

Nationwide Survey of Occupational Health Activities in Small-Scale Enterprises in Japan

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Abstract: Objectives: In order to clarify the real condition of occupational health (OH) activities in small-scale enterprises (SSEs) at the nationwide level, we conducted a questionnaire study sent to SSEs. We selected SSEs according to their employee numbers published in the in “Census of Workplaces in 1999”. Subjects and Methods: About 2000 establishments were selected from the list in the “Census” describing the names and addresses of enterprises with 5 or more employees. The questionnaire included type of business, number of employees, independence, OH competent person, conduction of health examination, potential hazardous works and countermeasures (chemicals handling, computer work, etc), committee or other types of organizations for OH, and others. Results: Two hundred eleven establishments with 1–4 employees, 779 establishments with 5–9 employees, 681 establishments with 10–49 employees, 300 establishments with 50–99 employees, and 57 establishments with more than 100 employees, a total of 2,029 establishments responded to the questionnaire. The types of businesses (the number of establishments) were construction (216 establishments), manufacturing (604), transportation and communication (216), wholesale and restaurants (390) and services (602). The rate of independent enterprises was 54.1% and branches 45.9%. Indicators of OH activities including selection of OH competent person, enforcement of OH guideline for computer work, OH education about the occupational health risks, enforcement of special health examinations and general health examinations in SSEs with 1–4 and 5–9 employees were worse than SSEs with 10 or more employees. Conclusions: The differences of OH activities by scale of number of employees were clarified at a nationwide level. However, OH activities in SSEs with 1–4 employees were not clarified sufficiently. Various policies and methods should be established and implemented to improve the low level of OH activities in SSEs.

Key words: Nationwide survey, Questionnaire, Occupational health activities

Introduction

Since about 98% of enterprises (sometimes same as establishments) in Japan are small-scale enterprises (SSEs), or establishments, with less than 50 employees, including the self-employed¹⁾, many researchers in the occupational health (OH) field in Japan are aware of the importance of OH in SSEs. In the last 10 yr, some questionnaire studies on activities of OH in SSEs have been conducted, but the studied areas were restricted to one prefecture, one city or some regions of one city^{2–4)}.

Nationwide surveys on OH, the Fundamental Survey on Occupational Health and the Survey on Workers' Health are conducted once every 5 yr by the Ministry of Health, Labour and Welfare. However, since the sampling rate in SSEs is lower than that for medium- and large-scale enterprises, and SSEs with less than 10 employees are excluded from these surveys, the surveys have severe limitations about OH in SSEs.

In order to clarify the real condition of OH activities in SSEs and small establishments including branch offices and factories of medium- and large-scale enterprises at the nationwide level, we conducted a questionnaire study. We selected SSEs according to their number of employees as

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published Establishments and Enterprises Census 1999⁵).

Subjects and Methods

Subjects

About 2000 establishments were selected from the list in the Establishments and Enterprises Census 1999 describing the names and addresses of enterprises with 5 or more employees. Accordingly, the subjects of the survey were establishments with 5 or more employees in 1999.

Questionnaires were distributed to about 1200 establishments listed with 5–9 employees, about 400 establishments with 10–49 employees and about 400 establishments with 50–99 employees by coordinators in 80 Regional Occupational Health Centres (ROHC) in 29 prefectures.

Methods

The questionnaire included questions on type of business, number of employees, independence, OH competent person, enforcement of health examinations, potential hazardous works and countermeasures (chemicals handling, computer work, etc), OH committee or other types of organizations for OH, and others.

The questionnaires were recovered by the coordinators of ROHC about 2 wk later. The counting and statistical analysis of the questionnaires were performed with SPSS.

Results

In Table 1, the numbers of employees in some establishments at the study time were different from those in 1999. The number of small-scale enterprises was 1,301 (64.2%) and that of small establishment of medium- and large-scale enterprises was 370 (18.2%).

Two hundred eleven establishments with 1–4 employees, 779 establishments with 5–9 employees, 681 establishments with 10–49 employees, 300 establishments with 50–99 employees, and 57 establishments with more than 100 employees, a total of 2028 establishments responded to the questionnaire. The types of businesses (the number of enterprises) were construction (216 establishments), manufacturing (604), transportation and communication (216), wholesale and restaurants (390) and services (602). The rate of independent establishments (enterprises) was 54.1% and branches 45.9%. Table 2 shows that the selection rate of competent persons in independent establishments (28.7%) was lower than that of branch establishment (48.3%). Many SSEs with less than 50 employees had no OH competent person (1–4, 5–9, and 10–49 employees: 84.3, 80.6, and 56.1%, respectively). In establishments with more than 50 employees, the representation of OH competent persons was higher (50–99, and more than 100 employees: 20.0 and 15.8%, respectively). According to the Ordinance of Occupational Safety and Health, establishments with 10–49 employees must select a (safety and) health promoter.

Table 3 shows that the VDT work was widely distributed in smaller establishments and various types of businesses.

Table 1. Number of surveyed establishments and enterprises by size of number of employees, independence and type of businesses

Size of enterprises	Total	1–4	5–9	10–49	Subtotal 1–49	50–99	100–299	300–	Subtotal 50–
	2,028	163	610	531	1,304	261	224	239	724
Independent	1,095	136	526	311	973	104	16	2	122
Branch	933	27	84	220	321	157	208	237	602
Establishment									
1–4 employees	211	150	16	11	177	6	5	23	34
5–9	779	13	579	49	641	21	51	66	138
10–49	681	0	15	468	483	48	72	78	198
50–99	300	0	0	3	3	186	61	50	297
100–	57	0	0	0	0	0	35	22	57
Type of business									
Construction	216	16	76	62	154	26	16	20	62
Manufacturing	604	58	208	167	433	84	53	34	171
Transportation & communication	216	7	47	60	114	22	22	58	102
Wholesale, retail and restaurants	390	32	95	85	212	47	60	71	178
Services	602	50	184	157	391	82	73	56	211

SSEs: 1,301 (*Italic*), Small establishment of larger enterprises: 370 (**Gothic**).

Table 2. Competent person for occupational health (OH) activities in small establishments

	Health promoter	Safety and health promoter	Health manager	No competent person
Independent	38 (3.5%)	157 (14.5%)	169 (15.6%)	772 (71.3%)
Branch	62 (6.8)	198 (21.8)	308 (33.9)	461 (50.7)
1–4	3 (1.4)	14 (6.7)	20 (9.5)	177 (84.3)
5–9	22 (2.9)	70 (9.1)	74 (9.6)	618 (80.6)
10–49	37 (5.6)	173 (26.0)	140 (21.1)	373 (56.1)
50–99	33 (11.0)	85 (28.3)	201 (67.0)	60 (20.0)
100–	5 (8.8)	14 (24.6)	44 (77.2)	9 (15.8)
Construction	18 (8.5)	79 (37.4)	58 (27.5)	97 (46.0)
Manufacturing	34 (5.7)	139 (23.2)	143 (23.8)	360 (60.0)
Transportation & communication	12 (5.7)	57 (27.1)	59 (28.1)	103 (49.0)
Wholesale, retail and restaurants	7 (1.8)	29 (7.6)	84 (22.0)	270 (70.9)
Services	29 (4.8)	52 (8.7)	135 (22.6)	408 (68.2)

Table 3. The recognition of official guideline (GL) for OH in VDT work

	With VDT work	Without VDT work			
		Did not know	Know, but did not enforce the content of the GL	Know and enforce the contents of the GL	
Independent	571 (52.7%)	290 (26.8%)	70 (6.5%)	211 (19.5)	513 (47.3%)
Branch	631 (68.6)	243 (26.4)	121 (13.2)	267 (29.0)	289 (31.4)
1–4	80 (38.1)	44 (21.0)	11 (5.2)	25 (11.9)	130 (61.9)
5–9	391 (50.6)	209 (27.0)	48 (6.2)	134 (17.3)	382 (49.4)
10–49	458 (68.0)	197 (29.2)	80 (11.9)	181 (26.9)	216 (32.0)
50–99	230 (77.7)	76 (25.7)	43 (14.5)	111 (37.5)	66 (22.3)
100–	48 (82.8)	10 (17.2)	10 (17.2)	28 (48.3)	10 (17.2)
Construction	148 (69.2)	69 (32.2)	26 (12.1)	53 (24.8)	66 (30.8)
Manufacturing	340 (56.5)	140 (23.3)	51 (8.5)	149 (24.8)	262 (43.5)
Transportation & communication	121 (56.8)	44 (20.7)	26 (12.2)	51 (23.9)	92 (43.2)
Wholesale, retail and restaurants	222 (57.5)	116 (30.1)	27 (7.0)	79 (20.5)	164 (42.5)
Services	377 (63.1)	167 (28.0)	62 (10.4)	148 (24.8)	220 (36.9)

But, the recognition and enforcement of the official guideline (GL) were higher in larger small establishments with 10–49 employees. The OH guideline for computer work was not known among 55.0% of SSEs with 1–4 employees with computer work, 53.5% of SSEs with 5–9 employees and 43.0% of SSEs with 10–49 employees.

Table 4 shows that the enforcement of OH education about hazards was similar to the tendency in VDT work. OH education about the occupational health risks was not performed among 74.4% of SSEs with 1–4 employees with the risks, 56.6% of SSEs with 5–9 employees and 40.4% of SSEs with 10–49 employees.

Table 5 shows that the rate of enforcement of the special health examination was higher in larger small establishments with 10–49 employees than smaller establishments with 1–9 employees. Special health examinations were not known

among 51.9% of SSEs with 1–4 employees with occupational health risks requiring the examination, 41.9% of SSEs with 5–9 employees, and 20.0% of SSEs with 10–49 employees.

Table 6 shows that the rates of simplified periodical general health examination were higher in smaller establishments with 1–9 employees than larger establishments with 10–49 employees. Periodical health examinations were not conducted by 40.6% of SSEs with 1–4 employees, by 26.8% of SSEs with 5–9 employees, and by 14.1% of SSEs with 10–49 employees.

Discussion

In general, indicators of OH activities including selection of OH competent person, enforcement of OH guideline for computer work, OH education about the occupational health

Table 4. The performance of education about hazardous work

	With hazardous work		Without hazardous work	
		Education	No education	
Independent	282 (26.0%)	133 (12.3%)	149 (13.8%)	801 (74.0%)
Branch	218 (23.8)	144 (15.7)	74 (8.1)	699 (76.2)
1–4	43 (20.6)	11 (5.3)	32 (15.3)	166 (79.4)
5–9	173 (22.4)	75 (9.7)	98 (12.7)	599 (77.6)
10–49	171 (25.5)	102 (15.2)	69 (10.3)	500 (74.5)
50–99	100 (33.6)	74 (24.8)	26 (8.7)	198 (66.4)
100–	15 (26.3)	15 (26.3)	0 (0.0)	42 (73.7)
Construction	78 (36.4)	53 (24.8)	25 (11.7)	136 (63.6)
Manufacturing	214 (35.8)	134 (22.4)	80 (13.4)	383 (64.2)
Transportation & communication	34 (16.0)	16 (7.5)	18 (8.5)	179 (84.0)
Wholesale, retail and restaurants	56 (14.6)	13 (3.4)	43 (11.2)	328 (85.4)
Services	120 (20.0)	61 (10.2)	59 (9.8)	480 (80.0)

Table 5. The enforcement of special health examinations to hazards in SSEs

	With hazardous work			Without hazardous work	
		Did not know	Know, but did not enforce the examination	Know and enforce the examination	
Independent	192 (17.8%)	57 (5.3%)	15 (1.4%)	120 (11.1%)	886 (82.2%)
Branch	162 (17.7)	31 (3.4%)	8 (0.9%)	123 (13.4%)	755 (82.3)
1–4	27 (12.9)	14 (6.7%)	1 (0.5%)	12 (5.7%)	182 (87.1)
5–9	105 (13.7)	44 (5.7%)	6 (0.8%)	55 (7.2%)	664 (86.3)
10–49	130 (19.4)	26 (3.9%)	15 (2.2%)	89 (13.3%)	540 (80.6)
50–99	78 (26.4)	3 (1.0%)	1 (0.3%)	74 (25.0%)	218 (73.6)
100–	14 (24.6)	1 (1.8%)	0 (0.0%)	13 (22.8%)	43 (75.4)
Construction	45 (20.9)	15 (7.0%)	6 (2.8%)	24 (11.2%)	170 (79.1)
Manufacturing	198 (33.2)	29 (4.9%)	12 (2.0%)	157 (26.3%)	398 (66.8)
Transportation & communication	23 (10.8)	11 (5.2%)	0 (0.0%)	12 (5.6%)	190 (89.2)
Wholesale, retail and restaurants	30 (7.9)	16 (4.2%)	2 (0.5%)	12 (3.2%)	350 (92.1)
Services	58 (9.7)	17 (2.8%)	3 (0.5%)	38 (6.4%)	540 (90.3)

Table 6. The enforcement of periodical general health examination in SSEs

	Enforced					Not enforced
		All items indicated by the ordinance	Simplified examination	Chest XP, BP and Urinalysis	Chest XP only	
Independent	785 (71.8%)	602 (76.7%)	78 (9.9%)	33 (4.2%)	16 (2.0%)	309 (28.2%)
Branch	842 (90.7)	699 (83.0%)	105 (12.5%)	10 (1.2%)	6 (0.7%)	86 (9.3)
1–4	126 (59.4)	90 (71.4%)	16 (12.7%)	6 (4.8%)	6 (4.8%)	86 (40.6)
5–9	569 (73.2)	418 (73.5%)	76 (13.4%)	25 (4.4%)	11 (1.9%)	208 (26.8)
10–49	585 (85.9)	479 (81.9%)	65 (11.1%)	9 (1.5%)	5 (0.9%)	96 (14.1)
50–99	295 (98.0)	269 (91.2%)	20 (6.8%)	2 (0.7%)	0 (0.0%)	6 (2.0)
100–	57 (98.3)	50 (87.7%)	6 (10.5%)	1 (1.8%)	0 (0.0%)	1 (1.7)
Construction	184 (85.2)	156 (84.8%)	16 (8.7%)	6 (3.3%)	1 (0.5%)	32 (14.8)
Manufacturing	476 (78.5)	392 (82.4%)	37 (7.8%)	17 (3.6%)	7 (1.5%)	130 (21.5)
Transportation & communication	193 (89.4)	161 (83.4%)	20 (10.4%)	7 (3.6%)	1 (0.5%)	23 (10.6)
Wholesale, retail and restaurants	287 (74.0)	210 (73.2%)	48 (16.7%)	5 (1.7%)	7 (2.4%)	101 (26.0)
Services	493 (81.6)	387 (78.5%)	62 (12.6%)	8 (1.2%)	6 (1.2%)	111 (18.4)

risks, enforcement of special health examinations and general health examinations in SSEs with 1–4 and 5–9 employees were worse than SSEs with 10 and more employees. These results are similar to previous studies in localized areas.

On the selection of competent persons, 56.1% SSEs did not conduct it (Table 2). Such conditions were more frequently found in wholesale, retail, restaurants and services. Especially, in services, the fact that SSEs are more than medium-scale enterprises (MSEs, with more than 50 employees and less than 300 employees) may result in such a condition. The fact that 20.0% of MSEs with 50–99 employees and 15.8% of MSEs with more than 100 employees had no competent person may suggest moral hazard among employers in such MSEs.

The recognition of GL on VDT work showed small differences between SSEs and MSEs by scale by employee number (Table 3). However, the enforcement of the GL showed clear differences among SSEs and MSEs, that is, 48.3% of MSEs with 100 and more employees enforced the GL, but only 11.9% of SSEs with 1–4 employees enforced the GL. The type of business did not relate to the recognition and enforcement of the GL. However, the fact that some MSEs with VDT work did not know or enforce the GL suggests the necessity of some measures to enforce the GL.

In OH education about hazardous work, differences between SSEs and MSEs were clear; that is, more than half of SSEs with hazardous work and with 1–4 and 5–9 employees did not perform OH education. In manufacturing and construction, the education was more frequently performed, but not in wholesale, retail and restaurants.

Special health examinations were performed in MSEs with 50 and more employees except for some cases, but not in SSEs (Table 5). This differed between types of business; that is, the rates of “enforcement of the examination” in manufacturing and construction were higher than in wholesale, retail and restaurants. The high enforcement of the examination will be resulted from administrative lead for long term. However, in wholesale, retail and restaurants, traditional chemical and physical risks are less than in manufacturing and construction, but ergonomic risks are not as low as other businesses. The ergonomic risks may not be understood among employers and employees (E&E).

The rate of non-enforcement of general health examinations was higher in smaller enterprises (Table 6). The rate was lower than that of previous study by Hirata *et al.*³⁾. This may be due to the inclusion of branch (the present study) and exclusion of branch (previous study), or nationwide (the present study) and one district near large city (previous study). The rate of “all items indicated by

ordinance” was higher than the previous study, but the rate was lower in smaller SSEs. The latter tendency is same as the previous study. The difference of types of business was similar to OH education.

According to the results of present study, we can conclude that OH activities in SSEs with 1–4 and 5–9 employees are insufficient in the nation. This conclusion is the same as that of previous Hirata’s study. However, the data of the present study should be analysed in more detail, because the present results did not show clearly a difference in subclass by employee number (e.g. 10–29 and 30–49) or branch and independent SSEs.

Since a previous study performed by Hirata *et al.*³⁾ surveyed SSEs which are independent and had less than 50 employees, and the present study surveyed enterprises which are independent or branch and had no limitation on number of employees, there is no comparability between two surveys. Consequently, OH activities in SSEs surveyed in the present study covered a wide scope than Hirata’s study.

However, we do suggest that the target for promotion of OH activities in small establishment should be independent SSEs with less than 50 employees, and various policies and methods should be established and implemented to improve the level of OH activities in SSEs

References

- 1) Statistics Bureau, Ministry of Internal affairs and Communication (2001) Establishment and Enterprises Census 2001. Statistics Bureau, Ministry of Internal affairs and Communication, Tokyo (in Japanese and English).
- 2) Futatsuka M, Ngano M, Minami R (1996) A questionnaire study on health administration in small enterprises in a rural region. *San Ei Shi* **38**, 262–6 (in Japanese with English abstract).
- 3) Hirata M, Kumagai S, Tabuchi T, Tainaka H, Andoh K, Oda H (1999) Actual conditions of occupational health activities in small-scale enterprises in Japan: System for occupational health, health management and demands in small-scale enterprises, *San Ei Shi* **41**, 190–201 (in Japanese with English abstract)
- 4) Kumagai S, Hirata M, Tabuchi T, Tainaka H, Andoh K, Oda H (2000) Actual conditions of occupational health administration in small-scale enterprises in Japan: (II) Occupational health controls for hazardous and musculoskeletally stressful working factors. *San Ei Shi* **42**, 193–200 (in Japanese with English abstract).
- 5) Statistics Bureau, Ministry of Internal Affairs and Communication (1999) Establishment and Enterprises Census 2001. Statistics Bureau, Ministry of Internal affairs and Communication, Tokyo (in Japanese).