Distribution among Jordan University Students by Gender. (N = 403)

Gender	BMI	Frequency	Percent (%)
Male	< 25	184	67.4
	25 to 29.9 (over weight)	60	22.0
	≥ 30 (obesity)	29	10.6
Female	< 25	105	80.8
	25 to 29.9 (over weight)	22	16.9
	≥ 30 (obesity)	3	2.3

Table (3): Percentages of Lifestyle among Jordan University Students in Relation to Consumption Patterns, Smoking, Stress, Sleep and Exercise. (N = 403)

Statement	Yes (%)	No (%)
Usual amount of salt that you add:		
Too much	17.1	
Moderate	60.5	
Little	20.6	
No salt	1.7	
What is your main meal time:		
Morning / Breakfast	8.4	
Afternoon / Lunch	61.8	
Evening / Dinner	29.8	
Consumption of:		
Vegetables	69.7	30.3
Fruits	59.1	40.9
Fish	17.1	82.9
What type of caffeinated drinks?		
Coffee	59.6	40.4
Tea	65.3	34.7
Soda	38.2	61.8
Do you drink alcohol?	3.0	97.0
Are you a smoker?	26.8	73.2
Less than 5 years	19.8	
5 years – 10 years	7.0	
Do you have stress?	90.6	9.4
How many hours do you Sleep / day?		
1- 9 hrs	79.9	
10- 12 hrs	9.4	
Irregular	10.7	

Statement	Yes (%)	No (%)
Do you perform exercise?		
Daily	18.6	
Weekly	20.1	
Monthly	6.2	
Irregular	55.1	

Table (4): Associations between lifestyle habits and demographic characteristics among Jordan University Students. (N = 403)

Health Habit	Age	Gender	Educational Level	Income
Smoking	7.587	55.881**	22.211**	.676
(Are you a smoker?)	(.370)	(.000)	(.000)	(.713)
Drinking Alcohol	3.537	1.376	5.521	15.659**
(Do you drink alcohol)	(.831)	(.241)	(.356)	(.000)
Stress	6.714	1.862	3.253	1.338
(Do you have stress?)	(.459)	(.172)	(.661)	(.512)
Exercise	24.618	14.057**	14.356	9.964
(Do you perform exercise?)	(.264)	(.003)	(.499)	(.126)
Drinking coffee	5.949	.921	6.068	.170
	(.546)	(.337)	(.300)	(.918)
Drinking Tea	138.203*	26.288	95.524*	37.713
	(.017)	(0.35)	(.055)	(.157)
Drinking Soda	172.329	15.525	125.856	44.272
	(.075)	(.796)	(.081)	(.376)
Sleep				
(How many hours do you sleep /day?)	20.253	8.217*	13.710	1.188
	(.122)	(.016)	(.187)	(.880)

* P ≤ 0.05
* * P ≤ 0.01

Table (5): Chi-square, p value and degree of freedom for lifestyle habits significantly associated with gender. (p<0.05) (N=403)

lifestyle habits	Male N (%)	Female N (%)	Chi square
Smoker	105	4	55.88**
Non smoker	168	126	
Perform exercise:			
-Daily	57	18	14.05**
-Weekly	60	21	
-Monthly	22	3	
-Irregular	134	88	
Coping with stressors by sleeping			
Yes	56	217	7.05**
No	43	87	

*P value < 0.01 **P value < 0.001

Discussion

The potential limitation incurred in this study was the use of a convenient/not randomized sample which usually limits the generalization of the results. Nevertheless, this study is the first -

to the best of our knowledge- in its nature to address the important aspects of cardiovascular diseases and early detection among young populations in a public university in Jordan. As such, these findings would contribute to the important basic information needed for early detection of the cardiovascular diseases.

Obesity and Dietary Practices

The results of this study indicated that male students reported higher weight measures than females. In addition, it was also evident that around one third of male students are being overweight or obese as compared to their of female counterparts. This result is consistent with the finding by Bothmer and Fridlund (2005) [11] that showed male students mean (BMI) was significantly greater than that for female students. The above result may reflect a rational that female students are healthier in their nutritional habits than male students. Other explanation could be that females care about their body image and tend to desire a thinner figure than males. In contrast, males have reported a desire for a heavier muscularity. [17]

The results of this study indicated that the majority of the students eat one to two meals a day and it is evident that only (8.4%) of them preferred not to skip the breakfast meal which is congruent with the study of [17] which indicated that most of the Chinese students regularly eat three meals and a high proportion of them eat breakfast daily. The skipping of breakfast has been associated with lower nutritional status and cardiovascular diseases. [18] Tam et al. (1996) [19] concluded in their study about diet composition of college undergraduate students at California State University that a higher consumption of fat, cholesterol and sugar would place students at a higher risk for cardiovascular diseases. On the other hand, students reported having fruits (59.1%) and vegetables (69.7%) on a regular basis which indicates a favorable attitude toward health. This is supported by the finding of Ness and Powles (1997) [20] who stated that there is evidence to the protective effect of fruit and vegetables against CVDs as they contribute to cardiovascular health through a variety of potassium and fiber that they contain. Daily intake of fresh fruit and vegetables, in an adequate quantity (400-500 g per day), is also recommended to reduce the risk of coronary heart disease, stroke and high blood pressure. Regarding fish consumption, results of this study showed that the majority of the students (82.9%) didn't prefer fish. On the other hand, many

studies have shown that fish consumption is associated with a reduced risk of coronary heart disease. A study of Zhang et al. (1999) [21] showed that in high risk populations, an optimum fish consumption of 40-60 gm per day would lead to approximately a 50% reduction in death from coronary heart disease. Regarding caffeinated drinks, more than half of the students (59.6%) reported drinking coffee which is culturally considered among the most popular caffeinated drinks in Jordan. As a matter of fact, several studies revealed coffee as a significant factor for cardiovascular diseases and coffee drinking is linked to higher level of serum cholesterol [9] which could expose our students to more risk of developing cardiovascular diseases. Tverdal et al. (1999) [22] mentioned that the intake of a large amount of unfiltered coffee markedly raises serum cholesterol and has been associated with coronary heart disease. Regarding tea drinking, the majority of the students (65.3%) reported drinking tea.

Our study also indicated that the majority of the students (60%) added a moderate amount of salt (4-6 gm per day) to their diet. This could be a favorable finding as it has been reported, that there is a positive relationship between high salt consumption and the elevation of blood pressure. A study conducted by Pietinen et al. (1996) [23] indicated that, dietary intake of sodium, from all sources, influences blood pressure levels in populations and should be limited so as to reduce the risk of coronary heart disease and current evidence suggests that an intake of no more than 1.7 gm of sodium per day is beneficial in reducing blood pressure. Therefore, the limitation of dietary sodium intake to meet this goal should be achieved by restricting daily salt intake to less than 5 gm per day.

Smoking Habits

Despite the clear evidence of harmful effect of smoking, over one fourth of the students reported smoking which put them at risk for developing cardiovascular diseases especially if they continue to smoke. This issue is also common among university students in other countries as well; such as what Von Ah et al. (2005) [24] had

reported that high prevalence of cigarette smoking among college students raises great concern. This concern is compounded by the fact that younger smokers aged 18-29 are less concerned about the negative health effects of smoking than older smokers aged more than 50 years. Also, our study showed that smoking behavior is being influenced by family factors since more than half of them have a smoker in their family especially the father. This is considered an alarming finding which tends to reflect that smokers in this study may be at higher risk for cardiovascular diseases.

Stress

The results of our study also revealed that the majority of the participants are reporting having stress (91%) and reported coping to stress by sleeping (X^2 =7.50,p<.006). Although the study didn't include the sources of these stressors, a diversity of disciplines supports the hypothesis that psychosocial factors are related to morbidity and mortality of cardiovascular diseases. [13]

Exercise

Regarding performing exercises, this study indicated a low participation rate among the students who perform daily regular exercises (18.6%). This could be due to either limited time to perform exercise or not believing in it as part of the Jordanian culture rituals. Lack of exercise could also place these students under more risk for cardiovascular diseases as the literature indicates a presence of relationship between poor physical activity and the risk of cardiovascular diseases Pietinen et al. (1996) [23] Pietimen et al. (1996) also reported that at least 30 minutes of moderate intensity of activity on most days of the week is considered sufficient to raise cardio-respiratory fitness to the level that has been shown to be related to decrease risk of cardiovascular disease.

Overall, the results of this study indicate that university students are following a lifestyle (such as smoking, poor exercise, unhealthy dietary practices) that could expose them to a higher risk for cardiovascular disease. Since college students

at the University of Jordan do not differ in their demographic characteristics than other college students in their age groups at other universities in Jordan, one may expect that other students might be exposed to the same risks for cardiovascular diseases. However, it is recommended that a larger study should be conducted on a wide sample of students from the same age group from all universities in Jordan.

Recommendations and Implications

The results of this study indicate the need to increase awareness among University students for the importance of living a healthy lifestyle and for early prevention of cardiovascular diseases. The implication of this current research is directed towards encouraging the university administrators and health professionals (nurses in particular) to develop student educational programs to educate and raise the awareness of the consequences of specific lifestyle behaviors, the programs should target the following key areas: eating habits, tea and coffee drinking, sleep and exercises and stress management.

As a result, promotion of health and early detection of risk factors that contribute to chronic illnesses among youth is considered very essential in the improvement of community health in the future. It is recommended, based on the findings of this study, that effort to reinforce rules and regulations are to be enhanced in order to promote health and prevent illness. This can be achieved at different levels. First at the governmental level by a) modifying rules and regulations regarding smoking, b) providing continuous monitoring for services provided to youth in coffee shops like providing fruit juice rather than caffeinated drinks and prohibiting smoking specially among university students who prefer to smoke Hubble-bubbly which is called narghile in eastern countries (a water pipe connected to a glass bottle half-filled with water, a burning charcoal is placed directly on a dark paste tobacco called tumbak). c) establishing sport centers that can be affordable by all social classes in the different geographical areas for youth to engage in regular exercise programs, d) enhancing the role of the media for the prevention

of CVDs risk factors and enhancing healthy habits among young people. Second at the university level which includes (a) preventing smoking inside all of the university buildings (b) directing the students efforts and capabilities in many non-curriculum activities and counseling for the students to alleviate the stressors they may have (c) applying health insurance that provides chances for frequent physical and psychological checkup. Further research is required to include more Jordanian Universities and with larger groups. More research studies in this area are recommended to explore risk factors among young populations and early prevention of cardiovascular disease.

Conclusion

In conclusion, cardiovascular diseases in Jordan are considered one of the major causes of death, so to overcome this problem it is important to adopt the preventive measures that will be more efficient than any form of therapeutic interventions. The present study calls for attention to risk factors of cardiovascular diseases among university students so as great efforts must be directed in evaluating and detecting these factors. Annual medical screening through student's medical insurance need to be stressed upon and educational programs must explain the benefits and consequents of adopting a healthier lifestyle.

Acknowledgement

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الكشف المبكر عن عوامل الخطورة المؤدية إلى أمراض القلب الوعائية

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الملخص

الهدف: هدفت هذه الدراسة الاستطلاعية إلى معرفة نسبة وجود عوامل الخطورة المؤدية إلى أمراض القلب الوعائية لدى طلبة الجامعات.تكونت العينة من403 من طلبة الجامعة الأردنية.

أظهرت النتائج أن الطلبة الذكور لديهم زيادة في الوزن ويعانون من البدانة أكثر من الإناث (22%، 10.6%) على التوالي. معظم الطلبة يستهلكون الشاي والقهوة بشكل كبير، مدخنون، يمارسون التمارين الرياضية بشكل غير منتظم، يعانون من الإجهاد النفسي بينما 17% من الإناث لديهن نوم غير منتظم، خلصت الدراسة إلى أن معظم طلبة الجامعة أكثر عرضة لعوامل الخطورة المؤدية إلى أمراض القلب الوعائية.

الكلمات الدالة: عوامل الخطورة، طلبة الجامعات، نمط الحياة، أمراض القلب الوعائية.