Conference Paper

State of Annual Paid Leave–Doctors' Working Conditions

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1. Survey Objectives

While it has been a long time since a term "black company", in which they exploit their employees under execrable working environment, became generalized in Japan, another term "black hospital", in which they impose excessive working hours on hospital-based doctors, has been recently introduced.

This "black hospital" nowadays is a serious issue in Japan. In the field of Japanese medical services, there are hospital-based doctors who have been forced to work under execrable working environment where they can hardly take any days off and are at the risk of karoshi, death from overwork.

The problem associated with demands and supplies, such as uneven distribution of doctors, has also been actualized; it is an urgent issue to comprehensively resolve this situation from the aspects of labor policies such as by improving working conditions of doctors or by rebuilding demand-supply coordination system, in order to satisfy demand for doctors' works and to establish and maintain safe and secure medical service systems in the future. Needless to say, it is especially important for doctors to take annual paid leave of "holidays" where they can relieve cumulative fatigue and rest mentally and physically whenever they need. Medical services involve various social factors in a complex manner. A single and short-sighted measure will induce another problem. Therefore, from a long-term perspective, it is necessary to create a vision while looking into the future of medical services in Japan and to resolve the labor issues of doctors on the basis of the long-term vision of the future.

In this article, significance of actual situation of "annual paid holiday", which is a crucial element for working condition of doctors, is discussed through quantitative analysis of questionnaire survey conducted in "hospital-based doctors".

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2. Data to Be Used

Individual data obtained in the “survey on annual paid leave of hospital-based doctors” consigned to and conducted by Rakuten Research, Inc. in 2015 were included in this survey (This survey was conducted using internet in doctors working at hospitals all over Japan (excluding directors of hospitals and clinics). The samples were randomly extracted. The number of distributions had been determined so that 800-1000 samples would be collected.) Igusa (2015) presented the results of simple aggregation of the individual data. In order to generalize these individual data, t-test and analysis of variance (ANOVA) were performed on differences in the number of annual leave days for each item. Then, following results were obtained (Table 1).

TABLE 1: Simple totaling results of the number of annual leave days taken by doctors.

		n value	%	Mean value of the number of annual leave days taken	T value, F value
	total	800	100.0	5.8	
Gender	Male	709	88.6	5.8	0.151
	Female	91	11.4	5.9	
Age	20's	13	1.6	5.0	1.416
	30's	138	17.3	5.1	
	40's	265	33.1	5.5	
	50's	317	39.6	6.4	
	60's	66	8.3	6.0	
	70's	1	0.1	5.0	
Married status	Unmarried	103	12.9	4.7	2.283
	Married	668	83.5	6.0	
	Divorced or widowed	29	3.6	6.6	
Children	Have	608	76.0	6.1	2.528 *
	Do not have	192	24.0	5.0	
Graduated university	High ranked public university	316	39.5	5.8	0.096
	Low ranked public university	277	34.6	5.8	
	High ranked private university	119	14.9	5.7	
	Low ranked private university	88	11.0	6.1	
Do you belong to a medical office?	Yes	446	55.8	5.6	0.180
	No	354	44.3	6.1	
Last year's annual income (all)	between 1–3 million yen	6	0.8	7.0	0.970
	between 3–5 million yen	14	1.8	5.1	
	between 5–7 million yen	23	2.9	5.4	
	between 7–10 million yen	59	7.4	4.9	
	between 10–15 million yen	212	26.5	5.4	
	between 15–20 million yen	282	35.3	5.9	
	20 million yen or more	204	25.5	6.5	
Working hours per week (all)	less than 20 hrs	4	0.5	8.0	3.670 **
	between 20–40 hrs	79	9.9	6.3	
	between 40–50 hrs	292	36.5	6.4	
	between 50–60 hrs	197	24.6	5.4	
	between 60–70 hrs	128	16.0	5.9	
	between 70–80 hrs	43	5.4	5.3	
	80 hrs or more	57	7.1	3.6	
Number of prescribed holidays per week	none	34	4.3	4.1	1.416
	1 day	199	24.9	5.3	
	2 days	524	65.5	6.1	
	3 days	27	3.4	6.2	
	4 days	2	0.3	2.0	
	5 days	13	1.6	5.0	
	6 days	1	0.1	0.0	
Number of duty facilities in the last month	1 place	449	56.1	5.8	1.690
	2 places	169	21.1	6.7	
	3 places	98	12.3	5.7	
	4 places	45	5.6	4.5	
	5 places	21	2.6	3.0	
	6 places	7	0.9	6.9	
	7 places	3	0.4	4.0	
	8 places	3	0.4	3.3	
	9 places	0	0.0	—	
	10 places or more	5	0.6	2.4	
Management form (main workplace)	National university corporation of the alma mater university	30	3.8	3.3	1.349
	National corporation other than the alma mater university (including independent administrative corporations, national university corporations)	43	5.4	6.7	
	Public institution of the alma mater university	22	2.8	5.9	
	Public institution other than the alma mater university	98	12.3	6.4	
	Public institution (Japan Red Cross, Saiseikai, etc.)	119	14.9	5.6	
	Social insurance related group	15	1.9	6.5	
	Medical corporation	357	44.6	5.9	
	Individual	31	3.9	3.7	
	Educational institution of the alma mater university	19	2.4	5.1	
	Educational institution other than the alma mater university	25	3.1	5.9	
	Other corporation or institution	41	5.1	6.8	
Type of hospital (main workplace)	Acute care hospital and emergency hospital	384	48.0	5.6	1.383
	Acute care hospital	111	13.9	5.6	
	Emergency hospital	34	4.3	4.6	
	None of the above	271	33.9	6.4	
Location of the hospital (main workplace)	Located in an ordinance-designated city, or the 23 wards of Tokyo	334	41.8	5.8	0.009
	Located in a depopulated rural area	330	41.3	5.8	
	None of the above	136	17.0	5.9	
Number of sickbeds (main workplace)	49 beds or less	135	16.9	6.6	0.788
	50–99 beds	56	7.0	5.3	
	100–299 beds	242	30.3	5.4	
	300–499 beds	168	21.0	5.8	
	500–999 beds	158	19.8	6.0	
	1000 beds or more	41	5.1	5.4	

Department (main workplace)	internal medicine	243	30.4	6.3	2.673 **
	cardiology	35	4.4	6.6	
	surgical department	94	11.8	4.7	
	psychiatry	49	6.1	4.9	
	orthopedics	67	8.4	6.4	
	ophtalmology	25	3.1	7.0	
	neurosurgery	26	3.3	4.1	
	ENT	20	2.5	5.7	
	pedatrics	37	4.6	7.1	
	urology	22	2.8	5.5	
	obstetrics and gynecology	31	3.9	3.0	
	dermatology	18	2.3	7.3	
	respiratory organs department	10	1.3	7.7	
	emergency department	15	1.9	7.3	
	gastrointestinal department	25	3.1	4.3	
	anesthesiology	50	6.3	5.8	
	radiology	33	4.1	6.1	
Number of years experience as a doctor	less than 1 year	7	0.9	0.9	1.580
	between 1–3 years	11	1.4	6.5	
	between 3–5 years	18	2.3	5.4	
	between 5–10 years	56	7.0	4.8	
	between 10–15 years	106	13.3	5.5	
	15 years ore more	602	75.3	6.0	
Number of years of service (main workplace)	less than 1 year	73	9.1	4.7	2.445 *
	between 1–3 years	140	17.5	4.7	
	between 3–5 years	100	12.5	5.9	
	between 5–10 years	214	26.8	6.2	
	between 10–15 years	114	14.3	6.4	
	15 years ore more	159	19.9	6.5	
Position (main workplace)	Medical intern (until 2 years after graduation)	8	1.0	1.9	4.261 *
	Medical staff, medical officer, resident (after 3rd year after graduation)	152	19.0	5.5	
	Assistant proffessor	34	4.3	5.5	
	Head physician, lecturer, head of medical office	159	19.9	5.7	
	Head of section, head of department, deputy head of department, proffessor, associate proffessor	257	32.1	6.3	
	Director, vice chief director, assistant director, assistant facility director	154	19.3	5.6	
	Other	36	4.5	6.4	
Number of days of annual leave taken (main workplace)	0 days	196	24.5	—	
	1–3 days	130	16.3	—	
	4–6 days	180	22.5	—	
	7–10 days	190	23.8	—	
	11–15 days	57	7.1	—	
	16–19 days	8	1.0	—	
	20 days or more	39	4.9	—	
Number of annual leave days given (main workplace)	0 days	301	37.6	3.9	16.461 **
	1–5 days	65	8.1	4.9	
	6–10 days	110	13.8	5.4	
	11–15 days	44	5.5	7.7	
	16–20 days	223	27.9	8.1	
	21 days or more	57	7.1	7.8	
Method of taking annual paid leave (main workplace)	work sharing method	439	54.9	6.0	3.169 **
	circulating method	23	2.9	5.9	
	reverse circulating method	57	7.1	6.0	
	self-pay system (preceding)	178	22.3	6.2	
	self-pay system (at a later date)	64	8.0	5.5	
	self-pay system (home-work)	39	4.9	2.3	
Related to the medical service (MA) (main workplace)	Lack of doctors at workplace	433	54.1	5.4	1.980 *
	Lack of compliance with the labor-related laws and regulations of the hospitals	150	18.8	5.3	1.236
	There is no labor union	237	29.6	5.7	0.389
	The hospital is not aware of the number of working hours	94	11.8	5.6	0.294
	Workload management is not conducted in matching with the number of the personnel	138	17.3	5.7	0.204
	There are no supervisors orcolleagues to talk to when you have trouble in your work	82	10.3	5.1	1.170
	The lack of learning opportunities about advanced medical technology	105	13.1	5.2	1.247
	Electronic medical records aren't implemented	168	21.0	5.8	0.077
	Information is not shared	79	9.9	5.7	0.258
	Your own fatigue and health anxiety	196	24.5	5.3	1.459
	Litigation risk from the patient	149	18.6	5.8	0.426
	Doctor-patient relationship has become patient-centered	69	8.6	5.1	1.341
	Attending physician system	290	36.3	5.6	0.858
	Alternative work schedule	37	4.6	8.6	2.072 *
	I have ambition for medical procedures	144	18.0	5.4	0.910
	A sense of vocation as a doctor for patients	202	25.3	5.6	0.747
	Excessive number of outpatients	112	14.0	5.4	0.808
	Excessive number of inpatiens in charge of	62	7.8	6.9	1.310
	People around you, such as co-workers, supervisors and subordinates are taking annual leave	59	7.4	6.3	0.632
	Annual leave is also dependent on the agreement with the medical office	42	5.3	5.1	0.858
	Hierarchical relationships and rivalry in the medical department is affecting the annual leave taking of doctors	24	3.0	3.4	3.171 **
	There is an unwritten rule unique to doctors that young doctors can not take annual leave	32	4.0	2.6	5.324 **
	When you try to take your annual leave, if you are not there, your workplace will be in trouble	158	19.8	5.0	1.968 *
	None of the above applies to me	82	10.3	6.5	1.144

Last year's annual income (main workplace)	1–5 million yen	41	5.1	4.7	0.989
	5–7 million yen	38	4.8	4.9	
	7–10 million yen	71	8.9	5.4	
	10–15 million yen	236	29.5	5.5	
	15–20 million yen	273	34.1	6.2	
	20 million yen or more	141	17.6	6.5	
Number of working hours per week (main workplace)	less than 20 hrs	9	1.1	7.1	2.830 *
	between 20–40 hrs	129	16.1	6.5	
	between 40–50 hrs	300	37.5	6.2	
	between 50–60 hrs	184	23.0	5.1	
	between 60–80 hrs	138	17.3	5.9	
	80 hrs or more	40	5.0	4.1	

Note (1): Estimated by the author
Note (2): * = significant @ 5%, * * = significant @ 1%
Note (3):If significant results were obtained by Levene's test for homogeneity of variance, correct the degree of freedom by Welch.

1. The number of annual leave days varied according to presence or absence of children, age group, hospital department in charge, years of service, position at work, the system of taking annual paid leave, number of doctors in the workplace, work system, features of medical society, and working hours.

2. The number of annual leave days is especially small in particular hospital departments (especially surgical specialties). Moreover, as indicated by Igusa (2013) through an interview survey, the number of annual leave days was significantly smaller in doctors who had been feeling an unwritten law of medical society (doctors who are at lower positions, young doctors, and those who had been feeling a hierarchical relationship among medical schools, etc.)

3. Differences were observed in items associated with substitution when doctors were taking annual paid leave.

These facts were revealed from the results of basic data aggregation. However, in order to reveal complicated context of situations where they can actually take annual paid leave, effects of individual factors will need to be observed by setting certain other conditions, followed by quantitative assessments through empirical analyses on the effects of individual factors.

3. Variables, Methods and Results

Then what sort of items will affect the doctor's taking annual paid leave? This is verified below by performing censored model regression analysis using the number of annual leave days as dependent variable (The number of annual leave days was " 0 " in 196 cases (24.5% of 799 effective samples). Therefore, in selection of an analysis method, a censored model which is appropriate for distributions where dependent variables have been discontinued, was used.), (Not all variables in the second paragraph were included as there was a problem with multicollinearity.).

In order to observe the effects of working environment (in the broad sense) on taking annual paid leave, the following factors were included as dependent variables in addition to the variables associated with how they work: medical office they belong to, hospital department in charge, and hospital attributes. Control variables include variables associated with basic attributes. Two formulas were estimated; one included subjective responses in multiple answers, and another one not. The Table 2 shows descriptive statistics of variables used in analyses, and the Table 3 presents the results.

According to the results, for both of the estimated formulas, significant differences were observed in doctors working in private hospitals, working in emergency hospitals, being in charge of obstetrics and gynecology department and dermatology department, the number of annual leave days, self-pay system (at a later date), self-pay system (homework) (The person who took annual paid leave performs his task by himself without letting others do this. Refer to Igusa (2014) for methods of taking annual paid leave.), and alternative work schedule. In addition, from the estimated formula-2, it was revealed that remarkable difference was observed in the number of annual leave days according to the working environments with excessive number of inpatients in charge of, unwritten rules unique to doctors, and feelings that if they are not there, their workplace will be in trouble.

TABLE 2: Descriptive statistics.

Variable name	Average	Standard deviation	Maximum value	Minimum value
Age	48.14	8.94	76	24
Married*	0.83	0.37	1	0
Divorced or widowed*	0.04	0.19	1	0
Female*	0.11	0.32	1	0
Have Children*	0.76	0.43	1	0
Do you belong to a medical office? Yes*	0.56	0.50	1	0
Last year's annual income (main workplace)	1417.81	576.24	4000	10
Number of working hours per week (main workplace)	48.16	14.26	110	2
Number of prescribed holidays per week	1.76	0.75	6	0
Number of duty facilities in the last month	1.88	1.38	10	1
National university corporation of the alma mater university*	0.04	0.19	1	0
National corporation other than the alma mater university (including independent administrative corporations, national university corporations)*	0.05	0.23	1	0
Public institution of the alma mater university*	0.03	0.16	1	0
Public institution other than the alma mater university*	0.12	0.33	1	0
Public institution (Japan Red Cross, Saiseikai, etc.)*	0.15	0.36	1	0
Social insurance related group*	0.02	0.14	1	0
Individual*	0.04	0.19	1	0
Educational institution of the alma mater university*	0.02	0.15	1	0
Educational institution other than the alma mater university*	0.03	0.17	1	0
Other corporation or institution*	0.05	0.22	1	0
Acute care hospital and emergency hospital*	0.48	0.50	1	0
Acute care hospital*	0.14	0.34	1	0
Emergency hospital*	0.04	0.20	1	0
Located in an ordinance-designated city, or the 23 wards of Tokyo*	0.42	0.49	1	0
Located in a depopulated rural area*	0.41	0.49	1	0

50–99 beds*	0.07	0.26	1	0
100–299 beds*	0.30	0.46	1	0
300–499 beds*	0.21	0.41	1	0
500–999 beds*	0.20	0.40	1	0
1000 beds or more*	0.05	0.22	1	0
cardiology*	0.04	0.20	1	0
surgical department*	0.12	0.32	1	0
psychiatry*	0.06	0.24	1	0
orthopedics*	0.08	0.28	1	0
ophtalmology*	0.03	0.17	1	0
neurosurgery*	0.03	0.18	1	0
ENT*	0.03	0.16	1	0
pediatrics*	0.05	0.21	1	0
urology*	0.03	0.16	1	0
obstetrics and gynecology*	0.04	0.19	1	0
dermatology*	0.02	0.15	1	0
respiratory organs department*	0.01	0.11	1	0
emergency department*	0.02	0.14	1	0
gastrointestinal department*	0.03	0.17	1	0
anesthesiology*	0.06	0.24	1	0
radiology*	0.04	0.20	1	0
Paid holidays used	5.83	5.85	40	0
Number of annual leave days given (main workplace)	10.16	10.37	45	0
circulating method*	0.03	0.17	1	0
reverse circulating method*	0.07	0.26	1	0
self-pay system (preceding)*	0.22	0.42	1	0
self-pay system (at a later date)*	0.08	0.27	1	0
self-pay system (home-work)*	0.05	0.22	1	0
Lack of doctors at workplace*	0.54	0.50	1	0
Lack of compliance with the labor-related laws and regulations of the hospitals*	0.19	0.39	1	0
There is no labor union*	0.30	0.46	1	0
The hospital is not aware of the number of working hours*	0.12	0.32	1	0
Workload management is not conducted in matching with the number of the personnel*	0.17	0.38	1	0
There are no supervisors orcolleagues to talk to when you have trouble in your work*	0.10	0.30	1	0
The lack of learning opportunities about advanced medical technology*	0.13	0.34	1	0
Electronic medical records aren't implemented*	0.21	0.41	1	0
Information is not shared*	0.10	0.30	1	0
Your own fatigue and health anxiety*	0.25	0.43	1	0
Litigation risk from the patient*	0.19	0.39	1	0
Doctor-patient relationship has become patient-centered*	0.09	0.28	1	0
Attending physician system*	0.36	0.48	1	0
Alternative work schedule*	0.05	0.21	1	0
I have ambition for medical procedures*	0.18	0.38	1	0
A sense of vocation as a doctor for patients*	0.25	0.43	1	0
Excessive number of outpatients*	0.14	0.35	1	0
Excessive number of inpatiens in charge of*	0.08	0.27	1	0
People around you, such as co-workers, supervisors and subordinates are taking annual leave*	0.07	0.26	1	0
Annual leave is also dependent on the agreement with the medical office*	0.05	0.22	1	0
Hierarchical relationships and rivalry in the medical department is affecting the annual leave taking of doctors*	0.03	0.17	1	0
There is an unwritten rule unique to doctors that young doctors can not take annual leave*	0.04	0.20	1	0
When you try to take your annual leave, if you are not there, your workplace will be in trouble*	0.20	0.40	1	0

Note (1): The sample size is 799.
Note (2): * represents dummy variable.

4. Conclusions

The results of analyses revealed followings and indicated measures to be taken.

TABLE 3: Influence of the variable on use of paid holidays (censored model).

Dependent variable = Paid holidays used
Sample size = 700
Left censored obs = 136
Log likelihood = -2140.251

Name of variable		(1) Coefficient value	(1) P value	(2) Coefficient value	(2) P value
Constant		1,319	0,736	1,632	0,676
Age		0,011	0,732	0,007	0,836
Married status	(Unmarried)				
	Married	0,345	0,746	0,276	0,796
	Divorced or widowed	1,033	0,519	1,100	0,492
Gender	Female	0,661	0,451	0,884	0,323
Children	Have	1,596	0,057	1,504	0,070
Do you belong to a medical office?	Yes	-0,657	0,250	-0,481	0,400
Last year's annual income (main workplace)	Annual income (log)	0,568	0,277	0,694	0,249
Number of working hours per week (main workplace)		-0,033	0,103	-0,029	0,148
Number of prescribed holidays per week		-0,407	0,255	-0,547	0,126
Number of duty facilities in the last month		-0,228	0,250	-0,196	0,327
Management form (main workplace)	National university corporation of the abs number university	-2,170	0,174	-1,909	0,236
	National corporation other than the abs number university (including independent administrative corporations, n	0,453	0,710	0,920	0,472
	Public institution of the abs number university	-1,157	0,471	-0,512	0,748
	Public institution other than the abs number university	-0,409	0,581	-0,150	0,868
	Public institution (Japan Red Cross, Saiseikai, etc.)	-0,569	0,476	-0,325	0,693
	Social insurance related group	1,624	0,275	1,574	0,287
	(Medical corporation)				
	Individual	-2,963	0,046 *	-3,157	0,034 *
	Educational institution of the abs number university	-0,677	0,643	-0,101	0,930
	Educational institution other than the abs number university	-0,062	0,961	0,102	0,948
	Other corporation or institution	-0,055	0,963	-0,095	0,934
Type of hospital (main workplace)	Acute care hospital and emergency hospital	-1,065	0,173	-0,851	0,279
	Acute care hospital	-0,787	0,362	-0,773	0,392
	Emergency hospital	-3,006	0,027 *	-2,927	0,030 *
	(None of the above)				
Location of the hospital (main workplace)	Located in an ordinance-designated city, or the 23 wards of Tokyo	0,339	0,643	0,421	0,565
	Located in a depopulated rural area	0,249	0,627	0,538	0,455
	(None of the above)				
Number of sickbeds (main workplace)	(49 beds or less)				
	50~99 beds	-1,001	0,129	-1,037	0,121
	100~299 beds	-1,091	0,227	-1,115	0,222
	300~499 beds	-0,456	0,651	-0,393	0,709
	500~999 beds	0,630	0,582	0,695	0,550
	1000 beds or more	0,576	0,712	0,506	0,748
Department (main workplace)	(Internal medicine)				
	cardiology	1,622	0,202	1,556	0,217
	surgical department	-0,641	0,247	-0,679	0,447
	psychiatry	-1,195	0,309	-1,216	0,300
	orthopedics	1,597	0,124	1,526	0,117
	ophthalmology	1,760	0,239	1,708	0,251
	neurosurgery	-1,632	0,275	-1,516	0,321
	ENT	1,692	0,306	1,141	0,485
	pediatrics	1,435	0,245	1,163	0,341
	urology	-0,072	0,964	0,988	0,546
	obstetrics and gynecology	-3,556	0,011 *	-3,195	0,023 *
	dermatology	3,574	0,035 *	3,630	0,031 *
	respiratory organs department	2,396	0,287	2,417	0,286
	emergency department	-0,909	0,642	-0,254	0,858
	gastrointestinal department	-1,553	0,300	-1,024	0,492
	anesthesiology	-1,119	0,323	-0,931	0,410
	radiology	-0,130	0,923	-0,232	0,864
Number of annual leave days given (main workplace)		0,214	0,000 ***	0,215	0,000 ***
Method of taking annual paid leave (main workplace)	(work sharing method)				
	circulating method	0,205	0,690	0,458	0,757
	reverse circulating method	-0,122	0,900	-0,053	0,957
	call-pay system (preceding)	-0,384	0,546	-0,291	0,648
	call-pay system (at a later date)	-2,237	0,020 *	-1,899	0,049 *
	call-pay system (home-work)	-6,895	0,000 ***	-6,839	0,000 ***
Related to the medical service (NA) (main workplace	Lack of doctors at workplace			-0,851	0,116
	Lack of compliance with the labor-related laws and regulations of the hospitals			-0,243	0,747
	There is no labor union	-0,342	0,548	0,006	0,992
	The hospital is not aware of the number of working hours			0,164	0,869
	Workload management is not conducted in matching with the number of the personnel			0,970	0,242
	There are no supervisors or colleagues to talk to when you have trouble in your work			-0,733	0,431
	The lack of learning opportunities about advanced medical technology			-0,718	0,390
	Electronic medical records aren't implemented	0,155	0,814	-0,135	0,842
	Information is not shared			0,633	0,497
	Your own fatigue and health anxiety			-0,100	0,879
	Litigation risk from the patient			-0,054	0,905
	Doctor-patient relationship has become patient-centered			-0,952	0,337
	Attending physician system	-0,602	0,282	-0,519	0,372
	Alternative work schedule	4,258	0,000 ***	4,140	0,001 ***
	I have ambition for medical procedures			-0,705	0,357
	A sense of vocation as a doctor for patients			0,276	0,704
	Excessive number of outpatients			-1,515	0,051
	Excessive number of inpatients in charge of			2,396	0,016 *
	People around you, such as co-workers, supervisors and subordinates are taking annual leave			0,904	0,371
	Annual leave is also dependent on the agreement with the medical office			-0,487	0,708
	Hierarchical relationships and rivalry in the medical department in affecting the annual leave taking of doctors			-0,506	0,766
	There is an unwritten rule unique to doctors that young doctors cannot take annual leave			-2,516	0,023 *
	When you try to take your annual leave, if you are not there, your workplace will be in trouble			-0,993	0,146

Note (1): Estimated by the author
Note (2): * = significant = 5%, * = significant = 1%, ** = significant = 0,1%

First of all, the fact that doctors are in charge of surgical department does not necessarily prevent them from taking annual paid leave in a direct manner (Significant results

were not observed in surgical doctors when conditions were controlled with variables associated with alternative work schedule, methods of annual paid leave, and the number of doctors.). Although it has been recently pointed out that doctors especially in surgical fields are suffering from overwork such as no holidays due to their high specialty, the problem is not their skills but rather an absolute lack of number of doctors. The results of analysis indicated that it is crucial to increase the number of doctors significantly and establish a shift system in order to improve the conditions for taking annual paid leave. Some hospitals are using a system where a team of 3 doctors including a resident, fellow and consultant is involved in treatment of 1 patient so that they can take days-off whenever they need without any concerns. However, this system cannot be introduced if the number of doctors is too small. Therefore, it needs to be considered at the same time to increase the number of doctors and to establish the shift system.

Secondly, negative effects were observed on taking annual paid leave in cases where they work at private hospitals or clinics. If they work in hospitals, etc. and perform their tasks following directions provided by these hospitals, the corresponding doctors are considered as labors under the labor law and protected by this law. However, they are actually hardly aware of this fact (Mizushima, 2010). It appears that the smaller the hospital, the more obvious this tendency becomes as in a case of a business corporation. It is required for the national government or the third party organizations to organize and assess the labor law issues associated with hospital-based doctors and to improve the level of knowledge regarding the law of annual paid leave mainly in private hospitals and clinics.

Thirdly, the model 2 indicated that negative effects were imposed on annual paid leave in cases where there was an unwritten rule unique to doctors that young doctors could not take annual leave. It may reflect the fact that expectations on young doctors are higher than ever under circumstances with a lack of doctors or uneven distribution of doctors. However, this should not be overlooked considering recent karoshi (death from overwork) of young doctors. In the field of medical services, there are some local rules unique to specialist groups under a strict hierarchy. However, not only the hospitals but also the medical offices may need to reconsider that these young doctors are also labors protected under the labor law.

Many researchers have pointed out that in general there is the tendency of “neglect or ignorance of the labor law at workplaces” are becoming more prominent in the field of medical services. Therefore, further discussion will be needed in the future on issues regarding taking annual paid leave in Japan.

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