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**THE RELATIONSHIP BETWEEN CHRONIC
OCCUPATIONAL STRESS AND ARTERIAL STIFFNESS: A
CROSS-SECTIONAL STUDY IN CHINESE WORKERS**

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Objectives exposure to occupational stress increases the risk of cardiovascular disease. However, few reports focused on the association between occupational stress and arterial stiffness as a

suitable marker of early stage atherosclerosis. It is unclear which aspect of chronic occupational stress shows a stronger association with arterial stiffness, as an indicator of atherosclerosis. This study was designed to clarify the connection between occupational stress components and arterial stiffness, using Brachial-ankle pulse wave velocity (BaPWV).

Methods This study was conducted on 2687 workers (male, 62.7%; mean age, 44.5) who underwent a health checkup at a physical examination centre in Shanghai, China. Occupational stress was assessed by the NIOSH job stress questionnaire (China version, modified), containing 38 questions and 5 criteria (job control, social support, job demand, skill under-utilisation and workload). Demographic data, blood pressure, fasting blood glucose (FBS), HbA1c, lipid parameters and BaPWV were measured in each subject. Each component of the job stress score is graded into four levels by percentile. The main outcome (BaPWV > 14 m/s) was a useful cut-off, and considered as an independent risk factor of cardiovascular disease. Due to gender differences in the baseline study, all data were analysed by gender.

Results In univariate logistic regression analysis, compared with the highest job control group, the second lowest job control was associated with lower OR (0.706, 95% CI 0.548 to 0.910) for baPWV > 14 m/s in male workers, whilst others were insignificant. In female workers, compared to the lowest skill utilisation group, the second highest group showed a significantly lower OR (0.365, 95% CI 0.188 to 0.706). Multivariate logistic analysis demonstrated that the second lowest job control group in males still showed a significantly lower OR (0.737, 95% CI 0.552 to 0.983), following adjustment of age, BMI, education, smoking status, alcohol consumption, exercise habits and occupational type. However the corresponding association in females was insignificant.

Conclusions This study showed that the type of job stress affected arterial stiffness differently by gender. Job control might play an important role in the relationship of job stress and arterial stiffness in males, whereas skill utilisation was the most important factor in females.