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PREVALENCE OF CARDIOVASCULAR DISEASE RISK FACTORS IN CHINA: FINDINGS FROM 2010 CHINA CHRONIC DISEASE AND RISK FACTOR SURVEILLANCE

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Objectives To examine the up-to-date prevalence of cardiovascular disease risk factors in Chinese adult population in 2010.

Methods Overview of the surveillance and sample design

The 2010 China Chronic Disease and Risk Factor Surveillance (CCDRFS) selected participants by using a multi-stage stratified cluster sampling method from National Disease Surveillance Points System which covers 31 provinces, autonomous regions or municipalities in mainland China. A total of 98 712 interviews were completed.

The 2010 CCDRFS was conducted using centralised interviews and physical measurements (ie, gathering participants in certain locations). The contents of the 2010 CCDRFS included face-to-face questionnaire interviews, physical measurements, and laboratory tests. The contents of face to face interview included household information on dietary habits, economy status and individual information on tobacco use, alcohol consumption, diet, physical activity, self-reported chronic diseases, self-rated health status, etc. Physical measurements included height, weight, hip circumference and blood pressure. Laboratory tests included fasting and 2 h oral glucose tolerance test (OGTT-2h) blood glucose, insulin, blood lipids, and HbA1c.

A three-level quality control network (national, provincial and county) was carried out and a national quality control protocol was developed to ensure the quality. Fasting and OGTT-2h blood glucose were performed in county level laboratories. Each laboratory was required to pass performance test for blood sugar measurements quality controls.

Statistical analysis

We estimated weighted prevalence of behavioural risk factors such as current tobacco smoking, overconsumption of alcohol

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drinking, insufficient physical activity, unhealthy diet, and other risk factors such as overweight and obesity, hypertension, and dyslipidemia by age groups (18–44, 45–59, 60+), sex, rural/urban according to county level administrative unit and east, middle, west regions according to provincial-level geographical distribution.

In this study, all estimated prevalence was weighted considering complex sampling weight. All computation was conducted in SAS 9.3.

Results Tobacco use In 2010, the estimated self-reported prevalence of current smoking among Chinese residents aged 18 years and older was 28.8%. Smoking behaviour is much higher in male (53.3%) than in female (2.5%). Among male residents, current smoking prevalence was 52.5% in urban areas and 53.6% in rural areas, and was similar among east (52.8%), middle (53.0%) and west (54.2%) regions within China.

Alcohol overconsumption

There was 8.1% adults report hazardous drinking (consuming ethanol ≥41.0 g per day and <61.0 g per day for men, ≥21.0 g per day and <41.0 g per day for women) among those who drank. It was higher in male (9.3%) than in female (3.2%), higher in rural area (8.5%) than in urban area (7.4%). A decreasing trend was found from east, middle to west regions (8.4%, 8.3%, and 7.5%, respectively).

Harmful drinking (consuming ethanol ≥61.0 g per day for men, ≥41.0 g per day for women) was reported 9.3% among those who drank. Among those who drank, harmful drinking was more common among males (11.1%) than females (2.0%), more common in rural areas (10.2%) than urban areas (7.5%), and decreased from the east, middle to west regions (10.5%, 8.9% and 7.9%, respectively).

Insufficient vegetable and fruit intake

In 2010, insufficient intake of fruit and vegetable among residents aged 18 and older was 52.8% with a similar level between men and women (53.8% and51.7%, respectively). Insufficient intake of fruit and vegetable was most common among residents aged 60 and older than young age groups, more common among in rural residents (55.7%) than urban (46.2%), and similar across regions (51.3% in east, 54.6% in middle and 52.6% in west region).

Physical activity

In 2010, 1.9% of the adults reported regular physical exercise performance. Regular exercise was more common in urban (19.9%) than in rural areas (8.2%), and more common in men (13.1%) than women (10.6%). The proportion of residents who reported never have physical exercise during the last 12 months was 83.8%, which was more common in rural than in urban areas (88.6% vs 78.2%) and more like among women than men (86.2% vs 81.6%).

Overall, the average amount of leisure time sedentary behaviour was 2.7 h. Men had more sedentary behaviour time (2.9 h) than women (2.6 h), and urban residents had more areas (3.3 h) than rural residents (2.5 h). Sedentary behaviour time decreased with increasing age.

Overweight and obesity

In 2010, the prevalence of overweight and obesity (BMI cutoff points: 24.0–27.9 for overweight, ≥28 for obesity) were 30.6% and 12.0%, respectively. Higher proportion of overweight and obesity was found in urban area than in rural area with a similar level between men and women. 32.3% and 12.5% of participants aged 60 years and above was found being overweight and obesity. Obesity was the most serious in women aged 44–59 (17.8%).

According to the WHO criteria (BMI cutoff points: 25.0–29.9 for overweight, ≥30 for obesity), overweight and obesity was found 27.9% and 5.1%, respectively.

Raised blood pressure

The prevalence of raised blood pressure in Chinese adults was 33.5%. The prevalence increased with age, with highest among residents aged 60+ years and lowest among individuals aged 18–44 years. The prevalence is higher among males (35.1%) than females (31.8%). Residents suffered similar situation in urban (34.7%) and rural area (32.9%). Prevalence in east, middle, and west region of China were 36.2%, 34.1%, and 28.8%, respectively.

Dyslipidemia

In 2010, 3.3% had high total cholesterol (TC) (men 3.4% and women 3.2%; urban 4.2% and rural 2.9%). Of those 60 years and older, 4.9% had high TC.

The prevalence of low blood high-density lipoprotein cholesterol (LDL-C) was 2.1%, with the same figures for both genders. Low blood LDL-C were found among 3.0% urban residents 1.8% rural residents and were 2.9%, 1.5%, and 1.8% for the east, middle, and west regions respectively. With increasing age, the prevalence of low blood LDL-C increased first among younger groups and then declined in older groups.

High triglycerides were found among 11.3% of Chinese adults (men 13.8%, women 8.6%; urban residents 12.1% and rural residents; 10.9%; 11.0%, 11.7%, and 11.2% for the east, middle, and west region). The prevalence of high triglyceride among women increased with age, whereas among men, it increased among younger age groups then declined among older age groups.

Conclusions Risk factors of cardiovascular disease are prevailing among Chinese adults.

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