The Ideal Working Environment Required for a Successful Career Path and Work-Life Balance: Results of a survey on doctors working at Kyoto University Hospital

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Kae OKOSHI,[*1] Tomoko TANABE,[*2] Norio HISAMOTO[*3]

Abstract

The burden of prolonged work on doctors who are supporting the healthcare system in Japan has long been recognized. We recently carried out a questionnaire survey of doctors working at Kyoto University Hospital concerning their career consciousness, work-life balance (WLB), etc. Career consciousness correlated positively with self-direction in scheduling, time for improving diagnostic and treatment skills, gratitude from patients, income, and the comfort of the doctors' resting room, whereas it tended to correlate negatively with having a spouse. WLB correlated positively with self-direction in scheduling and negatively with working hours in the past week. In addition, 55.1% of the spouses of male doctors were full-time housewives, whereas 83.3% of the spouses of female doctors were also doctors. The results of the questionnaire highlighted the reality that female doctors were continuing to work while carrying a greater burden of household chores and child-rearing than male doctors. These results suggest the need for labor management, environmental rearrangements, and gender equality for ensuring that doctors can continue to enhance their careers while maintaining an ambitious attitude.

Key words Work-life balance, Career consciousness, Desire to quit job, Gender equality

Introduction

The number of doctors per 1,000 population in Japan was 2.2 in 2008, which is lower than the mean 3.1 among the Organization for Economic Co-operation and Development (OECD) member countries. On the other hand, total health expenditure in Japan as a percentage of gross domestic product is 8.5% (2008), 1 point lower than the mean 9.5% among OECD member countries. Japan has achieved an average life expectancy of 83.0 years, which is the longest among OECD member countries, despite having fewer doctors and lower health expenditures. The total number of beds per 1,000 population is 13.7, which is considerably higher than the 3.1 in the US, 3.3 in the UK, 8.2 in Germany, and 6.6 in France,[1] and this serves as a factor increasing the burden on doctors in Japan.

Low cost and high quality, two conflicting values, have concurrently arisen in healthcare, mostly thanks to doctors who have exerted their efforts—in healthcare services. However, deteriorating working conditions are currently pushing doctors working at the forefront of health care services to the limit of exhaustion. In addition, the single-income household model comprising a husband who provides the family budget and a wife who is in charge of child-rearing is now collapsing socially, and this is also true in doctors'

*1 Assistant Professor, Department of Surgery, Kyoto University Hospital, Kyoto, Japan (kae_md@kuhp.kyoto-u.ac.jp).
*2 Medical Education Research Center, Kyoto Prefectural University of Medicine, Kyoto, Japan.
*3 Professor, Graduate School of Economics, Kyoto University, Kyoto, Japan.
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homes. It is presumed that the quality of healthcare cannot be maintained unless the contents of duties and the work system of doctors are reviewed. We carried out a questionnaire survey to analyze the work-life balance (WLB), career consciousness, and desire to quit their job, of doctors, to facilitate understanding and identifying better ways for doctors working in hospitals.

Methods

In March 2010, a questionnaire survey of 641 doctors working at Kyoto University Hospital (only employed doctors including residents, medical staff, teaching assistants, lecturers, associate professors, and professors) was carried out. Questionnaires were distributed with return-mail envelopes to each department of the hospital, asking doctors to provide answers voluntarily, and the answered questionnaires were collected by the university's internal mail system. The study was reviewed and approved by the ethics committees of Kyoto University Graduate School of Medicine, Faculty of Medicine, and the university hospital prior to initiation of the study.

Questions in the questionnaire covered the doctors' current status (age, gender, department, position, family structure, income, etc.), career consciousness, WLB, level of satisfaction with work, feeling of weariness, etc. Question items were prepared, with reference to the questionnaire survey by Lloyd et al. to investigate the satisfaction of emergency care doctors[2] and another questionnaire survey by Ozaki et al. about the work satisfaction of doctors working in hospitals.[3]

After collection, the results were scored for factor analysis. For all question items, the mean value and standard deviation were calculated to exclude items that had statistical bias. Factor analysis of the remaining items was carried out three times by the principal factor method. As a result, we found it to be feasible to classify question items into seven factors. When the α factor, mean, and standard deviation were calculated for each factor, the presence of common characteristics within each factor was confirmed.

Among the seven factors, three, i.e., career consciousness, WLB, and desire to quit, were further examined by multiple regression analysis. In the multiple regression analysis of career consciousness, WLB, and desire to quit their job, the following dependent variables were examined:

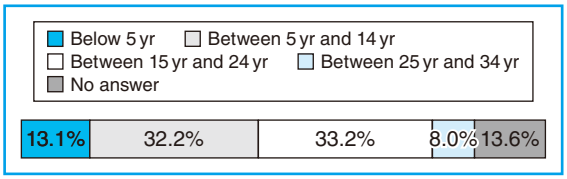

Fig. 1a Years after graduation

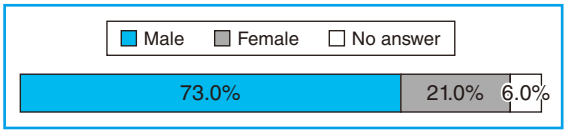

Fig. 1b Gender

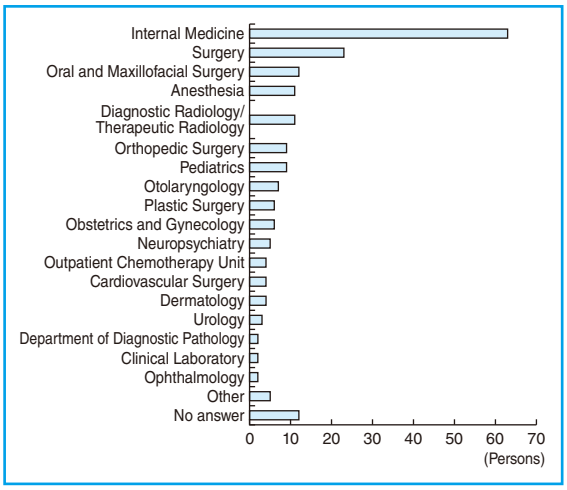

Fig. 1c Department

age, gender (dummy variable, standard = male), department (dummy variable, standard = surgery), position (dummy variable, standard = lecturer or higher position), presence/absence of spouse (dummy variable, standard = absent), preschool children (dummy variable, standard = present), working hours in the past week, and income (in log scale). Other question items presumably affecting respective factors were also examined as independent variables. In addition, question items were analyzed after classifying them into several patterns so as to avoid overlapping of the contents of independent variables.

Results

There were 200 valid responses (the valid response rate: 31.2%). **Figure 1** shows the number of years

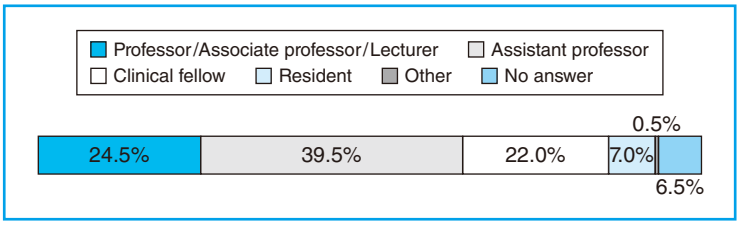

Fig. 1d Position

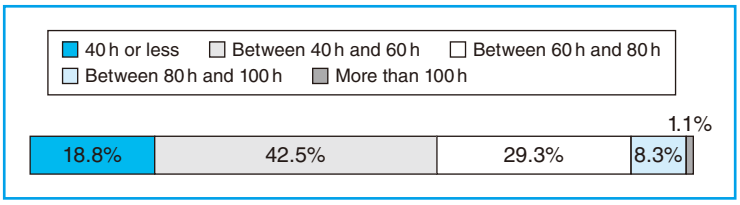

Fig. 1e Actual working hours in the past week

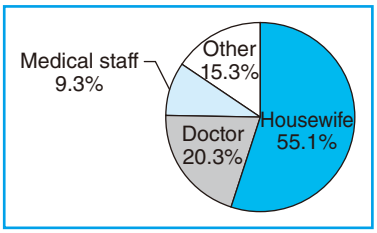

Fig. 2a Occupation of spouses of male doctors

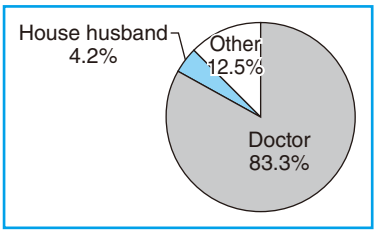

Fig. 2b Occupation of spouses of female doctors

after graduation, gender, department, breakdown of positions, and actual working hours in the past week. Actual working hours in the past week were 40 h or less in 18.8% of respondents, between 40 h and 60 h in 42.5%, between 60 h and 80 h in 29.3%, between 80 h and 100 h in 8.3%, and more than 100 h in 1.1% (**Fig. 1e**). Among spouses of male doctors, housewives accounted for 55.1%, and doctors accounted for 20.3% (**Fig. 2a**). On the other hand, 83.3% of spouses of female doctors were doctors, and 4.2% were house husbands (**Fig. 2b**). Although cross-correlations between factors were also examined by factor analysis, no strong correlations were recognized.

Analysis of career consciousness revealed differences according to the selection patterns of question items; the results for 8 patterns are shown in **Table 1**. Career consciousness was found to correlate positively with income and the following question items: "I have sufficient time to improve my skills," "I can control my work schedule," "I have experienced much cooperation and teamwork with fellow doctors," "The doctors' room for resting and having meals is comfortable," and "I am motivated by my patients' gratitude." On the other hand, there was a negative correlation between career consciousness and the spouse being a housewife (house husband), medical staff, or other. Namely, the career consciousness of doctors correlated positively with securing sufficient time for improving one's own skills, self-direction, comfort of the doctors' room for resting, and good doctor-patient relationships. The level of career consciousness was generally lower in doctors who had a spouse than in those without a spouse.

Because there was no difference in WLB or desire to quit being a doctor among the selection patterns, examples of analysis in terms of

Table 1 Career consciousness

Selection patterns of question items	1	2	3	4	5	6	7	8
Age	−0.027	−0.009	0.005	0.013	−0.035	−0.042	−0.034	−0.021
Gender (standard = male)	−0.108	−0.174	−0.127	−0.184	−0.085	−0.121	−0.085	−0.132
Department (standard = surgery)	−0.01	−0.023	0.006	−0.029	0.044	−0.019	0.015	0.016
Position (standard = lecturer or higher)								
Assistant professor	−0.207	−0.189	−0.17	−0.165	−0.134	−0.15	−0.139	−0.117
Clinical fellow	−0.255	−0.129	−0.227	−0.111	−0.156	−0.065	−0.163	−0.036
Resident	−0.299	−0.152	−0.291	−0.139	−0.21	−0.056	−0.204	−0.046
Other	0.6	0.54	0.596	0.534	0.658	0.621	0.655	0.628
Presence/absence of spouse (standard = absence)								
Presence Housewife (House husband)	−0.296	−0.254	−0.307	−0.274	−0.379**	−0.364**	−0.383**	−0.381**
Presence Doctor	−0.163	−0.132	−0.181	−0.149	−0.286	−0.257	−0.284	−0.286
Presence Medical staff	−0.38	−0.281	−0.382	−0.302	−0.489**	−0.438	−0.501**	−0.445
Presence Other	−0.509**	−0.466**	−0.503**	−0.463**	−0.587***	−0.55**	−0.585***	−0.557**
Preschool children (standard = presence)	−0.019	0.002	−0.019	0.005	−0.016	0.016	−0.011	0.014
Actual working hours in the past week	0.001	0.002	0.001	0.002	0.0000789	0	0.00002922	0
Income (in log scale)	0.689	0.75	0.758	0.821	0.766	0.827**	0.8**	0.853**
I have sufficient time to improve my skills.	0.095	0.126**	0.112**	0.129**				
The hospital is fully equipped with necessary medical devices.	0.046	0.034	0.051	0.041	0.06	0.053	0.061	0.061
I can mainly decide my patients' medical treatment policies.	0.065	0.067			0.028	0.033		
I can control my work schedule.					0.139***	0.128**	0.137***	0.143***
I have experienced much cooperation and principles concerning medical treatment.	0.179***	0.189***	0.156**	0.17**	0.156**	0.185***	0.156**	0.166**
My fellow doctors respect my opinion and principles concerning medical treatment.			0.083	0.089			0.028	0.045
Medical staff are cooperative.	0.016	0.048	0.009	0.042	0.012	0.047	0.014	0.039
The doctors' room for resting and taking meals is comfortable.	0.127***		0.127***		0.123***		0.119**	
The facilities for eating and shopping in the hospital are sufficient.		0.086		0.082		0.052		0.046
Paperwork hinders medical practice.	0.06	0.067	0.061	0.068	0.07	0.071	0.07	0.072
I have fallen asleep during work in the past week.		−0.023	−0.021	−0.026	−0.013			−0.019
My concentration has declined.	−0.04					−0.056	−0.038	
I am motivated by my patients' gratitude.	0.126***	0.142***	0.126***	0.137***	0.118***	0.123***	0.115**	0.124***
I am overwhelmed by my patients' demands.	0.001	−0.004	0.002	0.004	−0.011	0.003	−0.001	−0.004

***$P<0.01$, **$P<0.05$.

representative question items are shown in **Tables 2 and 3**.

WLB correlated positively with the question about self-direction, i.e., "I can control my work schedule," and negatively with actual working hours in the past week and the question about fatigue, i.e., "I have fallen asleep during work in the past week" (**Table 2**).

Desire to quit their job correlated positively with a poor doctor-patient relationship expressed as "I am overwhelmed by my patients' demands," and negatively with sense of accomplishment expressed as "I have improved as a doctor" (**Table 3**).

Discussion

Career consciousness means that doctors feel that they have achieved improvement in their skills and academic research. It is readily understandable

Table 2 Work-life balance

Age	−0.207
Gender (standard = male)	0.073
Department (standard = surgery)	−0.095
Position (standard = lecturer or higher)	
Assistant professor	0.12
Clinical fellow	0.338
Resident	−0.063
Other	1.193
Presence/absence of spouse (standard = absence)	
Presence Housewife (House husband)	−0.36
Presence Doctor	0.04
Presence Medical staff	−0.306
Presence Other	0.023
Preschool children (standard = presence)	−0.234
Actual working hours in the past week	−0.008***
Income (in log scale)	0.602
I can control my work schedule.	0.165**
I have experienced much cooperation and principles concerning medical treatment.	0.141
The doctors' room for resting and taking meals is comfortable.	0.056
I feel that I have made valuable achievements through work.	−0.069
Too many patients are assigned to me.	−0.043
I cannot feel satisfied with my work.	0.003
I have fallen asleep during work in the past week.	−0.096**

*** $P<0.01$, ** $P<0.05$.

Table 3 Desire to quit job

Age	−0.189
Gender (standard = male)	0.03
Department (standard = surgery)	−0.076
Position (standard = lecturer or higher)	
Assistant professor	−0.147
Clinical fellow	−0.414
Resident	−0.275
Other	0.952
Presence/absence of spouse (standard = absence)	
Presence Housewife (House husband)	−0.247
Presence Doctor	−0.264
Presence Medical staff	−0.31
Presence Other	−0.287
Preschool children (standard = presence)	−0.236
Actual working hours in the past week	0.006
Income (in log scale)	−0.404
I have sufficient time for myself.	0.032
I have sufficient time to improve my skills.	−0.098
I can balance the time spent for my work and family.	0.1
I can mainly decide my patients' medical treatment policies.	0.095
I can control my work schedule.	−0.098
I have experienced much cooperation and principles concerning medical treatment.	−0.067
My fellow doctors respect my opinion and principles concerning medical treatment.	−0.124
Medical staff are cooperative.	0.129
I have not been paid sufficiently in the light of my workload.	0.066
I have improved as a doctor.	−0.263***
I am motivated by my patients' gratitude.	−0.067
I am overwhelmed by my patients' demands.	0.196***

*** $P<0.01$.

that self-direction and opportunities to improve themselves, patients' gratitude, and income correlated positively with career consciousness. These are key words that support doctors' career consciousness as medical professionals.

On the other hand, improvement of the doctors' resting room has rarely been discussed in relation to career consciousness. The doctors' resting area helps doctors engaged in research with retrieval of case data, writing papers, and preparing for presentations at academic meetings between medical practice duties. It is of course important from the viewpoint of industrial health to provide an area simply designed for working persons to take an occasional rest while on duty. Considering the fact that remaining in the hospital, as when on night duty, is one of doctor's tasks, it would be appropriate to pay more attention to improvement of the doctors' resting room and the doctor-on-duty room, where doctors must stay for long periods of time.

More interestingly, the explanatory variable

"having a spouse" tended to correlate negatively with career consciousness. The subgroups of doctors having a spouse, i.e., doctors whose spouse is a housewife (house husband), medical staff, or other, showed a significant negative correlation with career consciousness. Namely, having a spouse may suppress career consciousness. This does not suggest that doctors should avoid raising a family, but implies that having a family may sometimes conflict with career consciousness. It is important to adjust the balance between these two important aspects of life when continuing work.

WLB naturally showed a negative correlation with working hours. Doctors working between 60 h and 80 h in the past week accounted for 29.3%, those working between 80 h and 100 h for 8.3%, and those working more than 100 h for 1.1%. Thus, 38.7% of doctors were working overtime exceeding the criteria for worker's compensation concerning cerebral and cardiac diseases[4] (criteria for death from overwork) (**Fig. 1e**). However, to secure the minimum time required for vital activities including sleep and meals and family time, an off-work time of at least 11 h is necessary per day. Therefore, policies that make it compulsory to place an interval of certain time (e.g., 11 h) between working days should be considered, in addition to simply restricting working hours per week.

According to a review published by Ehara, who studied long working hours and patient safety,[5] four of seven studies that addressed direct influences of doctors' working hours on patients concluded that shortening of working hours would reduce the incidence of adverse events harmful to patients. On the other hand, three studies concluded that working time durations did not differ significantly according to the incidence of adverse events in patients. In other words, shortened working hours for doctors may decrease, or at least not increase, the incidence of adverse events harmful to patients. Because numbers of studies on this issue providing a high level of evidence are not sufficient, it is not possible to draw a direct conclusion about doctors' working hours and patient safety. However, for the purpose of providing safe healthcare services, it is necessary to improve working environments by taking into account doctors' working hours and sleeping hours.[6]

Analysis of the occupations of spouses of male and female doctors revealed that 55.1% of spouses of male doctors were housewives, and 20.3% were doctors (**Fig. 2a**). In contrast, doctors accounted for 83.3%, and house husbands for 4.2%, of the spouses of female doctors (**Fig. 2b**). According to the White Paper on Gender Equality 2011, as for the actual employment situation, there were 10,120,000 double-income households among employees' households in 2010, whereas there were 7,970,000 households comprising an income-earning husband and a non-working wife. Thus, double-income households outnumbered single-income households in Japan as a whole.[7] In contrast, a majority of male doctors working at Kyoto University Hospital had a single-income household.

In general, in an international comparison, men in Japan spend little time on household chores, child-rearing, and nursing care, only about 30 min per day, regardless of whether or not their wives work.[7] Unlike male doctors who can leave most household chores and child-rearing to their spouses, time pressure is great on female doctors who are practicing in the clinical setting while playing a major role in household chores and child-rearing at home. However, this issue is difficult to resolve only by providing the option of part-time work for female doctors during their child-rearing years. The reason is as follows. If the part-time working mode is allowed only for female doctors under the current working schedule of doctors, which is feasible on the premise of overtime work, it precludes them from opportunities for important decision-making and knowledge acquisition, such as conferences and study meetings, and consequently from the chance of taking a responsible role in the work setting. From the aspects of both societal gender equality and labor management, it is necessary to establish a system by which fundamental duties are preferably finished within regular working hours. The idea that females alone are "weak," and therefore need back-up, may well interfere with cultivation of gender equality awareness.[8]

While desire to quit being a doctor correlated positively with "being overwhelmed by patients' demands," it correlated negatively with "feeling improved as a doctor." Namely, patients' exaggerated awareness of their rights makes it more likely for doctors to become exhausted and eventually have the desire to quit being a doctor. It is necessary in the future to build a framework to define how much to allow the demands of

patients to be placed on doctors. The need to build a new doctor-patient relationship is suggested, but not in the form of meeting all of the patients' demands. It is interesting that exhaustion due to their relationships with patients, rather than long working hours, correlates more strongly with the desire to quit being a doctor.

It is also important that doctors who feel that they are improving professionally are less likely to have a desire to quit being a doctor. Working under conditions where the desire to improve themselves is satisfied gives doctors the greatest motivation to keep working. Compiled data from this survey revealed that 81.0% of respondents felt "there are too many chores" and 78.1% responded "I would choose not to do shifts at other institutions if I were paid sufficiently at this hospital" (data not shown). "Chores" can be defined as duties that have hardly any direct tie with improvement in skills or knowledge for doctors. To create an environment where good doctors can maintain their motivation to be a doctor, it is important to make sure that they can earn a sufficient income without doing shifts at other institutions, and to reinforce the medical staff supporting doctors.

Because this survey covered only a single medical institution, Kyoto University Hospital, the results do not provide an overview of issues that doctors in general currently face. The number of valid responses in this survey was 200, not a large sample size. However, we believe that this is acceptable, considering the fact that responding was left to individual doctors' free will, according to the recommendation of the Ethics Committee. The valid response rate of 31.2% is reasonable, given that no psychological pressure was imposed on the respondents, and it demonstrates the high level of interest in this issue. We intend to produce a proposal for future environmental improvement based on the interesting findings obtained in this study.

Acknowledgements

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References

1. OECD Health Data 2011.
2. Lloyd S, Streiner D, Hahn E, Shannon S. Development of the emergency physician job satisfaction measurement instrument. Am J Emerg Med. 1994;12:1–10.
3. Ozaki M, Bito S, Matsumura S. Developing a Japanese hospital physician satisfaction scale. Int J Health Care Qual Assur. 2008; 21:517–528.
4. Ministry of Health, Labour and Welfare. Revision of Criteria for Workmen's Compensation of Cerebral and Cardiac Diseases. December 12, 2001. http://www.mhlw.go.jp/houdou/0112_h1212-1.html. Accessed May 2013. (in Japanese)
5. Ehara A. Ishi no Kaju Rodo—Syounika Iryo no Genba kara [Overwork of Doctors: From the Scene of Pediatric Medical Practice]. Tokyo: Keiso Shobo; 2009:94–104. (in Japanese)
6. Harada Y, Taoda K, Tsuruta I, Imanaka Y. Working environments of hospital physicians and medical safety. Journal of the Japan Society for Healthcare Administration. 2008;45:215–226. (in Japanese)
7. Cabinet Office. White Paper on Gender Equality 2011. http://www.gender.go.jp/whitepaper/h23/zentai/pdf/index.html. Accessed May 2013. (in Japanese)
8. Osawa M. Danjo Kyodo Sankaku Syakai wo Tsukuru [Producing Society With Gender Equality]. Tokyo: NHK Publishing Inc; 2002: 211. (in Japanese)