



A national study of the prevalence and risk factors associated with peripheral arterial disease from China: The China Hypertension Survey, 2012–2015☆

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ABSTRACT

Background: Peripheral arterial disease (PAD) is the third leading cause of atherosclerotic vascular morbidity after coronary heart disease and stroke. Epidemiology data of PAD is very limited in low-income and middle-income countries. A national wide survey was conducted from October 2012 to December 2015 to assess the prevalence of PAD in China.

Methods: Data from the China Hypertension Survey (CHS). In total, 56,000 people aged 35 years or older were enrolled in this sub-survey for PAD, and 30,025 participants were eligible for analysis. Ankle-brachial index was measured using an automated ABI device (WatchBP Office device Microlife, China). PAD was defined by ABI and Edinburgh Claudication Questionnaire.

Results and conclusions: Overall, 6.6% (estimated 45.3 million) of the Chinese adult population age 35 years or older had PAD. The weighted prevalence of PAD increased significantly after aged ≥ 75 years. There were no significant differences in PAD prevalence between urban and rural residents, as well as between males and females. Among individuals with PAD, only 4.9% (95% CI: 0%–10.1%) were aware of their condition, 1.9% (95% CI: 0%–4.0%) received revascularization, and 0.2% (95% CI: 0%–0.4%) achieved ABI >0.9 . Older age, Han population, current smokers, education level, hypertension, CAD, diabetes, dyslipidemia, and rural residences all were significantly associated with an increased risk of PAD. In China, there is an increasing prevalence of PAD, but the awareness, treatment, and control were very low. Special attention should be paid to prevent and control PAD in China.

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1. Introduction

Peripheral arterial disease (PAD) commonly results from progressive narrowing of arteries in the lower extremities and is a manifestation of systemic atherosclerosis [1]. It is well known

that PAD is associated with increased risk of vascular and all-cause mortality, and is the third leading cause of atherosclerotic vascular morbidity after coronary heart disease and stroke [2,3]. It is estimated that >200 million people have PAD worldwide in 2010 [3]. However, PAD remains underdiagnosed and undertreated worldwide.

The burden of atherosclerotic cardiovascular disease is rapidly increasing as a result of the economic growth, urbanization, and aging of the population in China. Population surveillance data and studies of risk factors are crucial for prevention and management of PAD, but most of the existing literature on the epidemiology of PAD comes from high-income countries [4], these data are very limited in low-income and middle-income countries, such as China. Although several previous local studies were conducted in China, the results were very inconsistent due to small sample size or non-representative sampling. It has been reported that prevalence of PAD in elderly Chinese aged ≥ 60 years range from 2.2% to 20% [5–7]. Therefore, the aim of this

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study is to determine the prevalence of PAD and associated factors in a nationally representative population in China.

2. Methods

2.1. Survey participants

The China Hypertension Survey (CHC) study were conducted between October 2012, to December 2015, and the design was published previously [8]. Briefly, a stratified, multistage random sampling method was used to obtain a nationally representative sample of the general Chinese population aged 15 years or older. All 31 provinces in mainland China were covered in this survey. For this sub-study, all selected urban and rural areas were stratified into eastern, middle and western regions again according to both geographical locations as well as economic level. By using the simple random sampling (SRS) method, 16 cities and 17 counties were selected, including 7 cities and 7 counties from eastern regions, 6 cities and 6 counties from the middle regions, as well as 3 cities and 4 counties from western regions. Next, at least three communities or villages were randomly selected from each region. Participants with certificated documents from Administration of Households of the local government were enrolled to exclude immigration effects. For meeting the designed sample size of 35,000 participants aged ≥ 35 years and take nonresponse into account in the survey, 56,000 subjects were randomly selected and invited from the eligible sites. Among which, 34,994 positively responded with a response rate of 62.5%. We excluded 405 participants with ABI values >1.4 because ABI values this high indicate measurement error resulting from incompressible arteries [1]. and 4564 participants with missing variables of interest, which left 30,025 individuals in the present study. Table S1 shows the differences between the participants who were included and those who are not included in the analyses later.

The written informed consent was obtained from each participant before data collection. The ethics committee of Fuwai Hospital approved the study.

2.2. Training and data collection

A standardized questionnaire developed by the coordinating center, Fuwai Hospital (Beijing, China), was administered by trained staff to obtain information on demographic characteristics and social-economic factors. Body mass index (BMI) was calculated as weight divided by the square of height (kg/m^2) for each participant. Height was measured without shoes using a standard right-angle device and a fixed measurement tape (to the nearest 0.5 cm), and waist circumference in a standing position using a cloth tape directly on the participant's skin (to the nearest 0.5 cm). Body weight without heavy clothing was measured using an OMRON body fat and weight measurement device (V-body HBF-371, OMRON, Kyoto, Japan). Blood pressure was measured with the OMRON HBP-1300 Professional Portable Blood Pressure Monitor (OMRON, Kyoto, Japan) 3 times on the right arm supported at heart level after the participant was sitting at rest for 5 min, with 30 s between each measurement with an observer present.

2.3. Ankle-brachial index

ABI was determined by using a standard protocol. Systolic blood pressure (SBP) was measured using an automated ABI device (WatchBP Office device Microlife, China) [9]. Blood pressure was measured 3 times simultaneously on both on the brachial arteries and posterior tibial artery using two ABI devices in the supine position. The ABI for each leg was calculated as the SBP in the posterior tibial artery divided by the higher value of the two arm SBPs. In addition, the Edinburgh Claudication Questionnaire was used to estimate intermittent claudication [10].

2.4. Survey-outcome definition

Participants were diagnosed as having PAD if the ABI for one of the legs was ≤ 0.9 or having a positive intermittent claudication. Overweight was defined as a BMI between 24.0 and 27.9, and obesity was defined as a BMI of 28.0 or more [11]. Current smokers were defined as participants who have smoked at least 20 packets of cigarettes in their lifetime and currently smoke cigarettes; former smokers were defined as participants who have smoked at least 20 packets of cigarettes in their lifetime, and quit smoking for at least 1 month; never smokers were defined as participants who have never smoked a cigarette or who smoked fewer than 20 packets of cigarettes in their entire lifetime. Drinker was defined as consuming at least once alcoholic beverage per week in the past month. Hypertension was defined as SBP of 140 mm Hg or greater, and/or DBP of 90 mm Hg or greater, and/or self-reported current treatment for hypertension with anti-hypertensive medication within 2 weeks. Coronary artery disease (CAD) was defined as previous myocardial infarction, or surgery or coronary revascularization. Participants with a fasting plasma glucose level ≥ 7.0 mmol/L and/or who were receiving antidiabetic medications were defined as diabetes. Dyslipidemia was defined as any one of the following four conditions: total cholesterol ≥ 6.22 mmol/L; triglycerides ≥ 2.26 mmol/L; low levels of high-density lipoprotein cholesterol < 1.04 mmol/L; or high levels of low-density lipoprotein cholesterol ≥ 4.14 mmol/L.

2.5. Statistical analysis

Our study was designed to provide accurate estimates of the prevalence of PAD in the general Chinese population aged ≥ 35 years. Sampling weights were calculated based on the 2010 China population census data and sampling scheme and included oversampling for specific age or geographic subgroups, nonresponse, and other demographic or geographic differences between the sample and the total population [12]. Adjustment for differential probabilities of selection and the complex sampling design was used to enhance the representativeness of the survey sample population. Variables were summarized using means for continuous data; frequencies, percentages, and proportions used for categorical data.

Two-tailed Student *t*-tests and Chi-squared tests were used to compare continuous and categorical variables, respectively. The prevalence was weighted to represent the total Chinese population aged ≥ 35 years. The risk factors for PAD were estimated by logistic regression. All 95% confidence intervals (CI) for the parameters were estimated. $P < 0.05$ was the threshold for statistical significance. Statistical analyses were conducted with SAS version 9.4 (SAS Institute INC, Cary, NC, USA) and Stata 12.1 (STATA Corp., TX, USA).

3. Results

3.1. Characteristics of study participants

A total of 30,025 participants (45.8% males and 54.2% females; 46.3% from urban and 53.7% from rural) completed the survey and were included in the analysis (Table 1). A significant difference was observed between males and females for all characteristics except age and ethnicity. The similarity was shown in all characteristics between urban and rural areas with exception of BMI, education level, hypertension, and diabetes.

3.2. Prevalence of PAD

Among Chinese adults age 35 years or older, the overall crude prevalence of PAD was 5.8% (Table S2), the weighted prevalence of PAD was 6.6% (estimated 45.3 million) (Table 2). The prevalence of PAD increased with age, and was nearly half high in the population aged 35–44 years than aged ≥ 75 years (6.0% vs. 11.8%). There were significant differences in weighted PAD status for ethnicity and diabetes. The weighted prevalence of PAD was similar between urban and rural residents (4.4% vs. 7.8%, $P = 0.258$), as well as between males and females (6.3% vs. 7.0%, $P = 0.496$) (Fig. 1).

Only 4.6% (74/1626) of participants with an ABI of ≤ 0.9 had claudication, and 90.2% (74/82) of participants with claudication had an ABI of ≤ 0.9 .

3.3. Awareness, treatment, and control of PAD

Among those with PAD, only 1.9% (95% CI: 0%–4.0) were aware of their condition, 0.2% (95% CI: 0%–0.5%) received revascularization, and 0.2% (95% CI: 0%–0.4%) achieved ABI > 0.9 (Fig. S1). Among those with treated PAD patients, 81.3% (13/16) achieved ABI > 0.9 .

The awareness of PAD was similar between females and males (1.4% vs. 2.4%, $P = 0.134$), as well as similar between urban and rural (4.9% vs. 1.0%; $P = 0.071$). The treatment rate was higher in males than females (0.4% vs. 0.1%; $P = 0.031$) but was similar between urban and rural (0.7% vs. 0.1%; $P = 0.080$) (Fig. S1 and Table S3). The crude rates of awareness, treatment, and control were shown in Table S4.

3.4. Multivariable risk assessment

Older age, Han population, current smokers, education level, hypertension, CAD, diabetes, dyslipidemia, and rural residences were significantly associated with an increased risk of PAD (Table 3).

4. Discussion

This study for the first time reports nationally representative estimates of PAD status in China. Our study showed that 6.6% of Chinese people aged 35 or older, or estimated 45.3 million individuals, had

Table 1
Characteristics of study participants by gender and region.

Characteristics	Region		Gender		Total	P value for region	P value for gender
	Urban	Rural	Male	Female			
n (%)	13,900 (46.3)	16,125 (53.7)	13,742 (45.8)	16,283 (54.2)	30,025 (100.0)		
Mean age – yr	52.1 (50.5–53.8)	51.7 (50.6–52.8)	51.7 (50.9–52.6)	52.0 (51.1–52.9)	51.9 (51.0–52.7)	0.631	0.242
Mean BMI – kg/m ²	25.1 (24.6–25.5)	24.2 (23.6–24.9)	24.5 (24.1–24.9)	24.6 (24–25.1)	24.5 (24.1–25.0)	0.032	0.769
<18.5	1.7 (1.2–2.3)	3.6 (1.5–5.7)	2.9 (1.8–4.0)	3.0 (1.3–4.7)	2.9 (1.5–4.3)	0.029	0.016
18.5–23.9	37.6 (31.4–43.9)	45.3 (40.6–50)	41.6 (37.5–45.7)	43.6 (39.4–47.9)	42.6 (38.7–46.5)		
24.0–27.9	41.4 (37.9–44.8)	37.4 (34.8–40.1)	40.8 (38.8–42.9)	36.8 (34.1–39.4)	38.8 (36.7–40.9)		
≥28.0	19.2 (15.5–23.0)	13.7 (9.4–17.9)	14.7 (11.7–17.6)	16.6 (12.9–20.2)	15.6 (12.7–19.1)		
Ethnicity (Han, %)	95.9 (91–100.8)	90.3 (78.4–102.2)	92.5 (85.3–99.8)	92.0 (84.4–99.6)	92.3 (84.9–99.6)	0.269	0.625
Education attainment, %							
Elementary school	25.6 (17.0–34.2)	56.7 (46.7–66.8)	37.5 (30.7–44.4)	54.2 (45.2–63.2)	45.9 (38.4–53.5)	<0.001	<0.001
Elementary middle school	64.8 (57.4–72.2)	41.0 (31.8–50.3)	56.8 (50.9–62.6)	41.9 (34.0–49.7)	49.3 (42.9–55.7)		
High school or above	9.6 (5.3–14.0)	2.3 (1.0–3.5)	5.7 (3.4–8.0)	4.0 (1.9–6.0)	4.8 (2.7–6.9)		
Smoking status, %							
Non-smokers	69.6 (64.0–75.2)	69.4 (64.5–74.2)	42.0 (37.4–46.6)	97.0 (94.9–99.1)	69.4 (65.8–72.8)	0.901	<0.001
Past smokers	4.7 (3.2–6.3)	4.4 (3.1–5.7)	8.6 (7.0–10.3)	0.4 (0.1–0.7)	4.5 (3.5–5.5)		
Current smokers	25.7 (20.6–30.8)	26.2 (22.3–30.2)	49.4 (45.5–53.3)	2.6 (0.8–4.5)	26.0 (23.2–29.1)		
Consumption of alcohol, %	22.3 (16.1–28.6)	20.1 (14.7–25.4)	38.8 (32.6–45.0)	2.8 (1.5–4.2)	20.9 (16.9–24.8)	0.554	<0.001
Hypertension, %	39.6 (34.6–44.6)	32.9 (29.8–36.0)	37.6 (34.3–40.8)	32.9 (29.8–36)	35.2 (32.4–38.1)	0.018	0.002
Coronary artery disease, %	1.1 (0.1–2.0)	0.4 (0.2–0.7)	0.8 (0.3–1.3)	0.5 (0.2–0.7)	0.6 (0.3–1.0)	0.069	0.001
Diabetes, %	11.0 (7.5–14.6)	6.9 (5.3–8.5)	9.1 (7.2–10.9)	7.7 (5.9–9.4)	8.4 (6.6–10.1)	0.017	0.015
Dyslipidemia, %	35.0 (28.9–41.2)	32.6 (25.9–39.4)	38.6 (32.9–44.4)	28.3 (24.2–32.3)	33.5 (28.9–38.0)	0.570	<0.001

All values were weighted to represent the total population of Chinese aged 35 years or older based on Chinese census 2010. Data are represented as value (95% CI), unless otherwise indicated.

BMI = body mass index.

PAD. Among those with PAD, only 4.9% were aware of their condition, 1.9% received revascularization, and 0.2% achieved ABI >0.9. As the population ages and economic growth, PAD is likely to become an increasing problem in China.

Previous data on the epidemiology of PAD have largely derived from highly developed countries [13]. In high-income countries, the prevalence of PAD seemed to be similar in males and females, and to increase consistently with age from around 5% at age 45–49 years to 18% at age 85–89 years. In low-income and middle-income countries, prevalence rates seemed to be higher in females than in males, with more pronounced relative differences at younger ages (6.3% versus 2.9% at age 45–49 years compared with 12.3% versus 10.1% at age 75–79 years) [13]. Previous local studies reported a 2.2%–20% prevalence of PAD in elderly urban Chinese aged ≥60 years in 1999–2002 [5–7], and two recent studies showed that this prevalence was about 5% in 2008–2011. In this study, the prevalence of PAD was 6.6% and was increased with age. Research to date suggests that PAD might affect a greater proportion of females than males in low-income and middle-income countries, but we only found the same trend in urban [14]. Given the population aging and economic growth in China [15], the prevalence of PAD is expected to increase in next decades.

PAD is highly associated with traditional cardiovascular disease risk factors such as current smoking, diabetes, hypercholesterolemia, and hypertension [16]. The disparity of PAD prevalence by race was reported in the previous study [17]. The risks of PAD increase with the severity of diabetes: for every 1% increase in hemoglobin A1c level, the risk of PAD increases by 26% [18]. The various lipid fractions (total cholesterol, triglycerides, HDL-cholesterol, and apolipoprotein B levels) have been found to be associated with PAD in epidemiological studies [19–21]. Hypertension also has been associated with an increased risk of PAD in most epidemiological studies [14]. Many studies have confirmed that smoking is a potent risk factor for PAD, we only found smoking was associated with PAD in population aged ≥75 years (OR = 2.01, 95%CI: 1.48–2.75) and the amount smoked cannot explain this observation (data not shown) which indicates that smoking may play more important role in older population.

Individuals with PAD suffer a 5-fold-increased relative risk of a heart attack and 2- to the 3-fold-greater risk of stroke and total mortality than those without PAD [22]. PAD also fosters major morbidity by causing claudication, functional impairment, disability, and amputation. However,

PAD is largely unrecognized and under-treated worldwide. Surveys on knowledge and attitudes regarding PAD in general populations showed that only 25%–36% of the population reported a familiarity with PAD in US or Canada [23,24]. Previous data suggest that PAD detection and treatment are lower than for other forms of atherosclerotic arterial disease in primary care settings in western countries [25,26]. To date, no data was reported on the awareness, treatment and control rates of PAD in China. Due to the asymptomatic character of PAD and lack of medical attention, the awareness, treatment and control rates of PAD were significantly low in general population ≥35 years; while among those with treated PAD patients, 81.3% achieved ABI >0.9. Therefore, public health education and early screening programs, which can lead to health benefit by providing necessary knowledge of lifestyle changes and treatments recommendations, are needed.

Early detection of PAD can theoretically lead to health benefits, but recommendations on PAD screening for coronary heart disease events and coronary heart disease-related deaths vary across current guidelines due to lack of clear-cut evidence on the value of PAD screening [27]. Eco-Doppler is considered the gold standard for ABI test. However, it is time-consuming and it requires a trained technician which limited its routine use in clinical practice and did not seem suitable for the screening of PAD [28]. To overcome such obstacles and simplify measurement procedures, automated oscillometric ABI devices with high sensitivity and specificity have been invented recently [9,29]. This makes the early screening diagnosis and treatment of PAD possible in general population. Given the easiness of operation and low cost of devices have been developed, more studies should be performed to evaluate the value of PAD screening.

This study provides significant epidemiological knowledge gaps in PAD for middle-income countries. This study also has several limitations. First, it would be better to investigate the relationship between risk factors and PAD in a cohort study rather than a cross-sectional study. Indeed, we will follow the current population of this study during follow-up for several years, then we can investigate the risk factors longitudinally and estimate the value of PAD screening. Secondly, not all influential factors of PAD have been collected, previous studies have found that plasma fibrinogen and C-reactive protein have been related to symptomatic and asymptomatic PAD [30]. In addition, 20%–48% of the variability in ABI levels was owing to genotype, independently of cardiovascular risk factors [31,32]. Therefore, further studies are necessary.

Table 2
Weighted prevalence of peripheral arterial disease by characteristics.

Characteristics	Region		Gender		Total
	Urban	Rural	Male	Female	
Overall	4.4 (2.6–6.2)	7.8 (0.1–15.6)	6.3 (0.7–11.8)	7.0 (2.7–11.4)	6.6 (1.8–11.5)
Age					
35–44 yr	3.8 (1.6–6.0)	7.0 (0.0–15.2)	5.9 (0.0–12.3)	6.1 (1.7–10.5)	6.0 (0.7–11.3)
45–54 yr	3.9 (2.1–5.7)	7.2 (–0.9–15.3)	5.5 (0.2–10.9)	6.5 (1.6–11.3)	6.0 (1.1–10.9)
55–64 yr	4.1 (2.0–6.2)	8.7 (0.3–17.1)	6.5 (0.7–12.3)	7.6 (2.7–12.4)	7.0 (1.8–12.2)
65–74 yr	5.6 (2.6–8.6)	8.2 (1.7–14.7)	7.1 (2.5–11.7)	7.5 (3.3–11.6)	7.3 (3.0–11.5)
≥75 yr	10.3 (7.2–13.5)	12.6 (4.0–21.2)	10.5 (4.1–16.9)	12.9 (8.0–17.8)	11.8 (6.4–17.3)
P value					0.049
Ethnicity					
Others	4.5 (3.8–5.2)	2.6 (1.3–3.9)	2.0 (0.7–3.3)	3.8 (2.4–5.2)	2.9 (1.8–4.1)
Han	4.4 (2.5–6.3)	8.4 (0.0–16.8)	6.6 (0.7–12.5)	7.3 (2.7–12.0)	7.0 (1.7–12.2)
P value					0.035
Body mass index					
<18.5	6.2 (1.8–10.6)	4.7 (0.3–9.1)	4.1 (1.4–6.9)	5.8 (0.4–11.2)	5.0 (1.5–8.5)
18.5–23.9	4.0 (1.9–6.1)	7.0 (0.2–13.8)	6.2 (0.1–12.3)	5.9 (2.4–9.4)	6.1 (1.5–10.6)
24.0–27.9	4.3 (2.4–6.2)	8.4 (0.4–16.5)	5.9 (0.9–10.9)	8.0 (2.8–13.1)	6.9 (1.9–11.9)
≥28.0	5.3 (2.5–8.1)	10.0 (0.0–21.2)	7.7 (0.8–14.5)	8.2 (2.2–14.3)	8.0 (1.6–14.3)
P value					0.097
Education status					
Elementary school	5.7 (3.5–7.9)	8.3 (0.7–15.9)	7.1 (1.5–12.7)	8.3 (2.2–14.4)	7.8 (1.9–13.7)
Middle school	4.2 (2.2–6.2)	7.3 (0.0–15.9)	6.0 (0.0–12.4)	5.6 (3.1–8.1)	5.8 (1.3–10.4)
High school or above	2.7 (1.1–4.4)	6.1 (0.0–14.5)	3.0 (0.6–5.5)	4.8 (1.3–8.3)	3.8 (1.2–6.3)
P value					0.060
Smoking status					
Non-smokers	4.9 (3.2–6.6)	8.2 (0.7–15.7)	7.2 (1.4–12.9)	7.0 (2.6–11.4)	7.0 (2.4–11.7)
Past smokers	3.8 (0.0–7.6)	7.6 (0.0–17.6)	6.1 (0.0–12.3)	7.8 (0.7–14.9)	6.2 (0.0–12.4)
Current smokers	3.3 (1.4–5.2)	6.9 (0.0–15.3)	5.5 (0.1–10.9)	8.4 (1.3–15.6)	5.7 (0.2–11.1)
P value					0.230
Consumption of alcohol					
No	4.9 (3.3–6.5)	7.9 (0.1–15.7)	6.7 (0.5–12.8)	7.0 (2.7–11.4)	6.9 (2.0–11.8)
Yes	2.7 (0.5–5.0)	7.5 (0.0–15.2)	5.6 (0.7–10.5)	7.4 (2.0–12.8)	5.7 (0.8–10.6)
P value					0.113
Hypertension					
No	3.8 (1.9–5.7)	7.3 (–1.1–15.8)	5.9 (0.0–12.3)	6.4 (1.6–11.3)	6.2 (0.7–11.7)
Yes	5.4 (3.2–7.6)	8.9 (2.3–15.5)	6.8 (2.4–11.3)	8.3 (4.6–12.0)	7.5 (3.5–11.5)
P value					0.308
Coronary artery disease					
No	4.3 (2.6–6.1)	7.8 (0.1–15.6)	6.2 (0.6–11.8)	7.1 (2.7–11.4)	6.6 (1.7–11.5)
Yes	12.9 (7.4–18.4)	6.0 (0.0–12.8)	12.8 (6.6–19.1)	4.9 (0.0–10)	10.0 (5.5–14.4)
P value					0.302
Diabetes					
No	4.2 (2.5–6.0)	7.6 (0.0–15.1)	6.2 (0.4–11.9)	6.7 (2.6–10.8)	6.4 (1.6–11.3)
Yes	5.9 (3.5–8.3)	11.5 (1.4–21.5)	7.1 (2.8–11.4)	11.0 (3.4–18.7)	8.9 (3.3–14.5)
P value					0.001
Dyslipidemia					
No	4.0 (2.0–6.0)	7.6 (0.0–15.7)	6.1 (0.0–12.2)	6.7 (2.2–11.2)	6.4 (1.2–11.6)
Yes	5.2 (3.7–6.8)	8.3 (0.8–15.7)	6.5 (1.8–11.3)	8.0 (3.3–12.7)	7.2 (2.7–11.6)
P value					0.441

All values were weighted to represent the total population of Chinese aged 35 years or older based on Chinese census 2010. Data are represented as value (95% CI), unless otherwise indicated.

BMI = body mass index.

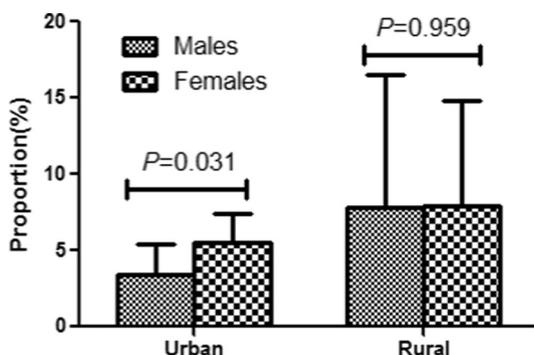


Fig. 1. Weighted prevalence peripheral arterial disease among Chinese adults 35 years of age or older by gender and region.

In summary, our results showed that the prevalence of PAD is 6.6% (estimated 45.3 million) in Chinese adults age 35 years or older, but the awareness, treatment and control rates of PAD were very low. The prevalence of PAD is still increasing, suggesting that China is still facing a serious challenge in the prevention and management of atherosclerotic diseases. Therefore, national strategies will need to increase awareness and management of PAD.

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Table 3
Multivariable-adjusted odds ratios for peripheral arterial disease.

Characteristics	Odd ratio	95% CI	P value
Age	1.02	1.01–1.02	<0.001
Ethnicity (Han vs. others)	2.28	1.82–2.86	<0.001
Gender (females vs. males)	1.09	0.96–1.24	0.165
Body mass index			
<18.5	Reference		
18.5–23.9	0.83	0.63–1.08	0.166
24.0–27.9	0.88	0.67–1.16	0.377
≥28.0	0.99	0.74–1.32	0.935
Education status			
Elementary school	Reference		
Middle school	0.92	0.82–1.04	0.183
High school or above	0.76	0.58–0.98	0.033
Smoking status			
Non-smokers	Reference		
Past smokers	1.02	0.82–1.28	0.827
Current smokers	0.98	0.85–1.14	0.817
Consumption of alcohol	0.99	0.85–1.14	0.864
Hypertension	1.24	1.11–1.38	<0.001
Coronary artery disease	1.71	1.22–2.39	0.002
Diabetes	1.24	1.07–1.43	0.004
Dyslipidemia	1.11	1.00–1.24	0.047
Region (rural vs. urban)	1.37	1.23–1.53	<0.001

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Declarations of interest/disclosures

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijcard.2018.10.047>.

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