

Perspectives of female medical students and physicians on professional development in Japan

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Abstract

Introduction: Female physicians often interrupt their careers due to fulfilling family caregiving roles, with childbirth and child-rearing being significant reasons for temporary leave or resignation. The employment rate of female physicians in Japan shows an M-shaped curve, with a low proportion in leadership positions. Female medical students also have anxiety about balancing family and career. While support systems are recognized as necessary, female physicians' experiences and career development perceptions are underexplored. Therefore, this study investigates their career aspirations and challenges. **Methods:** This study conducted semi-structured interviews with eight fourth-year Japanese female medical students and nine Japanese female physicians with over nine years of clinical experience. Interview data were analyzed using thematic analysis. **Results:** Four main themes related to professional life emerged: work environment, marriage and childbirth, continuation of work, and career development approach. Female students expressed

concerns about inadequate support systems and balancing career and family. Female physicians, even with support, worried about burdening colleagues, and experienced gender bias. Both groups cited advanced maternal age as a concern and recognized career development barriers due to part-time work after childbirth. Female students desired to maintain work, while physicians struggled to regain skills and knowledge after extended leave. **Conclusions:** Female students harbor anxieties about balancing work and family. Integrating learning opportunities about female physicians' experiences into early stages of education is crucial. Establishing communities of practice for career development can address these issues—involving both male and female students and physicians. This study highlights the need for support systems and role models to enhance the career fulfillment of female medical students and physicians in Japan.

Keywords: Female physicians, Female medical students, Gender roles, Career support, Life events

Date submitted: 1-July-2024

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Introduction

Women tend to take on caregiving roles such as child-rearing and care of the elderly as gendered responsibilities. Given this situation, previous studies have internationally reported that female physicians inevitably interrupt their careers.¹⁻³ In addition to medicine, this issue is a worldwide common concern across various professions, such as dentistry,⁴ pharmacy,⁵ academia,⁶ and management in the hospitality industry.⁷ For example, in the UK, more female dental undergraduates than males intend to work part-time five years after qualifying due to childcare commitments. Similarly, in Japan, childbirth and child-rearing are considered major reasons for

Citation: Sudo H, Kojima S, Hayashi K, Hosoki S, Tanaka A, and Imafuku R. Perspectives of female medical students and physicians on professional development in Japan. *Educ Health* 2024;37:389-395

Online access: www.educationforhealthjournal.org

DOI: 10.62694/efh.2024.120

Published by The Network: Towards Unity for Health

temporary leave or resignation among female physicians.⁸ The employment rate of female physicians is characterized by an M-shaped curve, decreasing until 12 years after medical registration and, subsequently, gradually recovering.⁹ However, the proportion of female physicians in leadership positions remains low.¹⁰ Although there is recognition of the necessity for support systems that consider the working arrangements of female physicians with families,^{10, 11} their own experiences and perceptions of career development have not been fully explored from an insider perspective, which delves into the personal experiences and beliefs of a specific culture or society (i.e., an emic approach).

In this context, previous studies have reported that female medical students also experience anxiety about balancing family and work when considering future career paths.^{12, 13} However, the detailed investigation of how female medical students perceive their ideal career as a physician, and the issues related to potential future life events and work has not been conducted adequately. Their voices expressing anxiety and their visions for future career are fundamental to developing a career support approach in medical education. Therefore, this case study developed the following research questions:

- 1) What anxieties do Japanese female medical students experience when contemplating how their ideal career aspirations can be achieved within a specific institutional culture?
- 2) How do Japanese female physicians perceive their own experience in career development?

The findings regarding the actual experiences of career development among Japanese female physicians would be fundamental for the educational development aimed at helping female medical students clarify their vision of future careers.

Methods

This qualitative study adopted a case study methodology with an emphasis on gaining a deeper understanding of people's perceptions, beliefs, and values within a specific context.¹⁴ These aspects are difficult to reveal solely through statistical analysis in quantitative research.

Data collection was conducted in January and February, 2023. Using convenience sampling, this study selected eight fourth-year Japanese female medical students who participated in clinical clerkships. Additionally, this study purposively selected nine Japanese female physicians with over nine years of clinical experience, as well as experience in marriage and childbirth. Their clinical experiences range from nine to 23 years, and specialty areas included anesthesiology, cardiovascular surgery, emergency medicine, gastroenterology, obstetrics and gynecology, neurology, ophthalmology, otolaryngology, and pediatrics.

Written consent has been obtained from all

participants. HS, SK, AT, SH, and KH conducted semi-structured interviews with the medical students and physicians in person or online, which lasted 30–50 min each. The interviewers were second-year medical students at the time of data collection who received training in qualitative research and interviewing as part of their undergraduate research course in medical education. The main interview questions for medical students are about: the ideal image of a physician; future plans regarding marriage and childbirth; and concerns about their future career. For female physicians, the questions focused on work-life balance, support systems and difficulties encountered upon returning to work.

The interviews were audio-recorded and produced verbatim as transcripts. The excerpts of Japanese transcripts were translated into English by the first and last authors. During this process, private identifiers were replaced with anonymized data, such as S1 for students and P1 for physicians.

Reflexive thematic analysis in an inductive way was employed for qualitative data analysis.¹⁵ All the researchers (HS, SK, AT, SH, KH and RI) systematically reviewed the transcribed data. Then, HS, SK, AT, SH and KH individually performed initial coding to the data that were broken into small analytical units. All the researchers compared the results of individual initial coding and identified themes representing abstract concepts. After that, the researchers iteratively reviewed the themes to ensure that the interpretation was congruent with the data.

This study was approved by Gifu University Institutional Review Board (No.28-468). Confidentiality was assured for the content of their interviews regarding their career.

Results

This study identified four main themes regarding the anxieties about the careers of female medical students (Table 1) and the career development experiences of female physicians (Table 2): work environment, marriage and childbirth, continuation of work, and career development approach. In the following sections, this study illustrates each theme on the perceptions of the students and physicians regarding their careers.

Work environment

Female students expressed concerns that in

environments with few female physicians, they might not receive colleagues' understanding regarding taking maternity or childcare leave. Consequently, they were concerned about the establishment of sufficient support systems in terms of their careers and institutional support. On the other hand, female physicians, even in environments with many women and well-

established support systems, tended to worry about imposing a heavy burden on those providing support. Some attempted to resolve issues independently, without relying on others. Additionally, others had experienced gender bias in the past, leading to restricted future choices. Medical students, however, did not make any comments on gender bias. This might be because

Table 1: Anxieties about the career among medical students

Theme	Sub-theme	Quotations
Work environment	Support system	<i>It might be nice to have support both in terms of work-life balance and in terms of career (S7)</i>
	Understanding of colleagues	<i>It seems important to consider the work environment when choosing a workplace because I worry about if those around me could understand my situation when taking a day off. So, workplace and environment are important. (S5)</i>
	The number of female physicians	<i>If there are a lot of female physicians or if it's easy to take maternity or childcare leave, I would be attracted to that work environment. (S3)</i>
Marriage and childbirth	Struggles with career	<i>When observing physicians, I felt they were extremely busy, and I wonder if it's possible for them to manage major life events like marriage and childbirth during such busy periods. Also, if I miss that timing, I worry about potentially delaying childbirth to a later age. So, in this regard, I wonder if I'll be able to work as a doctor in the future. (S8)</i>
	Advanced maternal age	<i>When I think about my life as a woman, I feel like I'd like to give birth to a baby by the age of 30, sort of like, I want to have at least one by then. However, when I heard that if I pursue becoming a specialist, I'll need 2 years of initial training and 3 years of advanced training, so it's better not to have a child for about 5 years after graduating from the university. If it's like this, hmm, can I give birth by the age of 30? (S1)</i>
Continuation of work	Return to work	<i>Even if I give birth, I want to continue working. (...) because it might be quite common to think, "I don't want to waste the experience of studying so hard in medical school." (...) I would feel sad taking a year off for childcare and falling behind during that time. I need to work hard on childcare, which requires taking maternity leave, but I don't want to ruin my career because of the leave. (...) So, it might be nice to have support in terms of career development; that's something I might wish for. (S7)</i>
	Balancing childcare and work	<i>If I feel like I want to raise my child properly, then I have to dedicate a certain amount of time because otherwise, I would feel sorry for the child. Handling childcare alone is already tough, so I really admire people who manage to balance it all. That's why I worry about whether I can handle it efficiently because if I'm not good at managing time. It's definitely not good if childcare keeps me up at night and affects my work. So, I'm worried about whether I can strike a good balance between work and childcare. (S7)</i>
Career development approach	Struggles with assuming gender roles	<i>From a student's perspective, I think surgery might be a difficult field for women to balance with childcare because it would require managing physical demands and a significant time commitment. (S8)</i> <i>When I'd like to focus solely on childcare, there are options like working part-time in infant health check-ups or other temporary positions. I heard that such options are available in this situation, so I've considered that as one possibility. However, considering the high divorce rates these days, if I were to end up divorced and not have a workplace to return to, it would be quite difficult to develop my career. (S3)</i>
	Absence of role models	<i>When thinking about becoming a surgeon, I hesitated a bit because there aren't still many female surgeons in the field. So, I'm not sure how I can build my career in that field. (S2)</i>

Table 2: Actual experiences of career development among female physicians

Theme	Sub-theme	Quotations
Work environment	Support system	<i>Despite departments where many female doctors are working and the support system is established, it's still quite challenging for us (...) I don't think many people are explicitly saying, "That female doctor is going on maternity leave again, and it's going to increase our workload." However, as the number of (doctors taking maternity leave) increases, it's important to acknowledge any growing dissatisfaction among colleagues, so we also need to establish a system to address this concern... (P6: Otolaryngologist)</i> <i>I'm registered for sick child care, just in case. (...) When they're around one year old, if you leave them somewhere unfamiliar, they cry a lot. I feel hesitant about leaving them in childcare when they're unwell. Until now, we've managed by adjusting our work schedules or having grandparents come over to help out, so we've somehow been able to take care of them at home. (P5: Obstetrician and gynecologist)</i>
	Gender biases	<i>When I graduated, it was common to hear things like, "Such-and-such department isn't suitable for women," or, "Oh, really? Then let's choose another department," or even, "Let's go there anyway," when deciding on a department. It was also considered normal to hear questions like, "Why haven't you left work yet to get married?" (P4: Anesthesiologist)</i>
	Understanding colleagues	<i>I've always worried that I might be criticized if I take any more days off for childcare. (P6: Otolaryngologist)</i>
	The number of female physicians	<i>I've had moments of hesitation, wondering if it would be better to choose a department with more woman physicians if you consider marriage and childbirth in the future. (...) However, I feel like I don't necessarily have to give up from the start and go into a field that doesn't interest me much. (P1: Cardiovascular surgeon)</i> <i>Surprisingly, when I entered departments like surgery with predominantly male doctors, I found them to be supportive, and there wasn't that sense of competitiveness or fear of criticism. (P7: Pediatrician)</i>
Marriage and childbirth	Struggles with career	<i>After giving birth to my child and working part-time, I ended up here without really having a specialization. Without a specialization, I found it challenging to position myself, for example, in my current role at the university. It's a bit difficult to establish my position and it's a bit uncertain what to do next in terms of my career development. (P3: Ophthalmologist)</i> <i>Given the nature of obstetrics and gynecology, there are many instances where female patients express gratitude, and there are plenty of opportunities for female doctors to be appreciated. So, in the workplace, being a woman does feel like an advantage. Additionally, having experienced childbirth and childcare myself, I feel it adds depth to my work and becomes a strength. (P5: Obstetrician and gynecologist)</i>
	Advanced maternal age	<i>Once you're over 35 years old, it's natural to gradually start to worry more about having children. (P7: Pediatrician)</i>
Continuation of work	Return to work	<i>Some doctors are quite afraid of returning to work, and there are plenty who feel like, "I've been on leave for so long, I'm no longer capable," even though it's not the case at all. (P6: Otolaryngologist)</i> <i>It took me about a week to regain my sense of conducting examinations. I felt a sense of unfamiliarity, like, "Is this how it's supposed to be?" (P3: Ophthalmologist)</i>
	Balancing childcare and work	<i>I wish I could have some time to study when I get back home, but that's just not possible, huh? Because I have small children, once I'm home, I can't do anything else. I really feel like I need to find time to study while I'm at work. (P7: Pediatrician)</i> <i>Ultimately, at different stages of life, the balance between focusing on work and prioritizing children and family naturally varies. I believe I've chosen what I wanted to do at each moment. I feel like people around me have allowed me to choose and give support, so I'm truly satisfied with my life. I'm 100 percent content. (P3: Ophthalmologist)</i>
Career development approach	Importance of choosing a medical specialty of interest	<i>I absolutely believe that my current career path was the right choice for me. While I think marriage and childbirth are important, don't you still have to live your life as yourself for decades? With roles as both a mother and a wife, work often forms the foundation of one's personal journey. Sometimes, if you choose work with a focus on prioritizing your roles as wife or mother, the work can become burdensome or feel like an obligation. But when you're doing the work you truly want to do, as a wife and a mother, you can enjoy it as well, and it becomes enjoyable as part of your professional identity too. (P5: Obstetrician and gynecologist)</i> <i>I participated in clinical clerkship while thinking what aspects were important to me when I was a medical student. In choosing a medical specialty, I gradually eliminated them one by one until only two were left, and then finally one. Ultimately, I believe that if it's not something I enjoy, I won't be able to sustain working there. So, I chose the one that I truly felt passionate about. (P3: Ophthalmologist)</i>
	Absence of role models	<i>There are few female faculty members or female leaders in medical schools, so at our university, for example, there's only one female professor among around 50 male professors. In such a situation, it's difficult for women to advance in rank. Currently, women of my age, like myself, don't face many difficulties in just working. However, there might be concerns about future career development. As you move up, you gain more authority, making it easier to do what you want. But there might be anxieties about how far you can advance. Nonetheless, as long as I'm working now, I don't feel too troubled. (P1: Cardiovascular surgeon)</i>

they have not experienced or learned much about unconscious gender bias during their medical education.

Marriage and childbirth

Female students considered having children by the age of 30 to avoid advanced maternal age. However, they were also anxious about whether they could marry and have children during busy periods as physicians. Similarly, female physicians harbored concerns about advanced maternal age and faced various issues regarding their careers. For example, some mentioned that continuing to work part-time due to child-rearing made it difficult to acquire the expertise necessary for future career advancement, posing a barrier to career development.

Continuation of work

Female students expressed a desire to return to and maintain work after their leave. However, as they worried that the employment gaps such as childcare leave would pose barriers to career development, they also hoped for some support in their careers. Female physicians shared the opinion that the longer the breaks, such as childcare leave, the greater the anxiety and hesitation about returning to work. Some mentioned struggling to regain procedural skills and update knowledge after being away from work. With the support of people around them, they were able to balance work and childcare.

Career development approach

Female students tended to consider gender roles and life events such as childbirth and childcare when selecting a medical specialty. However, some expressed concerns about prioritizing family too much, leading to potential risks for their career as physicians. On the other hand, female physicians stressed the importance of selecting medical specialties based on their interests, because it would be difficult to continue in a field they did not enjoy. Regarding female physicians' career development, both female medical students and female physicians expressed concerns about the absence of role models.

Discussion and Conclusion

This case study explored the future perspectives of female medical students and the actual experiences of female physicians' career development in Japan. The students harbored some anxieties about the future, such as balancing childbirth, childcare, and their work. Since they were fourth-year students who had recently started clinical training, they had

limited opportunities to observe the actual working environment of female physicians. In other words, they were in the process of forming clear future images. Aoki *et al.*'s study targeting fifth and sixth-year students found that they were starting to consider more specific career plans.¹² Therefore, as suggested by Okamoto *et al.*,¹⁶ it is crucial to integrate learning opportunities of the career experiences of female physicians and the practical career support into early stages of their education. For example, given the fact that there was no comment on gender bias from medical students, gender bias and its impact on career development are essential issues to be discussed among students in medical education.

Female physicians experienced barriers regarding work-life balance after becoming physicians. Echoing Yamazaki *et al.*'s study,¹⁷ their own feelings of guilt, gender discrimination from male physicians, and a lack of understanding of pregnancy and childcare, were main challenges in work environment in this study. As shown in Table 2 (e.g., excerpts from P5 regarding "marriage and childbirth" and "career development approach"), this study revealed that female physicians who successfully balanced marriage, childbirth, childcare, and work believed they could attain a sense of fulfillment that male physicians may not achieve.

To alleviate the vague anxieties of the students and further enhance the fulfillment of the physicians, it is important to establish communities of practice for career development.¹ For students, this provides an opportunity to know various experiences and perspectives from female physicians, while it allows female physicians to share their fulfillment and struggles and also gain inspiration from students. Furthermore, it can serve as a platform to discuss issues of gender equality and a support system for both recipients and providers of support, involving male and female medical students and physicians.

This study is significant in that it discussed the perspectives of both female students and physicians on career development. This study has some limitations. Firstly, it should be noted that the sample size is too small to reflect differences among specialties. In particular, the perspectives of female generalists could not be explored. Secondly, the results were not generalizable due to the small number of participants in a specific context. Thus, for future research, based on the findings of this

study, quantitative investigations can be designed to generalize the results. Furthermore, it is worthwhile to investigate the career of female physicians who decided to leave their jobs, as this would provide valuable insights for developing a community of practice aimed at supporting female physicians' career development.

Acknowledgements

The authors would like to express their gratitude to the female medical students and physicians who shared their perspectives and experiences in career development.

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