A population-based study of obesity and its complications in southern Islamic Republic of Iran

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Abstract

Background: General and central obesity are important risk factors for chronic diseases and health-related outcomes.

Aims: We determined the prevalence of obesity and related complications among individuals aged 40–70 years in Kherameh, southern Islamic Republic of Iran.

Methods: This cross-sectional study included 10 663 people aged 40–70 years who participated in the first phase of the Kherameh cohort study. Data were collected on demographic characteristics, history of chronic diseases, family history of diseases, and various clinical measures. We used multiple logistic regression analysis to establish the relationships between general and central obesity, and related complications.

Results: Of the 10 663 participants, 17.9% had general obesity and 73.5% had central obesity. In people with general obesity, the odds of having the non-alcoholic fatty liver disease and cardiovascular disease were 3.10 times and 1.27 times higher than in individuals with normal weight, respectively. People with central obesity had higher odds of having other components of metabolic syndrome such as hypertension (OR: 2.87; 95% CI: 2.53–3.26), high triglyceride levels (OR: 1.71; 95% CI: 1.54–1.89), and low high-density lipoprotein cholesterol levels (OR: 1.53; 95% CI: 1.37–1.71) than those without central obesity.

Conclusions: The study showed a high prevalence of general and central obesity and health-related effects, and its association with several comorbidities. Given the level of obesity-related complications found, primary and secondary prevention interventions are needed. The results may help health policymakers establish effective interventions to control obesity and related complications.

Keywords: obesity, prevalence, risk factors, chronic disease, Islamic Republic of Iran.

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Introduction

The prevalence of obesity in different parts of the world has shown a worryingly increasing trend *(1)*. Most concerns about this disease are because of its associated complications *(2)*. Thus, the increasing prevalence of overweight and obesity is an important public health problem worldwide *(3)*. The global prevalence of obesity in adults is 10.8% in males and 14.9% in females *(4)*. In Eastern Mediterranean countries, the prevalence of obesity and overweight has shown differing trends, ranging from 25.0% to 81.9% *(5)*.

Body mass index (BMI) is a suitable measure of general obesity and elevated BMI is a risk factor for several causes of death, including ischaemic heart disease and stroke *(6)*. Globally, 23% of cardiovascular diseases (CVDs) are associated with overweight and obesity, most of which occur in developing countries *(7)*. Studies have shown that central obesity, with complications such as metabolic syndrome and coronary heart disease, are more closely linked with a person's BMI *(8,9)*.

Non-alcoholic fatty liver disease is a chronic disorder that occurs as a result of the accumulation of fat in the liver *(2)*. The most important risk factors associated with non-alcoholic fatty liver disease are central obesity, type 2 diabetes, dyslipidaemia and metabolic syndrome *(10)*.

Metabolic syndrome is another complication associated with obesity and it significantly increases the risk of type 2 diabetes, stroke and hepatic steatosis *(11)*. The International Diabetes Federation defines metabolic syndrome as having central obesity plus 2 of the other 4 components of metabolic syndrome, which are: elevated triglyceride levels or specific treatment for these fatty disorders; reduced high-density lipoprotein (HDL) cholesterol or specific treatment for these lipid disorders; high blood pressure or a previous diagnosis of hypertension; and high fasting plasma glucose levels or a previous diagnosis of type 2 diabetes *(12)*.This definition is an effective diagnostic tool for research purposes and clinical practice. Physicians can use it to identify high-risk patients for health-related outcomes in any country *(13)*.

Comprehensive and accurate information is lacking on the prevalence of obesity and its associated complications in different regions of the Islamic Republic of Iran and among different age and sex groups *(14)*. Therefore, this study was carried out to investigate the prevalence of general and central obesity and several related complications using baseline data from a population-based cohort study conducted in Kherameh City, southern Islamic Republic of Iran. We examined and controlled for several complications associated with general and central obesity, including many confounding variables. The components of metabolic syndrome were considered separately as complications, and the relationship of each with general and central obesity was examined. The results of this study can help health policymakers propose evidence-based measures to prevent and control obesity and overweight and reduce its associated complications.

Methods

Study design and population

This was a cross-sectional study based on data from the initiation phase of the Persian Kherameh cohort study, conducted in Kherameh City. The Persian Kherameh cohort is a part of an extensive population-based cohort study in the Islamic Republic of Iran. This cohort study was designed in 2014. Its objectives and design, which involved 18 provinces of the country, have already been published *(15)*. The main purpose of the cohort study was to identify the most common noncommunicable diseases among Iranian ethnic groups and their related risk factors, and to explore effective methods of prevention. Kherameh City is in the south of Fars Province, with a population of 54 864 people.

All 10 663 participants aged 40–70 years who participated in the first phase of the Kherameh cohort study between 2014 and 2017 were included in our study.

After informed written consent was obtained from all participants in the cohort study, they were interviewed by trained experts using standard questionnaires which included demographic information, history of chronic diseases and family history of diseases *(15)*. The team of the Persian cohort study assessed the validity and reliability of the questionnaire before implementing this project *(15)*. The inclusion criteria of the cohort study were: age 40–70 years, resident of Kherameh and Iranian citizenship. Persons with mental disorders and any untreated disease in the acute phase, those unwilling to participate in the study and those who had not been referred to clinics designated for physical examination were excluded from the study.

Demographic and clinical information

Information on demographic characteristics, such as age, sex, marital status, place of residence, employment, educational level, ethnicity and socioeconomic status, was collected using a general questionnaire. The household and individual sections of the questionnaire collected information on the socioeconomic status of the respondents.

The blood pressure measurement protocol in the Persian Kherameh cohort required blood pressure to be measured twice. Anthropometric indices – weight (kg), height (cm) and waist circumference (cm) – were measured according to protocols proposed by the US National Institute of Health *(15)*.

Definitions

General obesity was defined based on the standard BMI method recommended by the World Health Organization (WHO) *(16)*: low weight (BMI < 18.5 kg/m^2); normal weight (BMI 18.5–24.9 kg/m^2); overweight (BMI 25–29.9 kg/m^2); and obesity (BMI ≥ 30 kg/m^2). Central obesity, also known as abdominal obesity, was defined based on criteria of the International Diabetes Federation, namely waist circumference ≥ 94 cm in men and ≥ 80 cm in women *(17)*.

Metabolic syndrome is defined by WHO as a pathological condition characterized by central obesity, insulin resistance, hypertension and hyperlipidaemia *(18)*. We used the International Diabetes Federation's definition of metabolic syndrome as having central obesity plus 2 of the other 4 components of metabolic syndrome. The other components are: elevated triglyceride levels (≥ 150 mg/dL) or specific treatment for these fatty disorders; reduced HDL cholesterol (< 40 mg/dL in men and < 50 mg/dL in women) or specific treatment for these lipid disorders; high blood pressure (systolic ≥ 130 mmHg and diastolic ≥ 85 mmHg) or a previous diagnosis of hypertension; and high fasting plasma glucose levels (≥ 100 mg/dL) or a previous diagnosis of type 2 diabetes *(17)*.

For assessing non-alcoholic fatty liver disease and CVDs, the data recorded in the clinical questionnaire were used. Participants' responses were matched with medications used, laboratory records, ultrasound records and physician diagnoses. Regarding alcohol consumption, the type of alcohol consumed, percentage of alcohol consumed (e.g. beer 5–7%) and age when drinking started were determined among individuals who consumed it and according to clinical evidence. These individuals were not classified as non-alcoholic fatty liver disease if they had fatty liver.

Statistical analyses

Categorical variables are presented as frequency and percentage and continuous variables as mean and standard deviation (SD). The chi-squared test was used to assess differences in the univariate analysis. The global standard population for low- and middle-income countries was used to estimate the age-standardized prevalence of general and central obesity by sex *(19)*. Logistic regression analysis was used to estimate the crude and adjusted odds ratios (OR) and 95% confidence intervals (CI) of general obesity, central obesity and their associated complications. Adjusted OR controlled for the effect of other confounding variables, including: age, sex,

marital status, ethnicity, socioeconomic status, education level, residence, and employment. A *P*-value < 0.05 was considered statistically significant. Data analysis was performed using STATA, version 16.0 (Stata Corp, College Station, Texas, USA).

Ethical considerations

The research ethics committee of Shiraz University of Medical Sciences approved this study (IR.SUMS.REC.1399.1175).

Results

Of 10 663 participants recruited for this study, 4719 (44.3%) were men (Table 1). The mean age of the participants was 51.9 (SD 8.2) years. More than half the participants (6247; 58.6%) lived in rural areas, 9492 (89.0%) were married and 5587 (52.4%) were illiterate (Table 1). Regarding clinical analyses, 7691 (72.1%) of the participants had fasting plasma glucose levels < 100 mg/dL (Table 1).

Out of the whole study population, 1919 participants (17.9%) had general obesity (BMI ≥ 30 kg/m^2) and 7847 (73.5%) had central obesity (Table 1). Figure 1 shows the prevalence of overweight and general and central obesity in men and women. No significant difference was seen in the prevalence of general obesity in different age groups (P = 0.769) but significant differences were found for all the other study variables (P < 0.001) (Table 2). Significant differences were seen in the prevalence of central obesity for all variables including age (P < 0.01) (Table 2).

The crude and age-standardized prevalence of general and central obesity was higher in women than men (Table 3).

Among other components of metabolic syndrome, general obesity was most prevalent in individuals with low HDL cholesterol levels (56.8%; 1091/1919), followed by people with central obesity (50.9%; 3993/7847) (P < 0.001). The prevalence of high fasting plasma glucose levels or previous diagnosis of type 2 diabetes was 42.7% (820/1919) in people with general obesity and 38.8% (3049/7847) in individuals with central obesity (P < 0.001). General obesity was least prevalent among people with high triglyceride levels (33.9%; 651/1919) followed by those with central obesity 31.1% (2444/7847) (P < 0.001).

Table 4 shows the multiple logistic regression analysis of the relationship between general and central obesity with related complications. Among people with general obesity, the odds of having non-alcoholic fatty liver disease and CVDs were 3.10 times (95% CI: 2.58–3.73) and 1.27 times (95% CI: 1.07–1.51) higher than in individuals with normal weight, respectively. Participants with central obesity also had higher odds of having CVD and non-alcoholic fatty liver disease than those without central obesity: OR: 1.19 (95% CI: 1.02–1.40) and OR: 3.01 (95% CI: 2.40–3.78), respectively.

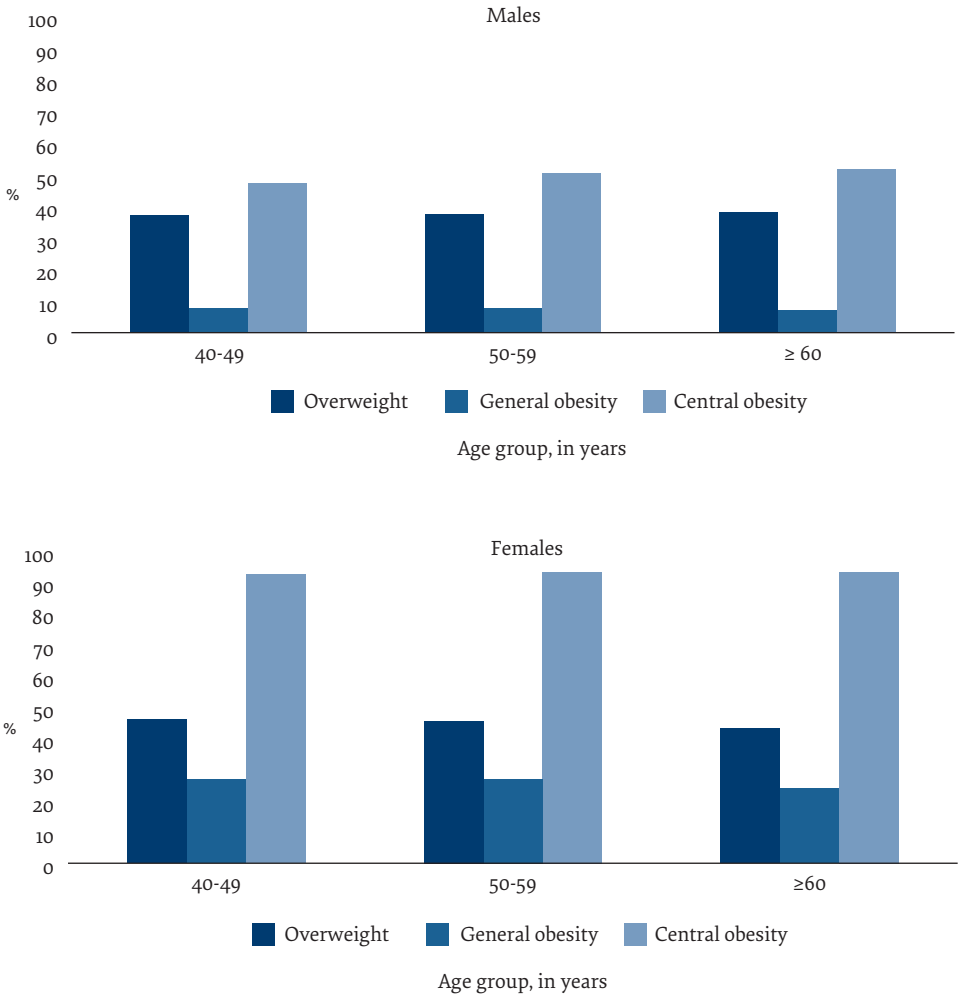
The odds of having high blood pressure or a previous diagnosis of hypertension, high triglyceride level or related specific treatment, and low HDL cholesterol or

Table 1 Baseline characteristics of the study sample

Variable	No. (%) *n* = 10 663
Age group, in years	
40–49	4686 (43.9)
50–59	3759 (35.3)
≥ 60	2218 (20.8)
Sex	
Male	4719 (44.3)
Female	5944 (55.7)
Residence	
Urban	4416 (41.4)
Rural	6247 (58.6)
Employment	
Employed	5147 (48.3)
Unemployed	5516 (51.7)
Marital status	
Single	1171 (11.0)
Married	9492 (89.0)
Educational level	
Illiterate	5587 (52.4)
Primary	2387 (22.4)
Elementary	1250 (11.7)
High school	864 (8.1)
University	575 (5.3)
Ethnicity	
Fars	7255 (68.0)
Other	3408 (32.0)
Socioeconomic status	
Low	2712 (25.4)
Medium	2648 (24.8)
High	2942 (27.6)
Highest	2361 (22.1)
Body mass index, in kg/m^2	
≥ 30	1919 (18.0)
25.0–29.9	4451 (41.7)
18.5–24.9	3882 (36.4)
< 18.5	411 (3.9)
Waist circumference, in cm	
≥ 94 in males and ≥ 80 in females	7847 (73.6)
< 94 in males and < 80 in females	2816 (26.4)
Triglyceride, in mg/dL (mmol/L)	
≥ 150 (1.7)	3021 (28.3)
< 150 L (1.7)	7642 (71.7)
HDL-C, in mg/dL (mmol/L)	
< 40 (1.03) in men and < 50 (1.29) in women	5882 (55.2)
≥ 40 (1.03) in men and ≥ 50 (1.29) in women	4781 (44.8)
Fasting plasma glucose, in mg/dL (mmol/L)	
≥ 100 (5.6)	2972 (27.9)
< 100 (5.6)	7691 (72.1)
Systolic blood pressure, in mmHg[a]	
≥ 130	1936 (18.2)
< 130	8716 (81.8)
Diastolic blood pressure, in mmHg	
≥ 85	1112 (10.4)
< 85	9551 (89.6)

HDL-C = high-density lipoprotein cholesterol.
[a] *Data were missing for 11 participants.*

Figure 1 Prevalence of overweight, general obesity and central obesity based on International Diabetes Federation definitions, by age group and sex



BMI = body mass index.
Note: *Overweight = BMI ≥ 25–29.9 kg/m2; general obesity = BMI ≥ 30 kg/m2; and central obesity = waist circumference ≥ 94 cm in males and ≥80 cm in females.*

related specific treatment as a component of metabolic syndrome were higher among people with general obesity than among people with normal weight: high blood pressure OR: 2.42 (95% CI: 2.13–2.74); high triglycerides OR: 1.55 (95% CI: 1.37–1.75); and low HDL cholesterol OR: 1.44 (95% CI: 1.27–1.62).

People with central obesity also had higher odds of having high blood pressure or a previous diagnosis of hypertension (OR: 2.87; 95% CI: 2.53–3.26), higher triglyceride levels or related specific treatment (OR: 1.71; 95% CI: 1.54–1.89) and lower HDL cholesterol level or related specific treatment (OR: 1.53; 95% CI: 1.37–1.71) compared with those without central obesity.

Discussion

This is a large population-based study that estimated the prevalence of general obesity, central obesity and several comorbidities using data from the first phase of the Persian Kherameh cohort study conducted in Kherameh. Since we simultaneously evaluated several complications related to central and general obesity, the study indicates the highest and lowest associations between obesity and comorbidities.

The overall prevalence of general obesity was 17.9% and central obesity was 73.5%. In a study in central Islamic Republic of Iran, the overall prevalence of general obesity was reported as 9.5% among adults *(20)*, while another study conducted in the south of the country reported the prevalence as 26.5% *(21)*. In a cumulative analysis of studies conducted in 10 different regions of Spain, the prevalence of obesity was estimated as 29% *(22)*. The prevalence of central and general obesity reported by these studies was different from the prevalence obtained in our study. In another study conducted among Asian adults living in the United States, the overall prevalence of central obesity was 58.1%, which was lower than in our study findings *(8)*.

CVDs were more prevalent among people with general and central obesity in our study. A study that aimed to determine the burden of disease associated with high BMI reported that about 70% of deaths due to high BMI were caused by CVD, of which more than 60% occurred in obese individuals *(23)*. Another study found that the

Table 2 **Prevalence of general and central obesity, by study variables**

Variable	No.	General obesity, no. (%)	*P*	Central obesity, no. (%)	*P*
Age group, in years					
40–49	4686	837 (17.9)	0.769	3331 (71.1)	< 0.001
50–59	3759	689 (18.3)		2790 (74.2)	
≥ 60	2218	393 (17.7)		1726 (77.8)	
Sex					
Male	4719	363 (7.7)	< 0.001	2321 (49.2)	< 0.001
Female	5944	1556 (26.2)		5526 (93.0)	
Residence					
Urban	4416	849 (19.2)	< 0.001	3364 (76.2)	0.005
Rural	6247	1070 (17.1)		4483 (71.8)	
Employment					
Employed	5516	602 (10.9)	< 0.001	3271 (59.3)	< 0.001
Unemployed	5147	1317 (25.6)		4576 (88.9)	
Marital status					
Single	1171	296 (25.3)	< 0.001	1048 (89.5)	< 0.001
Married	9492	1623 (17.1)		6799 (71.6)	
Ethnicity					
Fars	7255	1390 (19.2)	< 0.001	5506 (75.9)	< 0.001
Other	3408	529 (15.5)		2341 (68.7)	
Educational level					
Illiterate	5587	1066 (19.1)	< 0.001	4312 (77.2)	< 0.001
Primary	2387	469 (19.6)		1758 (73.6)	
Elementary	1250	213 (17.0)		821 (65.7)	
High school	864	105 (12.2)		551 (63.8)	
University	575	66 (11.5)		405 (70.4)	
Socioeconomic status					
Low	2712	450 (16.5)	< 0.001	1910 (70.4)	< 0.001
Medium	2648	504 (19.0)		1981 (74.8)	
High	2942	598 (20.3)		2333 (79.3)	
Highest	2361	367 (15.5)		1623 (68.7)	

Table 3 **Crude and age-standardized prevalence of general and central obesity by sex**

Sex	Prevalence of general obesity, %		Prevalence of central obesity, %	
	Crude (95% CI)	Age-standardized (95% CI)	Crude (95% CI)	Age-standardized (95% CI)
Male	7.69 (6.94–8.94)	7.65 (7.53–7.79)	49.18 (47.74–50.62)	49.37 (49.01–49.77)
Female	26.17 (25.06–27.31)	26.08 (25.80–26.45)	92.96 (92.28–93.60)	92.91 (92.42–93.45)

CI= confidence intervals.

prevalence rates of CVDs were respectively 1.8 and 1.5 times higher in men and women with general obesity. In contrast, central obesity was not significantly associated with heart diseases *(24)*. In a study on the Blue Mountains Eye Study longitudinal data, obesity was associated with an increased risk of CVD-related mortality at older ages *(25)*. A study in the Asia-Pacific region reported that waist circumference, which measures central obesity, was most significantly associated with the risk of ischaemic heart disease *(9)*.

Our results showed that people with general and central obesity had higher odds of having non-alcoholic fatty liver disease than individuals without obesity. A study in the United States found that BMI and high waist circumference were significantly associated with non-alcoholic fatty liver disease risk *(26)*. Obesity promotes various inflammatory responses in adipose tissue. As a result, oxidative stress plays a vital role in the development and progression of non-alcoholic fatty liver disease *(27)*. Results from the evaluation of 5 Asian

Table 4 Association of general and central obesity with various noncommunicable diseases: multiple regression model

Variable	Subgroup	Adjusted OR (95% CI)[a]	P
Cardiovascular disease			
General obesity	Normal	Reference	–
	Underweight	0.88 (0.60– 1.27)	0.509
	Overweight	1.18 (1.02–1.36)	0.018
	Obesity	1.27 (1.07–1.51)	0.006
Central obesity	No	Reference	–
	Yes	1.19 (1.02–1.40)	0.026
Non-alcoholic fatty liver disease			
General obesity	Normal	Reference	–
	Underweight	0.41 (0.20–0.85)	0.017
	Overweight	2.35 (2.00–2.77)	< 0.001
	Obesity	3.10 (2.58–3.73)	< 0.001
Central obesity	No	Reference	–
	Yes	3.01 (2.40–3.78)	< 0.001
Elevated fasting glucose ≥ 100 mg/dL (5.6 mmol/L) or on medication for elevated glucose			
General obesity	Normal	Reference	–
	Underweight	0.56 (0.43– 0.72)	< 0.001
	Overweight	1.29 (1.17–1.42)	< 0.001
	Obesity	1.53 (1.35–1.73)	< 0.001
Central obesity	No	Reference	–
	Yes	1.67 (1.49–1.87)	< 0.001
Elevated blood pressure or treated previously for elevated blood pressure			
General obesity	Normal	Reference	–
	Underweight	0.50 (0.37–0.67)	< 0.001
	Overweight	1.69 (1.53–1.87)	< 0.001
	Obesity	2.42 (2.13–2.74)	< 0.001
Central obesity	No	Reference	–
	Yes	2.87 (2.53–3.26)	< 0.001
Elevated TG ≥ 150 mg/dL (1.7 mmol/L) or on medication for elevated triglycerides			
General obesity	Normal	Reference	–
	Underweight	0.64 (0.48–0.84)	0.002
	Overweight	1.39 (1.26–1.54)	< 0.001
	Obesity	1.55 (1.37–1.75)	<0.001
Central obesity	No	Reference	–
	Yes	1.71 (1.54–1.89)	< 0.001
Reduced HDL-C or on medication for reduced HDL-C			
General obesity	Normal	Reference	–
	Underweight	0.72 (0.57–0.91)	0.007
	Overweight	1.24 (1.13–1.36)	< 0.001
	Obesity	1.44 (1.27–1.62)	< 0.001
Central obesity	No	Reference	–
	Yes	1.53 (1.37–1.71)	< 0.001

OR= odds ratio; CI= confidence intervals; TG= triglycerides; HDL-C= high-density lipoprotein cholesterol.
[a] *Adjusted for age, sex, marital status, ethnicity, socioeconomic status, educational level, residence and employment.*

studies on the relationship between general obesity and non-alcoholic fatty liver disease showed that after applying a random-effects model (due to the heterogeneity of studies), the overall adapted OR was 2.85; this is in line with the results of our study. Another study found that the effect of central obesity on non-alcoholic fatty liver disease was stronger than general obesity *(28)*, while our findings showed no difference between these 2.

In our study, people with general and central obesity had a higher prevalence of high blood pressure and low HDL. In the United States, obesity and increased waist circumference were most strongly associated with increased risk of hypertension and low HDL compared with other components of metabolic syndrome *(29)*. According to the Blue Mountains Eye cohort study, hypertension was separately associated with (time-dependent) death due to stroke *(13)*. Another study reported that mean waist circumference, systolic blood pressure, diastolic blood pressure, fasting blood sugar, and triglyceride levels were higher in the obese group *(30)*, which was consistent with our results. A study in northern Islamic Republic of Iran showed that metabolic syndrome was associated with abdominal obesity and high BMI *(31)*. A study in Nepal reported that central obesity was most strongly associated with decreased HDL levels, high triglyceride levels and high blood pressure *(32)*. Furthermore a Canadian study found that overweight people with higher waist circumference had significantly higher triglyceride levels, fasting glucose levels and systolic and diastolic blood pressure than overweight individuals with lower waist circumference *(33)*.

We observed a significant relationship between high blood pressure, fasting blood sugar, high triglycerides and decreased HDL and abdominal obesity. In a study in sub-Saharan Africa, the relationship between waist circumference and other components of metabolic syndrome was investigated by linear regression; the results showed that all metabolic syndrome components except for fasting blood sugar were directly associated with waist circumference *(34)*. This association can probably be attributed to urbanization because the prevalence of metabolic syndrome components has been reported to be linked with urbanization in previous studies *(35,36)*.

A strength of our study is that we measured central obesity together with general obesity measurements, such as BMI. We used population-based data from phase 1 of the PERSIAN cohort study and the large sample size and accuracy of data collection decreased the possibility of bias in our study compared with previous studies. A limitation of our study was the cross-sectional design, which made it difficult to establish a causal relationship. The synergy of general and central obesity and the comorbidity of complications in these conditions were not taken into account.

In conclusion, the overall prevalence of general obesity and especially central obesity is high in the adult population of Kherameh City. More importantly, among the components of metabolic syndrome, reduced HDL cholesterol level was most prevalent among individuals with general and central obesity. Given the level of obesity-related complications found, primary and secondary prevention interventions are necessary.

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Competing interests: None declared.

Étude en population sur l'obésité et ses complications dans le sud de la République islamique d'Iran

Résumé

Contexte : L'obésité générale et centrale constituent des facteurs de risque importants pour les maladies chroniques et les résultats en matière de santé.

Objectifs : Nous avons déterminé la prévalence de l'obésité et des complications associées chez les personnes âgées de 40 à 70 ans à Kherameh, dans le sud de la République islamique d'Iran.

Méthodes : La présente étude transversale a porté sur 10 663 personnes âgées de 40 à 70 ans qui ont participé à la première phase de l'étude de cohorte menée à Kherameh. Des données ont été recueillies sur les caractéristiques démographiques, les antécédents de maladies chroniques, les antécédents familiaux de maladies et diverses mesures cliniques. Nous avons utilisé l'analyse de régression logistique multiple pour établir les relations entre l'obésité générale et centrale, et les complications associées.

Résultats : Sur les 10 663 participants, 17,9 % souffraient d'obésité générale et 73,5 % d'obésité centrale. Dans le premier groupe susmentionné, la probabilité de présenter une stéatose hépatique non alcoolique et une maladie cardiovasculaire était 3,10 fois et 1,27 fois plus élevée respectivement que chez les personnes ayant un poids normal. Chez les personnes qui présentaient une obésité centrale, la probabilité de voir apparaître d'autres composants du syndrome métabolique tels que l'hypertension (OR : 2,87 ; IC à 95 % : 2,53-3,26), des taux élevés de triglycérides (OR : 1,71 ; IC à 95 % : 1,54-1,89) et de faibles taux de cholestérol des lipoprotéines de haute densité (OR : 1,53 ; IC à 95 % : 1,37-1,71) était plus importante que chez les personnes sans obésité centrale.

Conclusions : L'étude a mis en évidence une forte prévalence de l'obésité générale et centrale et de ses effets sur la santé, ainsi que son association avec plusieurs comorbidités. Compte tenu du niveau de complications liées à l'obésité qui a été constaté, il est nécessaire de mettre en place des interventions de prévention primaire et secondaire. Les résultats obtenus pourraient aider les responsables de l'élaboration des politiques de santé à établir des interventions efficaces pour lutter contre l'obésité et les complications associées.

دراسة سكانية عن السمنة ومضاعفاتها في جنوب جمهورية إيران الإسلامية

حامد كرامي، موزهجان سيف، عباس رزيانزاده، معصومة جوهري، رامين رزيانزاده، هالة غايم

الخلاصة

الخلفية: تُعد السمنة العامة والمركزية من عوامل الخطر المهمة المرتبطة بالأمراض المزمنة والمؤثرة على النتائج المتعلقة بالصحة.

الأهداف: هدفت هذه الدراسة الى تحديد معدل انتشار السمنة والمضاعفات المرتبطة بها لدى مجموعة من الأفراد الذين تتراوح أعمارهم بين 40 و70 عامًا في مدينة خرامه، جنوب جمهورية إيران الإسلامية.

طرق البحث: شملت هذه الدراسة المقطعية 10663 شخصًا تتراوح أعمارهم بين 40 و70 عامًا شاركوا في المرحلة الأولى من الدراسة الأترابية في خرامه. وجُمعت بيانات عن الخصائص السكانية، وسوابق الإصابة بالأمراض المزمنة، والسوابق المرضية في الأسرة، والتدابير السريرية المختلفة. واستخدمنا تحليل الانحدار اللوجستي المتعدد للكشف عن العلاقات بين السمنة العامة والمركزية، والمضاعفات المتصلة بها.

النتائج: من أصل 10663 مشاركًا، كان ما نسبته 17.9٪ يعاني من السمنة العامة و73.5٪ يعاني من السمنة المركزية. فأما مَن يعانون من السمنة العامة، فكانت احتمالات الإصابة بمرض الكبد الدهني غير الكحولي وأمراض القلب والأوعية الدموية أعلى 3.10 مرة و1.27 مرة على التوالي من الأشخاص ذوي الوزن الطبيعي. وأما مَن يعانون من السمنة المركزية، فقد زادت لديهم احتمالات الإصابة بالمكونات الأخرى للمتلازمة الاستقلابية، مثل ارتفاع ضغط الدم (نسبة الأرجحية: 2.87؛ فاصل الثقة 95٪: 2.53–3.26)، وزادت مستويات الدهون الثلاثية (نسبة الأرجحية: 1.71؛ فاصل الثقة 95٪: 1.54–1.89)، وانخفضت مستويات كوليستيرول الليبوبروتين المرتفع الكثافة (نسبة الأرجحية: 1.53؛ فاصل الثقة 95٪: 1.37–1.71) مقارنة بمَن لا يعانون من السمنة المركزية.

الاستنتاجات: أظهرت الدراسة ارتفاع معدل انتشار السمنة العامة والمركزية وتأثيرهما على الصحة، وارتباطها بالعديد من الأمراض المصاحبة. وبالنظر إلى مستوى المضاعفات المرتبطة بالسمنة، يلزم إجراء تدخلات وقائية أولية وثانوية. وقد تساعد النتائج راسمي السياسات الصحية على إنشاء تدخلات فعالة لمكافحة السمنة والمضاعفات المتصلة بها.

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