

Medical Doctors' Work-Life Balance and the Use of Household Chore Support Services

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ABSTRACT

Background Achieving an optimal work-life balance (WLB) is an important social issue not only for workers in general but also for doctors due to the shortage of women doctors. The present study aims to survey doctors' WLB and their use of household chore support services (HCSS).

Methods A questionnaire survey was conducted with doctors working in Tottori Prefecture and a total of 289 responses (212 men, 77 women) were obtained and analyzed. To examine the relationship between gender and satisfaction with working patterns or with life for WLB, as well as the use of HCSS, a chi-squared test was conducted. Furthermore, a chi-squared test was conducted including age, marital status, whether or not they have preschool-aged children, and type of institution the participant worked.

Results A significant difference was found in type of institution the participant worked regarding satisfaction with work patterns and life. The proportion of those who have used HCSS was 12.5% of the total sample and was significantly higher for women than men (men: 8.5%; women: 23.4%). Regarding the reason to use HCSS, “to reduce the burden of household chores and childcare” and “to secure time for work” were most common with the same proportions, and amongst women, “to secure time for work” was the highest.

Conclusion Doctors working at a university hospital could have different work patterns and satisfaction with life compared to those working at other types of medical institutions. Additionally, the demand for HCSS was particularly high among women doctors, which suggests that HCSS may be used to reduce the burden of household chores and childcare, as well as to create time for work.

Key words doctor; household chore support services; work-life balance

Japan is globally known for its large gender gap as Japanese women's participation in society is markedly lower than men's.¹ A similar trend can be observed among doctors, as 77.2% of all doctors in Japan are men, and only 22.8% are women, indicating a persistent gender difference.² It has been shown that women doctors experience more disadvantages due to their gender than men doctors, and women doctors have stronger perceptions of inequality in the workspace.³ Additionally, Japan stands out regarding the shortage of doctors among developed economies.⁴ Therefore, creating a friendly work environment for women medical doctors is critical to secure more women doctors and address gender inequities in the field.

The gendered division of labour, that is, “men to work, women to stay at home,” has been deeply rooted in Japan and has not greatly changed in contemporary society.^{5,6} For women doctors engaged in clinical medicine, role of the home is a serious problem. Because the proportion of women doctors who take a career break or leave their medical posts due to giving birth or childcare responsibilities is higher than that of men doctors, and as a result, their careers as medical doctors are often disrupted.⁷ Therefore, many medical institutions have introduced measures to facilitate flexible work to accommodate doctors' heavy household responsibilities by setting up workplace creches or shortening work hours.^{7,8}

In Japan, to ensure doctors' good physical or mental health and to improve their long working hours, work style reform for doctors is scheduled to be implemented.⁹ The reason is that doctors work long hours and that they have difficulty securing days off due to the wide variety of duties and special work patterns.⁹ It has been shown that maintaining an optimal balance between work and life prevents quitting and the deterioration of mental health and improves work engagement and life satisfaction.^{10–14} However, work style reform for

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Abbreviations: HCSS, household chore support services; WLB, work-life balance

doctors and support for balancing work and family life that each medical institution conducts is mostly measured in the workplace. As mentioned above, for women doctors, the issues of housework and childcare are serious problems.⁷ Therefore, we speculate that a better work-life balance (WLB) can be achieved by providing more support at home as well as in the workplace.

One of the services available for this is a household chore support service (HCSS).¹⁵ The Household Chore Support Service Promotion Council defines HCSS as “a service in which employees of a business are sent to the user’s home and perform all or some of the household chores (e.g., cleaning, laundry, and cooking) on behalf of the user.”¹⁶ Currently, cabinet office has implemented Specified Organizations for Project to Accept Foreigners Conducting Housekeeping Services in National Strategic Special Zones, which allows foreigners to enter and stay in Japan for assisting with housework.¹⁷ The reasons that the measure is conducted are three: promotion of women’s activities, meeting the needs of household support, and economic strategies.

Outsourcing household chores through the use of household chore services is more common overseas than in Japan.¹⁸ A large-scale survey on the situation of HCSS in Japan was conducted in 2014 with 41,330 women aged between 25 and 44 years, living in the Tokyo Metropolitan Area and Osaka Prefecture.¹⁹ The survey found that only 1% of the total respondents were using HCSS at that time, and only 3% had used these services in the past. Inversely, for those who have used it, approximately 90% of the users were satisfied with the HCSS they used and approximately 93% of the users wanted to continue using HCSS. The benefits gained from using HCSS were: “to secure my own time and time for work,” “to reduce physical and psychological burden,” and “increased satisfaction with life.”

As seen in Nomura Research Institute’s survey findings,¹⁹ whereas the usage rate of HCSS in Japan is low, the use of HCSS could reduce the burden of household chores for the worker, which could positively influence their work and life. However, conventional research and discussions regarding HCSS have focused on households of workers in general.^{17, 19} There has been no formal survey on the use of HCSS by doctors. Furthermore, as mentioned above, doctors’ work-life balance would differ depending on demographic characteristics such as gender, thereby the actual use of HCSS would differ by those. The present study aims to investigate WLB and the use of HCSS by doctors to examine how HCSS can achieve a balance between work as a doctor and family life.

SUBJECTS AND METODS

Participants

The present study was conducted upon obtaining approval from the ethics committee of the medical faculty, Tottori Prefecture (Reference number: 21A36).

The survey period was from October to November 2021. We distributed 1,343 envelopes containing the survey instructions and a self-administered questionnaire. The respondents were provided a choice of filling out a questionnaire using a paper-based form included in the envelope or using an online Google Form. The URL and QR code for the Google Form were included on the cover of the questionnaire.

Measures

Demographic characteristics

We collected responses regarding age, gender, marital status, the number of children, whether or not the respondent has preschool-aged children (i.e., children preschool aged or younger), type of institution where the respondent worked, employment situation, and the respondent’s specialist area.

Satisfaction with working patterns and satisfaction with life

We used one item each for satisfaction with working patterns and satisfaction with life from the WLB index survey for medical professionals.²⁰ A four-point Likert scale (agree, somewhat agree, somewhat disagree, disagree) was used to measure satisfaction with their working pattern, “I am satisfied with my current working pattern,” and satisfaction with life, “I am satisfied with my current life (family life, community life).”

Household chore support services

First, the respondent was asked about their experience of using HCSS with a two-point scale (yes, no). For those with experience using the service, we asked what service they used and why they used it. The respondent was given seven options: “cleaning,” “cooking,” “shopping,” “transportation of child,” “temporary care for child,” “caring for pets (walking, feeding, cleaning),” and “other,” and multiple choices were allowed. The respondent was given ten options regarding their reasons for using the service: “I wanted to receive high-quality service by professional,” “to save time and trouble of doing household chores and childcare,” “because I cannot do all household chores and childcare,” “it is accessible,” “someone using the service recommended it,” “to reduce the burden of household chores and childcare,” “to secure time for myself to spend on a hobby and change of scenery,” “to secure time for work,” “to

reduce the burden of household chores and childcare when pregnant, giving birth, and suffering illness” and “other”; multiple choices were allowed.

We asked those who had not used HCSS for their reasons and whether they had in the past wanted to use it. The respondent was given seven options regarding the reason for not using the service: “I did not know about household chore/childcare support services,” “costs and fees are concerning,” “I do not want to let a stranger in my place,” “I do not need the service as I am managing,” “because I think household chores and childcare should be provided by family members,” “I worry about the quality of service,” and “other”; multiple choices were allowed. The respondent was further asked to answer the question “have you ever wanted to use household chore support service?” with a two-point scale (yes, no) regarding their past intention to use such services.

These questions about HCSS were created referencing the work by Nomura Research Institute.¹⁹

Statistical analyses

To examine any demographic differences due to gender, we conducted a *t*-test with age and chi-squared tests with marital status, the number of children, whether child(ren) is/are preschool-age, type of institution the respondent worked, employment situation, and specialist field.

Next, chi-squared tests were conducted to examine the relationships between gender and satisfaction with working patterns or with life and use of HCSS. Similarly, chi-squared tests were conducted to examine the relationship between age and satisfaction with working patterns or with life and use of HCSS. Furthermore, chi-squared test was conducted with marital status and whether or not they have preschool-aged children. Finally, chi-squared tests were conducted to examine the relationships between type of institution the participant worked and satisfaction with working patterns or with life.

We then conducted a residual analysis with significant results from the chi-squared tests. For questions for which multiple choices were allowed, we conducted a chi-squared test on each option depending on whether the option was chosen. The significance level was set at 5%. For all analyses, IBM SPSS Statistics ver.28 was used.

RESULTS

299 envelopes were returned. Excluding non-responses, 226 respondents filled in the questionnaire using the handwritten format (16.8% response rate), and 73 filled

in the online Google Form (5.4% response rate). Finally, 289 responses were collected (212 men respondents, 77 women respondents), excluding filling-in errors.

Difference in demographic characteristics by gender

Table 1 shows the differences in demographic characteristics by gender.

Age was significantly higher among men than women. As for marital status, the proportion of unmarried women was higher than men. The proportion of divorce was high among women. As for child(ren), the proportion of those without children was higher among women, however those with preschool children were higher among women than men. Regarding the workplace, the proportion of having private practice was higher among men than women. No significant gender difference was found regarding employment situation and specialist field.

Difference in satisfaction with working patterns or with life and the use of household chore support services by gender

Table 2 shows the differences in satisfaction with working patterns or with life and use of HCSS by gender.

No significant difference between men and women was found regarding the question concerning satisfaction with working patterns or with life in reference to a WLB. The proportion of those who have used HCSS was 12.5% of the total respondents, including 8.5% of men and 23.4% of women. The proportion of women who had used such services was significantly higher than men. As for types of services used, the most frequently used service was cleaning for both men and women, and more women used cleaning, cooking, transportation of child, temporary care of child, and looking after pets services than men.

The most frequently cited reason for using HCSS was “to reduce the burden of household chores and childcare” and “to secure time for work,” both at 25.4%. Regarding gender differences in the reasons for using services, the most frequently cited reason for women was “to secure time for work” (28.6%), whereas for men, “to reduce the burden of household chores and childcare” (28.0%) was most frequently cited. Women accounted for a higher proportion than men regarding three reasons: “because I cannot do all household chores and childcare,” “to reduce the burden of household chores and childcare,” and “to secure time for work.”

The proportion of respondents who had not used HCSS was 86.9%, and the most frequently cited reason for not using such services was “I do not need the

Table 1. Differences in demographic characteristics (n = 289)

	Men n = 212		Women n = 77		Total n = 289		P
	n	%	n	%	n	%	
Age							
20–29 years old	1	0.5	8	10.4	9	3.1	0.000 ^a
30–39 years old	7	3.3	16	20.8	23	8.0	
40–49 years old	33	15.6	23	29.9	56	19.4	
50–59 years old	58	27.4	17	22.1	75	26.0	
60–69 years old	72	34.0	8	10.4	80	27.7	
≥ 70 years old	41	19.3	5	6.5	46	15.9	
Mean(SD)	59.8	(11.6)	46.3	(14.2)	56.2	(13.7)	
Marital status							
Unmarried	4	1.9–	18	23.4+	22	7.6	0.000 ^b
Married	204	96.2+	51	66.2–	255	88.2	
Divorce	0	0.0–	5	6.5+	5	1.7	
Bereavement	2	0.9	2	2.6	4	1.4	
Non-response	2	0.9	1	1.3	3	1.0	
Number of child(ren)							
0	15	7.1–	19	24.7+	34	11.8	0.000 ^b
1	24	11.3	14	18.2	38	13.1	
2	73	34.4	20	26.0	93	32.2	
≥ 3	99	46.7	17	22.1	116	40.1	
Non-response	1	0.5	7	9.1	8	2.8	
Preschool-aged child(ren)							
No	178	84.0+	48	62.3–	226	78.2	0.000 ^b
Yes	15	7.1–	21	27.3+	36	12.5	
Non-response	19	9.0	8	10.4	27	9.3	
Type of institution the respondent worked							
University hospital	29	13.7	8	10.4	37	12.8	0.030 ^b
Hospital (non-university hospital)	84	39.6	40	51.9	124	42.9	
Clinic	19	9.0	13	16.9	32	11.1	
Private practice	66	31.1+	14	18.2–	80	27.7	
Others	14	6.6	2	2.6	16	5.5	
Employment situation							
Full-time	197	92.9	68	88.3	265	91.7	0.051 ^b
Part-time	15	7.1	7	9.1	22	7.6	
On maternity/childcare leave	0	0.0	2	2.6	2	0.7	
Specialist field							
Internal medicine	82	38.7	33	42.9	115	39.8	0.094 ^b
Surgery	19	9.0	2	2.6	21	7.3	
Pediatrics	14	6.6	12	15.6	26	9.0	
Ophthalmology	10	4.7	4	5.2	14	4.8	
Anesthesiology	2	0.9	1	1.3	3	1.0	
Obstetrics and gynecology	4	1.9	3	3.9	7	2.4	
Psychiatry	11	5.2	9	11.7	20	6.9	
Dermatology	5	2.4	2	2.6	7	2.4	
Otorhinology	7	3.3	1	1.3	8	2.8	
Radiology	4	1.9	1	1.3	5	1.7	
Neurological surgery	4	1.9	0	0.0	4	1.4	
Neurology	4	1.9	0	0.0	4	1.4	
Urology	3	1.4	0	0.0	3	1.0	
Orthopedic surgery	22	10.4	2	2.6	24	8.3	
Rehabilitation cost	2	0.9	2	2.6	4	1.4	
Others	17	8.0	4	5.2	21	7.2	
Non-response	2	0.9	1	1.3	3	1.0	

^at-test. ^bchi-squared test. +, significantly more by residual analysis; –, significantly less by residual analysis.

Table 2. Difference in satisfaction with working patterns or with life and the use of household chore support services by gender (n = 289)

	Men n = 212		Women n = 77		Total n = 289		P
	n	%	n	%	n	%	
Satisfaction with working patterns or with life							
I am satisfied with my current working pattern							
Agree	80	37.7	27	35.1	107	37.0	0.778
Somewhat agree	106	50.0	37	48.1	143	49.5	
Somewhat disagree	20	9.4	11	14.3	31	10.7	
Disagree	5	2.4	2	2.6	7	2.4	
Non-response	1	0.5	0	0	1	0.3	
I am satisfied with my current life (family life, community life)							
Agree	85	40.1	28	36.4	113	39.1	0.204
Somewhat agree	107	50.5	35	45.5	142	49.1	
Somewhat disagree	14	6.6	12	15.6	26	9.0	
Disagree	5	2.4	2	2.6	7	2.4	
Non-response	1	0.5	0	0	1	0.3	
Household chore support services							
Experience of use							
No	192	90.6+	59	76.6–	251	86.9	0.002
Yes	18	8.5–	18	23.4+	36	12.5	
Non-response	2	0.9	0	0	2	0.7	
Services used (multiple choices allowed) ^a							
Cleaning	10	33.3–	14	31.8+	24	32.4	0.000
Cooking	6	20.0–	7	15.9+	13	17.6	0.023
Shopping	1	3.3	2	4.5	3	4.1	0.115
Transportation of child	3	10.0–	9	20.5+	12	16.2	0.000
Temporary care for child	9	30.0–	9	20.5+	18	24.3	0.021
Caring for pets	0	0–	3	6.8+	3	4.1	0.004
Others	1	3.3	0	0	1	1.4	0.546
Total	30		44		74		
Reasons for use (multiple choices allowed) ^a							
I wanted to receive high-quality service by professional	1	4.0	1	2.4	2	3.0	0.453
To save time and trouble of doing household chores and childcare	2	8.0	2	4.8	4	6.0	0.287
Because I cannot do all household chores and childcare	4	16.0–	10	23.8+	14	20.9	0.000
It is accessible	1	4.0	0	0	1	1.5	0.546
Someone using the service recommended it	1	4.0	2	4.8	3	4.5	0.115
To reduce the burden of household chores and childcare	7	28.0–	10	23.8+	17	25.4	0.002
To secure time for myself to spend on a hobby and change of scenery	1	4.0	1	2.4	2	3.0	0.453
To secure time for work	5	20.0–	12	28.6+	17	25.4	0.000
To reduce the burden of household chores and childcare when pregnant, giving birth, and suffering illness	3	12.0	4	9.5	7	10.4	0.065
Others	0	0	0	0	0	0	—
Total	25		42		67		
Reasons for not using (multiple choices allowed) ^a							
I did not know about household chore/childcare support services	20	8.3	9	10.6	29	8.9	0.573
Costs and fees are concerning	22	9.1	8	9.4	30	9.2	0.998
I do not want to let a stranger in my place	38	15.8	20	23.5	58	17.8	0.131
I do not need the service as I am managing	97	40.2+	25	29.4–	122	37.4	0.043
Because I think household chores and childcare should be provided by family members	32	13.3+	4	4.7–	36	11.0	0.024
I worry about the quality of service	10	4.1–	9	10.6+	19	5.8	0.035
Others	22	9.1	10	11.8	32	9.8	0.532
Total	241		85		326		
Past requests for use by those who have never used the service (n=251)							
No	156	81.3+	31	52.5–	187	74.5	0.000
Yes	26	13.5–	28	47.5+	54	21.5	
Non-response	10	5.2	0	0	10	4.0	

^aFor each item, chi-square test was conducted with and without selection. +, significantly more by residual analysis; –, significantly less by residual analysis.

service as I am managing" (37.4%). When considering gender, we found that men showed a higher proportion for two reasons: "I do not need the service as I am managing" and "because I think household chores and childcare should be provided by family members"; furthermore, women showed a higher proportion for "I worry about the quality of service." Lastly, regarding whether the non-users had ever wanted to use such services, 21.5% of the total respondents wanted to use the service at one point, and the proportion of those who wanted to use it was significantly higher among women than men (men: 13.5%, women: 47.5%).

Difference in satisfaction with working patterns or with life and the use of household chore support service by age

Table 3 shows the differences in satisfaction with working patterns or with life and the use of HCSS by age.

Due to the small number of respondents in their twenties, those in their twenties and thirties were combined for analyses regarding age. No significant difference by age regarding satisfaction with working patterns or with life, the use of HCSS, and reasons for use were found.

Only the service of temporary care for children was significant as the type of service used and while many respondents in their fifties used the service, those in their sixties did not use it much. Two reasons for not using the service cited by the non-users were significant: "costs and fees are concerning" and "I worry about the quality of service." "Costs and fees are concerning" was cited most frequently by the respondents in their forties and least frequently by those in their seventies or older. "I worry about the quality of the service" was cited most frequently by those in their forties and least frequently by those in their sixties.

As for if the non-users ever wanted to use the services, there was a significant difference according to the age. More respondents in their twenties/thirties and forties wanted to use the service than those in their sixties and seventies and older.

Differences in satisfaction with working patterns or with life and the use of household chore support services by marital status

Table 4 shows the differences in satisfaction with working patterns or with life and use of HCSS by marital status.

Only unmarried and married participants' responses were used for the analysis of marital status. No significant differences were found in all items.

Differences in satisfaction with working patterns or with life and the use of household chore support services by having a preschool-aged child

Table 5 shows the differences in satisfaction with working patterns or with life and use of HCSS by whether the respondent had a preschool-aged child(ren).

No significant differences regarding satisfaction with working patterns or with life, the use of HCSS, types of service used, and reasons for use were found. There was a significant difference regarding the reason, "I worry about the quality of service," for not using such services, as the response was higher for those with preschool-aged children than those without.

Differences in satisfaction with working patterns or with life by type of institution the respondent worked

Table 6 shows the differences in satisfaction with working patterns or with life by type of institution the respondent worked.

There was a significant difference in satisfaction levels with working patterns; those working at a university hospital tended to choose "somewhat agree" and not many of those who had their own practice chose "somewhat agree" regarding satisfaction with working patterns. There were many "no response" to others. Furthermore, there was a significant difference in satisfaction with life; more of those working at a university hospital chose "somewhat agree," and not many chose "agree." There were many "no response" to others.

DISCUSSION

In this study, regarding questions on satisfaction with working patterns and with life in reference to the WLB, there was no significant difference in gender, age, marital status and whether or not the respondents had preschool-aged children. However, a significant difference was found regarding type of institution the respondent worked in reference to the work pattern and satisfaction with life and the WLB. More concretely, the proportion of "somewhat agree" was higher for satisfaction with work patterns at a university hospital than in other workplaces, "agree" was low, and "somewhat agree" was high regarding the responses to the question about satisfaction with life. This finding does not mean that doctors working at a university hospital are dissatisfied with their work pattern and life. However, according to a large-scale survey, recently conducted in Japan,²¹ approximately 40% of doctors working at a medical faculty of a university or university hospital were not satisfied with their WLB. Complex reasons such as the normalization of long working hours have been cited.

Table 3. Difference in satisfaction with working patterns or with life and the use of household chore support service by age (n = 289)

	20–39 years old n = 32		40–49 years old n = 56		50–59 years old n = 75		60–69 years old n = 80		≥ 70 years old n = 46		Total n=289		P
	n	%	n	%	n	%	n	%	n	%	n	%	
Satisfaction with working patterns or with life													
I am satisfied with my current working pattern													
Agree	10	31.3	18	32.1	27	36.0	26	32.5	26	56.5	107	37.0	0.202
Somewhat agree	18	56.3	27	48.2	39	52.0	43	53.8	16	34.8	143	49.5	
Somewhat disagree	2	6.3	9	16.1	8	10.7	9	11.3	3	6.5	31	10.7	
Disagree	2	6.3	2	3.6	1	1.3	2	2.5	0	0	7	2.4	
Non-response	0	0	0	0	0	0	0	0	1	2.2	1	0.3	
I am satisfied with my current life (family life, community life)													
Agree	12	37.5	25	44.6	26	34.7	26	32.5	24	52.2	113	39.1	0.454
Somewhat agree	15	46.9	25	44.6	41	54.7	42	52.5	19	41.3	142	49.1	
Somewhat disagree	4	12.5	5	8.9	7	9.3	8	10.0	2	4.3	26	9.0	
Disagree	1	3.1	1	1.8	1	1.3	4	5.0	0	0	7	2.4	
Non-response	0	0	0	0	0	0	0	0	1	2.2	1	0.3	
Household chore support services													
Experience of use													
No	30	93.8	51	91.1	60	80.0	72	90.0	38	82.6	251	86.9	0.267
Yes	2	6.3	5	8.9	15	20.0	7	8.8	7	15.2	36	12.5	
Non-response	0	0	0	0	0	0	1	1.3	1	2.2	2	0.7	
Services used (multiple choices allowed) ^a													
Cleaning	2	66.7	3	18.8	9	29.0	6	46.2	4	36.4	24	32.4	0.692
Cooking	0	0	2	12.5	6	19.4	4	30.8	1	9.1	13	17.6	0.356
Shopping	0	0	1	6.3	1	3.2	1	7.7	0	0	3	4.1	0.875
Transportation of child	1	33.3	3	18.8	5	16.1	1	7.7	2	18.2	12	16.2	0.528
Temporary care for child	0	0	5	31.3	9	29.0+	1	7.7–	3	27.3	18	24.3	0.033
Caring for pets	0	0	2	12.5	1	3.2	0	0	0	0	3	4.1	0.266
Others	0	0	0	0	0	0	0	0	1	9.1	1	1.4	0.258
Total	3		16		31		13		11		74		
Reasons for use (multiple choices allowed) ^a													
I wanted to receive high-quality service by professional	0	0	0	0	1	3.6	1	7.7	0	0	2	3.0	0.783
To save time and trouble of doing household chores and childcare	1	50.0	0	0	1	3.6	1	7.7	1	9.1	4	6.0	0.787
Because I cannot do all household chores and childcare	0	0	4	30.8	4	14.3	3	23.1	3	27.3	14	20.9	0.592
It is accessible	0	0	0	0	0	0	0	0	1	9.1	1	1.5	0.258
Someone using the service recommended it	0	0	2	15.4	1	3.6	0	0	0	0	3	4.5	0.266
To reduce the burden of household chores and childcare	1	50.0	2	15.4	8	28.6	4	30.8	2	18.2	17	25.4	0.356
To secure time for myself to spend on a hobby and change of scenery	0	0	0	0	2	7.1	0	0	0	0	2	3.0	0.219
To secure time for work	0	0	3	23.1	9	32.1	2	15.4	3	27.3	17	25.4	0.067
To reduce the burden of household chores and childcare when pregnant, giving birth, and suffering illness	0	0	2	15.4	2	7.1	2	15.4	1	9.1	7	10.4	0.888
Others	0	0	0	0	0	0	0	0	0	0	0	0	
Total	2		13		28		13		11		67		
Reasons for not using (multiple choices allowed) ^a													
I did not know about household chore/childcare support services	6	14.0	7	8.0	5	6.5	9	10.6	2	5.9	29	8.9	0.215
Costs and fees are concerning	4	9.3	14	16.1+	7	9.1	4	4.7	1	2.9–	30	9.2	0.001
I do not want to let a stranger in my place	10	23.3	14	16.1	16	20.8	14	16.5	4	11.8	58	17.8	0.114
I do not need the service as I am managing	12	27.9	28	32.2	32	41.6	38	44.7	12	35.3	122	37.4	0.111
Because I think household chores and childcare should be provided by family members	1	2.3	10	11.5	8	10.4	10	11.8	7	20.6	36	11.0	0.331
I worry about the quality of service	3	7.0	9	10.3+	4	5.2	1	1.2–	2	5.9	19	5.8	0.012
Others	7	16.3	5	5.7	5	6.5	9	10.6	6	17.6	32	9.8	0.221
Total	43		87		77		85		34		326		
Past requests for use by those who have never used the service (n=251)													
No	16	53.3–	29	56.9–	47	78.3	60	83.3+	35	92.1+	187	74.5	0.000
Yes	14	46.7+	22	43.1+	11	18.3	7	9.7–	0	0–	54	21.5	
Non-response	0	0	0	0	2	3.3	5	6.9	3	7.9	10	4.0	

^aFor each item, chi-square test was conducted with and without selection. +, significantly more by residual analysis; –, significantly less by residual analysis.

Table 4. Differences in satisfaction with working patterns or with life and the use of household chore support services by marital status (n = 277)

	Unmarried n = 22		Married n = 255		Total n = 277		P
	n	%	n	%	n	%	
Satisfaction with working patterns or with life							
I am satisfied with my current working pattern							
Agree	7	31.8	94	36.9	101	36.5	0.390
Somewhat agree	9	40.9	129	50.6	138	49.8	
Somewhat disagree	5	22.7	25	9.8	30	10.8	
Disagree	1	4.5	6	2.4	7	2.5	
Non-response	0	0	1	0.4	1	0.4	
I am satisfied with my current life (family life, community life)							
Agree	4	18.2	105	41.2	109	39.4	0.182
Somewhat agree	13	59.1	123	48.2	136	49.1	
Somewhat disagree	4	18.2	20	7.8	24	8.7	
Disagree	1	4.5	6	2.4	7	2.5	
Non-response	0	0	1	0.4	1	0.4	
Household chore support services							
Experience of use							
No	21	95.5	220	86.3	241	87.0	0.465
Yes	1	4.5	33	12.9	34	12.3	
Non-response	0	0	2	0.8	2	0.7	
Services used (multiple choices allowed) ^a							
Cleaning	1	100.0	22	32.4	23	33.3	0.506
Cooking	0	0	13	19.1	13	18.8	0.278
Shopping	0	0	3	4.4	3	4.3	0.609
Transportation of child	0	0	10	14.7	10	14.5	0.344
Temporary care for child	0	0	16	23.5	16	23.2	0.226
Caring for pets	0	0	3	4.4	3	4.3	0.609
Others	0	0	1	1.5	1	1.4	0.769
Total	1		68		69		
Reasons for use (multiple choices allowed) ^a							
I wanted to receive high-quality service by professional	0	0	2	3.2	2	3.1	0.677
To save time and trouble of doing household chores and childcare	1	100.0	3	4.8	4	6.3	0.204
Because I cannot do all household chores and childcare	0	0	13	20.6	13	20.3	0.278
It is accessible	0	0	1	1.6	1	1.6	0.769
Someone using the service recommended it	0	0	3	4.8	3	4.7	0.609
To reduce the burden of household chores and childcare	0	0	17	27.0	17	26.6	0.211
To secure time for myself to spend on a hobby and change of scenery	0	0	2	3.2	2	3.1	0.677
To secure time for work	0	0	15	23.8	15	23.4	0.242
To reduce the burden of household chores and childcare when pregnant, giving birth, and suffering illness	0	0	7	11.1	7	10.9	0.431
Others	0	0	0	0	0	0	
Total	1		63		64		
Reasons for not using (multiple choices allowed) ^a							
I did not know about household chore/childcare support services	3	11.1	25	8.8	28	9.0	0.567
Costs and fees are concerning	2	7.4	28	9.8	30	9.6	0.784
I do not want to let a stranger in my place	7	25.9	48	16.8	55	17.6	0.143
I do not need the service as I am managing	9	33.3	110	38.6	119	38.1	0.839
Because I think household chores and childcare should be provided by family members	1	3.7	32	11.2	33	10.6	0.266
I worry about the quality of service	1	3.7	16	5.6	17	5.4	0.746
Others	4	14.8	26	9.1	30	9.6	0.247
Total	27		285		312		
Past requests for use by those who have never used the service (n=241)							
No	13	61.9	166	75.5	179	74.3	0.132
Yes	8	38.1	45	20.5	53	22.0	
Non-response	0	0	9	4.1	9	3.7	

^aFor each item, chi-square test was conducted with and without selection.

Table 5. Differences in satisfaction with working patterns or with life and the use of household chore support services by having preschool-aged child (n = 262)

	Preschool-aged child No n = 226		Preschool-aged child Yes n = 36		Total n = 262		P
	n	%	n	%	n	%	
Satisfaction with working patterns or with life							
I am satisfied with my current working pattern							
Agree	85	37.6	12	33.3	97	37.0	0.170
Somewhat agree	117	51.8	16	44.4	133	50.8	
Somewhat disagree	21	9.3	6	16.7	27	10.3	
Disagree	3	1.3	2	5.6	5	1.9	
Non-response	0	0.0	0	0	0	0.0	
I am satisfied with my current life (family life, community life)							
Agree	89	39.4	19	52.8	108	41.2	0.410
Somewhat agree	112	49.6	15	41.7	127	48.5	
Somewhat disagree	21	9.3	2	5.6	23	8.8	
Disagree	4	1.8	0	0	4	1.5	
Non-response	0	0	0	0	0	0	
Household chore support services							
Experience of use							
No	195	86.3	32	88.9	227	86.6	0.863
Yes	30	13.3	4	11.1	34	13.0	
Non-response	1	0.4	0	0	1	0.4	
Services used (multiple choices allowed) ^a							
Cleaning	20	34.5	2	25.0	22	33.3	0.508
Cooking	10	17.2	1	12.5	11	16.7	0.647
Shopping	2	3.4	0	0	2	3.0	0.571
Transportation of child	9	15.5	2	25.0	11	16.7	0.662
Temporary care for child	14	24.1	3	37.5	17	25.8	0.629
Caring for pets	2	3.4	0	0	2	3.0	0.571
Others	1	1.7	0	0	1	1.5	0.689
Total	58		8		66		
Reasons for use (multiple choices allowed) ^a							
I wanted to receive high-quality service by professional	2	3.6	0	0	2	3.2	0.571
To save time and trouble of doing household chores and childcare	3	5.5	0	0	3	4.8	0.487
Because I cannot do all household chores and childcare	11	20.0	2	28.6	13	21.0	0.860
It is accessible	1	1.8	0	0	1	1.6	0.689
Someone using the service recommended it	2	3.6	1	14.3	3	4.8	0.321
To reduce the burden of household chores and childcare	15	27.3	2	28.6	17	27.4	0.807
To secure time for myself to spend on a hobby and change of scenery	2	3.6	0	0	2	3.2	0.571
To secure time for work	14	25.5	1	14.3	15	24.2	0.412
To reduce the burden of household chores and childcare when pregnant, giving birth, and suffering illness	5	9.1	1	14.3	6	9.7	0.833
Others	0	0	0	0	0	0	
Total	55		7		62		
Reasons for not using (multiple choices allowed) ^a							
I did not know about household chore/childcare support services	22	9.0	6	11.1	28	9.4	0.211
Costs and fees are concerning	22	9.0	6	11.1	28	9.4	0.211
I do not want to let a stranger in my place	41	16.7	11	20.4	52	17.4	0.083
I do not need the service as I am managing	98	40.0	13	24.1	111	37.1	0.413
Because I think household chores and childcare should be provided by family members	26	10.6	6	11.1	32	10.7	0.380
I worry about the quality of service	11	4.5–	7	13.0+	18	6.0	0.001
Others	25	10.2	5	9.3	30	10.0	0.621
Total	245		54		299		
Past requests for use by those who have never used the service (n=227)							
No	157	80.5+	13	40.6–	170	74.9	0.000
Yes	31	15.9–	19	59.4+	50	22.0	
Non-response	7	3.6	0	0	7	3.1	

^aFor each item, chi-square test was conducted with and without selection. +, significantly more by residual analysis; –, significantly less by residual analysis.

Table 6. Differences in satisfaction with working patterns or with life by type of institution the respondent worked (n = 289)

	University hospital n = 37		Hospital (non-university hospital) n = 124		Clinic n = 32		Private practice n = 80		Others n = 16		Total n = 289		P
	n	%	n	%	n	%	n	%	n	%	n	%	
Satisfaction with working patterns or with life													
I am satisfied with my current working pattern													
Agree	9	24.3	42	33.9	14	43.8	35	43.8	7	43.8	107	37.0	0.019
Somewhat agree	25	67.6+	65	52.4	15	46.9	32	40.0-	6	37.5	143	49.5	
Somewhat disagree	3	8.1	12	9.7	3	9.4	11	13.8	2	12.5	31	10.7	
Disagree	0	0	5	4	0	0	2	2.5	0	0	7	2.4	
Non-response	0	0	0	0	0	0	0	0	1	6.3+	1	0.3	
I am satisfied with my current life (family life, community life)													
Agree	8	21.6-	47	37.9	15	46.9	36	45.0	7	43.8	113	39.1	0.026
Somewhat agree	26	70.3+	62	50.0	14	43.8	34	42.5	6	37.5	142	49.1	
Somewhat disagree	2	5.4	13	10.5	2	6.3	7	8.8	2	12.5	26	9.0	
Disagree	1	2.7	2	1.6	1	3.1	3	3.8	0	0	7	2.4	
Non-response	0	0	0	0	0	0	0	0	1	6.3+	1	0.3	

+, significantly more by residual analysis; -, significantly less by residual analysis.

Additionally, Kataoka et al. reported a necessity that supports their career for women doctors working in the university hospital.²² Therefore, doctors' WLB is influenced by the institution which they work, and considering that a university hospital provides a very busy working environment,^{21, 23} in particular, multi-layered support for doctors working at a university hospital is required so that they can balance work and family life better.

The proportion of those who have used HCSS in this study was 12.5% of the total sample, and 8.5% and 23.4% of men and women, respectively. The proportion of women who had used such services was significantly higher than men, which can be seen as a natural consequence of women doctors carrying many of the roles at home.²⁴ It is noteworthy that 23.4% of women doctors used the service, which is much higher than 3% of ordinary women who used it according to a survey.¹⁹ In general, the use of HCSS proportionally correlates to an individual's level of household income,¹⁹ and given that the average annual income of an employed doctor is approximately 13.70 million yen if there is one person in the household who works as a doctor,²⁵ the likelihood of the household using HCSS increases. The present study was conducted with doctors working in Tottori Prefecture, the least populous prefecture in Japan, with a declining population,²⁶ and as such, it is difficult to assume that the idea of outsourcing household chores is more widely accepted than in the Tokyo Metropolitan

area. Further, the Nomura Research Institute has conducted a study with ordinary women residing in the Tokyo Metropolitan area and Osaka Prefecture which suggests that if a similar survey is conducted with women doctors working in the Tokyo Metropolitan area,¹⁹ it is likely to indicate a higher usage rate of such services. This would mean that households with a doctor are using HCSS more frequently than normal households to reduce the burden of family life.

In this study, the most frequently used HCSS used by doctors with preschool-aged children was temporary care. The most frequently cited reasons by the user of HCSS with preschool-aged children were "because I cannot do all household chores and childcare" and "to reduce the burden of household chores and childcare." It is easily imagined that parents of preschool-aged children would feel more pressure with child-rearing; therefore, it is assumed that doctors with preschool-aged children would use household chore support services to directly reduce child-rearing stress.

Conversely, there was no clear difference in the general trend in using such services regarding other variables, such as gender, age, and marital status. The highest demand for the services was for cleaning; "to secure time for work" was the second most frequently cited reason for using HCSS, which was most frequently cited by women doctors. Doctors without preschool-aged children, that is, with not too high child-rearing stress tend, to use HCSS to secure time for work,

and this was more prominent among women doctors. Many of the women doctors who took part in the study were unmarried and more likely not to have children compared to men doctors. The achievement of WLB depends on each individual's values, and in the case of doctors who tend to emphasize work, HCSS might be used to secure time for work. Furthermore, it could be the case that more women doctors than men doctors would use such services for this reason.

We found significant differences regarding gender, age, and having or not having preschool-aged children in the question of whether the non-users of a HCSS had ever wanted to use it. More women doctors than men doctors had wanted to use the service, along with many young doctors in their twenties to forties and those with preschool-aged children. This finding shows that there is a demand for HCSS among women doctors with a heavy burden of household chores and childcare and doctors who are raising children. However, these women doctors and doctors with children were also worried about the quality of service and cited this as a reason for not using such services. HCSS businesses must overcome this when introducing their services as a support measure to achieve an optimal WLB for their clients; furthermore, a regime must be developed so that working doctors can receive HCSS without concern.

The present study has some limitations. First, the mean age of the respondents is very high at 56.2 years old and there were rather few young respondents in their twenties and thirties. Consequently, the study's findings could strongly reflect the views of doctors who are no longer child-rearing. Second, we investigated WLB with one question on satisfaction with work patterns and with life, respectively, however, it is unlikely that these two questions accurately reflect doctors' WLB. It is desirable to use a multiple-item scale that has been tested for reliability and validity to conduct more detailed research. Similarly, for the items regarding HCSS, we used an adapted scale created using the scales by the Nomura Research Institute.¹⁹ It is difficult to state that these questions have comprehensively measured the usage of HCSS. Third, when deciding whether or not using HCSS, other family support (e.g., grandparents residing in the same house or nearby) may play a significant role, though this has not been examined in the study. Additionally, whether or not the man doctor has a stay-at-home wife may affect the decision making. Finally, the present study investigated doctors' use of HCSS and discussed how the services could be used to achieve a better WLB for doctors. However, this discussion was based on survey findings rather than findings from an intervention study using HCSS. An

intervention study to examine how the use of HCSS influences the balance between work and family life for doctors must be conducted.

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