

Research paper

Improving Japanese Physicians' Gender-Role Attitudes: Career Education and Adjusted Work Systems

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What is known?

1. With the Japanese population aging and the number of Japanese physicians per 1,000 population well below other developed countries' average, but patient visits being two times higher, Japan needs its female physicians to practice medicine.
2. However, 70% of female physicians in Japan forgo promising careers because of difficulties in raising children and balancing family life and a career.
3. Traditional gender-role attitudes that 'females stay home and males go out and work' still prevail in clinical medicine. Early career education on such topics as overcoming the obstacles of pregnancy and child-rearing to the practice of medicine, how others overcome those obstacles, might help female physicians design their life's career, prevent turnover among them and enable men to be more active in the household.

What this paper adds:

1. Female physicians with no children, whose spouses' were 'non-working', who agreed on providing career education on life events to young physicians, and who graduated within the last 1–10 years showed greater openness toward improving gender-role attitudes in academic hospitals.
2. Male physicians who agreed with providing career education on life events to young physicians and who agreed with optimizing adequate work hours showed greater openness toward improving gender-role attitudes in academic hospitals.
3. Of all factors, providing career education on life events to young physicians was considered most effective in improving gender-role attitudes in the clinical field. Optimizing working hours could also help improve gender-role attitudes and overall workplace diversity in medical settings.

ABSTRACT

Background: Gender-role attribution is still prevalent in Japanese physicians' working environments. Indeed, 70% of female physicians forgo promising careers because of difficulties in raising children and balancing family life and a career. The proportion of male Japanese physicians taking paternity leave is only 2.6%, which is quite low. Female

physicians with children are sometimes compelled to do most of the child-rearing, no matter how much they wish to continue their careers. This situation often leads female physicians to reduce their total work and research hours and to work as part-timers. This study investigated factors related to openness towards improving gender-role attitudes in academic hospitals.

Methods: A cross-sectional, self-administered questionnaire with 34 items was distributed to 2,159 medical school alumni in 2011. The primary outcome measure was ‘openness towards improving gender-role attitudes in academic hospitals’.

Findings: Statistically significant relationships were identified using chi-square tests. A total of 484 responses were received: 71.6% of females and 55.3% of males approved improving ‘gender-role attitudes’ in academic hospitals. Logistic regression analysis showed that female physicians with no children (OR: 13.292, $p < 0.004$) showed greater openness towards improving gender-role attitudes in academic hospitals than those with children. Female physicians whose spouses were ‘non-working’ (OR: 26.710, $p < 0.035$) showed greater openness than those whose spouses were physicians or had other occupations. Female physicians who graduated within 1–10 years showed greater openness than those who graduated within 11–20 years (OR: 0.185, $p < 0.006$) and within

21–30 years (OR: 0.105, $p < 0.012$). Female physicians who agreed on providing career education on life events to young physicians (OR: 4.745, $p < 0.008$) showed greater openness than those who disagreed. Male physicians who agreed on providing career education on life events to young physicians (OR: 4.073, $p < 0.000$) showed greater openness than those who disagreed. Male physicians who agreed on optimizing adequate work hours (OR: 4.236, $p < 0.001$) showed greater openness than those who disagreed.

Conclusions: Of all factors, providing career education on life events to young physicians in academic hospitals was considered most effective in improving gender-role attitudes in the clinical field. Optimizing working hours could also help improve gender-role attitudes and overall workplace diversity in medical settings.

Keywords: gender-role attitudes, career education, workplace diversity

Background

As an occupation, being a physician requires high expertise and professionalism, based on each physician’s knowledge and skills. Therefore, in the discipline of medicine, there should be no gender disparities in physicians’ salaries or treatment (Tanebe K, 2008). However, studies have revealed gender differences in physicians’ pay (Jagsi R, 2012). Similarly, in Japanese medical settings, gender disparities are prevalent in the workplace. In a previous survey, 70% (N = 2,931) of female respondents reported that they had to forgo promising careers because of difficulties raising children and balancing family life and a career (Japan Medical Association Committee on Gender Equality, 2014). Japanese women’s work participation rate follows an ‘M-shaped curve’, indicating that during their 30s, a child-bearing age period, overall work participation decreases and then increases again near their 50s (Ramakrishnan A, 2014). This trend includes ‘M-shaped curve’ for female physicians. In addition, 70% of Japanese female physicians are married to male physicians (Kataoka H, 2012). Because physician-husbands also work long hours, asking them for sufficient support in household or child-rearing duties is difficult. Furthermore, the proportion of Japanese male physicians taking paternity leave is only 2.6% (N = 4,286) (Japan Medical Association Committee on Gender Equality, 2014). Therefore, female physicians with children are sometimes compelled to do most of the child-rearing, no matter how much they wish to continue their careers as physicians. In other words, traditional gender-role attitudes that ‘females stay home and males go out and work’ still prevails in clinical medicine. However, early career education on such topics as overcoming the obstacles of pregnancy and child-rearing to the practice of medicine, how others overcome those obstacles, organizational support systems available and how men can be supportive in the household and with child-rearing might help female physicians design their life’s career, prevent turnover among them and enable men to be more active in the household. This proposal is compatible with the current reform of the educational curriculum for undergraduate and graduate students, regulated by the Japanese Ministry of Education, Culture, Sports, Science and Technology, to implement career education in Japanese universities (Inagaki K, 2014).

Introduction

Because female physicians with children have time constraints, they are sometimes not able to work night shifts or to be charged with inpatient care. This situation might compel them to reduce their work and research hours, choose to work as part-timers or resign their positions; such actions might decrease overall career motivation and cause a loss of expertise. Practically, 15.6% (N = 20,792) of female physicians work full-time in regular employment, 36.4% (N = 1,286) work part-time in regular employment and 23.0% (N = 7051) work part-time in irregular employment (Japanese Ministry of Health, Labour and Welfare, 2010). That many female physicians choose to work part-time helps to explain the imbalance and inequality in working patterns among both female and male physicians.

Female physicians’ high turnover rate leads to an uneven distribution in specialties and a shortage in the absolute number of physicians. Those specialties with a high rate of female physicians, such as ophthalmology, dermatology, paediatrics and OBGYN, have suffered damage from their absence (Yoshida A, 2011). The Organisation for Economic Co-operation and Development (OECD) shows the average number of physicians per population of 1,000 people is 3.2; however, in Japan it is 2.3, much lower than that average (OECD Health Statistics, 2014). At the same time, the number of patient visits in Japan per capita is 13.2, two times higher than the average among other developed countries (The Statistics Portal, 2013). To respond adequately to high health-care demands, a higher number of physicians, including females, should be practising medicine. Indeed, uneven gender distribution eventually helps cause longer working hours and overwork among physicians; this requires optimization of their total work hours or work patterns. To improve gender-role attitudes in medical settings and changes in work systems, providing career education seems necessary. This will lead to greater overall diversity in clinical medicine, which is necessary because diversity is key to improving organizational performance, and patient and employee satisfaction (Victoria State Government, Australia, 2012).

This study aimed to investigate factors related to openness towards improving gender-role attitudes in academic hospitals through agreement towards providing career education and changing work systems. To the best of our knowledge, in Japan, factors of gender-role attitudes in the medical field have not yet been fully investigated. Identifying those factors could promote improvements in the clinical field's gender-role attitudes and workplace diversity.

Methods

Participants

From the alumni membership database of the Medical School of Tokyo Medical and Dental University (TMDU), Japan's only national university with a graduate school of medical and dental sciences, established in 1946, a sample of 2,159 individuals was assembled. 536 returned the questionnaire, and currently unemployed physicians ($N = 52$) were excluded from the study. Thus, study participants ($N=484$) were alumni (both female and male) who had graduated from the university during the previous 30 years and whose postal addresses were included in the TMDU medical school's database. Study participants were working as physicians—full-time ($N=295$), part-time ($N=67$), as residents ($N=20$), in private practices ($N=72$) and as graduate students ($N=30$).

For this study, the medical school alumni office's secretariat agreed to provide postal addresses. Each individual was sent a letter stating the study's purpose, a questionnaire to complete and a return envelope. Those who did not return the questionnaire within four weeks were sent a reminder by post to encourage a response. Participation was voluntary, and no incentive was provided.

Questionnaire

The questionnaire consisted of 34 items. These addressed 'openness towards improving gender-role attitudes in academic hospitals', 'openness towards providing career education to young physicians in academic hospitals' and 'openness towards changing work systems in academic hospitals' (Table 1).

Ethics

The ethical review board of TMDU approved the study, reference number 742.

Statistical analysis

Data were entered into an Excel database by a survey centre. Chi-square tests were performed to establish which demographic and other variables showed relationships with openness towards improving gender-role attitudes in academic hospitals. The level of statistical significance was set at 5%. On the basis of these chi-square test results, statistically significant variables were used as possible explanatory variables in logistic regression analysis, with 'openness towards improving gender-role attitudes' being dependent variables. Variables for regression were selected from possible explanatory variables by the forward selection method. Results are presented as odds ratios (OR) with 95% confidence intervals (95% CI). The Statistical Package for the Social Sciences Statistics Base and Regression 22.0 (IBM Japan, Ltd., Tokyo, Japan) was used for statistical analysis.

Results

By the end of February 2011, 536 questionnaires were received (a 24.8% response rate). Responses from males numbered 350 (65.3%) and from females 186 (34.7%).

Table 2 presents relationships between demographic characteristics and openness towards improving gender-role attitudes in academic hospitals. Of 484 participants, 71.6% of female physicians and 55.3% of male physicians agreed with improving gender-role attitudes in academic hospitals. Chi-square tests were performed for each demographic characteristic with 'openness towards improving gender-role attitudes in academic hospitals' showing no statistical significance for marital status, types of hospital, position, average weekly work hours, average number of night shifts per month, holding a specialist licence, or type of specialty. The variables that did show statistical significance were

Openness towards improving gender-role attitudes in academic hospitals:

- **Sex:** women showed greater openness towards improving gender-role attitudes than men in academic hospitals ($p < 0.001$).
- **Spouse's occupation:** Those whose spouse's occupation was 'physician' showed greater openness towards improving gender-role attitudes than 'non-working' spouses in academic hospitals ($p < 0.013$).
- **Not having children:** This was close to significant. Those with no children showed greater openness towards improving gender-role attitudes than those with children ($p < 0.059$) in academic hospitals.
- **Years after graduation:** This was close to significant. Those having graduated within 10 years showed greater openness than those having graduated more than 11–20 years and 21–30 years previously ($p < 0.059$).
- **Annual income:** Those earning more than 3 million Japanese yen showed greater openness than those earning below 3 million yen and above 20 million yen ($p < 0.005$).

Openness towards providing career education to young physicians in academic hospitals:

- **Career education on life events to young physicians in academic hospitals:** Those who agreed with providing career education on life events to young physicians in academic hospitals showed greater openness towards improving gender-role attitudes than those who disagreed ($p < 0.000$).
- **Career education on physician career paths of each specialty to young physicians in academic hospitals:** Those who agreed with providing career-path education for each specialty showed greater openness towards improving gender-role attitudes than those who disagreed ($p < 0.006$).

Openness towards changing work systems in academic hospitals:

- **Return-to-work training for female physicians after absence in academic hospitals:** Those who agreed with providing return-to-work training for female physicians after absence in academic hospitals showed greater

Table 1: Questionnaire items on gender-role attitudes in medical settings.

Objectives	Level of agreement with statements	Options for responses
Openness towards improving gender-role attitudes in academic hospitals	I agree that academic hospitals should improve gender-role attitudes.	1. Fully agree 2. Somewhat agree 3. Somewhat disagree 4. Fully disagree
Openness towards providing career education to young physicians in academic hospitals	I agree that academic hospitals should provide career development on life events to young physicians.	1. Fully satisfied 2. Somewhat satisfied 3. Somewhat unsatisfied 4. Completely unsatisfied
	I agree that academic hospitals should provide career education on career paths of each specialty to young physicians.	
	I agree that academic hospitals should provide return-to-work training for female physicians after absence.	
Openness towards changing work systems in academic hospitals	I agree that academic hospitals should optimize adequate work hours.	1. Fully satisfied 2. Somewhat satisfied 3. Somewhat unsatisfied 4. Completely unsatisfied
	I agree that academic hospitals should implement flexible work patterns.	
	I agree that academic hospitals should extend work-term appointments for childrearing.	
Demographic information	Gender Marital status Spouse's occupation Having Children Years after graduation Types of hospital Current position Average weekly work hours Average number of night shifts per month Annual income Licensed Specialist Specialty	

openness towards improving gender-role attitudes than those who disagreed ($p < 0.012$).

- **Optimizing adequate work hours in academic hospitals:** Those who agreed with optimizing adequate work hours showed greater openness in improving gender-role attitudes than those who disagreed ($p < 0.000$).
- **Implementing flexible work systems in academic hospitals:** Those who agreed with implementing flexible work systems showed greater openness towards improving gender-role attitudes than those who disagreed ($p < 0.001$).
- **Extending work-term appointments for child-rearing in academic hospitals:** Those who agreed with extending work-term appointments for child-rearing showed greater openness towards improving gender-role attitudes than those who disagreed ($p < 0.000$).

Sex, spouse's occupation, not having children, years after graduation, annual income, providing career education on life events, providing career education on career paths of each specialty, providing return-to-work training, optimizing adequate work hours, implementing flexible work systems and extending work-term appointments for child-rearing were statistically significant or near-significant variables for

'openness towards improving gender-role attitudes in academic hospitals'. Therefore, these variables were used in the logistic regression analysis (Table 3). Female physicians were 3.076 times more likely to show greater openness towards improving gender role attitude ($p < 0.000$) than male physicians. Physicians graduating within 1-10 years were 0.460 times more likely to show greater openness ($p < 0.012$) than those graduating within 11-20 years. Physicians 'Agreed to providing career education on life events to young physicians in academic hospitals' were 3.890 times more likely to show greater openness towards improving gender role attitude ($p < 0.000$) than those who disagreed. Physicians 'Agreed to optimize adequate work hours in academic hospitals' were 3.294 times more likely to show greater openness towards improving gender role attitudes ($p < 0.002$) than those who disagreed. Physicians 'Agreed to extend work-term appointments for child-rearing in academic hospitals' ($p < 0.044$) were 2.296 times more likely to show greater openness than those who disagreed (Table 3).

In order to see the difference between sex, logistic regression was performed stratified by sex, using the same independent variables (Table 4). Categorized by sex, the variables that did show statistical significance were the following:

Table 2: Demographic characteristics and openness towards improving gender-role attitudes of male and female physicians in academic hospitals.

Characteristic (N = 484)		N	%	<i>p</i> value (* < 0.05, ** < 0.01)	
Sex	Female	116 of 162	71.6	**0.001	
	Male	178 of 322	55.3		
Marital Status	Single	57 of 90	63.3	0.676	
	Married	227 of 375	60.5		
Spouse's Occupation (N = 395)	Divorced or widowed	10 of 19	52.6	*0.013	
	Physician	71 of 105	67.6		
	Non-Physician	99 of 155	63.9		
Having Children	Non-working	68 of 135	50.4	*0.059	
	Yes	191 of 330	57.9		
Years After Graduation	No	103 of 154	66.9	*0.059	
	1-10 years	87 of 146	59.6		
	11-20 years	122 of 182	67.0		
Type of hospital	21-30 years	85 of 156	54.5	0.167	
	Academic hospital	105 of 170	61.8		
	Non Academic hospital	145 of 229	63.3		
	Private practice	44 of 85	51.8		
Position	Graduate Student	19 of 30	63.3	0.281	
	Resident	10 of 20	50.0		
	Private clinician (self-employed)	37 of 72	51.4		
	Part time	45 of 67	67.2		
	Full time	183 of 295	62.0		
Average Weekly Work Hours (N = 481)	0-40	84 of 126	66.7	0.456	
	41-60	140 of 237	59.1		
	61-79	38 of 66	57.6		
	80 or more	30 of 52	57.7		
	Data Missing				3
	0	113 of 195	57.9		0.362
Average Number of Monthly Night Shift(s) (N = 465)	1-2	59 of 95	62.1	**0.005	
	3-4	66 of 116	56.9		
	5 or more	41 of 59	69.5		
	Data Missing				19
	Below 3	8 of 14	57.1		
Annual Income (in million yen) (N = 477)	3-4.9	21 of 32	65.6	0.996	
	5-9.9	85 of 123	69.1		
	10-14.9	90 of 143	62.9		
	15-19.9	57 of 93	61.3		
	20 or more	29 of 72	40.3		
Data Missing			7		
Licensed Specialist (N = 483)	Yes	222 of 366	60.7	0.996	
	No	71 of 117	60.7		
	Data Missing				1

Specialty (N = 482)	Internal medicine category	133 of 201	66.2	2	0.100
	Surgery category	46 of 87	52.9		
	Minor category	89 of 146	61.0		
	Other category	25 of 48	52.1		
Career education on life events to young physicians in academic hospitals (N = 482)	Data Missing				
	Agree	249 of 369	67.5		**0.000
	Non-agree	43 of 113	38.1		
Career education on career paths of each specialty to young physicians in academic hospitals (N = 480)	Data Missing	2			
	Agree	258 of 410	62.9		**0.006
	Non-Agree	32 of 70	45.7		
Return-to-work training for female physicians after absence in academic hospitals (N = 483)	Data Missing	4			
	Agree	273 of 437	62.5		*0.012
	Non-Agree	20 of 46	43.5		
Optimizing adequate work hours in academic hospitals (N = 482)	Data Missing	1			
	Agree	276 of 433	63.7		**0.000
	Non-Agree	16 of 49	32.7		
Implementing flexible work systems in academic hospitals	Data Missing	2			
	Agree	273 of 431	63.3		**0.001
	Non-Agree	21 of 53	39.6		
Extending work-term appointments for child rearing in academic hospitals (N = 481)	Data Missing	3			
	Agree	274 of 432	63.4		**0.000
	Non-Agree	18 of 49	36.7		

Table 3: Logistic regression analysis: openness towards improving gender-role attitudes in academic hospitals (N = 484).

Sex		OR	p value	95%CI	
		Male			
	Female	3.076	**0.000	1.740	5.437
	1-10 years		*0.020		
Years after graduation	11-20 years	0.460	*0.012	0.251	0.841
	21-30 years	0.835	0.554	0.460	1.516
Career education on life events to young physicians in academic hospitals	Non-Agree				
	Agree	3.890	**0.000	2.286	6.618
Optimizing adequate work hours in academic hospitals	Non-Agree				
	Agree	3.294	**0.002	1.542	7.037
Extending work-term appointments for child rearing in academic hospitals	Non-Agree				
	Agree	2.296	*0.044	1.023	5.151

For females:

- Not having children
- Spouse's occupation
- Years after graduation
- Openness towards providing career education on life events to young physicians

For males:

- Openness towards providing career education on life events to young physicians
- Openness towards optimizing adequate work hours

Among female physicians, those with no children were 13.292 times more likely to show ($p < 0.004$) greater openness towards improving gender-role attitudes than those with

children. Female physicians whose spouse's occupation was 'non-working' were 26.710 times more likely to show ($p < 0.035$) greater openness towards improving gender-role attitudes than those whose spouse's occupation was physician or other occupation. Female physicians who graduated within 1–10 years were 0.185 times more likely to show greater openness than those who graduated within 11–20 years ($p < 0.006$) and 0.105 times more likely to show greater openness than those who graduated within 21–30 years ($p < 0.012$). Female physicians who agreed with providing career education on life events to young physicians were 4.745 times more likely to ($p < 0.008$) show greater openness towards improving gender-role attitudes than those who disagreed.

Male physicians who agreed with providing career education

Table 4: Logistic regression analysis: openness towards improving gender-role attitude in academic hospitals, by sex.

		Female (N = 162)				Male (N = 322)			
		OR	<i>p</i> value	95%CI		OR	<i>p</i> value	95%CI	
Having Children	Yes					NA	NA	NA	NA
	No	13.292	**0.004	2.339	75.526	NA	NA	NA	NA
Spouse's Occupation	Physician		0.087			NA	NA	NA	NA
	Non-Physician	1.891	0.256	0.629	5.680	NA	NA	NA	NA
	Non-Working	26.710	*0.035	1.250	570.588	NA	NA	NA	NA
Years After Graduation	1-10 years		**0.006			NA	NA	NA	NA
	11-20 years	0.185	**0.006	0.055	0.620	NA	NA	NA	NA
	21-30 years	0.105	*0.012	0.018	0.609	NA	NA	NA	NA
Career education on life events to young physicians in academic hospitals	Non-Agree								
	Agree	4.745	**0.008	1.507	14.942	4.073	**0.000	2.210	7.504
Optimizing adequate work hours in academic hospitals	Non-Agree	NA	NA	NA	NA				
	Agree	NA	NA	NA	NA	4.236	**0.001	1.795	9.997

on life events to young physicians were 4.073 times more likely ($p < 0.000$) to show greater openness than those who disagreed. Male physicians who agreed with optimizing adequate work hours were 4.236 times more likely ($p < 0.001$) to show greater openness towards improving gender-role attitudes than those who disagreed (Table 4).

Discussion

Greater openness towards improving gender-role attitudes in academic hospitals was shown by female physicians. This situation is supported by the fact that the low number of female physicians has been a significant issue in Japanese clinical settings. Approximately 30% of students enrolled in Japanese medical schools are female, but this percentage decreases by the time they finish training; female physicians account for only 19.7% (total number of physicians: 303,268) of the medical workforce, and this percentage decreases with age (Arima, 2016). Furthermore, female physicians have reported that one cause of work stress was male-dominated society (Japan Medical Association Committee on Gender Equality, 2009). For women to continue their professional careers regardless of life events, a more gender-balanced work environment is necessary, and this might, in turn, decrease the degree of gender-role attitudes in clinical settings.

Greater openness towards improving gender-role attitudes was shown by physicians who graduated within 10 years than by those who graduated within 11–20 years and 21–30 years. After categorization by sex, this result was also found for female physicians. The previous study showed female physicians older than 40 were more likely to experience gender discrimination compared with younger women (Yasukawa, 2014). However in this study, female physicians in younger generations were more likely to show the openness towards improving gender role attitudes. In this study, female physicians graduating within 10 years mostly fall under early 30s, and graduating 11-20 years

mostly fall under late 30s-early 40s, and those graduating within 21-30 years mostly fall under late 40s-early 50s. Therefore in this study the age experiencing 'gender role attitudes' are much earlier than the previous study. This might be explained by the transition in the number of active female physicians. More female physicians in their 20s or early 30s, within 10 years after graduation, stay in clinical settings. However, the percentage of female physicians decreases as their age increases: those in their 40s account for 20.4%, and those in their 50s account for only 13.0% (Japanese Ministry of Health, Labour and Welfare, 2012). This might also be explained by a generation gap. Younger generations have yet to experience obstacles from multiple life roles—as a physician, a parent, a spouse and an individual. Those who are older, with abundant experience, might know that gender-role attitudes still remain in clinical settings, and improvement is not easy to achieve.

Among female physicians, those with no children showed greater openness towards improving gender-role attitudes than those with children. This might be explained because those with children experience real difficulty in child-rearing, as well as balancing family and work; in practice, these burdens are borne by females. As they know the reality of these difficulties, they might not 'dream' anymore of equal contribution by mothers and fathers in child-rearing. If male physicians commit to and participate in more housework and child-rearing, gender-role attitudes might change in households and workplaces.

Spouse's occupation showed greater openness towards improving gender-role attitudes among female physicians. Having a 'non-working spouse' showed greater openness, implying that female physicians' spouses do not work. In this regard, female physicians are central players in their household budgets, thus reversing 'standard gender-role attitudes'. Although it might seem extreme to some, if more female physicians start to be central players in household budgets, gender-role attitudes might improve.

Physicians agreeing to optimize adequate work hours showed greater openness towards improving gender-role attitudes. After categorization by sex, male physicians showed greater openness towards improving gender roles. This is explained by the fact that average weekly work hours for male physicians are longer than those for females: 67.0 hours and 63.6 hours, respectively (Japanese Ministry of Health, Labour and Welfare, 2006). In Japanese clinical practice, working long hours is common, and average weekly working hours are longer than in other developed countries. This negatively impacts their work–life balance (WLB) and also reduces the quality of clinical performance (Science Council of Japan, 2011). Physicians who work longer hours are likely to feel that the mindset that ‘men play the main role, and women play the assistant’s role’ should be improved. In turn, this might lead to adequate allocation of total work hours among men and women. Furthermore, organizational systems that optimize adequate working hours might result in greater job satisfaction, as well as helping to achieve good WLB. Measures for creating more WLB-friendly environments are also effective in establishing adequate work hours.

Physicians agreed with extending work-term appointments for child-rearing showed greater openness towards improving gender-role attitudes in academic hospitals. In Japanese work systems, physicians are appointed to a work-term at the beginning of their employment. This term is not usually extended, even for child-rearing, although doing so is at the discretion of each health organization. If a work-term appointment period is discontinued because of life events, it might result in the loss of one’s position and career. Therefore, Japanese female physicians might be compelled to decide to abandon their careers or choose not to have children. More organizations approving extensions of work-term appointments for life events would help both male and female physician-employees continue their careers, plan their future career paths and obtain support for balancing work and life.

Physicians who agreed with providing career education on life events to young physicians showed greater openness towards improving gender-role attitudes in academic hospitals. Even after categorization by sex, this was the only variable in which both males and females showed greater openness towards improving gender-role attitudes. The need of educational interventions has been proposed in the previous study, for promoting the continuation of professional career among female physicians in Japan (Nomura, 2015). However, the specific need of ‘providing career education on life events to young physicians to improve gender-role attitude in medical field has not been fully proposed yet. Providing career education on life events they will likely face, managing the balance between work and family and foreseeing priorities throughout their lifetimes are effective methods for designing their professional and personal lives. This might imply that both males and females struggle similarly in life events because of not knowing what potential hardships they face, since they were not educated. Providing sufficient information on the course of life at an early academic stage could help understanding between men and women and, consequently, improve gender-role attitudes in the workplace. In conjunction with reform of the educational curriculum for higher education in Japan, implementing career education on life events should be initiated in medical schools.

Conclusion

This study demonstrates the factors related to openness towards improving gender-role attitudes in academic hospitals through agreement towards providing career education and changing work systems. Among female physicians with no children, whose spouses’ were ‘non-working’, who agreed on providing career education on life events to young physicians, and who graduated within the last 1–10 years showed greater openness toward improving gender-role attitudes in academic hospitals. Among male physicians who agreed with providing career education on life events to young physicians and who agreed with optimizing adequate work hours showed greater openness toward improving gender-role attitudes in academic hospitals.

Of all factors, providing career education on life events to young physicians was considered most effective in improving gender-role attitudes in the clinical field. Identifying those factors could promote improvements in the clinical field’s gender-role attitudes and workplace diversity.

Limitations

All participants in this study were alumni of a single academic hospital; therefore, the study does not represent national data and could include some bias. To obtain greater validity, future studies should include graduates of other schools. The questionnaire was distributed only in paper form to home addresses of each alumnus; this might have contributed to the relatively low response rate (approximately 25%). As responses from non-respondents (nearly 75% of all participants) were not received, we had to accept that this was the best sample we could achieve in this study. To improve the response rate, future research should employ online questionnaires.

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CONFLICTS OF INTEREST

None

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