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Current Status of Working Women's Health Action in the Northern Iwate Region

Wakako Yachi and Yuko Fukushima

Faculty of Nursing, Iwate Prefectural University

Abstract

In Japan, low participation rates in screening for female-specific diseases, such as breast, cervical, and uterine cancers, remain a pressing concern. Women's health action, which aims to improve women's health knowledge and behaviors, has proven effective in promoting cancer screening. Although peer support has demonstrated efficacy in improving women's health in urban contexts, few studies have examined how such approaches can be adapted and implemented in rural areas, particularly among working women in regions such as northern Iwate. This study aimed to clarify the current status of women's health action among working women in northern Iwate Prefecture and obtain insights for future health support initiatives. The sample comprised 54 women aged 20 and older, most of whom were between 50 and 69 years of age, employed in non-regular positions, postmenopausal, and had given birth. Screening rates for breast cancer, as well as cervical and uterine cancers, were approximately 70%, exceeding the national average. A statistically significant difference was observed in breast cancer screening rates between premenopausal and postmenopausal women. Additionally, cervical and uterine cancer screenings were significantly associated with childbirth experience. Participants demonstrated limited knowledge of cancer stages and etiology. However, intrinsic motivation for self- and family health management and self-efficacy were positively correlated with screening behavior. These findings suggested that screening uptake among working women in northern Iwate is influenced more by life stage, intrinsic motivation, and psychological factors than by knowledge alone, highlighting the need for tailored support strategies to address these dimensions.

Keywords : working women, women's health action, cancer screening, health promotion

Introduction

As Japan enters the era of 100-year lifespans, women's workstyles and life courses are becoming increasingly diverse. As the percentage of working women rises annually, systems that enable women to become financially independent and active in society are urgently needed (Cabinet Office, Government of Japan, 2022). In Japan, since the Act on the Promotion of Women's Active Engagement in Professional Life (Cabinet Office, Government of Japan, 2015), measures to support women have been deployed in various companies and local

municipalities. However, the response to health issues faced by working women remains inadequate.

Notably, women are exposed to the effects of estrogen throughout their lives. They experience physical and physiological changes in accordance with each life stage during menstruation, pregnancy, birth, menopause, and old age, and health issues may arise with these changes (Office on Women's Health, 2025). These health issues may directly impact women's ability to continue working, as well as their workplace performance. Numerous studies conducted in and outside Japan have investigated the

impact of menopausal and menstruation-related symptoms on women's occupational performance. For instance, Hashimoto et al. (2021) and Tochio (2024) demonstrated significant negative correlations between symptom severity and work performance or presenteeism among working women. Furthermore, Tochio (2024) revealed that workplace interventions, such as flexible scheduling and provision of health-related information, can attenuate the adverse effects of these symptoms on job performance. In contrast, Hardy et al. (2017) employed a qualitative approach to explore women's subjective experiences of menopausal symptoms in the workplace and their perspectives on the types of employer support that would be beneficial. Thus, health support measures provided by corporations and local communities are becoming increasingly important.

Furthermore, the low screening attendance rate for female-specific diseases, such as breast and cervical cancers, despite early detection and treatment significantly improving their prognosis, is an issue that requires attention. The Ministry of Health, Labour and Welfare (2022) reported that the breast cancer screening attendance rate in Japan is below 50%, with markedly low attendance rates among younger women aged 20-49 years. Interventions should not only establish official systems but also encourage health awareness and behavioral changes among women to improve cancer screening attendance rates.

Considering this situation, women's health action is garnering attention. In Japan, the Women's Health Action Executive Committee (2017) implemented a framework for addressing the necessity of women's health promotion and issues in modern Japan in collaboration with the national government, local municipalities, medical and educational sites, households, and local communities. This framework, which aims to develop a series of processes to improve women's knowledge of their health issues and lead to changes in health behavior, is effective in promoting breast and cervical cancer screening and menopause support (Women's Health Action Executive Committee, 2017).

Despite the increasing proportion of permanently employed women in Iwate Prefecture, lifestyle-related disease risk indices, such as obesity and smoking behavior, are higher in Northern Iwate than in other regions, indicating health disparities (Iwate Prefectural Government, 2024a).

Furthermore, according to the 8th Iwate Prefectural Health and Medical Care Plan (2024-2029) issued by the Iwate Prefectural Government, the northern region has fewer hospitals and physicians per population than the prefectural and national averages, potentially limiting access to preventive and gynecological care. As Northern Iwate has many types of occupations with a high proportion of female workers, such as agriculture, forestry, fishery, food, and sewing industries, community-anchored support for employed women is required.

Health support provided through peer networks is garnering attention in local communities. Peer support, whereby peers with shared experiences and attributes support each other, is an effective intervention in women's health (Dennis, 2003). Previous studies have reported that colleague and leader role models affect behavioral changes regarding health promotion in the workplace (Bandura, 1986; Safeer et al., 2019).

However, peer support implemented as part of women's health action is biased toward initiatives that focus on metropolitan areas, whereas approaches for working women in rural areas are limited (Yasuoka et al., 2018; Wagner et al., 2023). In particular, the unique health needs, occupational characteristics, and sociocultural contexts of working women in regions such as northern Iwate remain underexplored. Women's participation in health behaviors may be influenced by life stage, intrinsic motivation, and psychosocial factors, in addition to employment status or access to services. Therefore, region-specific interventions should consider these aspects to effectively support preventive health behaviors among working women.

This study aims to clarify the current state of women's health action among working women in northern Iwate Prefecture and obtain insights for future health support initiatives.

In this study, women's health action is defined as women obtaining knowledge of female health issues, particularly breast, cervical, and uterine cancers, maintaining and promoting health awareness, achieving self-efficacy, and taking action to attend cancer screening.

Methods

1. Participants

The participants were female employees aged 20 years

or older at a private company headquartered in northern Iwate with branches across the region. The company was selected based on the following criteria: (1) a sizable female workforce, (2) office-based business typical of the local economy, and (3) interest in employee health. The company agreed to participate and provided access to its employees. The urban and rural distribution of its branches enhances its representativeness. Inclusion criteria were women aged 20 years and above, currently employed full-time (regular workers), part-time (non-regular workers), or temporarily (non-regular workers). Those on long-term leave were excluded. The sample size was determined following medical research guidelines, which recommend

at least 50 participants (Machin, 2022). Recruitment used internal communication; department managers explained the study using standardized documents and distributed questionnaires with return envelopes to ensure voluntary and anonymous participation.

2. Methodology

A questionnaire survey was conducted from August 2023 to March 2024. This study was approved by the institutional review board of Iwate Prefectural University (approval number: 447). Participation in the study was voluntary, and the participants were informed that refusing to participate would not impede their business activities in any way. The responses were anonymous. A document outlining the study, describing its purpose and methods, and providing an overview of the ethical considerations was distributed by mail to the person in charge of health management at the companies. Managers in each department distributed the questionnaires and return envelopes to the employees. Responses could be returned by mail using the enclosed reply envelope or online using the distributed two-dimensional code. Participants who used the mail method placed the completed questionnaires in the envelopes

Table 1. Questionnaire items on breast cancer knowledge

1. I know that the number of patients with breast cancer is increasing
2. I know the peak age range for breast cancer onset
3. I know the sites at which breast cancer is likely to develop
4. I know about breast cancer stages (stage 0 through stage IV)
5. I know about breast cancer sub-types and disease types
6. I know about hereditary breast and ovarian cancer syndrome
7. I know about male breast cancer
8. I know that breast self-exams lead to early detection
9. I know about treatment methods for breast cancer
10. I know that the survival rate evaluation is for ten years

Table 2. Questionnaire items on cervical and uterine cancer knowledge

1. There are two types of uterine cancer: cervical and endometrial
2. Uterine cancer is almost 100% curable with early detection and treatment
3. Human papillomavirus infection is a cause of cervical cancer
4. Cervical cancer is increasingly developing in younger women (more cases are occurring in women in their 20s)
5. Cervical cancer tends to develop at 40 to 50 years of age
6. Female hormones (hyperestrogenic state) are a cause of endometrial cancer
7. Endometrial cancer tends to develop at 50 to 60 years of age (post menopause)
8. Uterine cancer screening is offered to women aged 20 years or older
9. Uterine cancer screening only generally tests for cervical cancer

Table 3. Question items on self-efficacy of cervical cancer screening attendance

1. I am confident that I will attend screening regardless of how busy I am
2. I am confident that I will use my days off to attend screening
3. I am confident that I will attend screening to maintain my health
4. I am confident that I will attend screening for the sake of my family and loved ones
5. I am confident that I will attend screening even if I worry about what people will think when I go to an obstetrics and gynecology clinic
6. I am confident that I will attend screening even if nobody around me is attending screening
7. I am confident that I will attend screening even if I feel embarrassed about having my sexual organs viewed during the pelvic exam
8. I am confident that I will attend screening even if I do not know what the testing involves
9. I am confident that I will attend screening again after at least two years have passed since the last time that I underwent screening
10. I am confident that I will attend screening even if my plans to attend screening have to be postponed multiple times
11. I am confident that I will attend screening again even if I have lost the desire to undergo screening since the last time that I underwent it

and returned them without direct collection by managers. This method was intended to ensure confidentiality and minimize any sense of coercion. Returning the completed questionnaire was considered to indicate consent to participate in the study.

The questionnaire collected information about age range; employment type; breast, cervical, and uterine cancer screening knowledge, which was based on the study by Sakamoto et al. (2022); previous health screening attendance; motivation; whether the participant had reached menopause; marriage experience; and childbirth experience. Tables 1 and 2 present the questions regarding breast, cervical, and uterine cancer knowledge, respectively. Knowledge was rated on a three-point Likert scale (1 = I don't know about it at all; 2 = I know a little about it; 3 = I know a lot about it). Table 3 presents the questions regarding self-efficacy for cervical cancer screening attendance, which were developed based on a previous study (Kawai et al., 2010). Self-efficacy was rated on a four-point Likert scale (1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree). Previous studies on reliability did not report Cronbach's alpha coefficients. In this investigation, internal consistency was confirmed, with all scales achieving alpha coefficients of 0.9 or higher, indicating high reliability. However, the validity has not been sufficiently examined, and further verification through pilot studies is required.

The items encompassed overall knowledge of breast cancer; comprehensive knowledge related to uterine cancers, including endometrial and cervical cancers; and measures of self-efficacy concerning cervical cancer screening behavior. Consequently, the reliability and validity of the questionnaire have not been formally established. Nevertheless, as the items were carefully selected to align with the specific objectives of this study, they were deemed appropriate.

Data were analyzed using simple tabulation. A chi-square test was conducted to assess whether the participants had subjective knowledge and whether they exhibited screening attendance. Spearman's rank correlation analysis was conducted to examine the association between cancer screening behavior and confidence in performing the behavior. All analyses were conducted using SPSS version 30, and p-values of less than 0.05 were considered

statistically significant.

Results

1. Sample characteristics

Responses were received from 99 of 149 female workers (66.4%) at the surveyed company. Among them, three responses with significant amounts of missing data were excluded. Furthermore, 42 responses from women who did not work in Northern Iwate were excluded. The final sample comprised 54 women who work in Northern Iwate (valid response rate = 36.2%).

Table 4 presents the participant characteristics. Among the participants, 31.5% were aged 50-59 years and 33.3% were aged 60-69 years. Moreover, 37 participants (68.5%)

Table 4. Participant characteristics

Attribute Item	Item	n	(n% 54)
Age (years)	20-29	7	13.0
	30-39	6	11.1
	40-49	6	11.1
	50-59	17	31.5
	60-69	18	33.3
	No response	1	1.9
Employment type	Full-time	17	31.5
	Part-time	35	64.8
	Other (temporary worker)	2	3.7
Marriage experience	Yes	39	72.2
	No	15	27.8
Menstruation	Yes	20	37.0
	No	34	63.0
Childbirth experience	Yes	37	68.5
	No	17	31.5
Breast cancer screening attendance	Yes	38	70.4
	No	17	30.0
Uterine cancer screening attendance	Yes	38	70.0
	No	15	27.8
	No response	2	3.7

Table 5. Cancer Screening Participation and Attributes: Chi-Square Test

Attribute Item	Breast Cancer Screening		Cervical and Uterine Cancer Screening	
	χ^2 (df)	p-value	χ^2 (df)	p-value
Age group	1.52 (4)	.82	4.43 (4)	.35
Employment type	1.60 (2)	.45	0.77 (2)	.68
Menstruation	10.90 (1)	.00	0.30 (1)	.71
Marital status	1.53 (1)	.73	1.25 (1)	.26
Childbirth experience	0.43 (1)	1.00	5.21 (1)	.04
Subjective knowledge	1.62 (1)	.33	1.15 (1)	.34

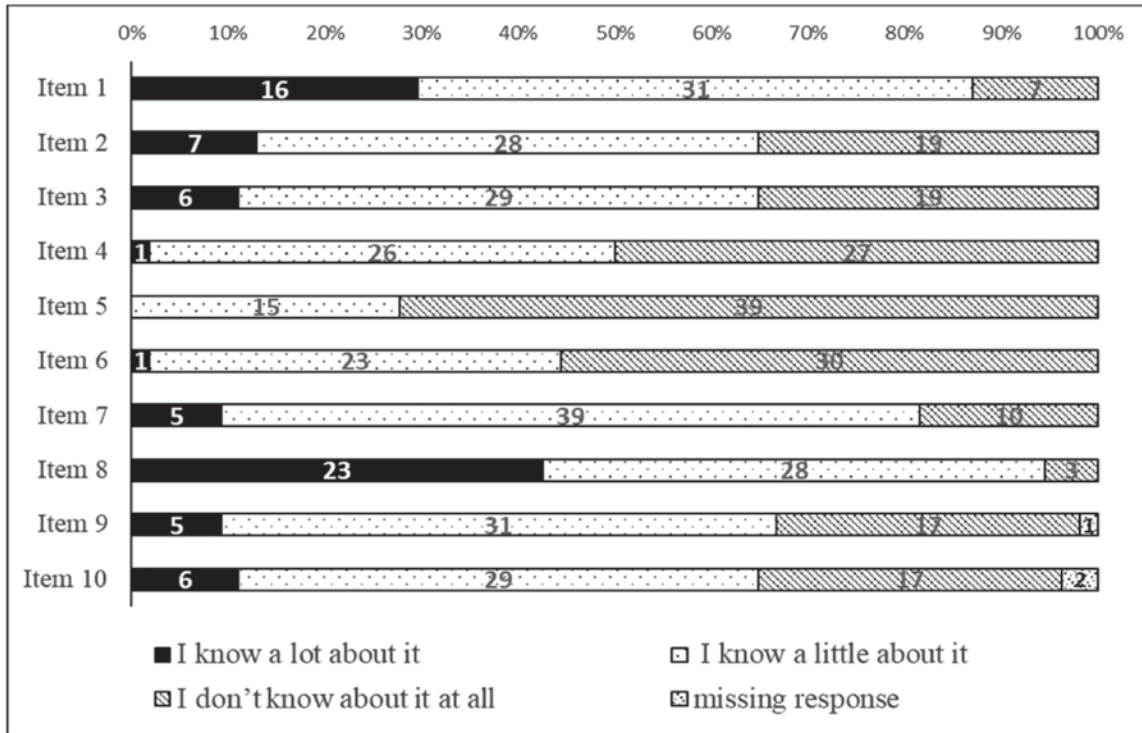


Fig 1. Basic Knowledge about Breast Cancer
 Details of each item are presented in Table 1.

were temporary or part-time workers, 63.0% had reached menopause, 72.2% were or had been married, and 68.5% had given birth.

The results of the chi-square test examining the relationship between breast cancer screening participation, cervical and uterine cancer screening participation, and demographic attributes indicated significant differences in breast cancer screening participation by menstrual status ($p < 0.01$). Premenopausal women had a significantly higher rate of breast cancer screening attendance than postmenopausal women. Significant differences in cervical and uterine cancer screening participation were also observed based on childbirth experience ($p < 0.05$) (Table 5).

2. Knowledge of breast cancer and screening attendance

Figure 1 shows the results for breast cancer knowledge. “I know a lot about it” and “I know a little about it” accounted for over 80% of the responses for “I know that the number of patients with breast cancer is increasing,” “I know about male breast cancer,” and “I know that breast self-exams lead to early detection.” “I don't know about it at all” accounted

for over 50% of responses for “I know about breast cancer stages (stage 0 through stage IV),” “I know about breast cancer sub-types and disease types,” and “I know about hereditary breast and ovarian cancer syndrome.” Regarding being knowledgeable about breast cancer, measured using the question “Do you think you are knowledgeable about breast cancer,” 18 participants (33.3%) responded “yes,” 33 participants (61.1%) responded “no,” and three participants (5.6%) did not respond. Furthermore, 37 participants (68.5%) had previously attended breast cancer screening, and 17 (31.5%) had not. Among them, premenopausal women had a significantly higher rate of breast cancer screening attendance than postmenopausal women ($p < 0.01$). Moreover, 54% of the participants responded that although they had attended breast cancer screening, their motivation was personal health management. In addition, 30 participants (55.6%) responded that they intended to attend breast cancer screening in the future. Participants whose reason for not attending screening was “I'm not really interested in it” responded that they did not intend to attend screening in the future. Cross-tabulation revealed no significant correlation between subjective knowledge of

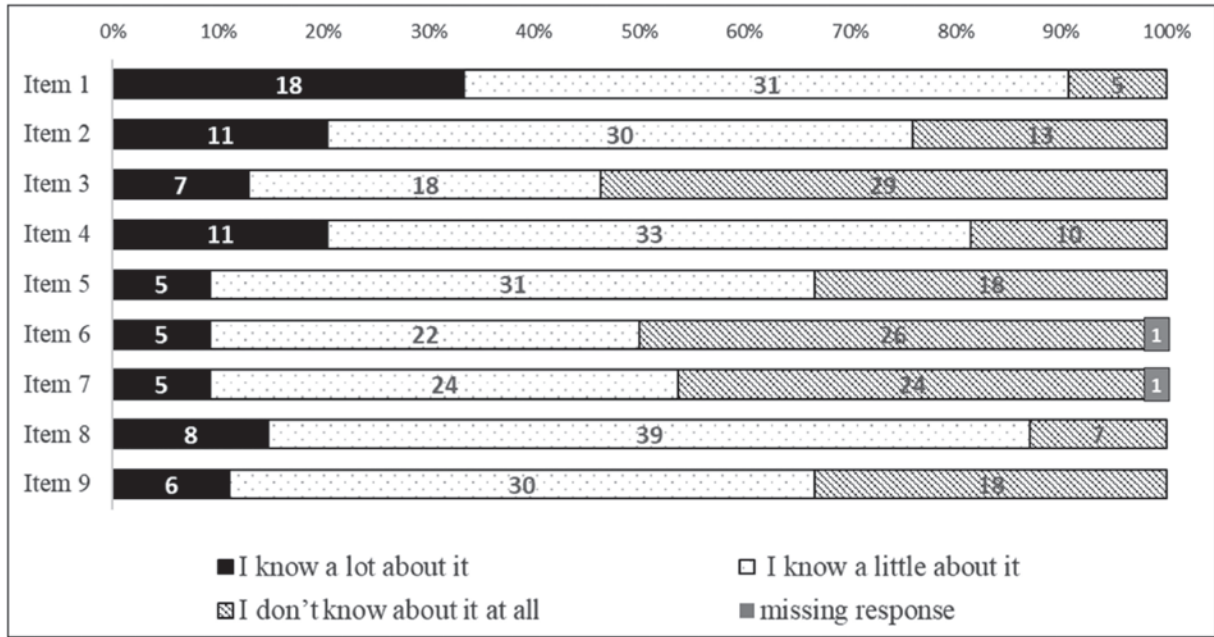


Fig 2. Basic Knowledge about Uterine Cancer
 Details of each item are presented in Table 2.

breast cancer and screening attendance ($\chi^2(1) = 1.62, p = 0.33$) (Table 5).

3. Knowledge of cervical and uterine cancer and screening attendance

Figure 2 shows the results for uterine cancer knowledge. “I know a lot about it” and “I know a little about it” accounted for over 80% of responses for “There are two types of uterine cancer: cervical and endometrial.” “I don’t know about it at all” accounted for over 50% of responses for “Human papillomavirus infection is a cause of cervical cancer,” “Cervical cancer tends to develop at 40 to 50 years of age,” and “Female hormones (hyperestrogenic state) are a cause of endometrial cancer.” Regarding being knowledgeable about uterine cancer, measured using the question “Do you think you are knowledgeable about uterine cancer,” 16 participants (29.6%) responded “yes,” and 38 participants (70.4%) responded “no.” Furthermore, 37 participants (68.5%) had previously attended cervical cancer screening, 15 participants (27.8%) had not, and two participants (3.7%) did not respond. Moreover, 19 participants (51.4%) responded that although they had attended uterine cancer screening, their attendance motivation was personal health management. Other reasons

included local municipality advertisements and workplace health screenings. All 37 (100%) participants who had previously attended uterine cancer screening responded that they intended to attend screenings in the future. Among the participants who had not attended screening, the most common reason was “I feel embarrassed” ($n = 5; 33.3\%$). Other reasons were “I’m not really interested in it” and “I’m healthy.” Cross-tabulation revealed no significant correlation between subjective knowledge of uterine cancer and screening attendance ($\chi^2(1) = 1.07, p = 0.36$) (Table 5).

4. Self-efficacy regarding cervical cancer screening attendance

Figure 3 shows the results for self-efficacy regarding cervical cancer screening attendance. Among the items regarding self-efficacy (Items 1-4), three items had a high percentage of “agree” and “strongly agree” responses: Item 3 (“I am confident that I will attend screening to maintain my health”; 70.3%), Item 2 (“I am confident that I will use my days off to attend screening”; 55.5%), and Item 4 (“I am confident that I will attend screening for the sake of my family and loved ones”; 66.6%). Attendance motivation was high for personal health reasons and family, and these reasons tended to cause action with confidence. Conversely,

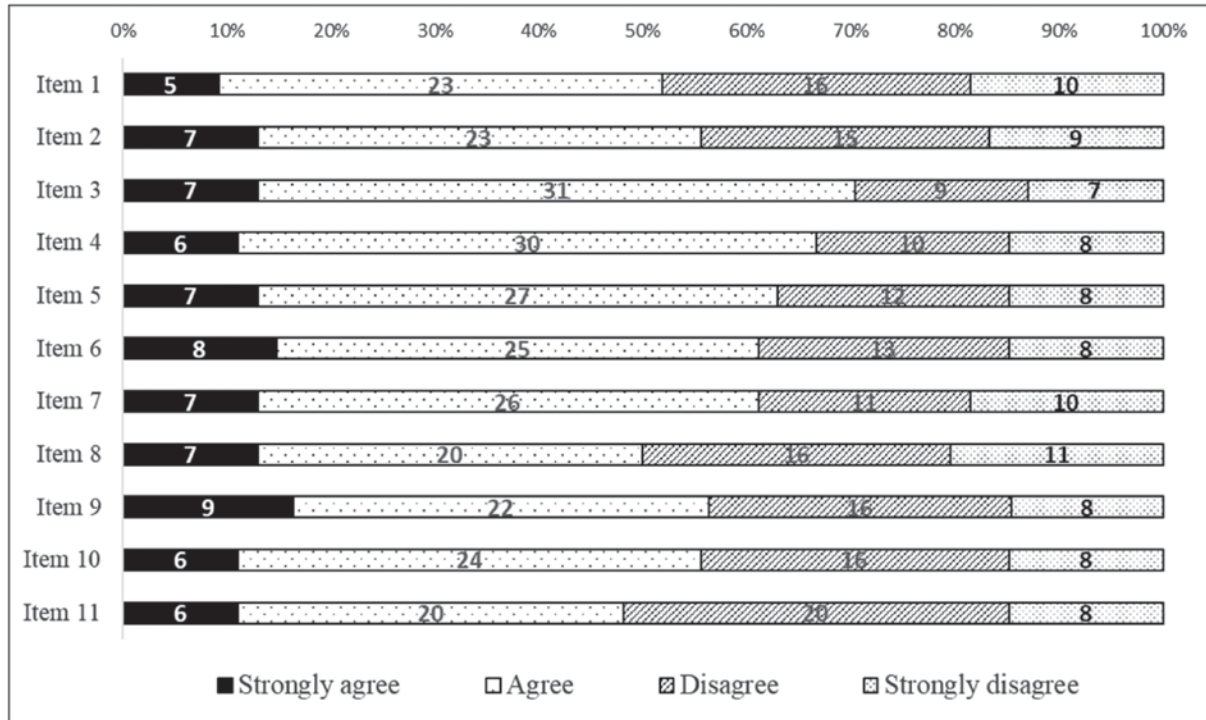


Fig 3. Self-efficacy for Cervical Cancer Screening
 Details of each item are presented in Table 3.

for items regarding psychological and social obstacles (Items 5-7), over 40% of the participants responded “disagree” or “strongly disagree.” The participants reported reasons such as worrying about what others would think if they went to an obstetrics and gynecology clinic and being embarrassed about having an internal pelvic examination. Among the items regarding barriers to cancer screening attendance (Items 8-11), Item 11 had the highest number of responses indicating “disagree” or “strongly disagree” (28 participants). For Item 8, 50% (n = 27) of the participants responded “disagree” or “strongly disagree.” Significant positive correlations were observed between cervical cancer screening attendance and all 11 items ($\rho = 0.36-0.49$, $p < 0.05$) (Table 6).

Discussion

1. Participant characteristics and screening attendance

Most participants were aged 50-69 years, non-regular employees, menopausal, married or previously married, and had given birth. Many continued working despite menopause-related changes and had household and child-

Table 6. Correlation between Cervical Cancer Screening Attendance and Self-Efficacy

Self-efficacy Item	Spearman's ρ	p-value
Item 1	.45	<.001
Item 2	.47	<.001
Item 3	.48	<.001
Item 4	.49	<.001
Item 5	.36	.009
Item 6	.36	.008
Item 7	.44	.001
Item 8	.37	.007
Item 9	.49	.002
Item 10	.40	.003
Item 11	.40	.004

rearing experience, which may have influenced their health behavior perspectives. Physical and emotional changes during menopause, combined with work and family burdens, can affect motivation, perceived barriers, and confidence in cancer screening participation. This study revealed that premenopausal women in northern Iwate had higher breast cancer screening attendance than postmenopausal women. The higher rate among premenopausal women may reflect greater awareness and proactive health behaviors during the

working-age period. Although this study did not directly examine workplace health programs, previous reports have suggested that workplace-based information and colleague interactions can promote screening participation (Mon, 2024). Considering that the participants were employed, these contextual factors may partially explain the higher attendance rate.

In Japan, the highest rates of cancer screening participation have been reported among middle-aged women, with attendance decreasing with age (National Cancer Center Japan, 2022). Nevertheless, life stage and work-related factors remain critical considerations in health promotion strategies because employment context, family responsibilities, and menopausal transition influence women's health behaviors (Kawata & Hatashita, 2015; Mon, 2024).

A significant association was observed between cervical cancer screening attendance and childbirth experience. Women who had given birth were more likely to undergo cervical cancer screening than those who had not. The high rate of cervical cancer screening among women with childbirth experience may reflect increased awareness of reproductive health and the importance of regular examinations stemming from exposure to pelvic examinations and opportunities for screening during pregnancy and childbirth. This finding aligns with Kawai et al. (2010), who demonstrated that healthcare provided during pregnancy and childbirth creates opportunities for health education and screening promotion at this life stage.

Breast and cervical cancer screening rates exceeded 70%, which is higher than the national averages of 47.4% and 43.6%, respectively (National Cancer Center Japan, 2022). Life events such as marriage and childbirth correlate with health literacy (Kawata & Hatashita, 2015). The results indicated that participants' primary reasons for undergoing health checkups were "for my own health," "local government publicity," and "workplace health screening." In addition to reflecting a group with high health literacy who underwent screening for personal health, the above-average screening rate in the Iwate region is likely influenced by the municipality's proactive health promotion policies, effective publicity, and the accessibility of public screening services.

This study found no significant differences in cancer

screening participation rates based on employment status (Table 5). This suggests that in the northern Iwate region, social factors such as municipal health policies and workplace environment may influence women's screening participation behavior more than employment status.

2. Knowledge of breast, cervical, and uterine cancer and screening attendance

Participants demonstrated low levels of knowledge regarding breast cancer and cervical or endometrial cancer, particularly regarding breast cancer staging, subtypes, and genetic risk factors. Their understanding was largely limited to basic concepts such as "early detection is crucial for breast cancer" and "regular screenings are necessary." This likely reflects conventional cancer education and awareness campaigns, which tend to emphasize simplified messages while providing limited access to specialized knowledge. Prior research has demonstrated that knowledge of cancer epidemiology and pathology is significantly associated with regular cancer screening behavior (Motoi et al., 2022). Moving forward, providing information tailored to participants' comprehension levels and interests will be essential.

Conversely, this study found that despite low knowledge levels (~30%), approximately 70% of participants underwent screening, indicating a screening rate that exceeded their knowledge level. This result differs from those of prior studies (Morita et al., 2020; Watanabe et al., 2025), suggesting that knowledge acts as a motivating factor for screening behavior. The present findings provide new evidence suggesting that factors other than knowledge influenced screening participation in this study. Even with limited knowledge, participants were motivated to undergo health checkups by intrinsic motivations such as concern "for my own health" and "for my family," which promoted their decision to seek medical care. Beyond knowledge, institutional factors such as the distribution of free screening coupons and workplace health examinations may also drive screening behavior (Nakamura et al., 2020). These findings suggest that knowledge level alone cannot fully explain screening participation in northern Iwate. Although this study did not directly examine peer support, future research should investigate whether and the extent to which peer-based information exchange or interpersonal support within

workplaces and local communities contribute to preventive health behaviors.

3. Psychological and social factors related to screening attendance

The most common reason for not attending cervical cancer screening was embarrassment. Japanese culture, in which discussing sex-related matters is taboo, and psychological reluctance appear to be barriers to screening attendance. In addition, a lack of information about screening and anxiety regarding what screening entails prevented attendance. Motoi et al. (2022) described the importance of health education encouraging young people and people who had not previously attended screening to consider screening relevant for themselves and argued that providing accurate and specific information about screening was effective in easing embarrassment, misunderstandings, and anxiety. Moreover, as a lack of information about what screening entails may increase feelings of anxiety and impede attendance, promotional materials and advance explanations of screening should be enhanced. Current promotional materials for cervical cancer screening in Japan typically include municipal pamphlets and posters displayed in medical institutions, which contain only general information. These materials may lack visual and emotional clarity, particularly for first-time screening candidates. Thus, more concrete and personalized content, such as illustrated step-by-step guides, testimonials from screening attendees, and explanatory videos, should be incorporated. These materials can help reduce anxiety and embarrassment by demystifying the screening process and making it feel more approachable (Mizota & Yamamoto, 2023; Motoi et al., 2022).

This study found that reasons for not attending screening included not being interested in it and being healthy. As these were personal convictions, this indicated that a sense of overconfidence in one's health was another factor impeding screening attendance. Furthermore, the tendency among Japanese people to view sexual and physical-related topics as taboo also appeared to increase psychological reluctance toward screening. Therefore, an environment in which women can peacefully attend screenings, considering their age and cultural context, should be created.

In addition, although many participants responded

“disagree” or “strongly disagree” to items related to barriers to cancer screening attendance (Items 8-11), this does not necessarily indicate the complete absence of barriers. The results instead suggest that the participants may not have perceived practical barriers, such as time management and appointment scheduling, as major obstacles. Based on the qualitative comments, emotional and social factors were barriers to screening attendance, despite high self-efficacy and minimal reports of practical difficulties. This highlights the need to address both practical and emotional aspects to effectively promote screening behavior.

4. Correlation between self-efficacy and screening attendance

Most participants reported confidence in attending uterine cancer screening to maintain their health, reflecting high personal health awareness, consistent with Bandura's (1997) self-efficacy theory linking high self-efficacy to health behaviors. Participants were motivated by health concerns for themselves and their families, acting with confidence. This aligns with previous findings that women attend breast cancer screening partly for their children's sake (Yachi & Kichiya, 2023). Support that enhances intrinsic motivation and encourages attendance for family reasons should be implemented.

5. Implications for developing health support for working women in the northern Iwate region.

The findings of this study suggest several implications for health support for working women in northern Iwate. First, support should be tailored to life stage and individual motivation. Higher breast cancer screening rates were observed among premenopausal women, while higher cervical cancer screening rates were observed among women with childbirth experience. Furthermore, participants were generally motivated by concerns about their own health and that of their families. Therefore, health promotion initiatives should provide information and educational activities that consider age, life stage, and individual motivation.

Second, the workplace environment and flexible work arrangements may play an important role. In this sample, which included a high proportion of non-regular employees, work flexibility and opportunities for screening within the

workplace may have facilitated participation. Workplace health education and information provision at the company or departmental level can effectively support screening behavior.

Third, psychological and social factors should be addressed. Psychological barriers, such as embarrassment and low interest, as well as limited knowledge, were identified as obstacles to participation. Interventions should incorporate strategies to reduce these barriers, such as offering concrete procedural guidance, testimonials, or explanatory videos.

Fourth, the potential for utilizing peer support should be explored moving forward. This study did not investigate peer support. However, given the suggested influence of workplace environments and cultures on working women, leveraging peer support through information exchange among colleagues and women in the community may promote preventive health behaviors.

Finally, strategies should consider local and workplace characteristics. Considering the limited availability of medical institutions and variability in access to public screening in northern Iwate (Iwate Prefectural Government, 2024b), future health support initiatives should consider regional healthcare resources and workplace environments to ensure accessible and effective preventive health activities.

Study limitations and future directions

This study had several limitations. First, the participants were limited to women working in a private company headquartered in northern Iwate. While this design enabled the examination of health behaviors in a specific regional context, the sample may not fully reflect the diversity of working women across other occupations or companies in northern Iwate. Future surveys should include women with more diverse attributes, such as variations in age, employment status, location (urban vs. rural), and screening history. Additionally, future studies should consider factors such as socioeconomic status, healthcare access, and health literacy.

Second, although quantitative methods were used to assess behaviors and attitudes, they may not fully capture the nuanced motivations behind screening decisions. Future research should incorporate qualitative or mixed-methods approaches to explore personal values and subjective

influences. Combining qualitative insights with quantitative data may offer a deeper understanding of screening behaviors.

Third, this study did not examine other relevant factors, such as workplace culture, family structure, medical history, or perceived economic burden, which could influence screening attendance. Future studies should comprehensively address these variables.

Finally, qualitative methods that analyze participants' narratives could shed light on the decision-making processes among working women. Such findings may inform practical interventions tailored to regional contexts and help assess strategies to effectively promote screening attendance.

Conclusions

This study aimed to clarify the current state of women's health action among working women in northern Iwate Prefecture and obtain insights for future health support initiatives. The findings indicated that breast cancer screening rates were significantly higher among premenopausal women, while cervical cancer screening rates were significantly higher among women with childbirth experience. This underscores the importance of life stage as a key factor influencing screening behaviors.

The results revealed that most participants were non-regular employees aged 50-69 years with a history of marriage and childbirth. However, because the sample was limited to women employed at a single company in northern Iwate, it may not fully represent all working women in this region.

Despite limited knowledge of breast and cervical cancer, particularly concerning disease staging, classification, and etiology, screening rates surpassed national averages. No substantial correlation was found between the extent of cancer knowledge and the adoption of screening practices.

In contrast, intrinsic motivation, defined as the desire to maintain one's own health and that of one's family, and self-efficacy regarding screening participation were significantly correlated with screening behaviors. Psychological and cultural barriers, including feelings of embarrassment and low interest, were also identified as impediments to screening uptake. These findings suggested that cancer screening behaviors among working women in this region are shaped by a complex interplay of factors,

including life stage, intrinsic motivation, psychological barriers, and workplace environment, rather than knowledge alone.

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<資料>

北いわて地域の就労女性における ウィメンズ・ヘルス・アクションの現状

谷地和加子, 福島裕子
岩手県立大学看護学部

要旨

日本では、女性特有疾患のがん検診受診率の低さが喫緊の課題である。女性の健康と行動改善を目指す「ウィメンズ・ヘルス・アクション」は検診促進に有効であり、都市部ではピアサポートが健康増進に寄与する。岩手県北部は特に生活習慣病リスクが他地域と比較し高く、食品や縫製業など女性労働者の人口割合も多い特徴がある。本研究の目的は、同地域の女性の健康行動を明らかにし、地域特性に応じた健康支援の示唆を得ることである。対象は20歳以上の女性54名で、50～60歳代が約64%を占め、非正規雇用・閉経後・出産経験者が多かった。がん病期や病因に関する知識不足が示された一方で、乳がん・子宮がん検診率はいずれも約70%と全国平均を上回った。乳がん検診は閉経前女性で有意差があり、子宮がん検診は出産歴と関連した。自己効力感は検診行動と正の相関を示し、本知見は地域特性を踏まえた健康支援に有用である。

キーワード：就労女性, ウィメンズ・ヘルス・アクション, がん検診, ヘルスプロモーション