Is Working at a Small Company a Component of “The Status Syndrome” in Japan?

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The social gradient in health has an impact on coronary artery disease (CAD). The concept of “the status syndrome” in regard to social hierarchy. The Whitehall study first found the phenomenon among British civil servants: “the higher the social position, the better the health.” Even in developed countries, researchers have observed a socioeconomic gradient in health. Thus, the socioeconomic gradient is likely everywhere, but dependent on levels of both income and education.

Regardless of such unmodifiable factors, it is important for physicians to better understand the causal framework in order to explain why the socioeconomic gradient in health is associated with CAD. It has been conventionally considered that individuals in a lower social position tend to have difficulties in accessing medical care or have unhealthy lifestyles related to CAD risk factors. In Japan, the government has stated that being in a low-income group is strongly related to unfavorable lifestyles: for example, overweight, less consumption of fruits or vegetables, smoking, excess alcohol intake, and sedentary lifestyles. Indeed, a social gradient in health exists even in Japan where a universal health insurance system is established.

In this issue of the Journal, Okuda et al demonstrate that working at a small company is associated with a higher risk of total cardiovascular disease (CVD) and all-cause death. The figure shows multivariable-adjusted hazard ratios and 95% confidence intervals for CVD and all-cause death among indefinite-term employees according to company size: (A) large company/public office, (B) medium company, and (C) small company. The model was adjusted for age and other factors, including body mass index, smoking and drinking habits, salt intake, and fruit and vegetable intake, population size of the residential municipality, use of medications for hypertension, diabetes mellitus, or dyslipidemia, systolic blood pressure, diastolic blood pressure, HbA1c, serum total cholesterol, high-density lipoprotein cholesterol, and triglycerides.

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that among Japanese men, employees working at a small company, defined as <30 employees, were at increased risk of death from cardiovascular disease (CVD). When compared with large company/public office employees, the age-adjusted hazard ratio of small company employees was 2.53 (95% confidence interval, 1.12–5.69) for CVD death (Figure). The association was not seen for all-cause death, and adjustment for several confounders did not weaken the connection. There were no differences in CVD death among workers for a large company/public office, a medium company, and a self-employed/administrator.

The authors explain the phenomenon in the context of a socioeconomic issue. The company size was possibly a social determinant representing the gradient in health. Men working in small companies had higher smoking rates, less habitual exercise, and lower fruit and vegetable intake compared with those in a large company/public office. Their profiles were consistent with those in a lower socioeconomic position, together with a small income and working overtime.

Although they examined several CVD risk factors related to the social gradient in health, including fruit and vegetable intake, the hazard ratio for CVD death of male employees at small companies was unchanged when those confounders were adjusted. In other words, the risk factors investigated were unlikely to be mediators in the causal framework. Therefore, working at a small company was not strongly linked with the unhealthy lifestyles and risk factors for CVD death observed among individuals with lower social position. If true, we need to seek another link to CVD death.

Possible explanations of the association between the social gradient in health and CVD have been proposed, most of which have focused on the stress pathway. Occupational stress, explained by an imbalance between effort and reward, is high in lower social position. This has been linked to the biological stress pathway in the hypothalamic-pituitary-adrenal axis, leading to an impaired autonomic nervous system. Autonomic dysfunction is the connection between social position and CAD. It is evaluated by the assessment of heart rate variability (HRV). Decreased HRV is associated with insulin resistance, raised levels of high-sensitivity C-reactive protein, and elevated morning blood pressure measured at home, together with further development of diabetes and CAD outcomes. Recently, we reported that those working overtime of more than 11 h/day were at increased risk of incident CAD but not ischemic stroke among Japanese men, especially salaried employees, independent of several CAD risk factors including waking hours/day, sleep duration, and occupation. These findings suggest a stress pathway common to working overtime and working at a small company, which often results from socioeconomic status.

In Japan since 2015, the government has legally required all employers to carry out the management of stress at work by using the Brief Job Stress Questionnaire; however, this is not required for small companies with <50 employees. Unfortunately, the social gradient in health between high and low social positions may be steeper in the future. From the perspective of a social gradient in health, we need to understand the high-risk population for CAD death and find the best way to prevent the disease.

References