

# Work environment and health needs in small- and medium-sized enterprises in a manufacturing technology ward in Japan



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## Introduction

- The Ota ward of Tokyo is a hotbed of advanced manufacturing activity, being home to around 4000 factories and workshops that underpin Japan's manufacturing industry. The Ota ward's cluster of small and medium-sized technology enterprises (SMEs) is arguably unparalleled in the world.
- However, few studies have investigated the work environments and health problems in these SMEs.

## Objectives

- To evaluate the work environments and employee health needs in small and medium-sized manufacturing technology enterprises in the Ota ward, Tokyo.

## Methods

- An anonymous questionnaire was mailed to 3,171 employers that are members of the Ota branch of the Tokyo Chamber of Commerce and Industry (TCCI). Health problems, health management, work environment, human resource development and health needs were measured. To compare the work environments and health outcomes across establishments, data was analyzed by the employee size of each business. The study was approved by the University of Tokyo Research Ethics Committee.

## Results

- 372 responses were received (valid response rate 11.7%). The average respondent is 62.5 (SD=11.3) years old and has 19.8 (SD=15.1) years of working experience. The sample contains the following distribution of business sizes: <10 employees 181 (48.7%); 10-49 employees 133 (35.8%), 50-99 employees 22 (5.9%) and; >100 employees 17 (4.6%). There were statistically significant differences between small- and medium-sized enterprises in areas related to smoking, infections, metabolic syndrome and mental health (Figure 1).
- Work environment characteristics (Figure 2):** Positive responses were significantly higher in enterprises with <100 employees for the following items: "every employee and employer sees each others' face"; "employer's management policy is easily transmitted to employees"; "there is attention to aging of employees" and; "close relationships exist among employees".
- Personnel development (Figure 3):** Positive responses on "effective management of working hours", "safety training", "participation in internal and external training" and "holding events in-house" were significantly higher in medium-sized as compared with small-sized enterprises.

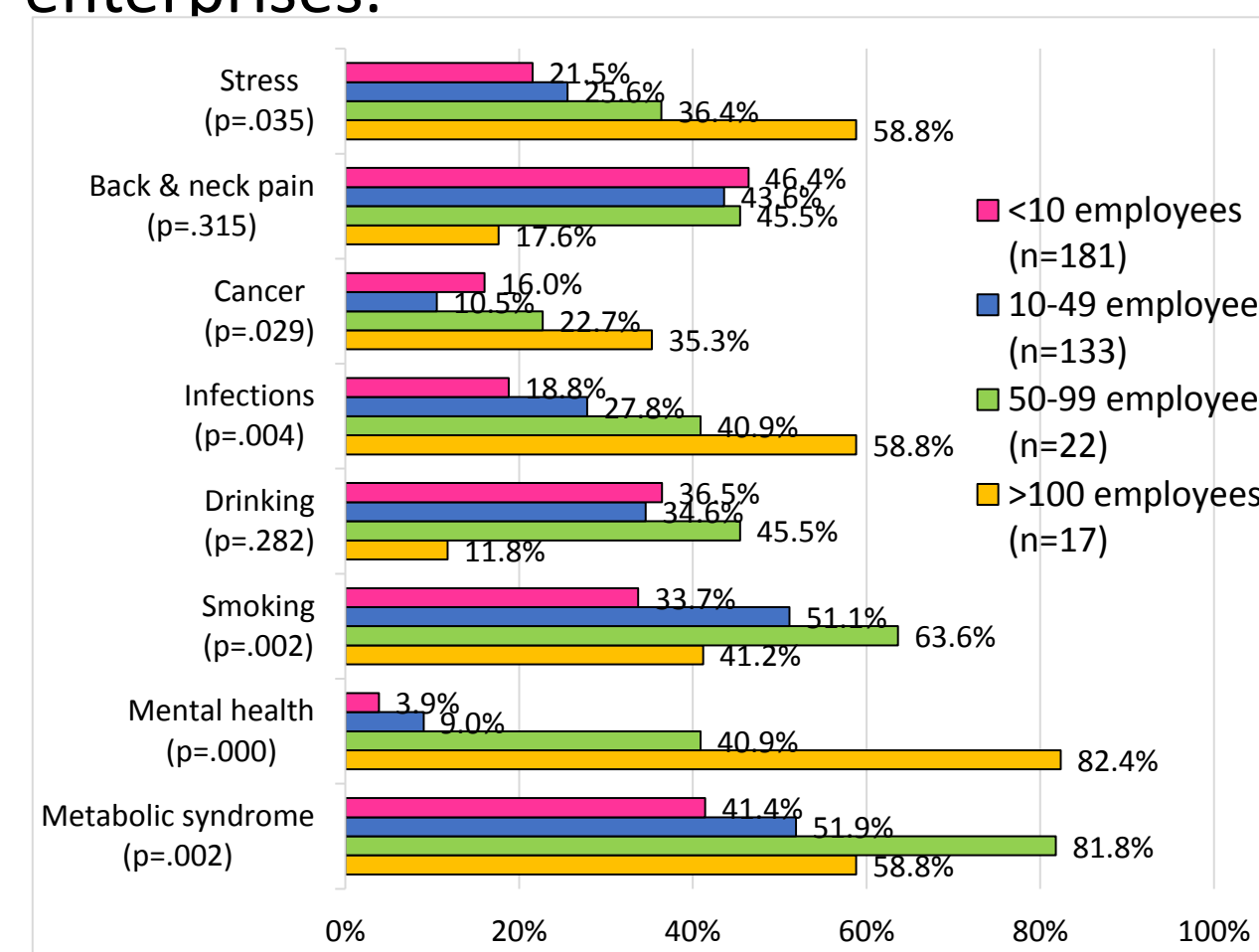


Figure 1. Health problems by workforce

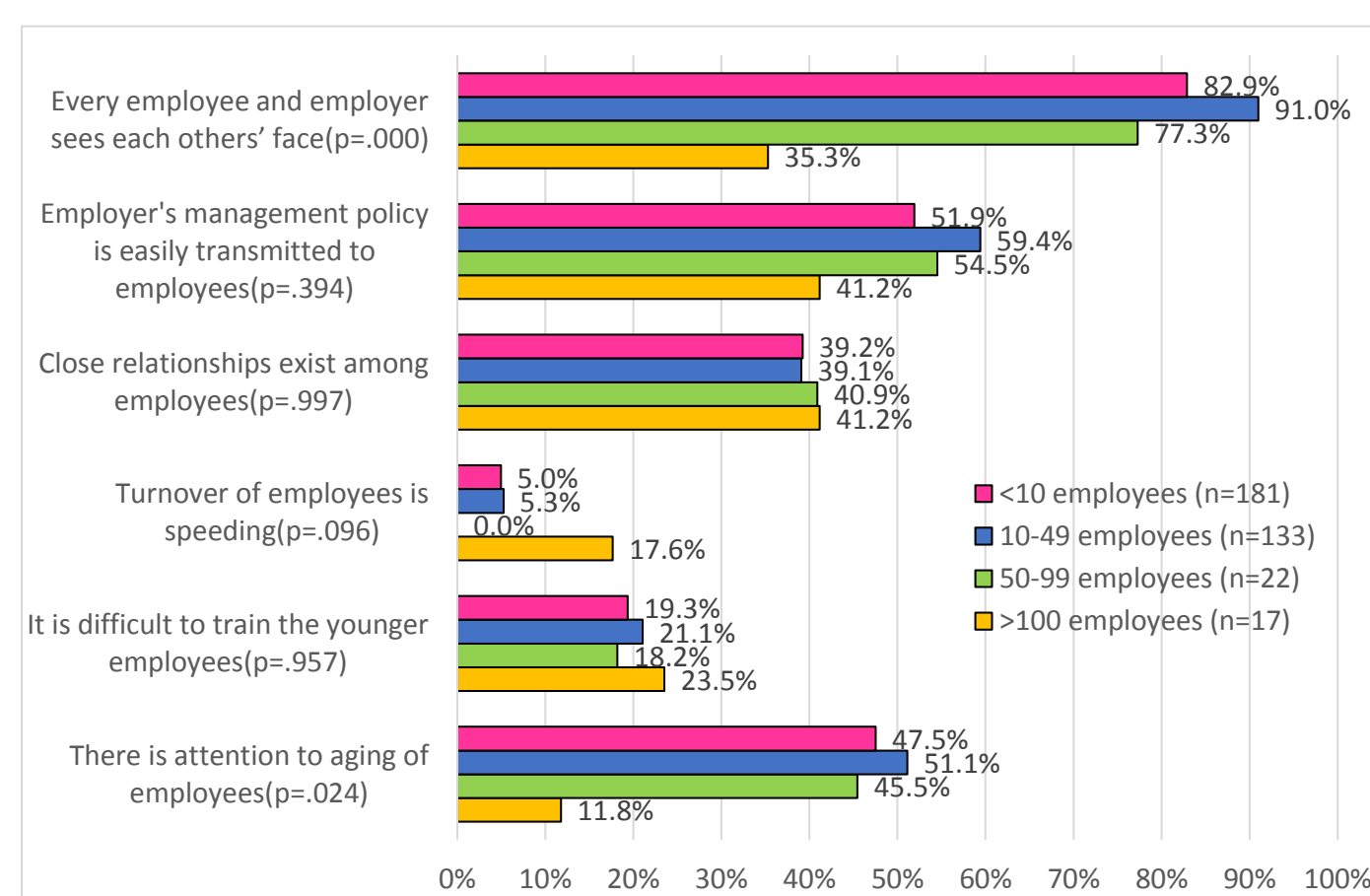


Figure 2. Characteristics of the work environment by workforce size

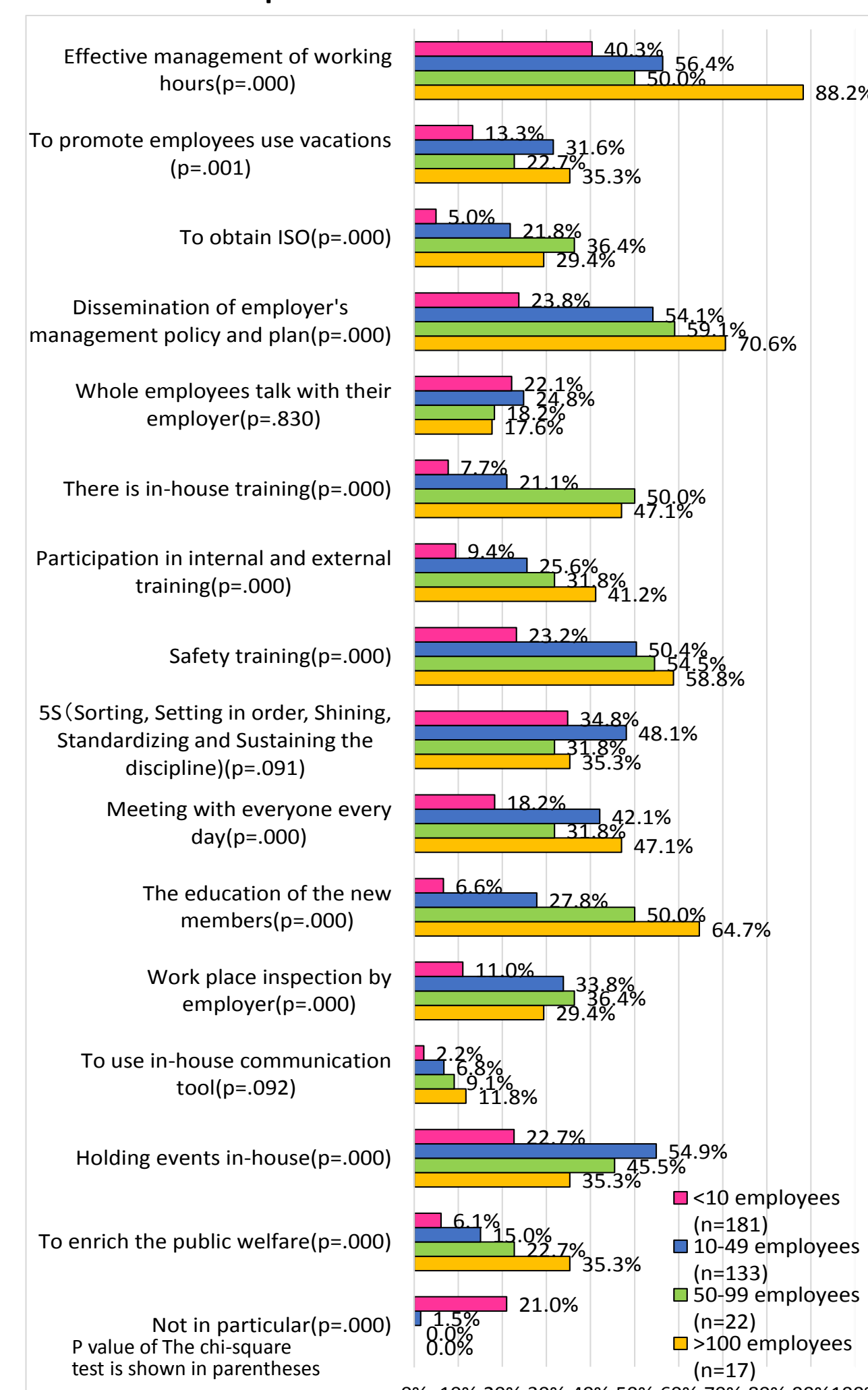


Figure 3. The state of implementation of SME personnel development

## Conclusions

- Health amongst the employees of SMEs in Ota, Japan, differ according to enterprise size. In Occupational health in this study, response rates were low and respondents were exclusively sampled from the Ota branch of the TCCI, which may limit the generalizability of the results.
- In Japan, enterprises with 50 or more employees face different legal obligations towards the occupational health of their employees. However, legal differences are unlikely to account for all of the observed differences in occupational health between SMEs of different sizes because occupational health outcomes differ between enterprises with less than 50 employees, more than 10 employees and less than 10 employees.
- The results also demonstrated that health problems differ amongst enterprises with less than 10 employees. These very small businesses found it difficult to develop positive work environments and health management systems.
- This study suggests some possible directions for health support strategies in Tokyo's advanced manufacturing enterprises. The strategies emphasize the key role of employers for occupational health.

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