

Current state and future direction of task shifting in obstetric and gynecological care

A survey of obstetrician–gynecologists across Japan

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Abstract

To conduct a survey about task shifting in obstetric and gynecological care.

A multivariate logistic regression analysis was conducted in Japanese hospitals using obstetrician–gynecologists (OB/GYNs) who answered that task shifting was rarely used at their working environment as the outcome variable and using their personal attributes (sex, age, type of medical institution employed at, and regional characteristics) as predictor variables. Opinions were gathered regarding promoting task shifting impact on individual work duties.

Responses were collected from 919 OB/GYNs (49.9% women, 50.8% <40 years). Characteristics' analysis of 34.6% of OB/GYNs who thought that task shifting was hardly used indicated that it was used significantly more at private university hospitals (odds ratio 5.33, 95% confidence interval: 2.33–12.18) than at national university hospitals (odds ratio 3.54, 95% confidence interval: 1.67–7.51). “Transfer of patients (from operating rooms to the ward)” and “securing the contrast agent line” were the only items related to the task shifting status for individual work duties that were identified by most respondents, revealing that task shifting is not progressing. More than half and 9% of the OB/GYNs said that task shifting progression would improve and decline medical care quality, respectively. Overall, 46% and 24% of the respondents thought that task shifting could reduce working hours by “>1 hour, but <2 hours”/day and “<1 hour”/day, respectively.

The current study confirmed that OB/GYNs working at university hospitals believe that task shifting is not progressing in university hospitals and that the working environment is poor. Even if task shifting reduces the number of working hours per day by 2 hours, the working hours of these physicians still exceed the criteria for death by overwork. Thus, further working hour reduction measures are needed in addition to task shifting, such as consolidation of medical institutions dealing with deliveries.

To promote task shifting in obstetric and gynecological care in Japan, it is necessary to continue promoting policy-based, institutional, and educational guidance.

Abbreviations: OB/GYNs = obstetrician–gynecologists, WHO = World Health Organization.

Keywords: Japan, obstetrician–gynecologists, surveys and questionnaires, task shifting

1. Introduction

According to the World Health Organization (WHO) definition, task shifting “presents a viable solution for improving health care coverage by making more efficient use of the human resources already available and by quickly creating capacity while training

and retention programs are expanded”.^[1] Efforts to increase the effectiveness of medical care through task shifting have been a focus in low- and middle-income countries, and the effectiveness of task shifting has been proven in a range of medical fields, such as noncommunicable diseases.^[2] HIV/AIDS.^[3,4] contraceptive

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Informed consent was obtained from each respondent.

This study was conducted in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments and was approved by the institutional review board of the University of Tsukuba (No. 1346).

The authors have no conflicts of interest to disclose.

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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distribution,^[5] and primary care.^[6] In 2012, the WHO even published recommendations regarding task shifting within the area of maternal and newborn health care.^[7] Thus, task shifting is a valuable measure for the effective use of limited medical resources.

Internationally, working hours in Japan have generally been noted to be long,^[8] and the working hours of physicians are particularly long. In a comparison of professions, 42% of physicians who worked >60 hours per week also worked >200 days per year.^[9] The average across all professions was 12%, indicating that physicians had the longest working hours of all.^[9] Even among physicians, obstetrician–gynecologists (OB/GYNs) have the longest working hours. Some data state that 20.5% of OB/GYNs work >1920 hours overtime per year (an average of >80+ hours per week).^[10]

In 2016, the Ministry of Health, Labor, and Welfare established a “Study Group on Physician Work Style Reform,” and conducted an investigation into measures to promote reform in physicians’ work style; in 2018, it announced “urgent initiatives to reduce the working hours of physicians”.^[11] The proposal included initiatives, such as careful management of working hours, utilization of existing occupational health systems, and promotion of task shifting, to reduce the working hours of physicians.

Specifically, the promotion of task shifting involves the transfer of initial treatment examinations, explanation of test procedures and hospital admission procedures, medication explanation and guidance, blood draws, intravenous injections, securement of intravenous lines, placement of urethral catheters, completing medical records by proxy, and patient referral to other professionals. Although examination of the impact of task shifting promotion on care quality and working hours as well as the specification of tasks for which task shifting should be promoted (considering the characteristics of obstetrics and gynecology as a medical department) are necessary to reduce working hours of OB/GYNs in Japan, where overwork is becoming common, there is no such prior research available.

This research aimed to conduct a survey of OB/GYNs working in hospitals across Japan, with the aims of considering recommendations for medical policy by gathering opinions on the impact of task shifting promotion on care quality and working hours and identifying tasks for which task shifting should be promoted.

2. Methods

2.1. Participants

This study included 893 hospitals (10.7% of all hospitals) listed in the Bed Function Reporting System^[12] that had at least 1 infant delivery in July 2017. In February 2019, survey cooperation requests were sent to physicians or the head of obstetrics and gynecology at 893 hospitals.

2.2. Data collection

A web-based survey was conducted. First, respondent attributes (sex, age, type of medical institution employed at, and regional characteristics) were collected. Age was classified into 5 categories as follows: <30 years, 30 to 39 years, 40 to 49 years, 50 to 59 years, and ≥60 years. There were 6 categories for the type of medical institution employed at as follows: national (excluding national universities), public, local government,

national university, private university, and private sector (excluding private universities). In Japan, 344 secondary medical areas were classified into 3 categories based on the combination of population size and population density in 2016: the first group (urban), second group (intermediate), and third group (rural).

Then, the implementation status of individual task shifting items and agreement or disagreement with their implementation (already task shifting, should use task shifting in the future, should not use task shifting in the future, neither) were evaluated. The Ministry of Health, Labor, and Welfare “urgent initiatives to reduce the working hours of physicians” was used as a guide regarding individual task shifting items not related to obstetrics and gynecology.^[11] Moreover, obstetrics and gynecology-specific items were written in with input from members of the Medical Reform Committee of the Japan Society for Obstetrics and Gynecology, of which the author is a member.

2.3. Patient and public involvement

Patients or the public were not involved in the design, or conduct, or reporting, or dissemination plans of our research

2.4. Statistical analysis

A multivariate logistic regression analysis was conducted, with OB/GYNs who answered that task shifting was rarely used at their place of employment as the outcome variable and the physician attributes (sex, age, type of medical institution employed at, and regional characteristics) designated as predictor variables. Additionally, specific characteristics of OB/GYNs employed at hospitals where task shifting was hardly progressing were analyzed. As an additional analysis, we considered the background and future direction for extracted task shifting initiatives, for which opinions were divided according to the attributes of the task shifting respondents. Furthermore, the impact of task shifting promotion on the quality of care (improved greatly, somewhat improved, somewhat decreased, decreased greatly, or unknown) and the number of hours reducible per day (<1 hour; >1 hour, but <2 hours; >2 hours, but <3 hours, >3 hours, but <4 hours, and >4 hours) were assessed.

For the statistical analyses, *P*-values (two-tailed) <.05 were considered statistically significant. STATA 15.1 (STATA Corp.) was used to perform all statistical analyses.

2.5. Ethics statements

This study was contacted in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments and was approved by the Institutional Review Board of the University of Tsukuba (No. 1346). Informed consent was obtained from each respondent.

3. Results

The questionnaire was sent to 893 hospitals, with valid responses received from 343 hospitals and 919 OB/GYNs (response rate, 38%). The 919 OB/GYNs who responded correspond to 13.8% of the 6656 OB/GYNs accounted for in the Ministry of Health, Labor and Welfare 2016 Survey of Physicians, Dentists, and Pharmacists.^[13] OB/GYNs’ sex, age, type of medical institution employed at, and regional characteristics are presented in Table 1.

Table 1
Characteristics of participants.

Total of participants, n	919	
% of all hospital OB/GYNs		13.8%
Sex, n, %		
Male	460	50.1%
Female	459	49.9%
Age, n, %		
<30	77	8.4%
30–39	390	42.4%
40–49	225	24.5%
50–59	158	17.2%
≥60	69	7.5%
Institution, n, %		
National	55	6.0%
Public	146	15.9%
Local association	174	18.9%
National university	281	30.6%
Private university	77	8.4%
Private	185	20.1%
Area, n, %		
Urban	416	45.3%
Intermediate	456	49.6%
Rural	47	5.1%

OB/GYN = obstetrician–gynecologist.

As indicated in Figure 1, when asked about task shifting progress status, 3.4% of OB/GYNs answered “progressing well”, 42.4% “progressing slightly”, 15.8% “not progressing much”, and 34.6% “hardly any progress”. As indicated in Table 2, the analysis of OB/GYNs who responded that task shifting is progressing showed that the only significant correlation was observed between task shifting progression and the type of medical institution. The odds ratio was significantly high for national university hospitals, as a standard for national hospitals, at 3.54 (95% confidence interval: 1.67–7.51, $P < .00$), and that for private university hospitals was 5.33 (95% confidence interval: 2.33–12.18, $P < .00$). Agreement and disagreement regarding task shifting status for individual task shifting items are shown in Table 3.

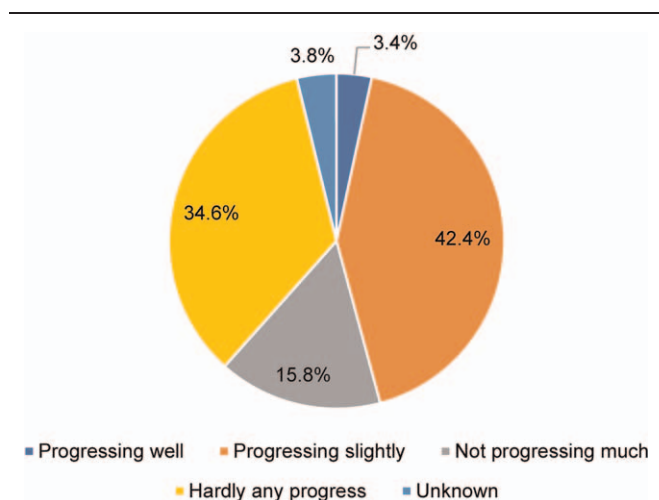


Figure 1. Progress status of task shifting at the hospital where respondents work.

Table 2
Association between task shifting and physician characteristics.

	OR	95%CI	P-value
Sex			
Male	Reference		
Female	0.88	0.65–1.18	.39
Age			
<30	Reference		
30–39	1.06	0.62–1.81	.84
40–49	1.06	0.60–1.87	.85
50–59	0.85	0.46–1.58	.61
≥60	1.01	0.49–2.09	.98
Institution			
National	Reference		
Public	1.63	0.78–3.42	.20
Local association	2.13	0.99–4.61	.06
National university	3.54	1.67–7.51	.00
Private university	5.33	2.33–12.18	.00
Private	2.08	0.98–4.44	.06
Workplace			
Urban	Reference		
Intermediate	0.69	0.36–1.33	.26
Rural	0.75	0.39–1.44	.38

CI = confidence interval, OR = odds ratio.

* $P < .05$.

The total percentage answering “already task shifting” or “should use task shifting in the future” was above 70% for all proxy input items, except for “completing electronic medical records”. There was a certain amount of task shifting progress indicated, with “already task shifting” percentages for “initial examination” and “writing up a diagnosis/referral” in excess of 30%. However, 47% of OB/GYNs considered that “electronic medical records” “should not use task shifting in the future.”

Regarding patient explanation and basic procedures, the total percentage answering “already task shifting” or “should use task shifting in the future” was above 70% for all items except for “use of online telehealth”. There was a certain amount of task shifting progress indicated, with “already task shifting” percentages for “responding to telephone inquiries from patients”, “transfer of patients (from surgery to the ward)”, collection of specimens for blood cultures”, and “securing contrast agent line” in excess of 30%. Additionally, 41% of OB/GYNs considered that “use of online telehealth” “should use task shifting in the future”, whereas 43% responded “neither”.

For OB/GYNs-specific procedures, “already task shifting” and “should use task shifting in the future” percentages were below 70% for all items. There was a certain amount of task shifting progress indicated, with “already task shifting” percentages above 40% for “internal examination during contractions/rupture of membranes” and “adjustment of labor-inducing drugs”. Moreover, >40% of respondents considered that the “internal examination during contractions/rupture of membranes” “should not use task shifting in the future”. The percentage of respondents answering, “should use task shifting in the future” for “initiating labor-inducing drugs for weak contractions” and “episiotomy incision and closure” exceeded 60%. Additionally, the percentage of respondents answering, “should not use task shifting in the future” regarding “fetal

Table 3
Opinion regarding task shifting status.

	Already task shifting	Should use task shifting in the future	Should not use task shifting in the future	Neither
1. Proxy input				
Initial examination	376	297	146	100
Test, measure and procedure orders	151	504	154	110
Admission/surgery appointment	113	605	126	75
Writing up a diagnosis/referral	334	437	83	65
Writing up an in-house summary	98	553	184	84
Filling out electronic medical records	33	313	432	141
Registration on clinical database (eg, cancer database)	144	666	39	70
2. Patient explanation and basic procedures				
Responding to telephone inquiries from patients	346	407	67	99
Explanations using pamphlets and visuals	144	609	71	95
Use of online telehealth	9	377	140	393
Transfer of patients (from surgery to the ward)	501	324	42	52
Collection of specimens for blood cultures	407	404	51	57
Securing contrast agent line	475	367	21	56
Securing chemotherapy treatment line	269	498	66	86
3. Specialist OB/GYN procedures				
Fetal echocardiogram at prenatal check-up	65	198	495	161
Fetal Screening	85	337	371	126
Prescription of routinely used medicines	34	216	568	101
Internal exam during contractions/rupture of membranes	381	102	371	65
Initiating labor inducing drugs for weak contractions	54	574	211	80
Adjustment of labor inducing drugs	400	219	223	77
Epistomy incision and closure	18	575	208	118
Bimanual uterine compression	31	435	295	158
1-mo postpartum check-up	29	381	378	131
4. OB/GYN surgical procedures				
Assisting with OB/GYN surgery	24	544	208	143
Management of anesthesia, breathing, and circulation during surgery	121	457	193	148
Management and removal of drains postsurgery	30	450	330	109
Postsurgery CV removal/PICC insertion	38	463	279	139
Postsurgery wound management (cleaning, suturing, thread removal)	29	398	365	127

CV=central venous, OB/GYN=obstetrician–gynecologist, PICC=peripherally inserted central catheter.

echocardiogram at prenatal check-up” and “prescription of routinely used medicines” was above 60%. Respondent percentages regarding “fetal screening”, “bimanual uterine compression”, and “1-month postpartum check-up” were

conflicted between “should use task shifting in the future” and “should not use task shifting in the future”.

For OB/GYNs surgical procedures, “already task shifting” and “should use task shifting in the future” percentages were below 70% for all items. Additionally, “should use task shifting in the future” was the highest response category for all items.

As shown in Figure 2, when asked about the impact of task shifting on quality of care, 12% of OB/GYNs answered “improved greatly”, 38% “improved somewhat”, and 32% “unchanged”. Conversely, 9% responded “declined somewhat” and 0% “declined greatly”.

As illustrated in Figure 3, responses of OB/GYNs regarding the number of working hours reducible due to task shifting indicated that 46% (the majority) answered “>1 hour, but <2 hours”, 24% “<1 hour”, 16% “>2 hours, but <3 hours”, 2% “>3 hours, but <4 hours”, and 2% “>4 hours”.

4. Discussion

In a survey of OB/GYNs working at delivery hospitals nationwide, 42.4% of respondents responded that task shifting was progressing slightly, while 34.6% answered that there was hardly any progress being made in task shifting. This opinion gap between OB/GYNs may be due to institutional differences in physician work reform progress and differences in OB/GYNs’

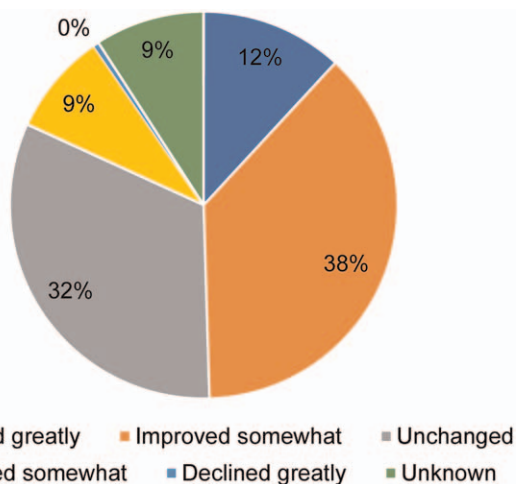


Figure 2. Impact on medical care when task shifting is promoted.

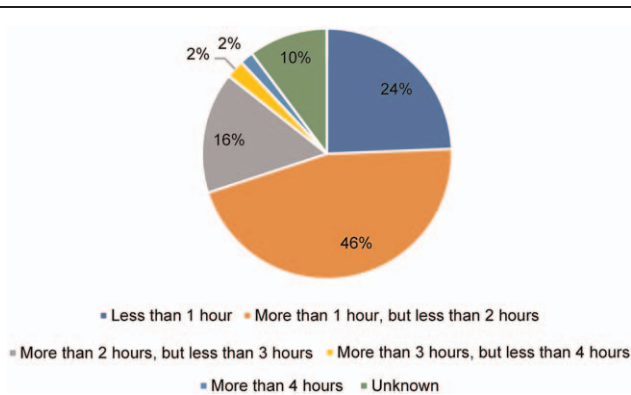


Figure 3. Number of working hours reducible due to task shifting.

opinions regarding the extent to which task shifting should be used in their work.

No significant associations were noted in the characteristics, such as sex, age, or regional characteristics, of OB/GYNs who answered that there was no progress in task shifting. The only significant association was observed between task shifting progress and university hospitals; private university hospitals had a higher odds ratio than national university hospitals. Physicians working at university hospitals are characterized by their engagement in teaching, research, and clinical work; the majority of them are overworked, and, in some cases, physicians are working without remuneration, all of which highlights a poor working environment.^[14,15] Additionally, this study confirmed that OB/GYNs working at university hospitals believe that task shifting is not progressing in university hospitals and that the working environment is poor.

We considered the reasons behind the relatively large number of OB/GYNs who believed that task shifting is not progressing as well in private university hospitals compared to national university hospitals. A study by the Japanese Ministry of Education, Culture, Sports, Science, and Technology found a higher proportion of unpaid physicians at private university hospitals, which could lead to less task shifting due to unpaid physicians providing cheaper labor.^[16] The provision of appropriate compensation and promotion of task shifting in university hospitals is being planned as part of the physician work style reform promoted by the Ministry of Health, Labor, and Welfare. It is hoped that the working environment of physicians in Japanese university hospitals will improve in the future.^[17]

When asked about task shifting between physicians and nonphysicians, >50% of Japanese OB/GYNs responded “already task shifting” for only “transfer of patients (from surgery to the ward)” and “securing contrast agent line”, revealing a lack of task shifting progress. Even “proxy input” and “patient explanation and basic procedures” tended to have more task shifting progress than “OB/GYNs-specific procedures”. “Proxy input” and “patient explanation and basic procedures” were similarly clearly highlighted as task shifting targets in the 2018 Ministry of Health, Labor, and Welfare “urgent initiatives to reduce the working hours of physicians”, and it is expected that task shifting will continue to be further promoted in government-led physician work style reform.^[11] Meanwhile, almost half of the respondents were of the opinion that “Completing medical records” (proxy input) should not be performed via task shifting. Given that, in other countries, use of a proxy input system, where

administrative staff enter information into medical records from physicians’ verbal recordings, is common practice, the reasons, including opposition from physicians, preventing its implementation in Japan should be investigated.

Task shifting of individual obstetrics and gynecology items has been addressed by various initiatives not only in low- and middle-income countries but also in high-income countries, and its contribution to increasing the efficient utilization of medical resources has been noted.^[18–21] According to WHO task shifting recommendations in the area of maternal and newborn health care, items mentioned in the current research, “adjustment of labor-inducing drugs”, “bimanual uterine compression”, and “episiotomy incision and closure” should be task shifted from physicians to auxiliary nurse midwives. In this study, the percentage of “already task shifting” for “adjustment of labor-inducing drugs” was over 40%, indicating a certain level of task shifting progress. However, for “episiotomy incision and closure”, over 60% of respondents answered that “task shifting should be used in the future”, indicating substantial room for improvement. Moreover, there was conflict between proportions for “task shifting should be used in the future” and “task shifting should not be used in the future” regarding “bimanual uterine compression”. Items with high percentages of “task shifting should be used in the future” responses can be prioritized in the push for progress in task shifting.

More than half of OB/GYNs responded that task shifting would improve the quality of health care, while no more than 9% responded that it would not. Although it is necessary to avoid reduced quality of care due to task shifting, this study found that most OB/GYNs do not believe that task shifting reduces quality of care.

Overall, 46% of OB/GYNs thought that “>1 hour, but <2 hours” of work could be reducible due to task shifting, and 24% answered that it would be “<1 hour”. As mentioned previously, OB/GYNs working hours are said to be the longest of the departments, with reports that 20.5% work >80 hours per week on average.^[10] Therefore, even if task shifting reduces the number of working hours per day by 2, the working hours of these physicians still exceed the criteria for death by overwork.^[10] Hence, further work hour reduction measures are needed in addition to task shifting, such as consolidation of medical institutions dealing with deliveries.^[22]

This study has several limitations. First, the number of respondents in this study was limited to 13.8% of 6656 OB/GYNs within Japan; hence, it cannot be said to necessarily represent all Japanese OB/GYNs. The low response rate is attributable to overwork by OB/GYNs, and there could have been no room to answer the questionnaires. Since the response rate was low, it is necessary to consider selection bias. For example, as shown in Table 1, only 5.1% of participants came from rural areas. In the 2016 national survey,^[13] the percentage of obstetricians and gynecologists working in rural areas was 5.2%, which was almost the same as that in this study. Second, the response rate was quite low. Third, although this study surveyed OB/GYNs, it did not investigate the stance of midwives and medical administrative staff who are on the receiving end of task shifting; this information is desirable to increase uptake of task shifting. Lastly, this study has all limitations and risk of bias inherent to a questionnaire-based study.

To promote task shifting in obstetrical and gynecological care in Japan, it is necessary to continue promoting policy-based, institutional, and educational guidance, while considering the

will of midwives and medical administrative staff to whom the tasks are being shifted.

Author contributions

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