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REPORT OF THE COMMITTEE

The work style and living condition survey of diabetologists and the expectations for the Japan Diabetes Society: results of questionnaires about the current state and the future prospect of their carrier in 2017

Keiko Naruse[1] · Atsuko Abiko[2] · Hitomi Nakayama[3] · Nobue Tanaka[4] · Kaori Ikeda[5] · Hitomi Imachi[6] · Emi Usigome[7] · Yutaka Umayahara[8] · Setsu Ota[9] · Yukiko Okada[10] · Noriko Kodani[11] · Noriko Takahashi[12] · Ai Terai[13] · Akinobu Nakamura[14] · Rumi Fujikawa[15] · Junnosuke Miura[4] · Emiko Morita[16] · Miyuki Yanagimachi[17] · Kojiro Ueki[18] on behalf of on behalf of the Japan Diabetes Society Committee to Promote Female Diabetologists

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Abstract

The Japan Diabetes Society's Committee to Promote Female Diabetologists conducted a questionnaire survey from May to June 2017 to investigate the work style and living situation of diabetologists. The survey targeted 5298 Board Certified Diabetologists (diabetologists), with answers obtained from 1566 diabetologists (male, $n = 1003$: females, $n = 563$). Ninety-four percent of the males and 72% of the females worked full time. Twenty-one percent of the male subjects and 7% of the female subjects were heads of clinical departments, and 23% of the male subjects and 13% of the female subjects were diabetes training instructors, showing that there were fewer women than men in both roles. Regarding the allocation of time per day, men spent 10.7 h working, while women spent 8.5 h working. Both men and women slept 6.3 h. Men spent 1.0 h on housework, while women spent 3.3 h on housework. Men spent 0.7 h on childcare and nursing care, while women, spent 2.8 h. Among diabetologists in the childrearing generation, men spent 1.4 h providing childcare and nursing care, while women spent 4.9 h, showing that women spent significantly more time on these tasks than men. To encourage female diabetologists to work more actively, to reduce overworking on the part of male diabetologists, and to enhance the careers of both men and women as diabetologists, we conclude it necessary to improve the workplace environment and for the Japan Diabetes Society to offer support.

Keywords Women diabetologists · Japan Diabetes Society · Work-life balance

Introduction

The Japan Diabetes Society established the Committee to Promote Female Diabetologists in 2012, presented the committee report "Proposal for Supporting Female Diabetologists" in the October 2014 issue of the Journal of the Japan Diabetes Society [2], and made several proposals to the society's Board of Directors. Thereafter, the society created a section titled "Approaches to Support Female Diabetologists" on its website and implemented projects, such as providing child care service at related conferences, and holding lecture meetings and symposia planned by the committee.

In 2015, a "Fact-finding Questionnaire Survey of Specialist physicians" [3] was conducted targeting female diabetologists. It revealed a delay in acquisition of the title of diabetes specialist and a lower percentage of child-rearing female physicians being qualified as clinical instructors. The working style is part-time for a high percentage of female diabetologists aged 36–40 years, and the most common reason for working part-time was "childcare". Moreover, at universities and hospitals, few female diabetologists assume administrative positions such as professor, hospital director, or vice-director.

This is the English version of the committee report published in 2019 [1] by the Committee to Promote Female Diabetologists of the Japan Diabetes Society.

✉ Atsuko Abiko
aabiko@asahikawa-med.ac.jp; aabiko@asahikawa-rch.gr.jp

Extended author information available on the last page of the article

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Female physicians account for more than 30% of the members of the Japan Diabetes Society, and further participation and career advancement by female diabetologists are considered necessary. At the same time, issues, including reform of working practices and overworking of physicians, are attracting attention, and the importance of work-life balance for both female and male physicians is becoming recognized. This committee conducted a questionnaire survey targeting all diabetologists to clarify the current state of working style and schedule of daily activities of diabetologists. In addition, the evaluation of past activities of this committee requests to the Japan Diabetes Society, and problems with gender equality were also investigated.

Methods for the questionnaire survey

- Subjects: 5298 Board Certified Diabetologists who are members of the Japan Diabetes Society registered on "My Page" (3718 males and 1580 females).
- Methods: a questionnaire was answered on the website using the questionnaire system on "My Page" consisting of closed- (single/multiple-choice) and open-ended questions.
- Content of the survey: Prepared by the Committee to Promote Female Diabetologists.
- Survey period: May 8-June 10, 2017.
- Results: after the secretariat of the Japan Diabetes Society excluded the members' names and membership numbers, the data were aggregated using Excel and analyzed by the Committee to Promote Female Diabetologists.
- Statistical analyses: statistical analyses were performed using IBM SPSS Statistic 21 software. The age categories, presence of a spouse, presence of children, presence of night shifts, and position at the workplace were compared between males and females by the chi-square test of independence. The number of children and time spent on activities of daily life were presented as the mean (median), the Kolmogrov-Smirnov test of normality was performed, and males and females were compared using the t-test or Mann–Whitney *U* test.

Results

1. Background of respondents

   Responses were obtained from 1566 members, with a response rate of 29.6%. They consisted of 1003 males (64.1%) and 563 females (35.9%), and this male/female ratio was close to that among diabetologists (7:3).

   The age distribution of the respondents is shown in Fig. 1a. Those in their 40 s comprised the largest group (544, 34.7%), followed by those in their 30 s (424, 27.1%), and those in their 50 s (359, 22.9%). Regarding the age distribution of male and female respondents, as shown in Fig. 1b, the percentage of females was 38% of those in their 30 s and 37% of those in their 40 s, and it decreased in older brackets ($p < 0.001$).

   Concerning spouses, 93% of males and 74% of females were married ($p < 0.001$). Concerning children, 85% of males and 69% of females had children ($p < 0.001$). The percentage of respondents with 2 or more children was 68% among males and 42% among females. The mean number of children (more than 4 was considered 4) was 1.8 (2.0) for males and 1.3 (1.0) for females, with a significant difference ($p < 0.001$).
2. Working place and form

   The respondents' working places are shown in Fig. 2a. General hospitals were the most common (674 respondents, 43.0%; 528 were at diabetic departments),

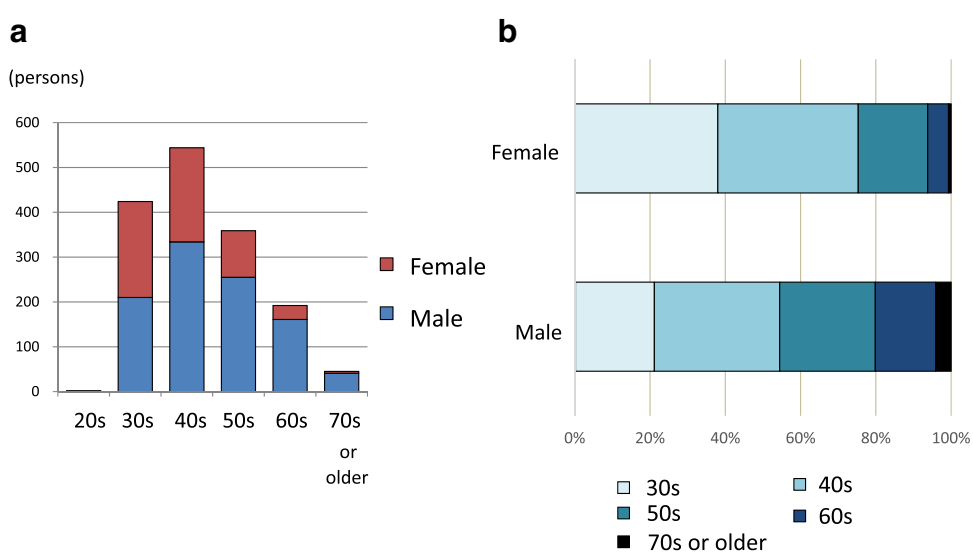

Fig. 1 Age distribution. (**a** all respondents, **b** by gender)

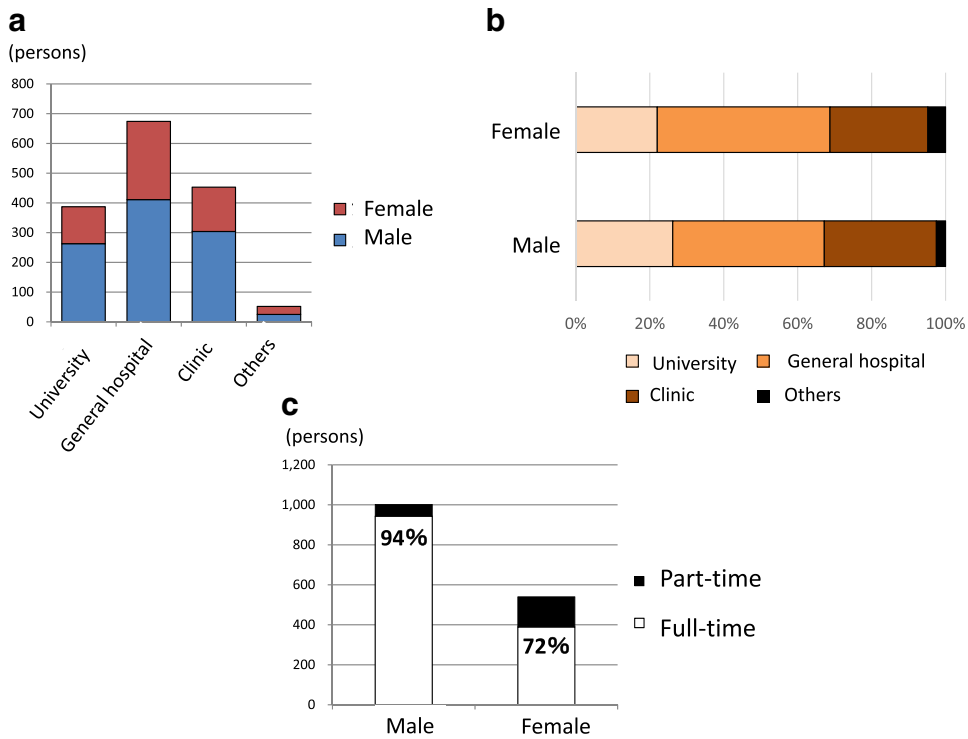

Fig. 2 Place and work arrangements (**a** place of work, **b** work arrangements)

followed by clinics (with and without beds; 453, 28.9%) and universities (387, 25.7%; 310 belonged to diabetic departments). Regarding the working place of male and female respondents, as shown in Fig. 2b, with not significant the percentage.

Regarding working form, 1332 respondents (86.4%) worked full-time, but 94% of males and 72% of females were full-time workers, with a significant difference ($p < 0.001$) (Fig. 2c).

Night shifts were assigned to 570 (36.4%), and 46% of males and 19% of females had night shifts, with a significant difference ($p < 0.001$). Of those who had night shifts, 412 answered questions about the frequency of night shifts, which was 2–3 times/month for 289 (70.1%), the largest proportion, 4–6 times/month for 99 (24.0%), 7–9 times/month for 17 (4.1%), and 10 or more times/month for 7 (1.7%), indicating that some diabetologists frequently worked night shifts.

3. Positions at the workplace and research grants

Concerning the positions at the workplace, as shown in Fig. 3a, 256 (16.1%) were directors of clinical or research departments, 302 (19.3%) were diabetologists certified as clinical instructors, and 714 (45.6%) were diabetologists not certified as clinical instructors. The percentage of directors of clinical departments was 21% among males and 7% among females, and the percentage of clinical instructors was 23% among males but 13% among females, with both positions occupied less frequently by females (Fig. 3b) ($p < 0.001$).

Regarding the application to research grants, 404 (25.8%) of all respondents "have applied and received a grant", 192 (12.3%) "have applied but failed to receive a grant or are currently applying for a grant", and 970 (61.9%), the majority, "have never applied". Of the 404 respondents working at universities or research organizations, 124 (31.0%) "have never applied", which distribution was 21% of males and a predominant 52% of female respondents. When they were asked about the reasons (multiple answers allowed) for not having applied, 44 respondents answered "lack of accomplishments", followed by 23 who answered "lack of time" and 17 who answered "inadequate research content". 10, who were all females, answered "childbirth/childcare leave". 9 answers as "age limit" and 11 as "problems with the workplace environment", suggesting that other factors interfered with the application.

4. Daily time allocations (Fig. 4)

Regarding the allocation of time in the daily life of diabetologists, the distribution of working time by gender is shown in Fig. 4a and 1171 (74.8%) or approximately three-fourths of them spent 8–12 h working. Among males, the working time was 10–12 h for 551 (54.9%) and 13 h or longer for 170 (16.9%), suggesting that many of them worked long hours. Among females, the working time was 8–10 h for 291 (51.7%), followed by 5 h or less for 81 (14.4%), with relatively many of them as short-time work. The mean working time was

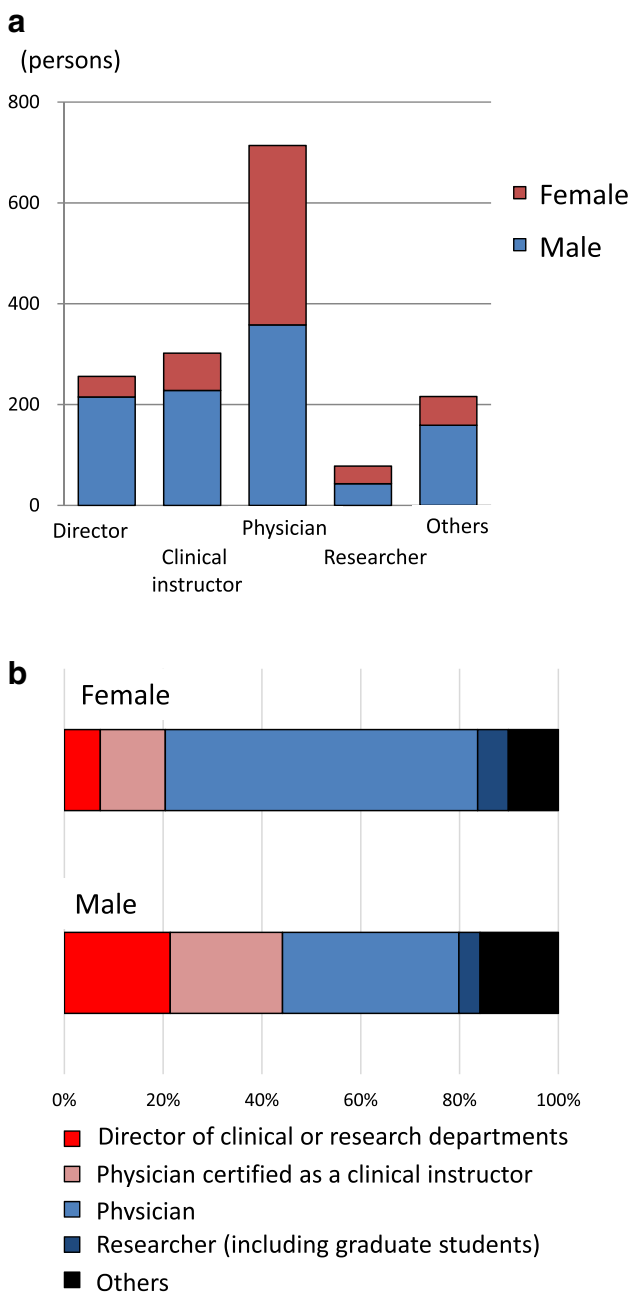

Fig. 3 Position at workplace (**a** all respondents, by gender)

10.7 (10.0) h for males and 8.5 (9.0) h for females, and was significantly longer for males ($p < 0.001$) (Fig. 4e).

The distribution of sleeping time is shown in Fig. 4b. The mean sleeping time was 6.3 (6.0) h and there was no gender difference ($p = 0.255$) (Fig. 4e).

The distribution of time spent on housework is shown in Fig. 4c. The mean time spent on housework was 1.0 (1.0) h for males and 3.3 (3.0) h for females, being significantly longer for females ($p < 0.001$) (Fig. 4e).

The distribution of time spent on childcare/nursing care is shown in Fig. 4d. The mean time for caregiving was 0.7 (0.0) h for males and 2.8 (2.0) h for females, being significantly longer for females ($p < 0.001$) (Fig. 4e).

When time allocations were compared among 712 respondents aged 30–49 years (425 males and 287 females) who were raising children during an important period for career advancement as a diabetologist, as shown in Fig. 4e, females spent approximately 3-times longer doing housework and childcare than males (housework: 1.1 (1.0) vs. 3.7 (3.0) h, childcare: 1.4 (1.0) vs. 4.9 (4.0) h, $p < 0.001$). Consequently, the time spent on work was shorter for females in this age bracket than for males (11.2 (11.0) vs. 7.5 (8.0) h, $p < 0.001$).

5. Appropriate number of female councilors

As of the end of 2016, females comprised 29.4% of all physicians certified as diabetologists by this society and 9.7% of the councilors of this society. Based on these figures, we asked the respondents about the appropriate number (percentage) of female councilors in this society. As shown in Fig. 5, the largest fraction, i.e., 409 members (26.1%), answered "26–30%", followed by 23.6% who answered "11–15%", 20.9% who answered "16–20%", 11.3% who answered "21–25%", and 11.0% who answered "30% or more". Therefore, 92.9% of all members considered it appropriate to increase the percentage of female councilors from the current level (9.7%). However, 111 members (7.1% consisting of 6.2% who answered "6–10%" and 0.9% who answered "0–5%") considered 10% or less, which is lower than the current level, to be appropriate. The reasons for the answers that supported low percentages included "The current percentage is considered appropriate", "the actual percentage of active female diabetologists is considered to be about 10%", and "it is not desirable to intentionally increase only female councilors".

When the 1445 respondents who selected percentages higher than the current level were asked what they considered to be necessary to increase the percentage of female councilors (multiple answers allowed), the most common answer, given by 790 (54.7%), was "supporting female physicians in career advancement", 637 (44.1%) answered "supporting female physicians during childbirth/childcare leave", and 541 (37.4%) answered "supporting female physicians to participate in academic conferences, etc.", followed by "reform of the organization and attitudes of the society" given by 469 (32.5%), "raising the age limit for society awards and research grants" given by 205 (14.2%), "setting quotas and special allocations for females" given by

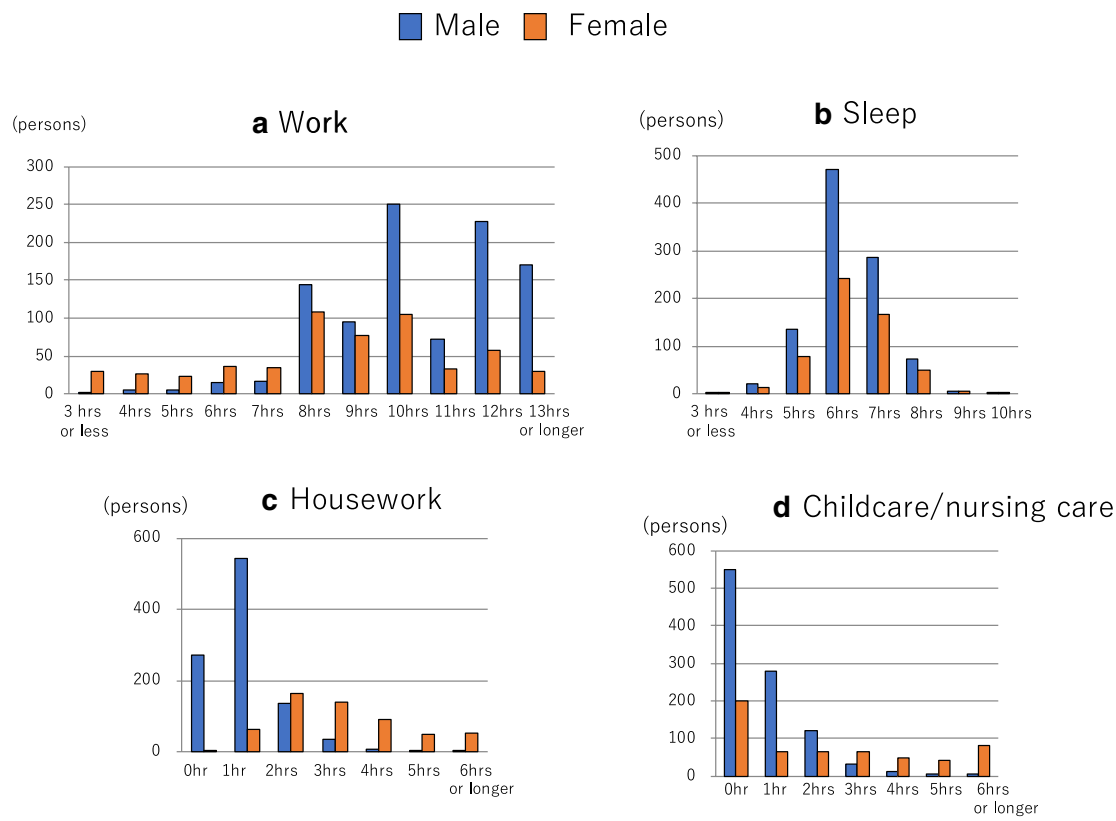

Fig. 4 Time allocation on weekdays (by gender) (**a** work, **b** sleep, **c** housework, **d** childcare/nursing care, **e** mean time allocations by gender)

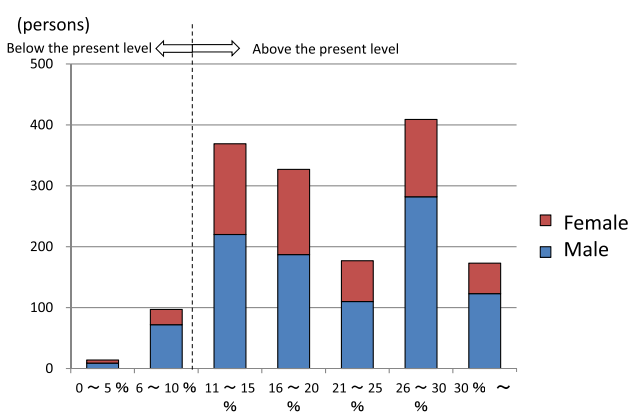

Fig. 5 Appropriate percentage of female councilors

144 (10.0%) and "establishment of an award for female diabetologists" given by 103 (7.1%).

6. Expectations of female diabetologists

The answers to the question about expectations of female diabetologists selected from 6 suggested answers are shown in Fig. 6a. The most common answer, given by 1438 members (91.8%), was "medical care for diabetes", followed by "diabetes education", given by 1138 (72.7%), suggesting relatively high expectations for clinical practice, in particular. Regarding research, 525 (33.5%) answered "basic research" and 765 (48.9%) answered "clinical research", indicating high expectations for clinical research. As for aspects of medical care in general, 609 (38.9%) answered "medical care of general internal medicine" and 898 (57.3%) answered "education of young physicians and medical staff". The answers given in the category of "others" included "The same are expected of male and female physicians equally (no distinction)" and "Female physicians are also expected to share night shifts".

7. Expectations for and requests to the Japan Diabetes Society

Figure 6b shows the multiple answers from 6 suggested answers to the question about measures necessary to increase the number of physicians who specialize in diabetes under the framework of the new internal medicine specialist qualification system. The majority, i.e., 908 respondents (58.0%), answered "preparation of a comfortable work environment", 730 (46.7%) answered "improvement of work-life balance", 679 (43.3%) answered "improvement of support for residents by the society", 674 (43.0%) answered "planning of diabetes training programs for students/residents",

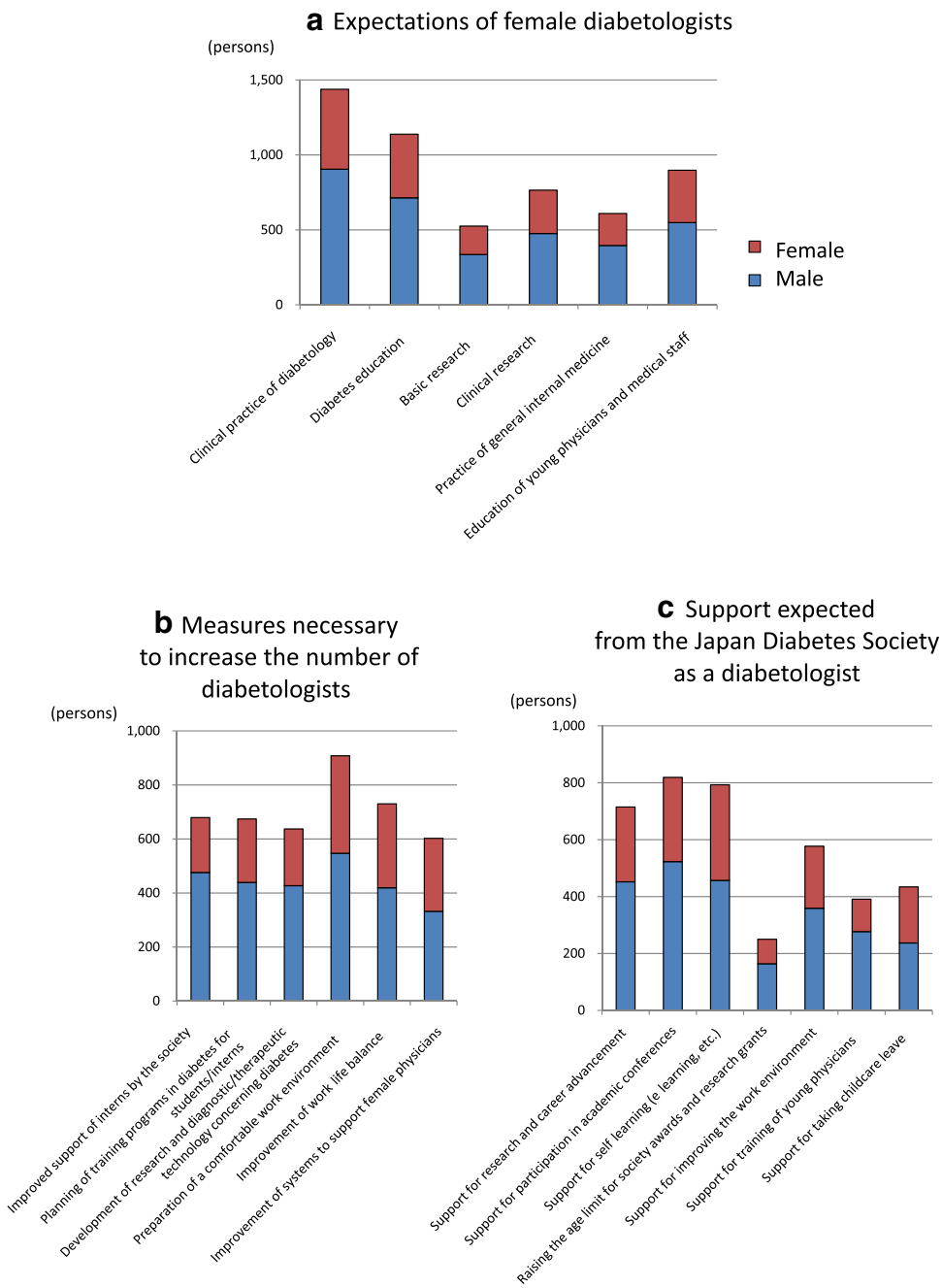

Fig. 6 Opinions about prospects for the future (**a** expectations of female diabetologists, **b** measures necessary to increase diabetologists, **c** support expected from the Japan Diabetes Society as a diabetologist)

637 (40.7%) answered "development of research and diagnostic/therapeutic technology concerning diabetes", 602 (38.4%) answered "improvement of systems to support female physicians"; therefore, all suggested answers were considered necessary. Answers given as "others" included "It is necessary to explicitly present the advantages of becoming a diabetologist" and "raising medical service fees in the field of diabetes care".

In addition, Fig. 6c shows the multiple answers from 7 suggested answers to the question of what is expected from the Japan Diabetes Society as diabetologists. Approximately half the respondents wished for support for self-development and career advancement, i.e., 819 (52.3%) requested "support for participation in academic conferences", 793 (50.6%) requested "support for self-learning (e-learning, etc.)", and 715 (45.7%) requested "support for research and career advancement". Moreover, 577 (35.8%) answered "support for improving the work environment", 434 (27.7%) answered "support for taking childcare leave", and

391 (25.0%) answered "support for training of young physicians". Some respondents requested "holding scientific conferences and lecture meetings on Sundays/national holidays", "mitigation of conditions for retaining specialist qualifications", and "resetting of annual membership fees and participation charges for scientific conferences".

8. Evaluation of activities of the "Committee to Promote Female Diabetologists" and the website "Actions to Support Female Diabetologists"

   When we asked the respondents about what they appreciated among the activities conducted since the establishment of the "Committee to Promote Female Diabetologists" in 2012 from 6 suggested answers, 960 (61.3%) answered "universally providing nursery services at the sites of scientific conferences and local meetings", followed by "symposium and workshops held in conjunction with scientific conferences and local meetings" selected by 652 (41.6%), "Web Kirari Female Doctors! (Web Introduce Radiant Female Doctors)" selected by 472 (30.1%), "Web News" selected by 386 (24.6%), "increases in the number of chairwomen at academic conferences and local meetings" selected by 379 (24.2%), and "Frontrunner" on the website selected by 195 (12.5%). However, 25 answered that they had never visited the website and knew little about the activities.

9. Free comments to the Society about the support of female diabetologists

   Free comments regarding support of female diabetologists were obtained from 205 respondents. They were diverse and included many demands for support for creating a comfortable work environment for males and females alike, appeals for action toward attitude reform by the workplace management, and expectations to increase the motivation of female physicians.

   Regarding the acquisition and renewal of the qualification as a specialist, there were opinions about regulations for full-time work and requests for extension of the covered period for submittable cases reports. Many respondents considered e-learning to be useful and some requested an increase in credit counts obtained by e-leaning.

   To facilitate participation in academic conferences, there were voices for consideration in arranging the site and time of academic conferences and setting the time of designated lectures during the daytime, raising the age limit and increasing the capacity of nursery services, and preparing a room for nursing. Hopes for improvements in the environment and lecture meetings at individual research institutes, the establishment of an award system for female researchers and instructors, mitigation of the age limit for society awards, and creation of a quota for supporting female researchers were also expressed.

   Regarding the assessment of committee activities, there were 24 positive and 13 negative opinions, and 38% and 46%, respectively, of them were presented by males. Negative opinions included concerns over increases in the burden on male and unmarried female physicians, adverse effects of the "female quota" on attitude reform, and the burden of acting as chairpersons felt by some females. However, a female physician voiced her sense of satisfaction by having acted as a chairperson.

   In addition to opinions about e-learning of educational lectures at academic conferences, there were also requests for internet delivery of symposium related to gender equality. Preparation of a return-to-work support curriculum and support after childcare leave was also desired.

10. Free comments about gender equality at the workplace

    Free comments about gender equality were obtained from 149 respondents. Opinions about the burden of male and single female physicians were voiced by 34 respondents, 79% of whom were males. Some complained of inequality in the assignment of night shifts, on-call shifts, temporary transfers, etc., reflecting a sense of burden on physicians due to chronic overworking. Some also suggested the necessity of reform of women's dependence on and sense of entitlement to favors they enjoy, and the rareness of female physicians who are capable of fulfilling leadership roles. On the other hand, many respondents demanded greater involvement of males in housework and childcare, indicating gaps in awareness between males and females.

    Among other comments, many requested supports for creation of a more comfortable work environment, including improvements in work efficiency, and some urged approaches to administrators, promotion of activities linked with other professions, and activities at local branches. The establishment of a system for objective assessment of actions and schemes of the society as a whole that facilitate participation of male physicians in childcare and caregiving was wanted.

Discussion

In this questionnaire survey, 1556 diabetologists responded and valuable opinions were obtained from more than 1000 male physicians. Similarly to the "Fact-finding questionnaire survey of specialist physicians" [3] in 2015 targeting female diabetologists, many female respondents were working part-time and few occupied administrative positions. In this survey, 72% of female physicians were working full-time.

According to the questionnaire survey about the work environment of female physicians by the Gender Equality Committee of the Japan Medical Association reported in 2009 [2] (30.7% of the respondents were physicians), 79% of the respondents worked full-time. In a similar survey conducted in 2017 [5] (30.3% of the respondents were physicians), 75% of the respondents worked full-time, and these results along with ours suggest that it remains difficult to increase the percentage of full-time female physicians. In the previous survey, [3] the most common reason for working part-time was "childcare" (53%), and in the "Questionnaire survey concerning improvement in the treatment of hospital obstetricians/gynecologists and work environment of female physicians", [5] by the Japan Society of Obstetrics and Gynecology, 50% of the respondents answered pregnancy/childcare as the most common cause of working part-time. The present survey reconfirmed the possibility that female physicians choose to work part-time or short hours during the period of childrearing of their own accord.

However, in the present survey, the percentage of respondents who had night shifts was relatively low. Young physicians who have not been qualified as diabetologists were not included in this survey, which may have resulted in the lower percentage of those who work night shifts than the percentage among all diabetologists, but because of the characteristics of diabetologists, emergency overtime responses may have been less frequent at some institutions.

By asking the daily time allocated to work, housework, childcare/nursing care, and sleep, we found that male physicians worked longer hours, but female physicians spent more time on housework and childcare, and female physicians rearing children, in particular, spent more time on childcare and housework. In the "Nationwide Survey of the Quality of Work and Life of Surgeons (2017)" by the Japan Surgical Society, 95% of male physicians answered that housework was borne primarily by the spouse, and 65% of female physicians answered that they were the primary bearers of housework [7]. Regardless of the specialty, female physicians were found to bear a heavy burden of housework, and time constraints were suggested to be a major factor that interferes with career advancement by female physicians. According to the 2017 Declining Birthrate White Paper by the Cabinet Office, [6] for average couples with children aged less than 6 years, the mean time spent on housework/childcare per day was 7 h and 41 min for wives, which was longer than in Western countries, but it was 1 h and 7 min, which was less than half the time spent by Western counterparts, for husbands, who spent only 39 min on childcare. Creation of an environment that facilitates males being involved in childcare is an urgent task in the future in Japan due to the declining birthrate and aging population. According to the present survey, both male and female diabetologists spent less time on housework/childcare than average Japanese people, suggesting that they performed housework more efficiently, more often obtained support by the family and babysitters, and used social services such as nursery schools. The total fertility rate in Japan was 1.45 in 2015 [6]. According to the present survey, it was 1.8 for males and 1.2 for females and was lower than the national average for females. The age-specific fertility rate in Japan was reported to peak at around age 30, [6] which overlaps with the age at which many diabetologists are trained for qualification as specialists, and this may deter them from having children or attempting career advancement.

Regarding research grants, which are a means for career advancement, there were fewer female applicants, and this was also related to the lack of accomplishments and time, as well as childcare. However, male physicians also mentioned a lack of accomplishments and time as reasons for not applying for research grants, and some male physicians were discouraged to apply for research grants by the burden of medical care for diabetes and night shifts.

The male/female ratio of the members of the Japan Diabetes Society is similar between all physicians and diabetologists, and, particularly, the number of young female diabetologists and specialists is increasing. As a measure to implement the opinions of women more in the Society, 92.6% of the respondents considered it appropriate to increase the number of female councilors. After the proposal by this committee, [2] the percentage of female councilors increased by 1.5% from 8.2% in 2013 during a 4-year period. With the increase in the percentage of female members, the number of female councilors is expected to increase naturally, but maintaining and further improving the present support system was suggested to be necessary. In particular, women-specific support for childbirth/childcare leave remains indispensable for the future, and requires understanding and cooperation by physicians in administrative positions for female physicians to continue their career and avoid increases in the burden on male physicians associated with their retirement. Scientific societies that adopt a quota system in appointing directors are increasing, but both pros and cons were observed in the introduction of a quota for female executives.

Regarding the assessment of the "Committee to Promote Female Diabetologists", many respondents appreciated the installation of a nursery service at the sites of related conferences. After the establishment of the committee, requests to provide nursery services were submitted to the chairpersons and coordinators of annual scientific conferences and local meetings, resulting in the availability of nursery services at all related conferences, including local branch meetings, in 2017. In addition, the committee opened a special section on the website of the Society and distributed information. Although this has been positively evaluated by female physicians, dissemination of information to male physicians

remains insufficient, and further evaluation of methods to deliver information to male and female physicians is considered necessary.

The Japan Diabetes Society has explicitly announced in the third term five-year strategic plan for the fight against diabetes (DREAMS) to "aim at a scientific society in which women shine". We will continue to improve the work-life balance of male and female diabetologists, and to support the career advancement of all physicians.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval This article does not contain any studies with human or animal subjects performed by any of the authors.

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Affiliations

Keiko Naruse[1] · Atsuko Abiko[2] · Hitomi Nakayama[3] · Nobue Tanaka[4] · Kaori Ikeda[5] · Hitomi Imachi[6] · Emi Usigome[7] · Yutaka Umayahara[8] · Setsu Ota[9] · Yukiko Okada[10] · Noriko Kodani[11] · Noriko Takahashi[12] · Ai Terai[13] · Akinobu Nakamura[14] · Rumi Fujikawa[15] · Junnosuke Miura[4] · Emiko Morita[16] · Miyuki Yanagimachi[17] · Kojiro Ueki[18] on behalf of on behalf of the Japan Diabetes Society Committee to Promote Female Diabetologists

1 Department of Internal Medicine, School of Dentistry, Aichi Gakuin University, Nagoya, Japan

2 Division of Metabolism and Biosystemic Science, Department of Medicine, Asahikawa Medical University, Midorigaoka 2-1-1-1, Asahikawa, Hokkaido 078-8510, Japan

3 Division of Endocrinology and Metabolism, Department of Medicine, Kurume University School of Medicine, Kurume, Japan

4 Diabetes Center, Tokyo Women's Medical University School of Medicine, Tokyo, Japan

5 Department of Diabetes, Endocrinology and Nutrition, Graduate School of Medicine, Kyoto University, Kyoto, Japan

6 Department of Endocrinology and Metabolism, Faculty of Medicine, Kagawa University, Kagawa, Japan

7 Department of Endocrinology and Metabolism, Kyoto Prefectural University of Medicine, Kyoto, Japan

8 Department of Diabetes and Endocrinology, Osaka General Medical Center, Osaka, Japan

9 Diabetes Center, Ohta-Nishinouti Hospital, Ohta General Hospital Foundation, Fukushima, Japan

10 Internal Medicine of Endocrinology and Metabolism, Kasugai Municipal Hospital, Kasugai, Japan

11 Department of Internal Medicine, Keio University School of Medicine, Tokyo, Japan

[12] Department of Physiology, Kitasato University School of Medicine, Sagamihara, Japan

[13] Department of Molecular Sciences on Diabetes, Department of Diabetes and Metabolic Diseases, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan

[14] Department of Rheumatology, Endocrinology and Nephrology, Faculty of Medicine and Graduate School of Medicine, Hokkaido University Graduate School of Medicine, Sapporo, Japan

[15] Grand Tower Medical Court, Hiroshima, Japan

[16] Hagiwara Central Hospital, Kitakyushu, Japan

[17] Endocrinology, Diabetes and Metabolism, Hirosaki University Hospital, Hirosaki, Japan

[18] Department of Molecular Diabetic Medicine, Diabetes Research Center, National Center for Global Health and Medicine, Tokyo, Japan