

Views Regarding Management Skills Required Currently and in the Future for Middle Managers in Perinatal Medicine: Their Differences Depending Working Position in Advanced Midwives

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Abstract

Similar to any other discipline/field, management skills are important in perinatal nursing/medicine. What kinds of management skills are required/important currently and also in the future? The view for this might be different according to the present position of midwives. We here attempted to determine this; we divided study population into three (head nurses, assistant head nurses and advanced midwives). A self-administered questionnaire survey was conducted for 1652 advanced midwives in hospitals in Japan during 2018 and 2019. Scores in 8 items showed significant differences among the three groups. The skill with the largest difference among the three groups was the ability to participate in and provide support for social activity. Although higher levels of management skills will be required for nursing managers in the next generation, the levels differ depending on current working positions in advanced midwives.

Keywords

Advanced Midwives, Nursing Middle Managers, Management Skills, Working-Position

1. Introduction

Management for making the most of the diversity of working people is required

with progress of work style reform [1]. In addition, there have been developments in artificial intelligence technology and information and communication technology (ICT), and the social environment surrounding patients has been changing during the past 10 years [2]. Considering the training of middle managers in perinatal medicine in the next generation, it is important to determine how management skills that are effective actions in situations that require management should be learned based on the prediction of changes in perinatal medicine and nursing in the future. We previously reported that many advanced midwives (AMWs) expected that there would be changes in perinatal care and nursing in the next 10 to 20 years [3]. We also reported that AMWs consider that management skills required for middle managers will change in the future (Abe 2021). Middle managers will need to ensure that midwifery care can be provided not only in a hospital but also in a community and to consider perinatal medicine and nursing from various points of view such as utilization of ICT and participation in management [4]. However, management skills at present and in the future may be different according to employment position such as head nurses (HNs), assistant head nurses (AHNs) and AMWs.

In Japanese hospitals, the maternity ward consists of one head nurse (HNs), two to three assistant head nurses (AHNs) and about 20 advanced midwives (AMWs). HNs have already played an active part by using management skills as nursing managers and they have many different roles including in the establishment and management of a staff system, training of nurses, and quality assurance of nursing practice and they understand the issues of current management. Thus, HNs can estimate management skills that are required for middle managers in the next generation. AHNs, who support the role of HNs, play roles in staff management such as establishing relationships with not only nurses but also medical staff in other departments. Also, AHNs use management skills for acting on behalf of middle managers when HNs are absent. AMWs are expected to be candidates for middle managers in the next generation since they are required to learn not only skills of midwifery practice but also skills of an administrator. In Japan, midwives can open a clinic for midwifery care after they obtain a midwifery license. Therefore, it is important to learn management skills as practical skills of midwifery practice. Since systematic education has been conducted through an educational program for training middle managers in a hospital in which an educational system has been established, AMWs in the hospital can have an opportunity for learning management skills along with the experience of midwifery practice.

It is necessary to understand what management skills are important in each working position. Views on management skills required at present and those required in the next generation may differ depending on HNs, AHNs and AMWs. The aim of this study was to determine the differences in views depending on working position regarding management skills currently required and skills required in the future for middle managers in perinatal medicine.

2. Materials and Methods

This study was conducted during the period from November 2018 to May 2019 in Japan. We previously showed the details regarding the methods [4]. There were about 3000 AMWs working in 267 perinatal maternity hospitals that have 300 or more beds. The necessary sample size for this study was calculated to be about 550 by using permissible errors, reliability and response ratio. The necessary sample size was determined to be 1100 considering the recovery rate and the appropriate sample size was determined to be 1650 considering the recovery rate by mail. Out of the 267 hospitals, 193 hospitals were randomly selected through the website of the Japan Institute of Midwifery Evaluation. We sent request forms that stated the purpose, significance and methods of the study with questionnaire forms to chiefs of nursing managers of those hospitals. For 1652 AMWs in 193 hospitals from which acceptance for research cooperation was obtained, we sent an explanation sheet for the study, an informed consent form, a self-administered questionnaire form and a return envelope.

The first part of the questionnaire consisted of questions on basic characteristics including questions on age, years of midwifery experience, position, educational institution for obtaining a midwife license, type of affiliated facility and affiliated department. In the second part of the questionnaire, AMWs were asked to give points from 1 (definitely no) to 5 (definitely yes) for each of 22 items at present and in the next generation (after 10 - 20 years) as follows: ability to use human resources, ability to provide education and training for midwives, ability for adjustment of interpersonal relationships, communication ability, ethical viewpoint as a midwife, ethical viewpoint as an administrator, ability to show leadership, ability to collect information, problem-solving ability, ability for adjustment of relationships with medical staff in a community from the viewpoint of community comprehensive care, ability to perform advanced practice for midwifery care, ability to conduct research, ability to participate in management, ability for risk prediction, ability to perform safety management, compliance, ability of organization change, ability to use ICT, ability for control of bed usage, participation and support for social activity, ability for negotiations and ability of self-control.

2.1. Statistical Analyses

Items in the background characteristics were analyzed by using the one-way analysis of variance and the chi-square test. Comparisons of scores at present and scores in the next generation and differences between scores at present and those in the next generation among the three groups were assessed by using the Kruskal-Wallis test. A two-sided value less than 0.05 was considered to be statistically significant. Multiple comparisons were performed by using Bonferroni's correction, and the statistical threshold was adjusted to 0.0023 (0.05/22). All analyses were conducted by using statistical package software (IBM Co. SPSS version 26).

2.2. Ethical Consideration

This study was approved by the Ethics Committee of Tokushima University Hospital (Approval No. 3271). An anonymous questionnaire sheet was used in the survey. Each subject was provided with a research explanatory document setting out an explanation about the research and was informed that she would be deemed to consent to participation in the research by completing the questionnaire sheet and by checking in the check boxes. The consent of each subject was obtained on the basis of our explanation that participation in the survey was voluntary, that refusal to participate would cause no detrimental treatment, and that data obtained would not to be used for any purpose other than this research.

3. Results

3.1. Participant Characteristics

We obtained the acceptance of chief managers of nursing in 193 (72.3%) of the 267 hospitals, and we received 1206 questionnaire forms from 1652 AMWs in the 193 hospitals (recovery rate: 73.0%). Sixty-six questionnaires for which there was no check in a check box or there were incomplete answers were excluded, and 1140 questionnaires were used for analysis (effective response rate: 94.5%). The demographics of the subjects are shown in **Table 1**. All items including mean period of midwifery experience, mean age, educational institute at which a midwifery license was acquired, hospital type and acceptance of midwifery practice, maternity nursing practice or midwifery practical training were significantly different among the three groups.

3.2. Assessment of Management Skills Currently Required for Middle Managers

Differences among the three groups in scores for 22 management skills that are required for middle managers at present are shown in **Table 2**. There was no significant difference among the three groups in total scores for management skills ($p = 0.169$). Management skills that were given high scores were problem-solving ability and ability to perform safety management in HNs, ability to provide education and training for midwives, ability for adjustment of interpersonal relationships and communication ability in AHNs, and communication ability in AMWs. There were 14 items that had significant differences among the three groups. Those 14 items included 4 items for which scores given by HNs were significantly higher than those given by AHNs, 13 items for which scores given by HNs were significantly higher than those given by AMWs and 9 items for which scores given by AHNs were significantly higher than those given by AMWs.

3.3. Assessment of Management Skills Required for Middle Managers in the Next Generation

Scores for 22 management skills that will be required for middle managers in the

Table 1. Characteristics of head nurses, assistant head nurses and advanced nurses.

		Head nurses	Assistant head nurses	Advanced midwives	P value
Number (proportion)		136 (11.9%)	354 (31.1%)	650 (57.0%)	
mean years of midwifery experience (years) (SD)		26.7 (5.6)	21.0 (7.0)	16.5 (7.3)	<0.001 ¹⁾
Age	20s	0 (0)	0 (0)	20 (3.1)	<0.001 ²⁾
	30s	2 (1.5)	70 (19.8)	298 (45.9)	
	40s	38 (27.9)	182 (51.4)	218 (33.5)	
	50s	94 (69.1)	98 (27.7)	106 (16.3)	
	60s	2 (1.5)	4 (1.1)	8 (1.2)	
Educational institute at which a midwifery license was acquired	Vocational school	88 (64.7)	206 (58.2)	336 (51.7)	<0.001 ²⁾
	Department of junior college	34 (25.0)	100 (28.3)	188 (28.9)	
	4-year university	0 (0)	32 (9)	70 (10.8)	
	University with having major Others	8 (5.9)	6 (1.7)	46 (7.1)	
Hospital type	University hospital	42 (30.9)	82 (23.2)	200 (30.8)	0.001 ²⁾
	General hospital	88 (64.7)	254 (71.7)	436 (67.1)	
	Other	6 (4.4)	18 (5.1)	14 (2.1)	
Presence of perinatal medical center	Yes	100 (73.5)	254 (71.7)	464 (71.4)	
	Not installed	36 (26.5)	100 (28.3)	186 (28.6)	
Department	Maternity ward	52 (38.3)	130 (36.7)	228 (35.1)	<0.001 ²⁾
	Obstetrics and gynecology ward	24 (17.6)	60 (17)	148 (22.8)	
	Ward including obstetrics and gynecology and other clinical departments	30 (22.1)	80 (22.6)	134 (20.6)	
	Maternal and fetal intensive care unit	4 (2.9)	56 (15.8)	76 (11.7)	
	Neonatal intensive care unit	14 (10.3)	10 (2.8)	20 (3.1)	
	Outpatient department	4 (2.9)	12 (3.4)	20 (3.1)	
	Others	8 (5.9)	6 (1.7)	24 (3.6)	
Acceptance of midwifery practice maternity nursing practice or midwifery practical training	No	14 (10.3)	194 (54.8)	572 (88)	<0.001 ²⁾
	Yes	122 (89.7)	160 (45.2)	78 (12)	
	First level training	122	160	78	
	Second level training	64	12	6	
	Third level training	4	0	2	

1) One-way analysis of variance, 2) Pearson's chi-square test.

Table 2. Scores for management skills currently required for middle managers given by the three groups.

	Head nurses (H)	Assistant head nurses (AH)	Advanced midwives (AM)	P value	Multiple comparison analysis
ability to use human resources	4.66 (0.47)	4.58 (0.54)	4.48 (0.59)	0.001	H vs AM**, AH vs AM***
ability to provide education and training for midwives	4.74 (0.44)	4.69 (0.51)	4.60 (0.54)	0.005	H vs AM***, AH vs AM**
ability for adjustment of interpersonal relationships	4.69 (0.55)	4.69 (0.54)	4.67 (0.54)	0.725	
communication ability	4.72 (0.56)	4.69 (0.55)	4.71 (0.51)	0.7	
ethical viewpoint as a midwife	4.66 (0.56)	4.56 (0.60)	4.54 (0.59)	0.05	H vs AM***
ethical viewpoint as an administrator	4.69 (0.49)	4.46 (0.67)	4.48 (0.64)	0.001	H vs AH*, H vs AM*
ability to show leadership	4.74 (0.44)	4.59 (0.55)	4.58 (0.62)	0.039	H vs AH***, H vs AM***
ability to collect information	4.63 (0.51)	4.53 (0.61)	4.52 (0.60)	0.216	
problem-solving ability	4.79 (0.40)	4.68 (0.55)	4.68 (0.54)	0.098	
ability for adjustment of relationships with medical staff in a community from the viewpoint of community comprehensive care	4.33 (0.67)	4.32 (0.75)	4.26 (0.76)	0.399	
ability to perform advanced practice for midwifery care	4.16 (0.80)	4.34 (0.70)	4.29 (0.76)	0.112	
ability to conduct research	4.12 (0.63)	4.08 (0.78)	3.80 (0.83)	<0.001	H vs AM*, AH vs AM*
ability to participate in management	4.35 (0.70)	4.19 (0.76)	3.98 (0.82)	<0.001	H vs AH***, H vs AM*, AH vs AM*
ability for risk prediction	4.74 (0.47)	4.61 (0.59)	4.54 (0.65)	0.003	H vs AM*
ability to perform safety management	4.79 (0.44)	4.68 (0.53)	4.69 (0.55)	0.087	
compliance	4.60 (0.52)	4.45 (0.64)	4.41 (0.68)	0.019	H vs AH***, H vs AM**
ability of organization change	4.43 (0.58)	4.31 (0.74)	4.21 (0.73)	0.002	H vs AM**, AH vs AM***
ability to use ICT	4.16 (0.72)	4.10 (0.79)	3.86 (0.84)	<0.001	H vs AM*, AH vs AM*
ability for control of bed usage	4.21 (0.63)	4.16 (0.73)	4.02 (0.83)	0.02	H vs AM***, AH vs AM***
ability to participate in and provide support for social activity	4.03 (0.62)	4.01 (0.79)	3.88 (0.79)	0.01	AH vs AM**
ability for negotiations	4.50 (0.56)	4.43 (0.63)	4.31 (0.71)	0.006	H vs AM**, AH vs AM***
ability of self-control	4.53 (0.61)	4.60 (0.55)	4.53 (0.59)	0.261	
Total score	4.51 (0.56)	4.44 (0.64)	4.37 (0.67)	0.169	

* $p < 0.001$, ** $p < 0.01$, *** $p < 0.05$.

next generation are shown in **Table 3**. There was a tendency for differences among the three groups in total scores of management skills required for middle managers in the next generation ($p = 0.077$). The management skill that was given a high score by all three groups was communication ability. The items for

which scores had significant differences among the three groups were ability to conduct research, ability to participate in management, ability of organization change, ability to use ICT, ability for control of bed usage and ability for negotiations. All of those 6 items were given significantly higher scores by HNs than by AMWs, and 4 of those items were given significantly higher scores by AHNs than by AMWs. There was no significant difference in scores given by HNs and those given by AHNs.

Table 3. Scores for management skills required for middle managers in the next generation given by the three groups.

	Head nurses (H)	Assistant head nurses (AH)	Advanced midwives (AM)	P value	Multiple comparison analysis
ability to use human resources	4.87 (0.34)	4.79 (0.45)	4.76 (0.48)	0.073	
ability to provide education and training for midwives	4.87 (0.34)	4.78 (0.44)	4.77 (0.48)	0.124	
ability for adjustment of interpersonal relationships	4.87 (0.34)	4.82 (0.41)	4.82 (0.43)	0.58	
communication ability	4.93 (0.26)	4.84 (0.38)	4.85 (0.40)	0.068	
ethical viewpoint as a midwife	4.74 (0.50)	4.73 (0.50)	4.70 (0.56)	0.855	
ethical viewpoint as an administrator	4.74 (0.50)	4.73 (0.47)	4.70 (0.54)	0.902	
ability to show leadership	4.69 (0.52)	4.73 (0.47)	4.75 (0.51)	0.117	
ability to collect information	4.80 (0.39)	4.72 (0.53)	4.70 (0.54)	0.212	
problem-solving ability	4.85 (0.35)	4.82 (0.41)	4.81 (0.44)	0.68	
ability for adjustment of relationships with medical staff in a community from the viewpoint of community comprehensive care	4.71 (0.52)	4.71 (0.54)	4.64 (0.59)	0.126	
ability to perform advanced practice for midwifery care	4.46 (0.74)	4.54 (0.72)	4.46 (0.73)	0.155	
ability to conduct research	4.51 (0.61)	4.49 (0.68)	4.24 (0.78)	<0.001	H vs AM*, AH vs AM*
ability to participate in management	4.63 (0.57)	4.62 (0.58)	4.46 (0.66)	<0.001	H vs AM**, AH vs AM*
ability for risk prediction	4.79 (0.40)	4.76 (0.44)	4.73 (0.54)	0.736	
ability to perform safety management	4.90 (0.30)	4.82 (0.41)	4.80 (0.47)	0.123	
compliance	4.75 (0.43)	4.68 (0.51)	4.66 (0.56)	0.452	
ability of organization change	4.76 (0.46)	4.64 (0.59)	4.56 (0.61)	<0.001	H vs AM*, AH vs AM***
ability to use ICT	4.53 (0.65)	4.50 (0.67)	4.37 (0.69)	0.001	H vs AM**, AH vs AM*
ability for control of bed usage	4.60 (0.57)	4.45 (0.70)	4.40 (0.71)	0.01	H vs AM**
ability to participate in and provide support for social activity	4.60 (0.57)	4.44 (0.76)	4.43 (0.71)	0.058	
ability for negotiations	4.79 (0.40)	4.68 (0.53)	4.62 (0.59)	0.009	H vs AM**
ability of self-control	4.75 (0.47)	4.76 (0.45)	4.71 (0.54)	0.687	
Total score	4.73 (0.47)	4.68 (0.53)	4.63 (0.57)	0.077	

* $p < 0.001$, ** $p < 0.01$, *** $p < 0.05$.

3.4. Differences between Scores at Present and Scores in the Next Generation

Significant differences were found among the three groups in scores at present and scores in the next generation for 8 items (ability to use human resources, ability to provide education and training for midwives, ethical viewpoint as an administrator, ability to show leadership, ability to participate in management, ability for risk prediction, ability to use ICT, and ability to participate in and provide support for social activity) (Figure 1). In those 8 items, the following significant differences were found by multiple comparison analysis. The score for ability to participate in and provide support for social activity given by HNs was significantly higher than that given by AHNs, and the score for ability to participate in and provide support for social activity given by AMWs was significantly higher than that given by AHNs. The score for ethical viewpoint as an administrator given by HNs was significantly lower than the scores given by AHNs and AMWs. The score for ability to show leadership given by HNs was significantly lower than the scores given by AHNs and AMWs. The items for which significantly higher scores were given by AMWs than by HNs were ability to participate in management and ability for risk prediction. The items for which significantly higher scores were given by AMWs than by AHNs were ability to use human resources, ability to provide education and training for midwives and ability to use ICT.

4. Discussion

Significant differences were found in the scores for ability to participate in management given by HNs and AHNs and the scores given by AHNs and AMWs. HNs have participated in various aspects of management including control of bed usage, management of human resources, and adjustments of working hours and working environment as well as participation in hospital management. HNs strongly recognize the importance of the ability to participate in management through the education, and AHNs have more opportunities for awareness of management and obtain more knowledge of management through training than do AMWs. Scores for ethical viewpoint as an administrator, compliance, ability to show leadership and ability to participate in management given by AHNs were significantly lower than those given by HNs. These management skills may be cultivated in the process of experience of the role of middle managers. The reason for the low scores given by AMWs for ability to use human resources, ability of organization change and ability for control of bed usage might be that AMWs did not have any chances to experience such management and they do not have a sufficient understanding. AMWs use ICT in a clinical environment for providing midwifery care, and HNs and AHNs are giving consideration to how ICT should be used from the viewpoint of management. The different points of view might be involved in the difference in scores for ability to use ICT.

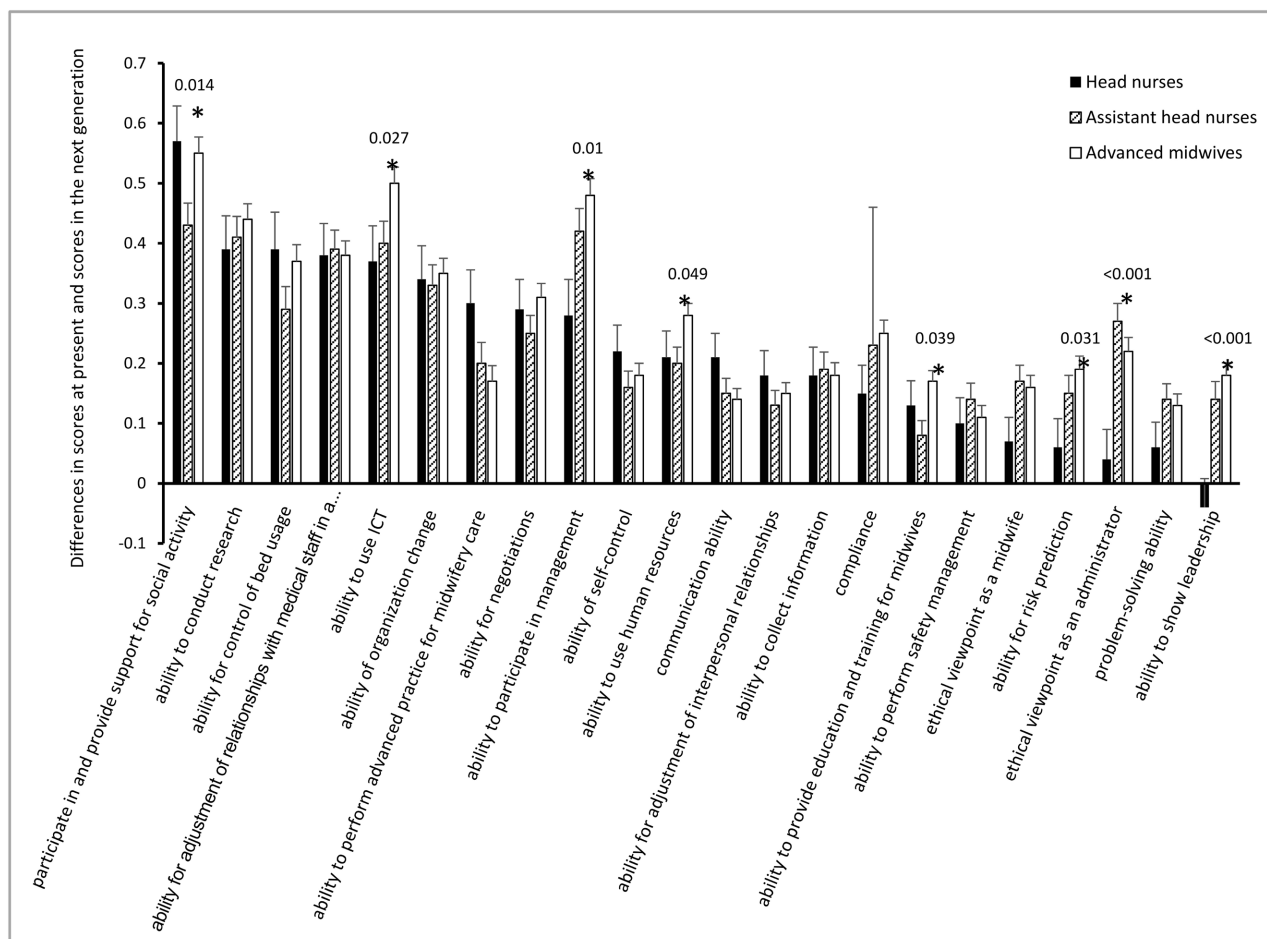


Figure 1. Comparisons of differences between scores at present and scores in the next generation among the three groups. Closed column: head nurses, Shadow column: assistant head nurses, Open column: advanced midwives.

The degrees of awareness regarding management skills required in the next generation were similar for HNs and AHNs. AHNs, who are the first candidates as middle managers in the next generation, might be educated by HNs about the importance of management in the future. HNs and AHNs gave high scores for the ability to conduct research, ability to participate in management, ability of organization change and ability to use ICT as items that would be needed more in the future than now, but AMWs gave low scores for these items. AMWs might have few opportunities to use these items in midwifery practice. It is necessary to provide opportunities for AMWs to learn these management skills in midwifery practice in order to train middle managers systematically.

There were significant differences between current scores and scores in the next generation for eight items in all three groups. There were large differences in all three groups between current scores and scores in the next generation for the ability to participate in and provide support for social activity, though the difference in scores given by AHNs was slightly smaller than the differences in scores given by the other two groups. These results indicate that all of the three groups recognize the importance of the ability to participate in and provide

support for social activity in the future, and it is expected that AMWs will work more in communities in the future. In Japan, it has been suggested that training for nurses including midwives who work in a community is needed from the point of view of disaster nursing and that an enlargement of the role of midwives is required in a community-based comprehensive care system [5]. The reason for the large difference in scores might be that HNs are using this skill based on an understanding of these backgrounds. Considering that there was a large difference in scores given by AHNs and AMWs, this skill may be closely related to changes in perinatal medicine and nursing in the next generation. Since the number of cases of abuse and postpartum depression has been increasing [6], roles in a seamless and comprehensive support system for mothers and children in a community are expected for midwives. It is expected that the roles of AMWs working in hospitals will soon be expanded to communities.

With respect to ethical viewpoint as an administrator and ability to show leadership, there were larger differences between current scores and scores in the next generation given by AHNs and AMWs than the differences between scores given by HNs. It has been reported that HNs suffer from ethical issues related to insufficient human resources, unclear evaluation of working and unpaid overtime [7]. Aitamaa *et al.* reported that there were ethical issues regarding resource allocation, providing and developing high quality care, and problems related to patients' care in nursing management [8]. It has been reported that nurse managers frequently experienced ethical issues regarding staff management and patient care, and the necessity of a team approach for these ethical issues has been suggested [9]. The reason for the small difference in scores might be that HNs fully understand the importance of an ethical viewpoint at present. Given that the numbers of postpartum women with depression and child maltreatment are increasing [10], AHNs and AMWs may predict that a higher ethical view would be required in the future due to an increase in complicated ethical issues in perinatal medical care. With respect to the ability to show leadership, HNs have already shown advanced leadership for preparing a safe childbirth environment and providing a high quality of midwifery care for pregnant and postpartum women. Strong leadership may be required for AHNs and AMWs as middle managers due to future change in the social environment. In the USA, the concept of servant leadership has been established for promoting the skills of nurses and increasing the degree of work satisfaction for nurses [11]. It has been suggested that a model of servant leadership encourages the growth of professionals and simultaneously promotes improved delivery of healthcare services through a combination of interdisciplinary teamwork, shared decision making, and ethical behavior [12]. In Japan, HNs have had many opportunities for learning servant leadership in nursing manager training. Kashihara *et al.* reported that a supporting model for training and environment so that HNs can learn servant leadership has been developed, and its effectiveness was confirmed [13]. HNs recognize that a flexible change in leadership concept is important with the times, but AHNs and AMWs consider traditional leadership to be im-

portant, suggesting that leadership style may be different depending on the working position. With respect to the ability to use ICT, a significant difference was found between scores at present and scores in the next generation given by AHNs and scores given by AMWs. It has been reported that learning skill for the use of ICT is needed since the use of ICT will become more important in the future in order to provide medical care of high quality [14]. Also, it has been demonstrated that midwifery need to use ICT in order to provide evidence-based care and acquire new skills efficiently in high impact technology environment [15]. An expansion of the use of ICT may be expected because of the establishment of a guideline regarding telemedicine and because of the COVID-19 pandemic [16] [17]. Since ICT will be increasing used for prenatal checkups by pregnant women, basic knowledge of ICT and practice of ICT utilization are needed for AMWs. AMWs might have given a high evaluation of an use of ICT for middle managers in the next generation because they want to improve their midwifery skills through further expansion of the use of ICT. The reason for no significant difference between scores given by HNs and AHNs might be that HNs have understood the importance of the ability to participate in management and AHNs play roles of an administrator by using the skills when HNs are absent. AMWs have few opportunities for participation in management. However, they may consider that the ability to participate in management is an important skill in the future because decrease in overtime work and adjustment of the working environment due to the work-life balance are familiar problems in their workplaces.

This study had a large sample size. The subjects in the present study were AMWs in hospitals that have more than 300 beds. The results obtained from the present study may be different depending on the scale, function of hospitals in which midwives are working and area where the hospitals are located. Further study on AMWs who work in moderate-scaled hospitals and in maternity homes is needed. Given that the environment surrounding medicine and nursing will change, management skills that are required in the next generation may also change. It is necessary to determine management skills for middle nursing managers that meet the needs of the times.

5. Conclusion

HNs and AHNs as well as AMWs predicted that higher levels of management skills will be required for nursing managers in the next generation. However, the levels differ depending on current working positions.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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