بسم الله الرحمن الرحيم

قالوا سبحانك لا علم لنا الا ما علمتنا إنك أنت العليم الحكيم

صدق الله العظيم

Assessment of health status of students at their admission to Ain Shams University

Thesis submitted for partial fulfillment of Master degree in Public Health

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تقييم الحالة الصحية للطلاب قبل التحاقهم بجامعة عين شمس

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من

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Prevalence of chronic diseases are growing today worldwide; many of these diseases are known to track from youth to adulthood, which makes it useful to define the high risk groups and early diagnosis of these diseases before settlement of the disease **(El khashab, 2002)**.

The pre-enrollment examination of university students is a great opportunity to evaluate their health status which reflects the health status of an important age group of the population. The prevalence of chronic communicable diseases like tuberculosis and non communicable diseases like diabetes & hypertension can be estimated. Also the nutritional status of students and prevalence of obesity can be measured. Prevention of tuberculosis by early detection of unapparent cases can be achieved by medical examination of the students. Also it is a valuable mean for discovery of unhealthy life style of students like smoking habits, lack of exercise and addiction. And hence it helps to design health educational programs for students to modify these risky behaviors.

One of these diseases is hypertension which has been reported among young people worldwide. Hypertension may lead to irreversible damages in vital organs; such as heart, brain, and it may cause death in children if treatments are not given despite early diagnosis **(Nur, 2008)**. It is also an important primary etiology of end-stage renal disease as well as a major factor responsible for progression of renal disease due to other causes. Multiple genetic and environmental factors are responsible for the variable prevalence of hypertension in various parts of the world **(El khashab, 2002).** Early detection can reduce risk of cardiovascular changes and end organ damage.

In the past year there is a nutritional transition in food choices from the typical Mediterranean diet to the fast food pattern. As a consequence, the dietary habits of young adults have been affected, thus overweight and obesity are increasingly being observed among the young **(Yahia et al., 2008)**.

Bronchial asthma is common chronic disease among young people and prevalence of this condition has been constantly growing over past two decades throughout the world. The prevalence of asthma was 3680/100.000 and mildly growiGeorgy et al,2006).ng trend was noted over the last several years (from 2.96% to 4.05%)

Pre-enrollment examination will help medical care givers to diagnose these hidden problems and facilitate their treatment or educate students to modify their life style. Some of these diseases may interfere with learning 1- To

estimate prevalence of the most common chronic diseases detected among university students enrolled in 1st year as hypertension, asthma, rheumatic heart diseases.

ability and student's achievement in the faculty like errors of refraction especially in scientific faculties. So early detection of these problems before enrollment may help those students to shift to more suitable theoretical fields. Also it provides a base line medical background for these students that may help to identify new diseases that may develop throughout the faculty years like psychiatric disorders or other diseases that are related to exposure in the faculty.

Objectives

1- To estimate prevalence of the most common chronic diseases detected among university students enrolled in 1st year as hypertension, asthma, rheumatic heart diseases.
2- To estimate prevalence of obesity among the studied sample.

3- Prevalence of dental caries among the studied sample.

4- To assess visual acuity of the students.

5 - To estimate prevalence of risky behaviors as smoking, lack of physical activity, bad dietary habits among the studied sample.

Subjects & Methods

Results

Table (1): Sociodemographic characteristics of the studied sample.

	Number N=475	**%**
Age group (year):		
16-	282	59.5 %
18-	168	35.4 %
>=20	25	5.1 %
Family income per month (LE):		
< 800	132	35.8 %
800-	119	32.2 %
>=1500	118	32.0
Gender:		
Male	281	59.5%
Female	194	40.5%
Residence:		
Urban	387	81.6%
Rural	88	18.4%

Table (2): Prevalence of smoking among the studied sample.

	Number N=475	**Males N= 281**	**Females N=194**	**X^2**	**P value**
Smoking:					
Non smokers	428 (90.1%)	239 (85.1%)	189(97.4%)		
Smokers	36 (7.6%)	33 (11.7%)	3(1.5%)	20.03	0.00*
Ex-smokers	11 (2.3%)	9 (3.2%)	2(1.1%)		
Type of smoking (n=47):					
Cigarette	30 (63.8%)	27 (64.3%)	3 (60.0%)	0.79	0.67
Shisha	4 (8.5%)	4 (9.5%)	0		
Both	13 (27.7%)	11 (26.2%)	2 (40.0%)		

Table (4): Prevalence of drug & alcohol addiction among the studied sample

	Number *N=475*	**Males N= 281**	**Females N=194**	**X2**	**P value**

Addiction: Not addict Addict (Drugs /Hashish/ Both)	 465 (97.9%) 10 (2.1%)	 271 (96.4%) 10 (3.6%)	 194 (100.0%) 0	7.04	0.00*
Alcohol intake: Alcoholic Non alcoholic	 468 (98.5%) 7 (1.5%)	 274 (97.5%) 7 (2.5%)	 194 (100.0%) 0	4.90	0.02*

Table (6): Practicing exercise among the studied sample.

	Number N=475	**Males N=281**	**Females N=194**	**X^2**	**P value**
Practicing exercise: Yes No	 230 (48.4%) 245 (51.6%)	 182 (64.8%) 99 (35.2%)	 48 (24.7%) 146 (75.3%)	73.62	0.00*
Type of exercise (n=230): Aerobics Strengthening Both	 26 (5.5%) 47 (9.9%) 157 (68.4%)	 8 (4.4%) 41 (22.5%) 133 (73.1%)	 19 (39.6%) 6 (12.5%) 23 (47.9%)	38.25	0.00*
Satisfactory duration: Satisfactory Not satisfactory	 151(31.1%) 68 (68.9%)	 125 (68.7%) 57 (31.3%)	 26 (54.2%) 22 (45.8%)	4.20	0.04*

Figure (1): Systolic blood pressure among university students.

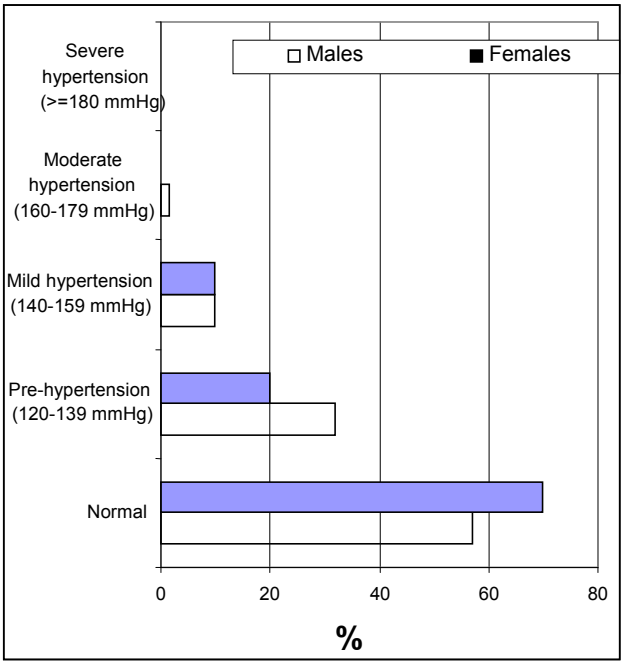


Figure (2): Obesity by BMI among university students.

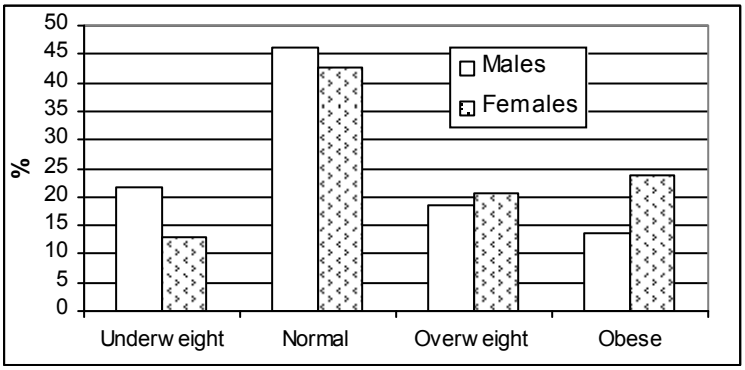


Table (17): Relation between systolic hypertension and BMI among university students.

	Normal N=273	Pre-hypertension N=121	Hypertension N=46	X^2	P value
BMI:					
Underweight	60 (22.0%)	12 (9.9%)	6 (13.0%)		
Normal	125 (45.8)	61 (50.4%)	10 (21.7%)	27.46	0.00*
Overweight	50 (18.3%)	22(18.2%)	14 (30.4%)		
Obese	38 (13.9%)	26 (21.5%)	16 (34.8%)		

Table (18): Relation between diastolic hypertension and BMI among university students.

	Normal N=370	Pre-hypertension N=4	Hypertension N=66	X^2	P value
BMI:					
Underweight	68 (18.4%)	1 (25.0%)	9 (13.6%)		
Normal	172 (46.5)	2 (50.0%)	22 (33.3%)	10.63	0.10
Overweight	71 (19.2%)	0	15 (22.7%)		
Obese	59 (15.9%)	1 (25.0%)	20 (30.3%)		

Table (19): Prevalence of DM, hepatic, renal and neurological disorders and anemia among the studied sample.

	Number N=475	%
DM:		
No	475	100.0%
Hepatic diseases:		
Present	15	3.2%
Absent	460	96.8%
Renal diseases:		
Present	54	11.4%
Absent	421	88.6%
Neurological disorders:		
Present	19	4.0%
Absent	456	96.0%
Pallor:		
Pallor	25	5.3%
Normal	450	94.7%

Table (22): Prevalence of some nasal problems among the studied sample

	Number N=475	Males N= 281	Females N= 194	X^2	P Value

Chronic sinusitis: Present Absent	 10 (2.1%) 465 (97.9%)	 4 (1.4%) 277 (98.6%)	 6 (3.1%) 188 (96.9%)	1.55	0.21
Nasal allergy: Present Absent	 12 (2.5%) 454 (97.5%)	 6 (2.1%) 275 (97.9%)	 6 (3.1%) 188 (96.9%)	0.42	0.51
Other Ent diseases: Present Absent	 37 (7.8%) 438 (92.2%)	 21 (7.5%) 260 (92.5%)	 16 (8.2%) 178 (92.8%)	0.40	0.52

Table (23): Prevalence of hearing loss among the studied sample.

	Number N=475	**Males N= 281**	**Females N= 194**	**X^2**	**P value**
Hearing loss (n=154): Present Absent	 2 (1.3%) 152 (99.6%)	 1 (1.2%) 81 (98.8%)	 1 (1.4%) 71 (98.6%)	0.00	0.92

Table (24): Prevalence of eye problems among the studied sample.

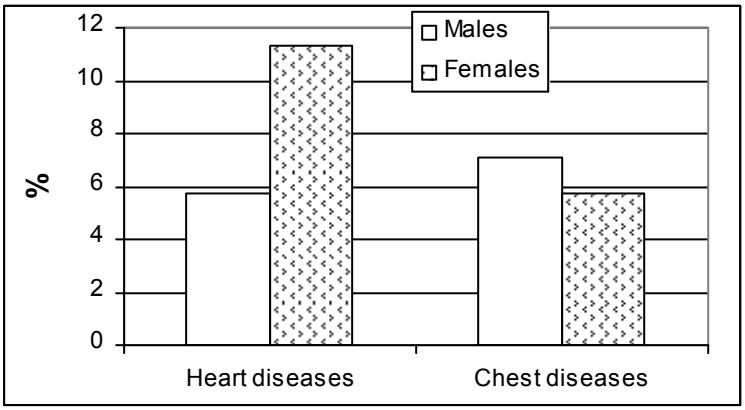
	Number N=475	**Males N= 281**	**Females N= 194**	**X^2**	**P value**
Squint: Squint No squint	 3 (0.6%) 472 (99.4%)	 2 (0.7%) 279 (99.3%)	 1 (0.5%) 193 (99.5%)	0.07	0.79
Visual acuity: Normal Mild impairment Low vision	 345(72.6%) 91 (19.2%) 39 (8.2%)	 204 (72.6%) 47 (16.7%) 30(10.7%)	 141 (72.7%) 44 (22.7%) 9 (4.6%)	7.21	0.02*
Other eye problems: Yes No	 13 (2.7%) 462 (97.3%)	 4 (1.4%) 277 (98.6%)	 9 (4.6%) 185 (95.4%)	4.46	0.03*

Table (25): DMF among the studied sample.

	Number N=475	**Males N= 281**	**Females N= 194**	**X^2**	**P value**

Decayed teeth:					
Present	121 (25.5%)	68 (24.2%)	53 (27.3%)	0.58	0.44
Absent	354 (74.5%)	213 (75.8)	141 (72.7%)		
Missed or filled teeth:					
Missed	27 (5.7%)	227 (80.8%)	168 (87.0%)	3.47	0.32
Filled	41(8.6%)	27 (9.6%)	14 (7.3%)		
Both	11 (2.3%)	19 (6.8%)	8 (8 (4.1%)		
Normal	396 (83.4%)	8 (2.8%)	3 (1.6%)		
Calculus & or Gingivitis:					
Present	66 (13.9%)	49 (17.4%)	17 (8.8%)	7.22	0.00*
Absent	409 (86.1%)	232 (82.6%)	177 (91.2%)		
Other dental problems:					
Yes	35 (7.4%)	19 (6.8%)	16 (8.2%)	0.37	0.54
No	440 (92.6%)	93.2%)	178 (91.8%)		

Figure (3): Heart and chest diseases among studied sample.



Conclusion

The study revealed that students adopt some risky behaviors like smoking and although a relatively satisfactory percentage of the students (about 2/3) showed daily intake of colored vegetables and dairy products, still there is a high percent of students don't behave these healthy behaviors. About half of the students practice physical exercise but most of them practice it for unsatisfactory duration while practicing risky behaviors like addiction & alcohol consumption were uncommon especially among females. The study showed an average prevalence of most chronic diseases. The recorded prevalence of hypertension is high compared to the expected low prevalence of hypertension among this age group dragging attention that it may be an important health problem.

Recommendations

Screening of students for hypertension, DM and other chronic diseases in pre-enrollment examination by simple screening tests.

Students should be screened for hearing defects & eye problems during pre enrollment medical examination.

Planning of health educational programs encourage students to adopt more healthy life style encouraging practicing physical activity, for more satisfactory periods, eating healthy diet & discouraging smoking, addiction & eating unhealthy diet.

Introduction

Introduction

The pre-enrollment examination of university students is a great opportunity to evaluate their health status which reflects the health status of an important age group of the population. The prevalence of chronic communicable diseases like tuberculosis and non communicable diseases like diabetes & hypertension can be estimated. Also the nutritional status of students and prevalence of obesity can be measured. Prevention of tuberculosis by early detection of unapparent cases can be achieved by medical examination of the students. Also it is a valuable mean for discovery of unhealthy life style of students like smoking habits, lack of exercise and addiction. And hence it helps to design health educational programs for students to modify these risky behaviors.

Prevalence of chronic diseases are growing today worldwide; many of these diseases are known to track from youth to adulthood, which makes it useful to define the high risk groups and early diagnosis of these diseases before settlement of the disease **(El khashab, 2002)**.

One of these diseases is hypertension which has been reported among young people worldwide. Hypertension may lead to irreversible damages in vital organs; such as heart, brain, and it may cause death in children if treatments are not given despite early diagnosis **(Nur, 2008)**. It is also an important primary etiology of end-stage renal disease as well as a major factor responsible for progression of renal disease due to other causes. Multiple genetic and environmental factors are responsible for the variable prevalence of hypertension in various parts of the world **(El khashab, 2002).**

Early detection can reduce risk of cardiovascular changes and end organ damage. Recently the Joint National Committee on the prevention, detection, evaluation, and treatment of high blood pressure introduced the term "pre-hypertension" for systolic blood pressure levels of 120 to 139 mm Hg and diastolic BP levels of 80 to 89 mm Hg. Pre-hypertension was observed among 50.6% of men and 35.9% of women (**Grotto et al, 2006)**.In a study conducted in turkey, prevalence of hypertension between university students was 4.4 % **(Nur, 2008)**.

Body mass index was found to be a strong predictor of pre-hypertension among both males and females (odds ratio: 1.100 - 1.152, respectively for every 1 kg/m2 increase). Our findings support the recommendation of lifestyle modification for pre-hypertensive patients (**Grotto et al., 2006)**.

Public awareness of the increasing prevalence of obesity and of diet-related chronic disease is increasing, and attention has turned to documenting the problems. In the past year there is a nutritional transition in food choices from the typical Mediterranean diet to the fast food pattern. As a consequence, the dietary habits of young adults have been affected, thus overweight and obesity are increasingly being observed among the young **(Yahia et al., 2008)**.

The age-adjusted prevalence of central obesity among Egyptian adults was 24.1% and 28.7% based on the waist circumference (WC) and waist/hip ratio (WHR) indicators respectively **(Abolfotouh et al., 2008)**.

After adjustment for sex and other confounding factors, WC was significantly associated with the risk of diabetes and hypertension. The prevalence of diabetes mellitus and of hypertension parallel that of obesity and both are very high. Little

information is available on physical activity, but it is likely that a large proportion of the population is quite sedentary, particularly in the cities **(Galal, 2002).**

A high risk of DM is associated with family history of the disease, obesity, premature atherosclerosis and hypertension. Prevalence of DM in Egypt as a whole is 4.3%, among secondary school children is 0.14 %**(Arab, 1992).**

Change in dietary habits within the last 10 years and growing obesity may also result in higher caries frequency (**Willershausen et al., 2004)**. In a cross sectional study in Dakar, (78%) of university students had at least one dental decay and among whom 72% presented teeth to fill and 28% teeth to pull out. (32.5%) of the students had at least one missing tooth and (29.75%) had at least one filled tooth (**Faye et al., 2007)**.

Differences in the socioeconomic standards of living remain an important and feasible partial explanation for the difference in incidence of rheumatic fever following GABHS infection in Egyptian compared with American children. Screening of school children in Eastern Mediterranean regions revealed a prevalence of 2.2 per 1000 (higher in the African and Eastern Mediterranean regions) (**WHO, 1992)**.

In Egypt prevalence was 3.4/1000 and 2.6/1000 for the RHD and CHD respectively. The most common cardiac defects were double mitral and pulmonary stenosis in the RHD and CHD groups' respectively. Family income was lowest in the RHD group, while increased crowding index and low whole social environment were significantly related to both RHD and CHD (**Refat et al., 1994).**