



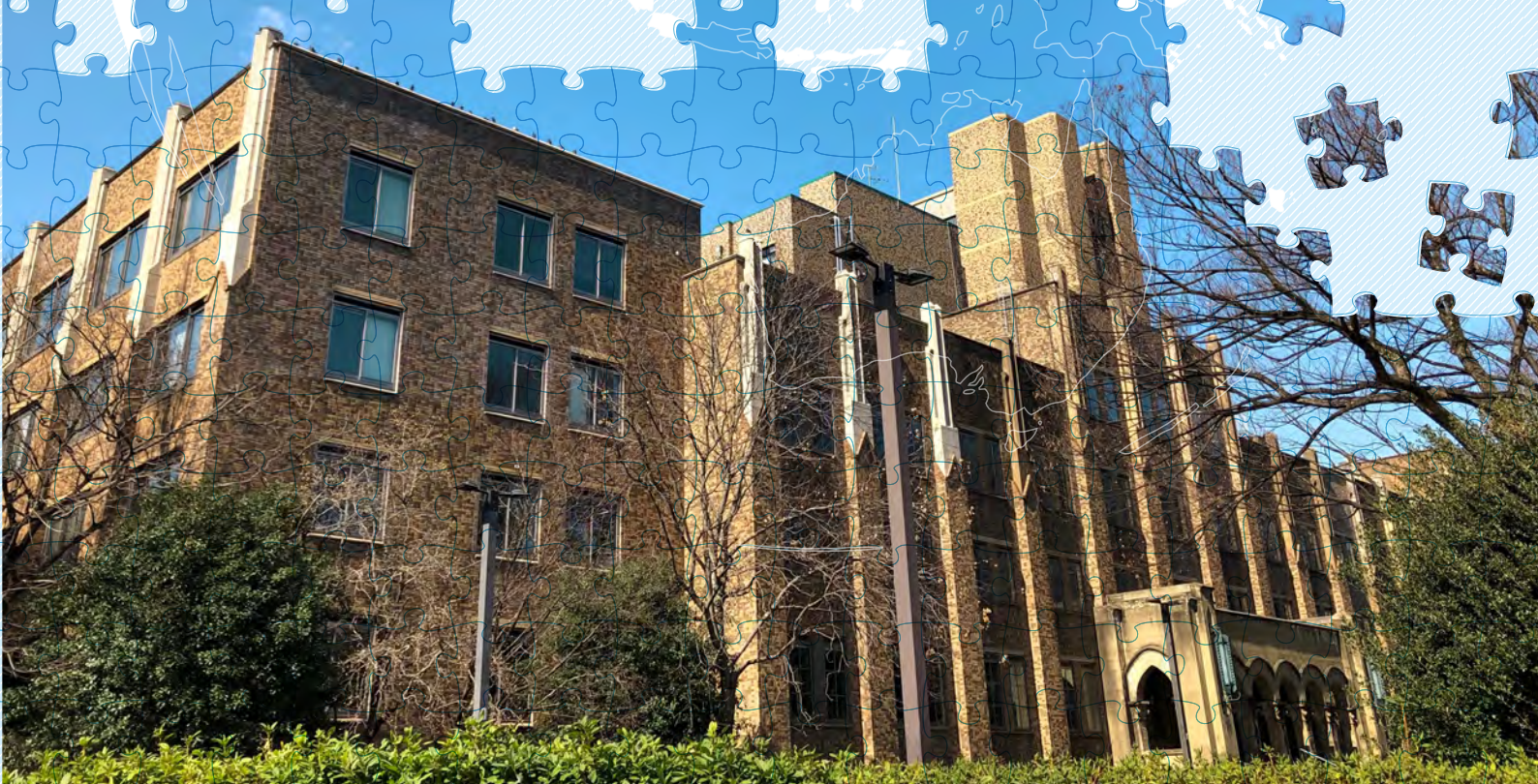
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Factors associated with ambition for promotion among female and male workers: a cross-sectional study in Japan



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**Factors associated with ambition for promotion among female and male workers: a
cross-sectional study in Japan**

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Abstract

The percentage of female managers is only 12.5% in Japan, far below the global average of 31.4%. This study aimed to investigate the low ambition for promotion (AFP) and its associated factors in female and male Japanese workers, focusing on gender differences. This cross-sectional survey evaluated the sense of coherence (SOC), mental health, physical health, health-related productivity loss, and household burden of the spouse. The data included 1257 women and 1206 men aged 20-39 who participated in our online survey in Japan for analysis. The high SOC, worse health conditions, and productivity loss were

negatively associated with low AFP, while the household burden of spouse was positively associated for both genders, and the association was more robust in women. Female workers with high AFP were in poorer health conditions than male workers.

Women's AFP was associated with their SOC, mental health, physical health, and spouse's household workload, and these factors need to be considered from various perspectives to increase promotion motivation and mitigate health risk concerns for female workers, hoping to be a manager.

Keywords: Career development, Gender inequality, Health-related productivity loss, Sense of coherence, Work-family conflict

Introduction

The percentage of females in a managerial position is only 12.5% in Japan ¹, far below the global average of 31.4% ² and lowest among 29 OECD (Organization for Economic Co-operation and Development) countries ³. The Japanese government decided to defer the deadline for achieving its numerical goal of increasing the percentage of women in leadership positions to approximately 30% by 2020. One of the reasons why there are few women in managerial positions is that women are not willing to become a manager; only 20-30% of women hoped to be a manager compared to 50-60% of men ⁴.

Of course, managerial positions are an individual choice and both the choice to become a manager and the choice not to become a manager should be equally respected. However, women are more likely to have reasons and possibilities to lose ambition for promotion (AFP) compared to men, even if they initially held the same AFP. Academic achievement and employment skills are similar, and consequently, AFP is expected to be the same for both genders. There is no significant difference in the university enrolment rate between women and men, 48.2% and 55.6%, respectively⁵. However, there is a significant difference in ambition to be a manager between genders with crucial reasons. A previous survey on section managers in a company with more than 300 employees indicated that the rate of employees who wanted to avoid promotion with the reason “a promotion will be difficult for balancing family and work” were 29.1% women and 16.2% men⁴. Another study

showed that the reasons women avoid being a manager were “It is too heavy a responsibility,” “It is difficult then to balance family and work,” “It is a heavy burden”⁶.

Previous studies showed factors related to AFP, such as confidence in job skills, leadership experiences, guidance and training abilities of the boss, and work-family balance support system of the workplace⁶⁻⁹. These workplace factors affect employees’ AFP. In contrast, though employees’ personal factors such as health condition and personality and family factors such as spouse and household burden are known to affect their work, how these factors affect employee’s AFP has not been previously studied. Supporting employees in the workplace and also their individual lives and family is essential for supporting women keep their motivation women.

We focused on three rationales concerning AFP. Firstly, individuals’ orientation to surroundings, another expression for a sense of coherence (SOC), is an essential factor when people talk about their confidence in their skill. In other words, SOC suggests how to perceive and interact with the world around them individually and socially. Secondly, health problems are a significant reason individuals fail to show complete competence and lead to a loss of confidence and motivation. Women face different health problems than men. For example, the work productivity loss due to menstrual symptoms were estimated to be 491 billion yen per year in Japan¹⁰. Thirdly, sharing household duty to ensure work-life balance is based on conversations, negotiations, and consensus with the spouse; thus, relationship and

spousal support are essential variable in preventing work-family conflict. However, the effects of an individual's orientation to surroundings (or SOC), health conditions, and spousal support emotionally and in household duties were not studied.

This study aimed to investigate the low AFP and its associated factors in female and male Japanese workers, focusing on gender differences. This knowledge can help the government and industry to remove the barriers to the employee's AFP with appropriate measures.

Materials and Methods

Participant

The cross-sectional online survey was conducted in September 2017 among 10,000 working individuals aged 20-69 who were randomly selected from 1,200,000 active members of the web research service. Of the 7,796 respondents, non-managerial employees aged 20-39 were analyzed in this study. In the analysis on family factor, of these non-managerial employees aged 20-39, participants who lived with the spouse and those who lived with children were examined, respectively.

Variables

Outcome variable: AFP

Participants were divided into two groups with the question “Do you want to become a manager?” Since the research question of this study was regarding “low” AFP, we focused on having a substantial avoidance to promotion; that is, people who answered "no." Therefore, individuals who answered “no” were put in “low AFP group” whereas individuals who answered “yes,” “neither yes nor no” to the “high AFP group.” We recognize that “neither yes nor no” people can be treated as either group, but this operative definition was required to separate a strong feeling of avoidance.

Personal factor

Sense of coherence (SOC)

We used the University of Tokyo Health Sociology version of the sense of coherence scale (SOC3-UTHS) to measure SOC¹¹. The SOC was proposed by Antonovsky in 1987 as a core concept of the salutogenic model. SOC consists of three confidence factors: comprehensibility, manageability, and meaningfulness¹². The orientation includes how individuals view, cope, and confront their worldview. Previous studies reported that people with high SOC show less absenteeism, a lower level of fatigue at work, higher job satisfaction, better mental health, and higher work motivation¹³. Therefore, we assumed SOC would affect how individuals evaluate their skills and assessed this by how they respond to ambition for being a manager.

SOC3-UTHS is originally a 7-point scale, ranging from 3-21. However, in this study, a 6-point scale was used; hence, SOC score ranged from 3-18.

Health condition and Health-related productivity loss

(1) Mental health (K6)

We used the Japanese version of The Kessler Psychological Distress Scale (K6), a screening scale for depression and anxiety disorders¹⁴. K6 score ranged from 0-24. Following the classification system in the Japanese version of the Comprehensive Survey of Living Conditions, this study classified those who scored ≥ 10 as "High probability of depression"

(2) Physical health

- Diseases peculiar to women

The following diseases were classified under "diseases peculiar to women": "pelvic floor dysfunction," "premenstrual syndrome," "dysmenorrhea," and "menstrual symptoms."

Female participants answered these with a "yes" or "no."

(3) Health-related productivity loss

- Usual job performance

The question "On a scale from 0 to 10 where 0 is the worst job performance anyone could have at your job and 10 is the performance of a top worker, how would you rate the usual performance of most workers in a job similar to yours?" in WHO Health and Work

Performance Questionnaire (short form) Japanese edition was used to score performance. The score ranged from 0-10.

- Menstrual related productivity and health problem-related productivity

Participants scored subjective work-productivity percentage (0-100%; 100%=usual productivity) in the premenstrual period and menstrual period. The median score was 80%, and participants were divided into three groups: <80%, ≥80%, and no answer. Similarly, participants scored work productivity percentage considering health concern in the past four weeks. This question was a part of the Japanese version of the Stanford presenteeism scale.

The Median was 75%, and participants were divided into three groups: <75%, ≥75%, and no health problem.

- Disturbance due to drowsiness during work

Participants answered with a “yes” or “no”.

Family factors

Spouse and work-family conflict

Work-family conflict was defined as “a form of inter-role conflict wherein the individual role pressures from work and family domains are mutually incompatible in some respect”¹⁵. This study focused mainly on the family domain strain-based work-family conflict and how the relationship dynamics with the spouse affects AFP.

- (1) Household burden of the spouse

Participants rated the percentage of the household burden their spouse shared (0-100%).

(2) Relationship with spouse

The scale was a 6-item scale and ranged from 6-24; a high score indicates a good relationship with the spouse¹⁶.

Demographic variables

Participants' age, family situation ("no children and no spouse," "living with a spouse," "living with children," and "living with spouse and children"), employment type ("regular employee" and "other" [representing part-time employee, temporary employee, self-employed, or freelancer], short working hours ("yes" or "no"), youngest child's age, educational attainment ("junior high school or high school," "vocational school or junior college," "university," or "graduate school"), household income ("<2.5 million yen," "2.5–4.5 million yen," "4.5–7.0 million yen," "7.0–10.0 million yen," and "≥10.0 million yen"), working hours per day, individual assignment ("yes" or "no"), housemate except children or spouse ("yes" or "no").

Theory/Calculation

We first conducted descriptive statistics. Subsequently, we performed multiple logistic regression analyses on variables that showed a significant difference in univariate analysis for each gender ($p < 0.1$).

To compare differences between genders, variables that showed significant differences solely in one gender were included in multiple logistic regression analyses for both genders. In the analysis for men, the menstrual-related question was removed. In the analysis for child-rearing individuals, the question of family structure was removed because of the unbalanced distribution of answers.

Multicollinearity was evaluated using Spearman's rank correlation coefficient and cross-tabulation; if the coefficients exceeded $|\rho| > 0.5$ or if the number of participants in any cell was 0 in cross-tabulation of two categorical variables, one of the variables was removed from the multiple logistic regression analysis.

The multiple logistic regression analysis of individual factors was conducted for women and men, and as a sub-analysis, on married women, married men, child-rearing women, and child-rearing men. Analysis of the family factor was conducted on married participants and child-rearing participants.

We conducted a univariate analysis of the relationship between each of the three SOC's component questions and AFP to see which components contributed the most. We conducted a sensitivity analysis to understand the effect of employment type since regular employment has a significant effect on AFP, although employment type (regular or other) was a controlled variable. Unless otherwise noted, two-tailed p values of <0.05 were

considered to indicate statistical significance. All data were analyzed using SAS University Edition for Windows (SAS Institute Inc.).

Results

Of the 7797 respondents, 2637 (1297 women and 1340 men) were aged between 20-39. Among them, 1257 women (96.9%) held non-managerial positions and 1206 (90.0%) in men. Descriptive statistics, univariate analysis, and analyses of individual factors were conducted on these 2463 respondents. Respondents who lived with their spouses were 438 women and 326 men, and who lived with their children were 277 women and 216 men.

Descriptive statistics and control variable

Descriptive statistics are reported in Table 1. Women showed lower AFP compared to men: 69.6% of women and 45.3% of men were in the 'low AFP' group. Non-regular employment was more prevalent in women (51.5%) than men (32.2%). The average working hours of regular employees were 8.1 in women and 8.9 in men and were 6.2 in women and 7.2 in men for other employment types.

The odds ratio indicates the degree of the contribution for low AFP; the small odds ratio indicates decreased risk of low AFP, that is, high AFP tendency. Women in this study took 72.9% of the household burden on average, while men took 30.0%. Moreover, the percentage of household burden taken by the spouse and the hours spent by the employee

Table 1

Comparison of the participants' characteristics by gender and ambition for promotion(AFP)

	Women			Men		
	n	High AFP group (%)	Low AFP group (%)	n	High AFP group (%)	Low AFP group (%)
All	1257	382 (30.4)	875 (69.6)	1206	660 (54.7)	546 (45.3)
Family situation						
Single	793	248 (31.3)	545 (68.7)	892	453 (50.8)	439 (49.2)
Spouse living alone, no children	9	3 (33.3)	6 (66.7)	14	6 (42.9)	8 (57.1)
Living with spouse, no children	178	44 (24.7)	134 (75.3)	84	60 (71.4)	24 (28.6)
No spouse, with children	26	11 (42.3)	15 (57.7)	4	0	4 (100)
No spouse, living with children and other family	18	6 (33.3)	12 (66.7)	2	1 (50)	1 (50)
Spouse living alone, living with children, no family living together	7	1 (14.3)	6 (85.7)	1	1 (100)	0 (0)
Spouse living alone, living with children, with family living together	2	2 (100)	0 (0)	3	2 (66.7)	1 (33.3)
Living with spouse and children	204	60 (29.4)	144 (70.6)	190	125 (65.8)	65 (34.2)
Living with parents' family	20	7 (35.0)	13 (65)	16	12 (75)	4 (25)
Type of work						
Fixed daytime work	824	274 (33.3)	550 (66.8)	819	495 (60.4)	324 (39.6)
Short working hours	190	40 (21.1)	150 (79.0)	61	18 (29.5)	43 (70.5)
Shift work including night work	60	22 (36.7)	38 (63.3)	126	59 (46.8)	67 (53.2)
Shift work not including night work	50	13 (26.0)	37 (74.0)	23	14 (60.9)	9 (39.1)
Flex time system	53	13 (24.5)	40 (75.5)	66	33 (50)	33 (50)
Discretionary work system	18	7 (38.9)	11 (61.1)	23	13 (56.5)	10 (43.5)
Other	62	13 (21)	49 (79.0)	88	28 (31.8)	60 (68.2)
Employment type						
Regular employee	610	245 (40.2)	365 (59.8)	818	523 (63.9)	295 (36.1)
Part-time employee	457	95 (20.8)	362 (79.2)	212	78 (36.8)	134 (63.2)
Temporary employee	104	21 (20.2)	8 (79.8)	47	19 (40.4)	28 (59.6)
Self-employed or freelancer	55	17 (30.9)	38 (69.1)	92	26 (28.3)	66 (71.7)
Other	31	4 (12.9)	27 (87.1)	37	14 (37.8)	23 (62.2)

Note. High AFP group means participants who answered “yes” or “yes nor no” to question “Do you want to become a manager?”. And low AFP group means participants who answered “no” to the question.

were not significantly correlated in married women (Pearson's coefficient was -0.06,

p=0.20).(data not shown in Table).

Table 2**Factors associated with low ambition for promotion(AFP) among participants**

Variables	Women, n=1127			Men, n=1206		
	Odds ratio	95%CI	<i>p</i>	Odds ratio	95%CI	<i>p</i>
Control variables						
Age	1.01	[0.99, 1.04]	0.32	1.05	[1.02, 1.08]	0.0002**
Family situation						
No children and No spouse	ref			ref		
Living with spouse (no children)	1.24	[0.84, 1.82]	0.28	0.50	[0.30, 0.84]	0.0082**
Living with children (no spouse)	0.60	[0.31, 1.15]	0.12	4.54	[0.52, 39.33]	0.17
Living with children and spouse	0.98	[0.67, 1.42]	0.90	0.68	[0.47, 0.99]	0.042**
Working form =regular (ref=the other)	0.45	[0.33, 0.62]	<0.0001**	0.39	[0.28, 0.53]	<0.0001**
Short working hours (ref=no)	1.13	[0.72, 1.74]	0.63	1.83	[0.97, 3.44]	0.061*
Household income						
<2.5 million yen	ref			ref		
2.5-4.5 million yen	0.71	[0.48, 1.05]	0.08*	0.88	[0.60, 1.30]	0.51
4.5-7.0 million yen	0.92	[0.60, 1.41]	0.69	0.86	[0.57, 1.30]	0.47
7.0-10 million yen	1.17	[0.72, 1.74]	0.53	0.94	[0.58, 1.51]	0.80
>10 million yen	0.70	[0.40, 1.23]	0.21	1.23	[0.70, 2.17]	0.48
Educational attainment						
Junior high or high school	ref			ref		
Vocational school or junior college	1.14	[0.78, 1.67]	0.50	1.00	[0.68, 1.48]	0.99
University	0.69	[0.48, 0.97]	0.03**	0.64	[0.47, 0.87]	0.0050**
Graduate school	0.43	[0.21, 0.87]	0.018**	0.48	[0.28, 0.82]	0.0072**
Working hours per day	1.00	[0.94, 1.07]	0.94	1.07	[1.01, 1.13]	0.027**
Sense of coherence	0.89	[0.85, 0.93]	<0.0001**	0.93	[0.89, 0.96]	<0.0001**
K6 score ≥10 (ref:<10)	0.68	[0.51, 0.92]	0.01**	0.85	[0.65, 1.12]	0.26
Diseases peculiar to women (ref=no)	0.56	[0.32, 0.99]	0.08*	,		
Usual job performance	0.95	[0.88, 1.02]	0.14	0.89	[0.83, 0.96]	0.0014**
Health problem related Work Productivity						
≥75%	ref					
<75%	0.65	[0.46, 0.92]	0.015**	1.02	[0.68, 1.51]	0.94
No health problem	1.02	[0.73, 1.43]	0.78	1.37	[1.00, 1.89]	0.05*
Productivity during menstruation						
≥80%	ref					
<80%	0.93	[0.69, 1.25]	0.62			
No answer	1.07	[0.67, 1.71]	0.78			
Drowsiness during work (ref =no)	0.70	[0.53, 0.92]	0.011**	0.88	[0.66, 1.17]	0.36

Note. Multiple logistic regression analysis was used to calculate the odds ratio, 95%CI and p-value. CI = confidence interval, ref=reference, * p<0.1. ** p<0.05

The result of multiple logistic regression analyses is reported in Table 2. Regular employment decreased the risk of low AFP (women: OR: 0.45, 95%CI: 0.33-0.62, men: OR: 0.39, 95%CI; 0.28-0.53). Similarly, higher educational attainment decreased the risk of low AFP.

A high SOC decreased the risk of low AFP in both genders (Women: OR: 0.89, 95%CI: 0.85-0.93, men: OR: 0.93, 95%CI: 0.89-0.96). Among the three confidence factors of SOC (comprehensibility, manageability, meaningfulness), only meaningfulness showed a significant effect in decreasing the risk of low AFP in univariate regression analysis (OR:0.88, 95%CI:0.79-0.98, $p=0.021$). In Table 2, a K6 high score was associated with decreased risk of low AFP only in women (OR: 0.68, 95%CI: 0.51-0.92); this was not significant for men. Disease peculiar to women was associated with decreased risk of low AFP (OR: 0.70, 95%CI: 0.53-0.92). A higher generalUsual job performance significantly decreased the odds of low AFP only in men (OR: 0.89, 95%CI: 0.83-0.96). In women, decreased risk of low AFP was observed in lower health problem-related productivity (OR: 0.65, 95%CI: 0.46-0.92) and drowsiness during work (OR: 0.56, 95%CI: 0.32-0.99). Hence, lesser health conditions and low health-related productivity were related to a higher AFP.

The results of multiple logistic regression analyses on respondents living with their spouses 438 women and 326 men showed that spousal household burden decreased the risk

of low AFP only in women living with spouses (OR: 0.99, 95%CI: 0.98-1.00). This was not significant in women living with children.

A similar tendency was observed in the sensitivity analyses of working forms.

Discussion

This study analysed 2463 non-managerial respondents aged 20-39 through an online survey. We found that low SOC, better health conditions, less productivity loss were associated with low AFP. Household burden taken by the spouse were related to high AFP in women. The previous research targeted only regular employees, but a significant number of women are employed as non-regular; hence, this study included both regular and non-regular employees.

Gender differences

Women's AFP was significantly associated with factors such as K6, work productivity loss, drowsiness during work, and spousal household burden. This implies that women with high ambitions for promotion were in more severe conditions than their men's counterparts. The previous study showed that longer working hours were required for women than for men when they want to be a manager¹⁷.

Similar to the previous study¹⁸, family type showed an inverse effect between genders; living with the spouse decreased AFP in women while significantly increased it

AFP in men. This result can be due to the traditional division within the couple; the husband adheres to work outside the home, and the wife takes the household burden. In a previous study¹⁹, women who agreed with the traditional gender division of labor had low motivation for promotion, whereas men showed an inverse tendency. Women in this study took 72.9% of the household burden on average, and this was almost the same (70.2%) for a full-time regular employee. In contrast, average working hours for men were longer than for women in all employment types. These findings suggest that gender role bias in the family remains even when women work full time.

Personal factors

SOC

The SOC, especially meaningfulness, significantly increases AFP in both genders. In the survey, the question for meaningfulness was, “I think some difficulties and problems in life are worth facing and working.” This may imply that people who find meaning in the challenges as a manager can keep their motivation high. Moreover, SOC has a protective effect on mental health from workplace stressors²⁰; therefore, coping abilities is an essential factor in ensuring confidence that they can manage stressful managerial duties. However, since SOC is affected by environmental factors, we cannot distinguish the cause of high AFP; SOC or the workplace environment, which also improves SOC.

Health conditions and Health-related productivity loss

As shown in the previous study ⁷, usual performance increased AFP, but the difference was significant only for men.

Adverse health conditions and health-related productivity loss were related to “high” AFP, and these associations were significant for women. It is unlikely that high AFP employees was unhealthy, and thus some causal reversal may exist. This suggests that individuals with high AFP had a high standard and demand for their job, and when health problem disturb their performance, they feel more dissatisfied and vulnerable to health problems. Another interpretation is that working hard to be a manager resulted in a heavy burden and bad health conditions. A previous research pointed out that women are in more severe conditions than men when aiming to be a manager ¹⁷. This may be why the relationship between bad health conditions and AFP was more significant in women.

Moreover, the difference in effect between gender can also be explained by the prevalence of health problems being higher in women; participants reporting “no health problems” was 34.7% women and 54.4% men. Prevalence of disease and symptoms peculiar to women was 4.9%, and if we exclude this factor, women still had a higher percentage of health problems.

Family factors

Spouse and work-family conflict

The household burden of spouse increased women’s AFP slightly and women held

more household burden than men on average. The percentage of the household burden of the spouse was not related to the hours the employee spent in household activities for this study. Considering this fact, higher spousal household burden percentage was considered helpful for women's careers mainly because it reduced the 'feeling' of being burdened. AFP Hence, a feeling of equality in household burden is essential.

In contrast, this was not significant for women who lived with children. As shown in a previous study, child-rearing working women had relatively higher ambitions for promotion⁹ because women with low ambition tend to quit their job after childbirth.

Practical implication

The SOC is related to high motivation for promotion. It affects the personal and the workplace environment. Notably, the socio-psychological characteristic of a workplace is reported to affect SOC²¹. Hence, the cause of high AFP is unclear; a high SOC or workplace conditions allow employees to have a high SOC. We required further research on SOC and AFP to clarify the same.

On the other hand, this study showed the health risk for women, especially those aiming to be a manager. Many women work despite their sickness; thus, their health problems should be considered. Highly motivated women can be more vulnerable to stress or health problems than others. Health problems and related productivity loss of women with high ambitions for promotion can also relate to the cost for productivity for the company other than

her well-being. Occupational health personnel should pay closer attention to these women. If not to increase female managers, this should ensure highly motivated female workers' wellness, protect them from absenteeism and presenteeism, and promote women's advancement.

Percentage of household burden of spouse were related to high AFP in women and was independent from the actual household chores duration. The relationship was weak and limited; however, further studies are required to focus on equality feeling in household and its association with career, and not only the actual burden. A qualitative study is required to conceptualize the reasons and examine how ambitions for promotion and spousal household burden are linked.

Limitation

First, this study was cross-sectional and cannot clarify a causal relationship. Therefore, we cannot distinguish between the effect of factors in this study and their original orientation towards their career. Further research is needed to confirm this based on panel data.

Second, statistical power was insufficient especially in analyzing people living with spouses or children.

Thirdly, a 6-point scale was used to measure SOC in this study; hence, SOC scores cannot be compared to other studies.

Finally, the problem of generalizability remains. Data used in this study showed some bias, a higher proportion of non-regular employees, and a high K6 score compared to the

Japanese national survey; 10.6% of respondents scored ≥ 10 in the national survey while 40.8% of respondents scored ≥ 10 in this survey. Moreover, employees who quit their jobs after childbirth were not included, and they may have a general low motivation, causing a bias. In a previous study¹⁹, the married female workers had almost twice higher motivation for promotion than unmarried female workers between the present and when they first began.

Conclusion

This study investigated the association between SOC, mental and physical health, health-related productivity loss, and spouse and AFP. Moreover, we also focused on gender differences. The SOC was positively associated with AFP, while health conditions, productivity, and household burden of spouses were negatively associated. These associations were significant in female workers. The result of the study emphasizes the importance of SOC, especially meaningfulness. Moreover, it is also important to pay attention to the risk of health problems for women who aim to be a manager. Results on the household burden of spouse suggest the potential for further research on equality feeling in household and its association with career. This will help remove the barriers to female employees' AFP. Moreover, it will help create a workplace where highly motivated women can work in good health.

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