



Prevalence of Obesity among Nursing Students at College of Applied Medical Sciences, Wadi Al Dawasir.

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ABSTRACT

Prevalence of Obesity among Nursing Students at College of Applied Medical Sciences, Wadi Al Dawasir. This study aimed to determine the prevalence of obesity among female nursing students by using body mass index and to find the obesity prevalence according to their age. Adopting a descriptive design, 100 female nursing students participated in the study. Data was collected using interviewer- administered questionnaire and digital weight height scale. Frequencies for demographic data and body mass index were calculated. The study revealed that prevalence of obesity among female nursing students as per body mass index (BMI), among 100 students about 35% had normal weight, 31% were overweight, 19% were obese, 9% had severe obesity, and 6% were underweight. According to the age it was observed that 18-<20 years there were 33 students out of these subjects 04% were underweight, 19% had normal weight and 10% were overweight. Further 20-<22 years, there were 40 students, out of these subjects 02(02%) were underweight, 11% had normal weight and 27% were overweight. In the age group ≥ 22 years there were 27 students out of which 35% had normal weight, 22% were overweight, and none of the students were underweight in this group. From the results of the present study, it is recommended to have obesity prevention

and weight control programs to raise the awareness among female nursing students should be emphasized.

Keywords: Obesity; Body Mass Index

INTRODUCTION

Obesity is an abnormal or excessive fat accumulation that presents a risk to an individual's health (*World Health Organization, 2016*). Globally, there is rising prevalence of obesity in both developing and developed countries. The rate of obesity has tripled in developing countries over the past 20 years as they rapidly become more urbanized, with increased consumption of high calorie foods and adoption of a more sedentary lifestyle (*Hossain P and et al., 2007*). Some studies observed that first year university students have significant weight gain, followed by ongoing slow but steady increase in weight (*Vella-Zarb RA and et al., 2009*).

Worldwide, at least 2.8 million people die each year as a result of being overweight or obese, and an estimated 35.8 million (2.3%) of global Disability-Adjusted Life Years (DALYs) are caused by overweight or obesity (*World Health Organization, 2016*). According to the World Health Organization (WHO) 2009, there will be about 2.3 billion overweight people aged 15 years and above, and over 700 million obese people worldwide in the year 2015.

In gulf countries, the prevalence of obesity and overweight is increasing in both adults and children. In Kuwait, the prevalence of overweight and obesity increased by 20.6% and 15.4% and by 13.7 and 8.4% among men and women, respectively (*Al-Jeheidli AH and et al., 2007*). In Qatar, it is estimated that 29.3% of females and 17.4% of males are obese (*Al-Muraikhi AE and et al., 2008*). In Bahrain, the prevalence of obesity was more significant among females, 32%, than males, 25%, throughout all age groups (*James PT and et al., 2001*)

In Kingdom of Saudi Arabia (KSA), the increasing problem of obesity has been reported in 2005 with an overall obesity prevalence of 35.5 % (*Al-Nozha MM. and et al., 2005*) Obesity and overweight are increasing, in the total Saudi population the prevalence of overweight was 27.23% and 25.20% in the males and females respectively, while the prevalence of obesity was 13.05% and 20.26% in the males and females respectively (*El-Hazmi MA and et al., 1997*). In the eastern province of Saudi Arabia, the overall prevalence of obesity was 43.8%, while 35.1% were overweight (*Al-Baghli NA and et al., 2008*). Prevalence of obesity among

Saudi adolescents in Eastern Saudi Arabia was higher in male than female students (19.3% versus 11.8%) while a higher proportion of female students than males were overweight (17.2% versus 10.2%) (*Al-Almaie SM, 2005*)

The prevalence of obesity in Saudi Arabia ranges from 14% in children to about 83% in adult. Studies among university students in developing countries show high prevalence of overweight and obesity (*Bahrain Medical Bulletin,2000*). According to Global Health Observatory (GHO) data the prevalence of obesity in women in Saudi Arabia ranges about 50.4 % (*World Health Organization, 2014*).

Over the decades the prevalence of obesity among adults and children have increased dramatically and it has now reached at its extreme proportion and stands as a major contributor to the global burden of chronic disease and disability. It was estimated through the Global Burden of Disease study that, by the year 2020, deaths due to non communicable diseases will be four times higher than the communicable diseases. The non communicable diseases include hypertension, diabetes mellitus, coronary heart disease, stroke and metabolic syndrome where obesity is the common predisposing factor(*Kennethe.E and et al., 2008*).

The prevalence of overweight and obesity is commonly assessed by using body mass index (BMI), defined as the weight in kilograms divided by the square of the height in meters (kg/m²). A BMI over 25 kg/m² is defined as overweight, and a BMI of over 30 kg/m² as obese. These markers provide common benchmarks for assessment, but the risks of disease in all populations can increase progressively from lower BMI levels (*Body Mass Index, 2016*).

STUDY PROBLEM

Obesity is a global health problem and little is known about prevalence among female nursing students in Wadi Al Dawasir. Nursing students are future health care professionals and would be the role model for the general population. Due to their sedentary lifestyle they are more prone to be obese and overweight and ultimately are at greater risk of chronic diseases. So, it would be worthwhile to provide useful information about the prevalence of obesity in order to design prevention strategies for future nurses as well as to sensitize the public on the adult female obesity in Wadi Al Dawasir and to provide data for public health professionals and policy planner. Therefore, this study aimed to determine prevalence of obesity among female nursing students and to determine prevalence of obesity according to their age.

OBJECTIVES

This study aimed to determine the prevalence of obesity among female nursing students by using body mass index and to find the obesity prevalence according to their age.

MATERIALS & METHODS

Study Design: A descriptive design was adopted for the study.

Setting: The study was conducted at Prince Sattam Bin Abdulaziz University, College of Applied Medical Sciences, Department Of Nursing, Wadi Al Dawasir, Saudi Arabia in the month of January 2016- February 2016.

Subjects: The target population consisted of 100 female nursing students of college of applied medical sciences, Wadi Al Dwasir, Saudi Arabia.

Ethical consideration: Necessary permissions to conduct the study were obtained from concerned college authorities. The objectives of the study were explained to the participating students after which they gave their informed consent. Confidentiality of the information was strictly adhered to by assuring the attendees that no details about their status will be released and data will be only used for research purpose.

Data was collected using the following tools:

An interviewer-administered questionnaire included the following sections:

a) Socio-demographic variables: academic year, age, nationality, marital status, housing and family income.

2-Anthropometric Measurements:

Body mass index was measured by following procedure.

Body Mass Index: Weight and height was measured using Digital Weight Height Scale model WLT200RT. The scales were previously checked for reliability. Practical demonstrations were conducted to ensure accuracy of measurements. Weight was measured in kilograms (kg) with students barefooted and wearing their usual light clothes. Weight was recorded to the nearest 100 gm. Height was measured in centimeters (cm) to the nearest 0.5 cm.

Obesity was defined by the body mass index (BMI), weight in kilograms divided by the square of height in meter. BMI was measured by the formula weight in kilograms / Height in

meters² (*Centers for Disease Control and Prevention, 2016*). Weight status assessed by standard classification as per the following table 1.

Table 1. Classification of obesity as per the body mass index:

Classification	BMI
Underweight	<18.5 kg/m ²
Normal	18.5-24.99 kg/m ²
Overweight	25-29.99 kg/m ²
Obese	30-34.99 kg/m ²
Severe obesity	>35 kg/m ²

For the convenience of statistical analysis, associations and interpretation of the results, BMI classification was categorized into 3 groups: underweight (BMI <18.5 kg/m²); normal (BMI=18.5-24.99 kg/m²); and overweight (includes overweight, obese, and severe obese) i.e.(BMI>25 kg/m²).

Statistical Analysis:

Data collected were checked for accuracy and completeness and were coded and entered into the Statistical Package for Social Sciences (SPSS) software version 16. The descriptive statistical data was analyzed and presented using frequency distribution and results were expressed in percentage.

RESULTS

Table 2: Socio-demographic variables of respondents:

Variables	Category	Frequency (N=100)	Percentages (%)
Age	18-<20 years	33	33%
	20-<22 years	40	40%
	≥22 years	27	27%
Academic year	First year	47	47%
	Second year	27	27%
	Third year	10	10%

Variables	Category	Frequency (N=100)	Percentages (%)
	Fourth year	16	16%
Nationality	Saudi	100	100%
	Non-Saudi	00	00%
Marital status	Single	89	89%
	Married	10	10%
	Divorced	01	01%
Family income in Saudi riyal(SR)	< 5000 S.R	32	32%
	5000-<10000 S.R.	50	50%
	≥ 10000 S.R.	18	18%
Housing	Apartment	31	31%
	Independent house	69	69%

Table 2 shows that 40% of the respondents were between the age of 20-<22 years, 33% were between 18-<20 years, and 27% were ≥ 22 years. Further, 47% were in first year, 27% were in second year, 16% were in fourth year and 10% were in the third year.

Figure 1: Percentage distribution of the students according to the age:

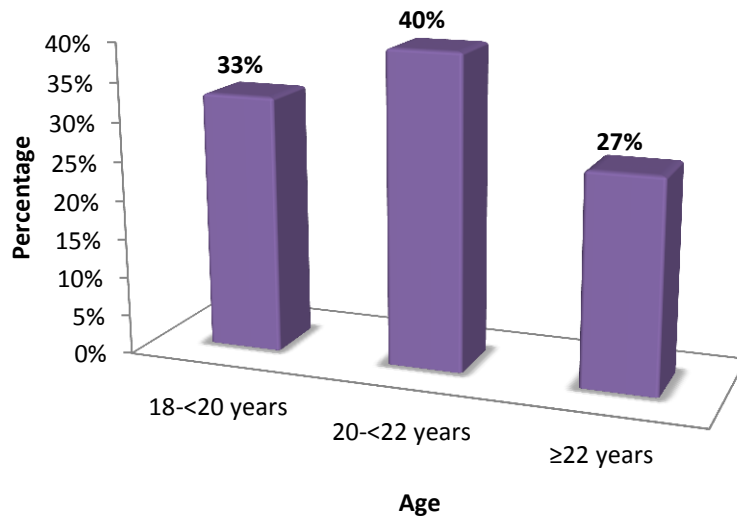
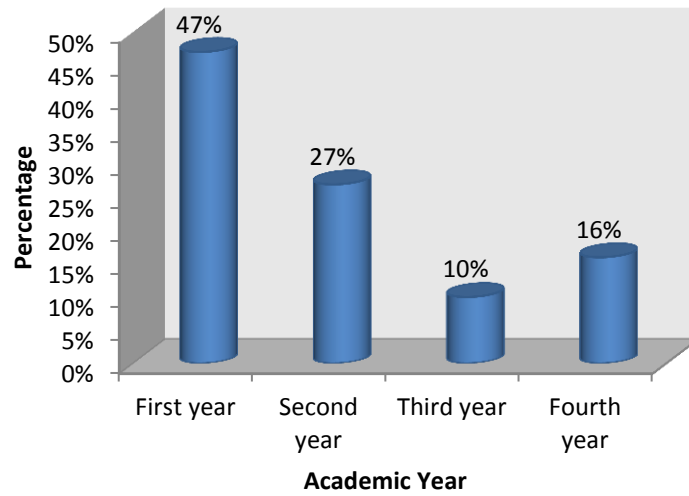


Figure 2: Percentage distribution of the students according to the academic year:



Regarding marital status, 89% were single, 10% were married and 01% was divorced. Regarding family income, 50% students had family income of 5000-10000 Saudi riyal, 32% had less than 5000 Saudi riyal, whereas 18% had 10,000 Saudi riyal. 69% were living in independent house; whereas 31% were living in apartment.

Figure 3: Percentage distribution of the students according to the family income:

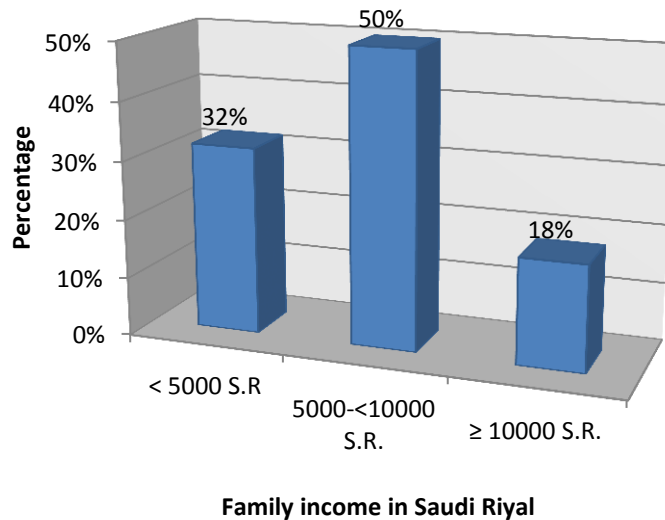


Table 3: Prevalence of obesity as per Body Mass Index (BMI):

Measurements	Frequency (N=100)	Percentages (%)
1. Body Mass Index(BMI)		
Underweight (<18.5)	06	06%
Normal weight(18.5-24.99)	35	35%
Overweight(25-29.99)	31	31%
Obese (30-34.99)	19	19%
Severe obese (≥35)	09	09%
2. Body Mass Index(BMI)		
Underweight (<18.5)	06	06%
Normal weight(18.5-24.99)	35	35%
Overweight(≥25)	59	59%

Table 3 shows the prevalence of obesity among female nursing students as per body mass index (BMI). 35% of the students had normal weight, 31% were overweight, 19% were obese, 9% had severe obesity, and 6% were underweight.

Figure 3: Percentage distribution of the students according to the body mass index (BMI):

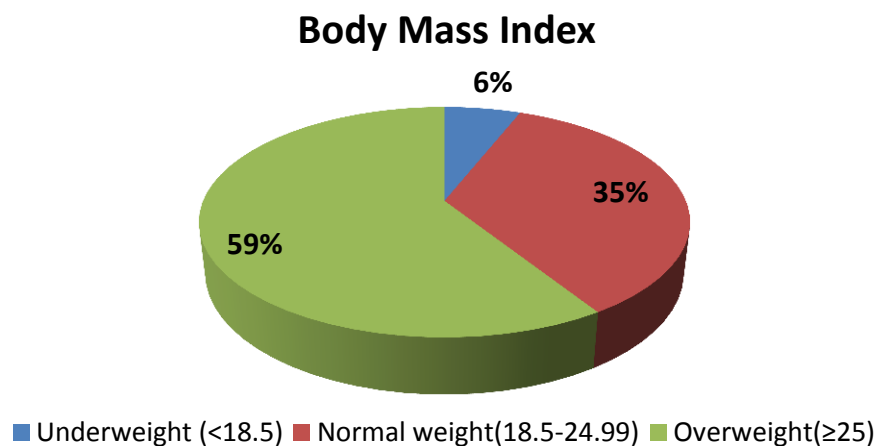
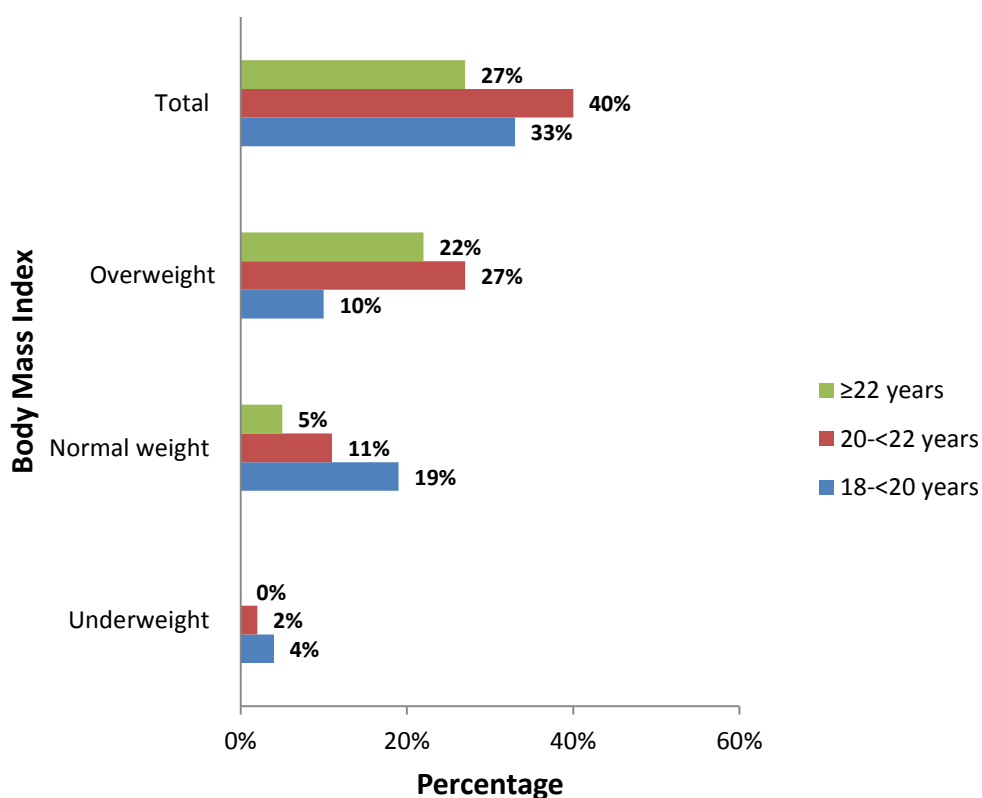


Table 4: Prevalence of obesity according to age:

Variable	Underweight		Normal weight		Overweight		Total	
	No (6)	%	No (35)	%	No (59)	%	No (100)	%
Age :								
18-<20 years	04	4%	19	19%	10	10%	33	33%
20-<22 years	02	2%	11	11%	27	27%	40	40%
≥22 years	00	00%	05	5%	22	22%	27	27%

Table 4 shows the prevalence of obesity according to age. It was found that 18-<20 years there were 33 students out of these subjects 04% were underweight, 19% had normal weight and 10% were overweight. Further 20-<22 years, there were 40 students, out of these subjects 02% were underweight, 11% had normal weight and 27% were overweight. In the age group ≥ 22 years there were 27 students out of which 35% had normal weight, 22% were overweight, and none of the students were underweight in this group.

Figure 4: Percentage distribution of obesity according to age:



DISCUSSION

Obesity has reached epidemic proportions globally, with more than 1 billion adults overweight and least 300 million of them clinically obese and is a major contributor to chronic disease and disability. Increased consumption of more energy-dense, nutrient poor foods with high levels of sugar and saturated fats, combined with reduced physical activity, have led to obesity in some areas of North America, the United Kingdom, Eastern Europe, the Middle East, the Pacific Islands, Australasia and China. This increase is often faster in developing countries than in the developed world (*World Health Organization,2016*).

Obesity and overweight pose a major risk for serious diet-related chronic diseases, including type 2 diabetes, cardiovascular disease, hypertension and stroke, and certain forms of cancer. The health consequences range from increased risk of premature death, to serious chronic conditions that reduce the overall quality of life (*World Health Organization, 2016*).

The present study was an attempt to identify obesity among female nursing students. Majority of the respondent were between 20-<22 years. About 89% were single. The result gathered based on anthropometric measurements from the study, using body mass index (BMI). As indicated by BMI the prevalence of obesity was about 59(59%) were overweight, 35(35%) had normal weight and 6(6%) were underweight.

This finding is consistent with a study was conducted on prevalence of overweight and obesity among Saudi female university students in Riyadh was reported 47.9% was obese (*Norah M Al Qauhiz 2010*).A National Survey of the prevalence of overweight and obesity in Saudi population aged 15-20 years, a prevalence of 12% and 7% for males(*Saudi Medical Journals,2016*). There is similar study conducted on Obesity among female intermediate nursing students of health science collage in dammam city, Saudi Arabia was reported high prevalence of obesity among nursing students (*Amr A. Sabra, 2014*).

CONCLUSION

Obesity is increasing in Saudi Arabia among female college students due to unhealthy habits like consumption of fast food, soft drinks, multiple snacks, low fruit and vegetable consumption. The results of the current study show a prevalence rate of obesity collectively from all age groups as estimated by Body mass index. Control of obesity is essential in order to prevent the development of other chronic diseases such as diabetes mellitus, hypertension

and cardiovascular disease. From the results of the present study, it is recommended to have obesity prevention and weight control programs to raise the awareness among female nursing students should be emphasized.

RECOMMENDATIONS

1. Awareness and preventive programs for weight control and a healthy lifestyle among females nursing students should be emphasized.
2. The Prince Sattam Bin Abdulaziz University should provide awareness on the health implication and preventive measures of obesity in collaboration with health organizations.
3. Public health strategies to prevent obesity should begin with schools, colleges and extend to the entire community.
4. Ministry of Health and ministry of education should provide more materials such as brochures, pamphlets, charts to college libraries on obesity and its health implication and possible preventive measures.

REFERENCES

- [1] *Al-Almaie SM*. Prevalence of obesity and overweight among Saudi adolescents in Eastern Saudi Arabia. *Saudi Med J* 2005; 26(4):607-611.
- [2] *Al-Baghli NA, Al-Ghamdi AJ, Al-Turki KA, El-Zubaier AG, Al-Ameer MM, Al-Baghli FA*. Overweight and obesity in the eastern province of Saudi Arabia. *Saudi Arabia. Saudi Med J* 2008; 29 (9): 1319-1325.
- [3] *Al-Jeheidli AH, Moquddan FI, Al-Rumh MK, Salmin NN*. General Practitioners Attitudes and Practices toward Managing Obesity. *Kuwait Med J* 2007, 39:138-143.
- [4] *Al-Muraikhi AE, Al-Kuwari MG*. Primary Care physicians' knowledge, attitude, and practice toward obesity management in Qatar. *Middle East J Fam Med* 2008; 10:3-7.
- [5] *Al-Nozha MM, Al-Mazrou YY, Al-Maatouq MA, Arafah MR, Khalil MZ, Khan NB, et al*. Obesity in Saudi Arabia. *Saudi Med J* 2005; 26:824-829.
- [6] *Amr A. Sabra*. Obesity among female intermediate nursing students of health science collage in Dammam city, Saudi Arabia: prevalence and associated factors. Available online: <http://dx.doi.org/10.14206/canad.j.clin.nutr.2014.01.04>.

- [7] **Bahrain Medical Bulletin**. obesity in Saudi Arabia. Available online: www.bahrainmedicalbulletin.com/september_2000/Obesity_saudi.pdf.(accessed on 28 February 2016)
- [8] **Body Mass Index: Considerations for Practitioners**. Available online: <http://www.cdc.gov/obesity/downloads/BMIforPactitioners.pdf>(accessed on 26 February 2016)
- [9] **Centers for Disease Control and Prevention**. About Adult BMI. Available online:http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/.(Accessed on 28 January 2016)
- [10] **El-Hazmi MA, Warsy AS**. Prevalence of obesity in the Saudi population. *Ann Saudi Med* 1997; 17(3):302-306.
- [11] **Hossain P, Kavar B, El Nahas M**. Obesity and diabetes in the developing world - a growing challenge. Erratum in: *N Engl J Med* 2007 Mar 1;356(9):973. *N Engl J Med*. 2007; 356(3):213–215.
- [12] **James PT, Leach R, Kalamara E, Shayeghi M**. The worldwide obesity epidemic. *Obes Res* 2001; 9 (4):228-233.
- [13] **Kennethe.E. Oghagbon, Valentine.U. Odilil**. Body mass index and blood pressure pattern of Students in a Nigerian University. *International Journal of Health Research*. 2008; 2(2):177-182.
- [14] **Norah M Al Qauhiz**. Obesity among Saudi Female University Students: Dietary Habits and Health Behaviors. *The Journal of the Egyptian Public Health Association* 01/2010; 85(1-2):45-59.
- [15] **Saudi Medical Journals**. Survey of the prevalence of overweight and obesity in Saudi population. Available online: <http://smj.psmmc.med.sa/index.php/smj/article/viewFile/5307-308>.
- [16] **Vella-Zarb RA, Elgar FJ**. The “freshman 5”: A meta-analysis of weight gain in the freshman year of college. *J. Amer. Coll. Health*. 2009; 58:161–166.
- [17] **World Health Organization**. Fact sheet: obesity. Available online: <http://www.who.int/topics/obesity/en/> (accessed on 28 February 2016).
- [18] **World Health Organization**. Global Health Observatory (GHO) data on obesity. Available online: http://www.who.int/gho/ncd/risk_factors/obesity(Accessed on 28 February 2016).
- [19] **World Health Organization**. World health statistics 2014. Available online: http://apps.who.int/iris/bitstream/10665/112738/1/9789240692671_eng.pdf

- [20] **World Health Organization**. Fact sheet: Obesity And Overweight. Available online: http://www.who.int/dietphysicalactivity/media/en/gsf_s_obesity.pdf (Accessed on 18 January 2016)
- [21] **World Health Organization**. Fact sheet: Unhealthy Diet and Physical Inactivity. Available online: http://www.who.int/nmh/publications/fact_sheet_diet_en.pdf (accessed on 28 February 2016).