Salt intake was estimated from early-morning urine specimens using an equation validated for this study population.

**Results:** Increasing quartiles of salt intake were associated with high urinary UA/creatinine levels in prehypertensive participants. Estimated salt intake positively correlated with urinary UA/creatinine excretions in the prehypertensive group. In addition, the prehypertensive group had higher levels of salt intake and serum UA than the normotensive group. The multivariate-adjusted odds ratios (95% confidence interval) for prehypertension compared with normotension were 1.68 (1.27–2.22) for salt intake and 1.71 (1.21–2.42) for serum UA. Increasing salt intake and serum UA were associated with higher risk of prehypertension. Compared with the lowest quartiles, the highest salt intake and serum UA quartiles entailed 3.48 times greater risk of prehypertension.

**Conclusion:** Salt intake is associated with urinary UA excretion in prehypertensive participants. High levels of salt intake and serum UA simultaneously are associated with a higher risk of prehypertension.

**Keywords:** Salt intake, uric acid, prehypertension, urine

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**EFFECT OF SALT INTAKE ON PLASMA AND URINARY URIC ACID LEVELS IN CHINESE ADULTS: AN INTERVENTIONAL TRIAL**

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**Objectives:** Uric acid (UA) has been proposed as an important risk factor for cardiovascular and renal morbidity. We conducted an interventional trial to assess the effects of altered salt intake on plasma and urinary UA levels and the relationship between UA levels and salt sensitivity in humans.

**Methods:** Ninety subjects (18–65 years of age) were selected from a rural community of northern China. All subjects were sequentially maintained on a normal diet for three days at baseline, a low-salt diet for an additional 7 days (18.0 g/day of NaCl), and a high-salt diet for an additional 7 days (3.0 g/day of NaCl).

**Results:** The plasma UA levels were significantly increased from baseline to the low-salt diet and decreased from the low-salt to high-salt diet in contrast. The daily urinary levels of UA were significantly decreased from baseline to the low-salt diet and increased from the low-salt to high-salt diet. Also, 24-h urinary sodium excretions were inversely correlated with the plasma UA, and positively correlated with the urinary UA excretions. Additionally, salt-sensitive subjects were associated with a significantly higher plasma UA changes in comparison to salt-resistant subjects, and a negative correlation between the degree of salt sensitivity and plasma UA difference was observed.

**Conclusion:** The present study indicates that variations in dietary salt intake affect the plasma and urine, and plasma UA may be involved in the pathophysiological process of salt sensitivity.

**Keywords:** Uric acid, salt intake, salt sensitivity, urine

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**THE ASSOCIATION OF INTRACRANIAL ARTERIAL STENOSIS WITH HOME BLOOD PRESSURE LEVEL AND VARIABILITY**

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**Objectives:** Intracranial arterial stenosis (ICAS) is a major cause of ischemic stroke. However, the associations of ICAS with home blood pressure (BP) and variability remains unclear.

**Methods:** Outpatients not on antihypertensive medications were recruited from 2009 to 2013. ICAS was defined if the peak systolic flow velocities measured with transcranial Doppler sonography were respectively of at least 140 cm/s, 120 cm/s, or 100 cm/s at middle, anterior, or posterior and vertical cerebral arteries. Home BP was self-measured by Omron HEM-7051 device for seven days. BP variability was assessed as variability independent of the mean, standard deviation, maximum–minimum difference, and average real variability.

**Results:** The prevalence of ICAS in the 801 participants (average age 51 years, 50% males) was 7.9% (63 cases). Patients with ICAS compared to those without had significantly higher clinic (135.8 vs 131.9 mmHg, P = 0.01) and home systolic BPs (134.8 vs 126.6 mmHg, P < 0.001). In multivariate-adjusted regression model, home systolic BPs, irrespective of at morning or evening, were associated with ICAS independently of other risk factors including any BP variability indices (OR, 1.47 to 1.82, P ≤ 0.005). However, after similar adjustment including home systolic BP, ICAS was only associated with seven-day morning systolic BP variability (OR, 1.35 to 1.47, P < 0.02), neither with evening BP variability (P ≥ 0.47), nor any day-to-day BP variability indices (P ≥ 0.07).

**Conclusion:** Asymptomatic ICAS was moderately prevalent in Chinese untreated patients. Both home morning and evening systolic BPs were important determinants of ICAS, and BP variability in the morning was also associated with ICAS.

**Keywords:** Intracranial arterial stenosis, home blood pressure, blood pressure variability
baseline hypertension and diabetes or follow-up diabetes may have more possibility to have cerebrovascular disease. Women with baseline diabetes may be most likely to have cerebrovascular disease.

Keywords: hypertension, diabetes, cerebral ischemic stroke, stroke

THE VALIDATION OF THE VISUAL SCREENING TOOL FOR ANXIETY DISORDERS AND DEPRESSION IN HYPERTENSION AND/OR DIABETES

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Objectives: The aim of this study was to validate the visual screening tool for depression and anxiety disorders (VISTAD) in primary health care participants diagnosed with hypertension and/or diabetes.

Methods: The study used a cross-sectional study design to validate the VISTAD. The VISTAD was validated against the MINI International Neuropsychiatric Interview (M.I.N.I) using field testing. A demographic questionnaire was used to collect data on socio-economic variables.

Results: Sixty-nine (87%) females, 10 (13%) males with a mean age of 49 (SD 8.6844) participated in the study. Fifty black (63%), 16 coloured (20%) and 13 white (16%) subjects participated in the study. The majority of the participants (77%) did not complete high school. The area under curve score (AUC) for the VISTAD in screening for depression was 0.91, and for anxiety disorders, 0.87 post traumatic stress disorder, 0.87 panic disorder, 0.85 social phobia, 0.88 agoraphobia, and 0.83 generalized anxiety disorder revealing acceptable psychometric properties.

Conclusion: The use of the VISTAD as a screening tool at primary health care is hence recommended for depression and anxiety disorders, and could therefore play a key role in the prevention and early treatment of individuals diagnosed with hypertension and/or diabetes across cultures and levels of education.

Keywords: screening, visual screening tool, depression, anxiety

DETERMINING THE PREVALENCE OF DEPRESSION AND ANXIETY DISORDERS IN PRIMARY HEALTH CARE PATIENTS WITH HYPERTENSION AND/OR DIABETES IN THE EASTERN CAPE, SOUTH AFRICA

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Objectives: The objective of this study was to determine the prevalence of depression and anxiety disorders in primary health care patients diagnosed with hypertension and/or diabetes.

Methods: This cross sectional study included 79 participants (87% female; 13% male) from five primary health care centres in the Eastern Cape, South Africa. The Mini-International Neuropsychiatric Interview (M.I.N.I) was utilized to diagnose depression and anxiety disorders. Descriptive statistics were used, and a multiple logistic regression analysis was performed to determine the association between hypertension and diabetes and depression and anxiety disorders.

Results: The majority of patients (97%) were on treatment for hypertension and 39% of them were being treated for diabetes. The most common diagnosis was panic disorder (40%), followed by post-traumatic stress disorder (33%), depression was 32%, generalized anxiety disorder (17%), social phobia (10%) and agoraphobia (10%). A comorbid diagnosis of hypertension and other medical conditions was significantly associated with a diagnosis of panic disorder. Only hypertension was associated with a higher prevalence of depression and anxiety disorders, compared to diabetes comorbid with hypertension.

Conclusion: The prevalence of depression and anxiety disorders is high in patients diagnosed with hypertension and/or diabetes. Therefore, the integration of mental health care in the treatment of people with hypertension and diabetes is recommended.

Keywords: hypertension, prevalence, depression, anxiety disorders

EFFECTIVENESS OF A WORKPLACE-BASED MULTICOMPONENT INTERVENTION PROGRAM ON HYPERTENSION CONTROL OF ENTERPRISE EMPLOYEES: A CLUSTER CONTROLLED TRIAL

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Objectives: Our study intended to investigate the influence factor of brachial-ankle pulse wave velocity (baPWV) in Tibetan monks, and the differences between Tibetan monks and Han residents in community.

Methods: A total of 352 Han residents in community and 272 Tibetan monks aged over 18 were recruited. After completing standardized questionnaires, physical examination, baPWV and biochemical tests, the participants were divided into elevated PWV group and normal PWV group based on baPWV level of 14 m/s.

Results: Mean baPWV of Tibetan monks is 13.69 ± 2.38 m/s, among them, the elevated group is 16.02 ± 1.57 m/s and the normal group is 12.06 ± 1.21 m/s. Significant differences were found in age (p < 0.001), blood pressure (p < 0.001), prevalence rate of hypertension (p < 0.001), TC (p = 0.015), TG (p = 0.048), LDL-C (p = 0.011) and years of believes in Buddhism (p < 0.001) between these two groups. When the variation of baPWV is the dependent variable factor, the logistic regression analysis shows that age (p < 0.05), elevated systolic blood pressure (SBP) (p < 0.05), total cholesterol (p < 0.05) and mean intake (p < 0.05) are all risk factors of baPWV, whereas longer belief (p < 0.01) and high level of HDL-C (p < 0.05) are protective factors of baPWV. The baPWV of Han residents is 16.01 ± 4.37 m/s (independent t test), which is higher than Tibetan monks in logistic regression (p < 0.001). Furthermore, Tibetan monks have lower diastolic blood pressure, BMI, fasting blood glucose, triglyceride, heart rate and total cholesterol.

Conclusion: In this study, we found that age, SBP, total cholesterol, HDL-C, years of belief in religion, mean intake are major influence factors of baPWV in Tibetan monks. Due to the special life style, their baPWV is lower than Han community residents.

Keywords: baPWV, Tibetan monks, hypertension

HEALTH-RELATED QUALITY OF LIFE OF HYPERTENSION IN CHINA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Objectives: To determine whether a workplace-based multicomponent intervention strategy could improve BP control among the Chinese enterprise employees.

Methods: A cluster controlled trial, with enterprises assigned to either the intervention or control group in a 3:1 ratio. 47 enterprises across 15 urban regions of China were included. Overall, 3370 hypertensive employees aged 18-60 were assigned intervention (n = 2620) or control (n = 750), of whom 3115 (92.4%) participants agreed to control; intervention, n = 2415; control, n = 700 were included in the primary analysis. Our intervention included workplace wellness programs for improving employees’ cardiovascular health and guideline-oriented BP management programs for achieving BP control. The intervention period was 24 months.

Results: At baseline, BP control was 15.3% and 14.0% in the intervention group and control group (P = 0.389), respectively. During the study, the mean effect on BP control for intervention versus control group was 28.5% (95% confidence interval 23.4% to 33.5%; P < 0.001). The mean effect on SBP and DBP was −8.2 mm Hg (−9.5 to −6.9 mm Hg) and −4.1 mm Hg (−5.2 to −3.1 mm Hg), respectively (all P < 0.001). Moreover, there was a greater reduction in the rates of smoking and alcohol consumption, but a substantial improvement in regular exercise, compared with the control patients, and the mean effect was −6.4% (−12.3 to −0.6%), −14.8% (−20.3 to −9.2%), and 30.5% (24.9 to 36.1%), respectively (all P < 0.05).

Conclusion: A multicomponent intervention program delivered to hypertensive employees at the enterprise is effective in improving BP control.

Keywords: Enterprise, multicomponent intervention, health promotion, blood pressure (BP) management

THE INVESTIGATION OF INFLUENCE FACTOR OF BRACHIAL-ANKLE PULSE WAVE VELOCITY IN TIBETAN MONKS

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Objectives: To determine whether a workplace-based multicomponent intervention strategy could improve BP control among the Chinese enterprise employees.

Methods: A cluster controlled trial, with enterprises assigned to either the intervention or control group in a 3:1 ratio. 47 enterprises across 15 urban regions of China were included. Overall, 3370 hypertensive employees aged 18-60 were assigned intervention (n = 2620) or control (n = 750), of whom 3115 (92.4%) participants agreed to control; intervention, n = 2415; control, n = 700 were included in the primary analysis. Our intervention included workplace wellness programs for improving employees’ cardiovascular health and guideline-oriented BP management programs for achieving BP control. The intervention period was 24 months.

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Conclusion: A multicomponent intervention program delivered to hypertensive employees at the enterprise is effective in improving BP control.

Keywords: Enterprise, multicomponent intervention, health promotion, blood pressure (BP) management

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