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Prevalence of overweight and obesity among a university faculty and staffs from 2004 to 2010, China

Lianping He[1], Xiaohua Ren[1], Yifan Qian[2], Yuelong Jin[1], Yan Chen[1], Daoxia Guo[1], Yingshui Yao[1]

[1]School of Public Health, Wannan Medical College. Wuhu 241002. Anhui. People's Republic of China. [2]School Hospital of Anhui Normal University. Anhui Normal University. Wuhu. Anhui 241000. People's Republic of China.

Abstract

Background: **Overweight and obesity are epidemic worldwide. Our present study was to examine the prevalence of overweight and obesity in a university faculty and staffs using two references [Working Group on Obesity references in China (2004) and World Health Organization (WHO) criteria 2000].**

Objective: **The purpose of this study was to estimate the prevalence of overweight and obesity among university faculty and staffs in China.**

Methods: **A cross-sectional study was designed to collect the routine health screening data for a university faculty and staffs from 2004 to 2010(2004, 2006, 2008 and 2010); the subjects aged 22-94 years.**

Results: **Depending on the references used (China and WHO, respectively), the overall prevalence of overweight, including obesity of the subjects was 36.1% and 25.5%, the prevalence of obesity was 5.3%, and 1.5%, respectively, the prevalence of overweight, including obesity among the male subjects was 46% and 32.5%, respectively, the prevalence of overweight, including obesity among the female subjects was 21% and 14.1%, respectively, An interesting observation made was that the overall prevalence of overweight was increased with age.**

Conclusions: **Regarding the harmful of overweight and obesity, it is encourage reducing liberal food environment and increasing physical activity among university faculty and staffs, especially for male faculty.**

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Key words: *Body mass index. Faculty. Obesity. Overweight. China.*

PREVALENCIA DE SOBREPESO Y OBESIDAD ENTRE UNA UNIVERSIDAD, FACULTAD Y PERSONAL, DE 2004 A 2010, CHINA

Resumen

Antecedentes: **El sobrepeso y la obesidad son epidemia en todo el mundo. El presente estudio fue examinar la prevalencia de sobrepeso y obesidad en una universidad, Facultad y personal utilizando dos referencias [Grupo de trabajo sobre la obesidad referencias en China (2004) y la Organización Mundial de la salud (OMS) criterios (2000)].**

Objetivo: **El objetivo de este estudio fue estimar la prevalencia del sobrepeso y la obesidad entre la facultad y personal de la Universidad en China.**

Métodos: **Un estudio transversal fue diseñado para recoger los exámenes de salud de rutina los datos para una universidad la facultad y personal de 2004 a 2010 (2004, 2006, 2008 y 2010); los sujetos de 22-94 años.**

Resultados: **Dependiendo de las referencias utilizadas (China y la OMS, respectivamente), la prevalencia de sobrepeso, incluyendo la obesidad de los sujetos fue un 36,1% y 25,5%, la prevalencia de obesidad fue del 5,3% y 1,5%, respectivamente, la prevalencia de sobrepeso, incluyendo la obesidad entre los sujetos varones, fue de 46% y 32,5%, respectivamente la prevalencia de sobrepeso, incluyendo la obesidad entre las mujeres fue de 21% y 14,1%, respectivamente, de una observación interesante es que la prevalencia global de sobrepeso aumentó con la edad.**

Conclusiones: **Respecto a los daños del sobrepeso y la obesidad, es alentar la reducción de alimentos ambiente liberal y aumentar la actividad física entre universidad, Facultad y personal, especialmente para hombre facultad.**

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Palabras clave: *Índice de masa corporal. Facultad. Obesidad. Sobrepeso. China.*

Lianping He, Xiaohua Ren and Yifan Qian contributed equally to this work.

Correspondence: Yingshui Yao.
School of Public Health.
Wannan Medical College. No. 22 Road wenchangxi.
Yijiang distric. wuhu city, anhui province.
241002 People's Republic of China.
E-amil: yingshuiyao@163.com

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Introduction

In recent decades, the prevalence of obesity in children and adult has risen steeply world wide[1-6]. Some researcher documented that employees have less self-efficacy and consume less healthful diets than their normal weight colleagues[7]. A high prevalence of adults obesity and overweight cases has been reported in developing countries undergoing nutritional transition[8]. These are also emerging as a major public health problem in China[9,10].

Obesity is associated with significant comorbidities and health problems such as breast cancer[11], diabetes mellitus[12,13], hypertension[14], coronary artery disease[15], and occupational injuries[16]. Some researcher showed that the prevalence of obesity was higher among middle-aged adults[17,18]. In China, the prevalence of overweight, general obesity and abdominal obesity among Chinese adults has increased greatly during the past 17 years. However, there is a paucity of data on prevalence of overweight and obesity in university faculty and staffs[19].

In this study, the Center for Working Group on Obesity references in China[20] and World Health Organization (WHO) criteria[21] was used to assess the prevalence of overweight, obesity in a university faculty and staffs in Wuhu area of south Anhui, China.

Methods

Subjects and Methods

Participants

Routine health screening was preformed among a university faculty and staffs every two years, in this study a total of 9,979 person-years (6,038 male and 3,941 female) data was collected between 2004 to 2010 (2004, 2006, 2008 and 2010), aged 22-94 years. All subjects agreed to provide their personal information regarding the purpose and the procedures of our study. This study was approved by local committee.

Anthropometric measurements

Height was measured using a standard stadiometer following study protocols, and weight in kilograms was measured on an electronic scales. BMI was computed using the following standard equation: BMI = Weight in kg/height squared in meter.

Definitions

Overweight and obesity were defined on BMI cutoff points, which are gender and age specific. 1 Working Group on Obesity references in China, the BMI cut-off points are 24 and 28 for overweight and obesity respectively; 2 the WHO reference is based on the BMI of 25 and 30 at the age of 18 for classification of childhood and adolescent overweight and obesity, respectively.

Ethical consideration

Faculty and staffs in the selected university were well-informed on the scope and extent of the survey and consent of the parents were also obtained.

Statistical analysis

R software programming language[22] was performed to describe the prevalence of overweight/obesity ,A line graph was draw by Excel software.

Results

In this study a total of 9,979 person-years (6,038 male and 3,941 female)data was collected between 2004 to 2010 (2004, 2006, 2008 and 2010), aged 22-94 years. The mean values (± SD) of weight, height, and calculated BMI are shown in table I. An interesting observation made was that the mean of BMI and weight was increased with year in male but not in female (fig.1).

The prevalence of overweight and obesity for university faculty and staffs are shown in table II. Depending on the references used (China and WHO, respectively), the overall prevalence of overweight, including obesity of the subjects was 36.1% and 25.5%, the prevalence of obesity was 5.3%, and 1.5%, respectively, the prevalence of overweight, including obesity among the male subjects was 46% and 32.5%, respectively, the prevalence of overweight, including obesity among the female subjects was 21% and 14.1%, respectively, An interesting observation made was that the overall prevalence of overweight was increased with age. The higher prevalence of overweight and obesity observed in our subjects using the WHO reference and working group on obesity references in China.

Discussion

In the present study, we use two references to compare the overweight and obesity. The results revealed that overall prevalence of overweight, including obesity of the subjects was 36.1% and 25.5%, the prevalence of obesity was 5.3%, and 1.5%, respectively, depending on the references used (China and WHO, respectively). An interesting observation made was that the mean of BMI and weight was increased with year in male but not in female, these data provide an indication that university male faculty and staffs should be taken more attention.

Table I
Mean (± SD) of height, weight and BMI of university faculty and staffs from 2004 to 2010

		2004	2006	2008	2010
male	n	1,436	1,646	1,673	1,627
	Age(years)	51.20 ± 16.80	50.82 ± 16.56	50.53 ± 17.11	51.46 ± 17.36
	Height(m)	1.69 ± 0.06	1.69 ± 0.06	1.70 ± 0.06	1.71 ± 0.06
	Weight(kg)	67.03 ± 17.36	67.60 ± 9.85	68.49 ± 9.65	70.03 ± 9.87
	BMI(kg/m^2)	23.31 ± 3.09	23.50 ± 2.94	23.72 ± 2.86	24.04 ± 2.93
Female	n	892	1,100	1,185	1,190
	Age(years)	47.58 ± 16.59	47.05 ± 16.27	45.39 ± 17.59	46.20 ± 18.08
	Height(m)	1.59 ± 0.12	1.59 ± 0.06	1.59 ± 0.06	1.60 ± 0.07
	Weight(kg)	54.76 ± 8.08	55.25 ± 8.09	55.22 ± 7.83	55.69 ± 7.74
	BMI(kg/m^2)	21.76 ± 3.11	21.94 ± 3.11	21.89 ± 2.97	21.83 ± 2.84

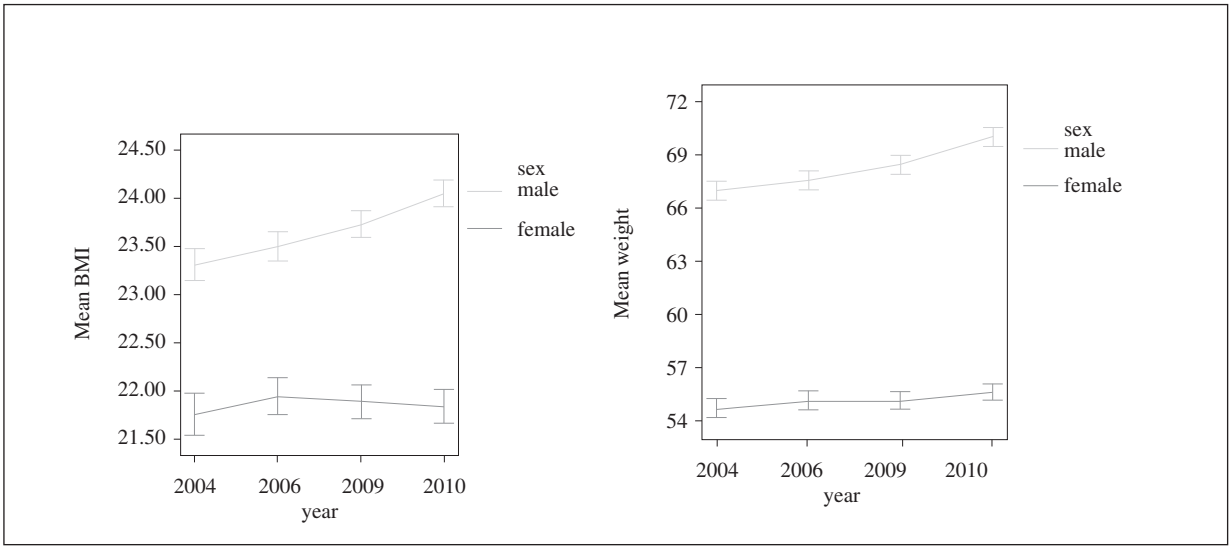

Fig. 1.—Trend of BMI and weight according to sex from 2004 to 2010.

Table II
The prevalence of obesity for university faculty and staffs according to age

		Reference	*Prevalence (%)*						
male	Age(years)		22-30	31-40	41-50	51-60	61-70	older 70	overall
	n		607	1375	1259	946	760	1091	6038
	Overweighta	China##	31.5	44.8	54.8	53.4	46.2	39.0	46.0
	obesity	China##	4.6	5.9	7.1	7.7	5.7	5.9	6.3
	Overweighta	WHO#	19.4	30.4	39.6	39.0	33.4	27.8	32.5
	obesity	WHO#	1.3	1.7	1	1.6	1.1	2.2	1.5
Female	n		693	1047	734	568	455	444	3941
	Overweighta	China##	8.4	12.2	18.5	32.2	32.1	39.9	21.0
	obesity	China##	1.0	0.9	2.5	7.0	8.8	9.0	3.9
	Overweighta	WHO#	5.6	7.4	11.9	22.4	23.5	26.4	14.1
	obesity	WHO#	0.1	0.2	0.8	2.6	3.5	3.2	1.4
All	n		1300	1673	1993	1514	1215	1535	9979
	Overweighta	China##	19.2	30.7	41.4	45.4	40.9	39.2	36.1
	obesity	China##	2.7	3.7	5.4	7.5	6.8	6.8	5.3
	Overweighta	WHO#	12.1	20.4	29.4	32.8	29.7	27.4	25.2
	obesity	WHO#	0.7	1.1	0.9	2.0	2.0	2.5	1.5

Working Group on Obesity references in China. # The WHO reference. Overweighta: Overweight including obesity.

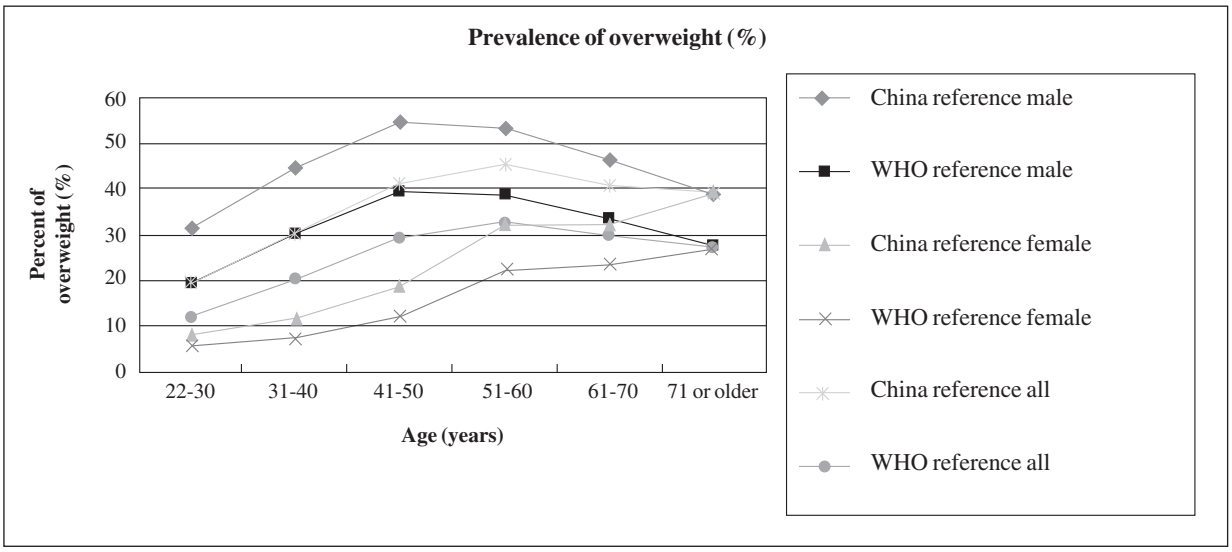

Fig. 2.—The prevalence of overweight for university faculty and staffs according to different reverence in different age.

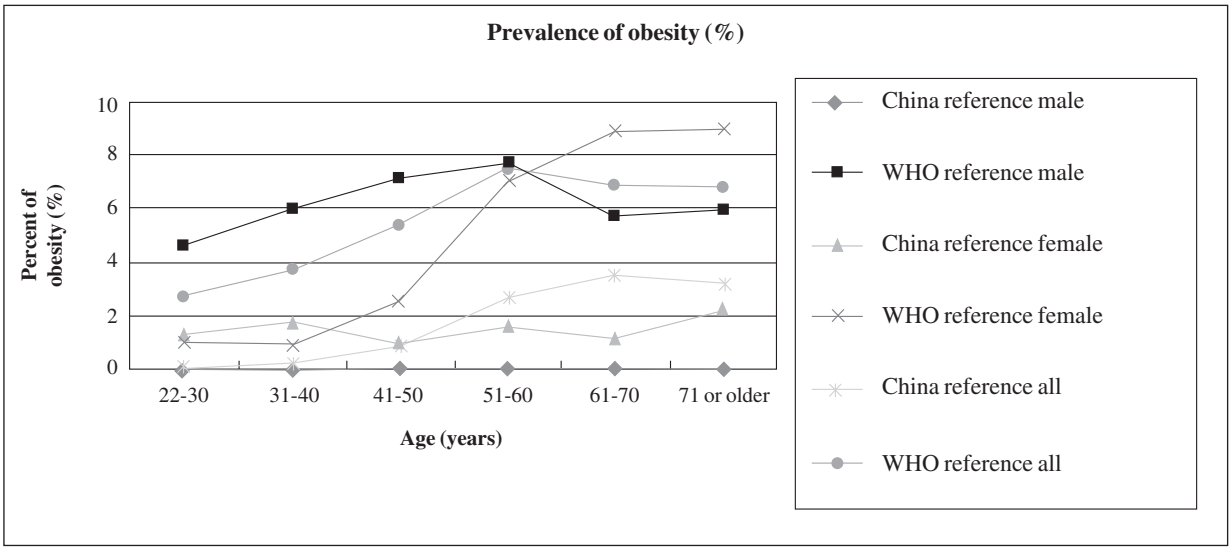

Fig. 3.—The prevalence of obesity for university faculty and staffs according to different reverence in different age.

Recent evidence suggests that the nutrition transition is accelerating and the outcome of this trend is a rapid increase in obesity and chronic diseases[23]. Lifestyle transition and socio-economic improvement have contributed enormously to the escalating problem in developing countries. Especially, lifestyle[24] and food variety[25] may have an influence on obesity. Meanwhile, obesity also is associated with reduced sleeping hours and long working hours[26], Lack of health awareness to male university faculty may also be linked to its high prevalence.

The references used in this study produce different estimates for overweight and obesity. However, future research is needed to identify more accurate defining criteria for overweight and obesity using the BMI cut-offs in adults.

Conclusions

The study showed that the prevalence of overweight in early adolescence school girls in small town of our country is a critical health issue. The study suggests that greater risk of overweight among university faculty and staffs for targeted intervention that promotes increased physical activity and decreased consumption of energy dense foods to control the escalating prevalence.

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Conflict of Interest

None declared.

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