

# Differences in Midwifery Care Skills for the Delivery Period Expected by Teachers as Compared to Clinical Staff at Time of Graduation from Midwifery School

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## ABSTRACT

**Objective:** To explore differences in midwifery care skills for the delivery period expected by schoolteachers and clinical staff at the time of graduation from midwifery school, a quantitative descriptive study with use of a questionnaire was conducted.

**Materials and Methods:** The subjects were 65 teachers employed by educational institutions that have a midwife development program, 205 nursing staff members working in obstetrics and gynecology wards, and 193 midwives responsible for on-the-job training of midwifery students or recent graduates. Using the document "Items and achievements related to care skills for the delivery period at graduation from midwifery school", created by the Japan Society of Midwifery Education, differences regarding necessary items and achievement of midwifery care skills for the delivery period required for midwifery students at the end of their formal education were analyzed.

**Results and Conclusion:** The results showed no significant differences for items regarding necessary midwifery care skills for the delivery period between teachers and clinical staff, whereas items related to achievement were different between the groups. It is suggested that clinical staff may accept a lower level of achievement as compared to teachers.

## KEY WORDS

midwifery education, midwifery care skills, required competencies, achievement at graduation

## INTRODUCTION

The International Confederation of Midwives (ICM) introduced a model program for educating midwives working in a professional capacity in 2012<sup>1)</sup>, then later presented "Global Standards for Midwifery Education (revised 2021)" in 2021<sup>2)</sup>. Those note a requirement of one and a half years of midwifery training after undergoing basic nursing education. In 2019, the ICM reported four categories of essential skills for midwifery practices (general competencies, competencies specific to pre-pregnancy and antenatal care, competencies specific to care during labour and birth, competencies specific to the ongoing care of women and newborns) expected to be studied as a part of midwifery education<sup>3)</sup>.

Gottfræðsdóttir H *et al* interviewed educators in The Netherlands (which offers direct entry education) and Iceland (which offers post-nursing education) as a comparison of midwifery training education. In this context, the curriculum aims for a holistic approach with woman-centered care, but there are concerns about how the physiological childbirth process is integrated into practice and clinical education, and how the gap between theory and practice will evolve<sup>4)</sup>. Sharghi NR *et al* also noted that existing clinical education does not transfer to students the competencies necessary to achieve appropriate clinical competence<sup>5)</sup>.

In Japan, the Ministry of Health, Labour and Welfare published "Achievement goals and achievement of practical ability for midwives required at the time of graduation (rev.)"<sup>6)</sup>, though the main items defined for diagnosis and care during the delivery period were rather generic, and a detailed discussion of those findings was found to be difficult. Therefore, the JSME subsequently conducted the Delphi study with midwifery training institutions in Japan, which provided for an enhanced standardization for the level of midwifery care skills achieved for providing care during the delivery period by the time of graduation by creating a document titled "Items and achievements related to care skills for the delivery period at graduation from midwifery school"<sup>7)</sup>. In Japan as well as Iceland, the low ability of newly graduated midwives, as well as differences in ability requirements by schools and clinical staff, were pointed out, such as "practical ability of new graduates is lower than needed for clinical practice" and "a one-year term of education is not enough to obtain important knowledge or technical understanding"<sup>4,8)</sup>. Furthermore, it has been noted that when a newly graduated midwife starts to work with a lower level of care skills, it is likely that they will soon consider leaving the job<sup>9,10)</sup>. However, no study that compared between educational and clinical sites about required achievement levels based on items related to care skills has been presented. The present investigation was conducted to explore differences between midwifery educational and clinical sites regarding midwifery care skills

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**Table 1: Items and achievements related to care skills for the delivery period at graduation from midwifery school**

No.	Assessment item
1	Diagnose onset of labor
2	Judge labor progression and predict delivery by aggregating obtained information
3	Judge labor progression and modify prediction of delivery
4	Perform timely digital vaginal examination
5	Understand vaginal examination findings
6	Diagnose labor progression based on external examination
7	Judge fetus well-being by CTG or Doppler examination
8	Judge well-being of parturient woman in line with labor progression
9	Diagnose membrane rupture and address it
10	Provide care for advancing labor progression
11	Provide care for alleviating pain related to labor
12	Provide care for basic needs (e.g., ingestion, nutrition, cleanliness, body position, rest)
13	Provide respectful care for independence of parturient woman
14	Provide comfort and psychological support for parturient woman
15	Establish necessary environment for parturient woman
16	Provide appropriate care for family members
17	Decide timing to prepare birthing field and for delivery
18	Protect perineum to minimize injury
19	Complete passage of fetal head with minimal adjustment
20	Complete passage of scapula using appropriate method
21	Provide safe support for passage of trunk and against pelvic axis
22	Check for umbilical cord loop and treat appropriately
23	Ligate umbilical cord and cut appropriately
24	Check for spontaneous breathing by fetus and assist as needed
25	Evaluate fetus well-being immediately after birth
26	Implement placental delivery with appropriate method
27	Observe and diagnose soft birth canal after delivery
28	Observe and diagnose uterine contractions after delivery
29	Observe and diagnose bleeding after delivery
30	Provide support for early skin-to-skin contact and breast feeding
31	Judge any abnormality with progression of labor
32	Implement prevention of any abnormality with progression of labor

related to the delivery period required at the time of graduation.

## METHODS

### Study Design

This was a descriptive quantitative study. Using the "Items and achievements related to care skills for the delivery period at graduation from midwifery school" created by the JSME, necessary skills for midwifery care during the delivery period expected by the time of graduation and their achievement were analyzed, along with differences between job types<sup>7)</sup>. The time of graduation is defined as the time when the midwifery education for more than one year is completed and the national examination is passed. Analysis was conducted using a self-completed anonymous questionnaire sent and received by postal mail. The data collection period was from September to November 2018.

### Subjects of research and analysis

The subjects were teachers from 201 educational institutions in Japan with a midwifery training program: 36 two-year programs (graduate schools), 84 one-year programs (university special programs and majors, junior colleges, and specialized training schools), and 81 parallel university nursing education programs (as of April 2018), who were

responsible for midwifery education. In addition, nurses in charge of an obstetrics and gynecology ward (responsible nurse) at 975 institutions, extracted from 1200 hospitals that are members of the obstetrics medical insurance system, were enrolled as well as midwives responsible for on-the-job training of midwifery school students or new graduates (trainer). Staff working at a medical clinic without an inpatient facility or an institute with less than 19 beds were excluded.

Answers were received from 496 of the subjects, for a rate of 23.1%. Of these 496, a total of 33, 19 with an unknown job type, and 14 without answers for items regarding the necessity and achievement of items in the questionnaire, were excluded. Thus, answers from 65 teachers (collection rate 32.2%; two-year programs: 13, one-year programs: 39, parallel university nursing education programs: 13), 193 trainers (19.8%), and 205 responsible nurses (21.0%) were subjected to analysis. Any questionnaire without answers related to the necessity or achievement of factors related to this study was excluded. Finally, in regard to necessary items, answers from 64 teachers (1 excluded), 192 trainers (1 excluded), and 195 responsible nurses (10 excluded) were analyzed, while for items regarding achievement, answers from 62 teachers (3 excluded), 183 trainers (10 excluded), and 198 responsible nurses (7 excluded) were analyzed.

### Questionnaire items

The items included in the questionnaire explored basic attributes, such as curriculum of the educational institution, type of institute where the teachers were employed, and items related to necessary care skills for the delivery period and their achievement by the time of graduation from midwifery school. For items related to care skills for the delivery period to be achieved by the end of midwifery school, 32 included in the list of "Items and achievements related to care skills for the delivery period at graduation from midwifery school"<sup>7)</sup> created by JSME from results of the Delphi study were used (Table 1). The necessity of each evaluation item was rated on a 5-point scale:

5 essential, 4 somewhat essential, 3 neither essential nor unnecessary, 2 somewhat unnecessary, or 1 unnecessary. The achievement of each evaluation item, that was assessed as 5 can be completed alone, 4 can be completed with minimum advice, 3 can be completed with coaching, 2 can be completed after practicing at school, and 1 knowledge only. For interpreting subject answers equally, achievement of 5 to 3 were defined as follows:

5; Can be completed alone, may need advice, but can decide and act independently with knowledge and techniques.

4; Can be completed with minimum advice, advice needed, but can decide and act alone with knowledge and techniques.

3; Can be completed with coaching, advice or supervision needed, but can decide and act with knowledge and techniques.

### Analysis Subjects and Statistical Analysis

For the basic attributes and assessment items analyzed, descriptive statistical calculations were performed. Comparisons of answers by the three groups, teachers, trainers, and responsible nurses, were conducted using a Kruskal-Wallis test for each item regarding necessity and achievement of care skills for the delivery period at the time of graduation from midwifery school. Thereafter, items with a significant difference were tested by Bonferroni's multiple comparison test. IBM SPSS Statistics 23 was used for all analyses, with the level of statistical significance level set at less than 5%.

## RESULTS

### Necessity of care skills for delivery period (Table 2)

The median value was 5.0 (necessary) for all 32 items submitted by the teachers, trainers, and responsible nurses. A comparison between teachers and responsible nurses showed significant differences for 26 of 32 items (no. 1, 9, 24, 25, 31, 32, no significant difference), while that between teachers and trainers showed significant differences for six of the 32 items (no. 6, 17, 22, 27, 28, 29). For all items, the values noted by the teachers were significantly higher. A comparison between trainers and responsible nurses showed no significant difference for 30 of the 32 items (no. 6, 22, no significant difference). On the other hand, there was

**Table 2** Necessity of care skills for delivery period

	educational sites		clinical sites				p value
	teacher		trainer		responsible nurse		
	n = 64		n = 192		n = 195		
	median	min-max	median	min-max	median	min-max	
1 Diagnose onset of labor	5	5-5	5	3-5	5	3-5	0.079
2 Judge labor progression and predict delivery by aggregating obtained information	5†	4-5	5	3-5	5†	3-5	0.013
3 Judge labor progression and modify prediction of delivery	5†	4-5	5	3-5	5†	3-5	0.002
4 Perform timely digital vaginal examination	5†	4-5	5	2-5	5†	3-5	0.001
5 Understand vaginal examination findings	5†	3-5	5	3-5	5†	3-5	0.029
6 Diagnose labor progression based on external examination	5†	3-5	5†	1-5	5†	2-5	0.001
7 Judge fetus well-being by CTG or Doppler examination	5†	4-5	5	2-5	5†	3-5	0.007
8 Judge well-being of parturient woman in line with labor progression	5†	4-5	5	3-5	5†	3-5	0.004
9 Diagnose membrane rupture and address it	5	4-5	5	3-5	5	3-5	0.108
10 Provide care for advancing labor progression	5†	5-5	5	3-5	5†	3-5	< 0.001
11 Provide care for alleviating pain related to labor	5†	5-5	5‡	3-5	5†‡	3-5	< 0.001
12 Provide care for basic needs (e.g., ingestion, nutrition, cleanliness, body position, rest)	5†	5-5	5	3-5	5†	3-5	0.001
13 Provide respectful care for independence of parturient woman	5†	4-5	5	2-5	5†	3-5	0.001
14 Provide comfort and psychological support for parturient woman	5†	4-5	5	2-5	5†	3-5	0.007
15 Establish necessary environment for parturient woman	5†	4-5	5	3-5	5†	3-5	0.014
16 Provide appropriate care for family members	5†§	4-5	5§	3-5	5†	3-5	0.002
17 Decide timing to prepare birthing field and for delivery	5†§	5-5	5§	2-5	5†	3-5	0.004
18 Protect perineum to minimize injury	5†	2-5	5	2-5	5†	2-5	0.004
19 Complete passage of fetal head with minimal adjustment	5†	3-5	5	2-5	5†	3-5	0.032
20 Complete passage of scapula using appropriate method	5†	3-5	5	2-5	5†	3-5	0.010
21 Provide safe support for passage of trunk and against pelvic axis	5†	3-5	5	3-5	5†	3-5	0.018
22 Check for umbilical cord loop and treat appropriately	5†§	3-5	5§	3-5	5†	3-5	0.004
23 Ligate umbilical cord and cut appropriately	5†	3-5	5	3-5	5†	3-5	0.036
24 Check for spontaneous breathing by fetus and assist as needed	5	4-5	5	3-5	5	3-5	0.144
25 Evaluate fetus well-being immediately after birth	5	4-5	5	3-5	5	3-5	0.089
26 Implement placental delivery with appropriate method	5†	4-5	5	3-5	5†	2-5	0.034
27 Observe and diagnose soft birth canal after delivery	5†§	3-5	5§	2-5	5†	1-5	0.003
28 Observe and diagnose uterine contractions after delivery	5†§	4-5	5§	3-5	5†	3-5	0.012
29 Observe and diagnose bleeding after delivery	5†§	4-5	5§	3-5	5†	2-5	0.023
30 Provide support for early skin-to-skin contact and breast feeding	5†	3-5	5	2-5	5†	2-5	0.013
31 Judge any abnormality with progression of labor	5	3-5	5	2-5	5	3-5	0.171
32 Implement prevention of any abnormality with progression of labor	5	3-5	5	2-5	5	2-5	0.110

no significant difference between values in the table (median, minimum, maximum value) for "Check for umbilical cord loop and treat appropriately" (no. 22), whereas the standardized statistical test value, calculated by subtracting the rank sum of the trainers from that of the teachers, was 2.497, and that calculated by subtracting the rank sum of the responsible nurses from that of the teachers was 3.344, both significantly higher for the teachers.

### Achievement of care skills for delivery period (Table 3)

Comparisons between job types showed significant differences for all 32 items among the teachers, trainers, and responsible nurses. The teachers showed a significantly higher score for each item and their answers indicated a requirement for higher level of achievement. There were seven items (no. 1, 7, 11, 12, 15, 23, 28) that teachers rated "can be completed alone" (5.0), whereas there was no item with that rating among the answers provided by the trainers and responsible nurses, as most of their answers were "can be completed with coaching" (3.0) and "can be completed with minimum advice" (4.0). Furthermore, there was no item with a significant difference between the trainers and responsible nurses.

## DISCUSSION

### Necessity of midwifery care skills for delivery period

The present results did not indicate any item as "necessary" or "somewhat unnecessary" for midwifery care skills during the delivery period among the enrolled teachers, trainers, and responsible nurses. Thus, it was concluded that the items covered in the questionnaire were reasonable for both educational and clinical sites, similar to preceding studies. This research result is also supported by Toosi M *et al* study of graduates<sup>(1)</sup>. Additionally, there were no significant differences between the teachers and clinical staff regarding midwifery care skills required for students at the time of graduation. The care skills described in the questionnaire covered competency specific for providing care immediately after delivery, other than repair of a perineal tear, which is not allowed to be performed by a midwife in Japan, as an "essential ability for midwifery practice" by the ICM. Therefore, those care skills are considered to serve well as an evaluation index for midwives during the delivery period needed at the time of graduation that can be commonly used in both educational and clinical contexts.

On the other hand, some of the items showed significant differences between educational and clinical sites. As compared to clinical staff, teachers considered the items "appropriate care for family members",

**Table 3 Achievement of care skills for delivery period**

	educational sites		clinical sites				p value
	teacher n = 62		trainer n = 183		responsible nurse n = 198		
	median	min-max	median	min-max	median	min-max	
1 Diagnose onset of labor	5†§	3-5	4§	1-5	4†	1-5	< 0.001
2 Judge labor progression and predict delivery by aggregating obtained information	4†§	3-5	4§	1-5	3†	1-5	< 0.001
3 Judge labor progression and modify prediction of delivery	4†§	3-5	3§	1-5	3†	1-5	< 0.001
4 Perform timely digital vaginal examination	4†§	3-5	3§	1-5	3†	1-5	< 0.001
5 Understand vaginal examination findings	4 †§	3-5	3§	1-5	3†	1-5	< 0.001
6 Diagnose labor progression based on external examination	4†§	1-5	3§	1-5	3†	1-5	< 0.001
7 Judge fetus well-being by CTG or Doppler examination	5†§	3-5	4§	1-5	4†	1-5	< 0.001
8 Judge well-being of parturient woman in line with labor progression	4†§	3-5	3§	1-5	4†	1-5	< 0.001
9 Diagnose membrane rupture and address it	4†§	3-5	4§	1-5	4†	1-5	< 0.001
10 Provide care for advancing labor progression	4†§	3-5	4§	1-5	4†	1-5	< 0.001
11 Provide care for alleviating pain related to labor	5†§	3-5	4§	1-5	4†	1-5	< 0.001
12 Provide care for basic needs (e.g., ingestion, nutrition, cleanliness, body position, rest)	5†§	3-5	4§	1-5	4†	1-5	< 0.001
13 Provide respectful care for independence of parturient woman	4†§	3-5	4§	1-5	3†	1-5	< 0.001
14 Provide comfort and psychological support for parturient woman	4.5†§	3-5	4§	1-5	4†	2-5	< 0.001
15 Establish necessary environment for parturient woman	5†§	3-5	4§	1-5	4†	2-5	< 0.001
16 Provide appropriate care for family members	4†§	3-5	3§	1-5	3†	1-5	< 0.001
17 Decide timing to prepare birthing field and for delivery	4†§	3-5	4§	1-5	4†	1-5	< 0.001
18 Protect perineum to minimize injury	4†§	2-5	3§	1-5	3†	1-5	< 0.001
19 Complete passage of fetal head with minimal adjustment	4†§	2-5	3§	1-5	3†	1-5	< 0.001
20 Complete passage of scapula using appropriate method	4†§	2-5	3§	1-5	3†	1-5	< 0.001
21 Provide safe support for passage of trunk and against pelvic axis	4†§	2-5	3§	1-5	3†	1-5	< 0.001
22 Check for umbilical cord loop and treat appropriately	4†§	2-5	3§	1-5	3†	1-5	< 0.001
23 Ligate umbilical cord and cut appropriately	5†§	1-5	4§	1-5	4†	1-5	< 0.001
24 Check for spontaneous breathing by fetus and assist as needed	4†§	3-5	3§	1-5	3†	1-5	< 0.001
25 Evaluate fetus well-being immediately after birth	4†§	3-5	3§	1-5	4†	1-5	< 0.001
26 Implement placental delivery with appropriate method	4.5†§	3-5	4§	1-5	3†	1-5	< 0.001
27 Observe and diagnose soft birth canal after delivery	4†§	2-5	3§	1-5	3†	1-5	< 0.001
28 Observe and diagnose uterine contractions after delivery	5†§	3-5	4§	1-5	4†	1-5	< 0.001
29 Observe and diagnose bleeding after delivery	4†§	3-5	3§	1-5	3†	1-5	< 0.001
30 Provide support for early skin-to-skin contact and breast feeding	4†§	3-5	4§	1-5	3†	1-5	< 0.001
31 Judge any abnormality with progression of labor	3†§	3-5	3§	1-5	3†	1-5	< 0.001
32 Implement prevention of any abnormality with progression of labor	3†§	2-5	3§	1-5	3†	1-5	< 0.001

"decide timing to prepare birthing field and for delivery", "check for umbilical cord loop and treat appropriately", "observe and diagnose soft birth canal after delivery", "observe and diagnose uterine contractions after delivery", and "observe and diagnose bleeding after delivery" to be more necessary. As for the reason why the clinical staff subjects considered "appropriate care for family members" and "decide timing to prepare birthing field and for delivery" to be less necessary is considered to be because of the difficulty of those factors.

A family member present at the time of delivery is considered to be a member of the team (attendant) caring for the parturient woman and WHO recommends that the person be selected by the birthing mother<sup>12)</sup>. However, some midwives have found difficulties with support provided by the husband when in attendance at the time of delivery, thus raising the difficulty of providing care when conducted in conjunction with birthing assistance<sup>13)</sup>. Therefore, clinical staff members may establish a priority for safe birth assistance for midwives who have recently graduated.

As for preparation for delivery, the timing and methods must be considered based on the needs of the individual parturient woman. Especially in circumstances when the time to delivery is short, determining the condition of the parturient woman, which can quickly change, is a care factor with higher difficulty that requires a complicated and predictive judgement, a skill that has been reported not typically mastered by the time of graduation from midwifery school<sup>14,15)</sup>. Furthermore, according to the National Institutes of Health (NIH), the

prevalence of a loop in the cord is occurring in around 20% to 30% of pregnancies, thus experience obtained from only 10 cases, the designated number in Japan, is generally not adequate. Thus, it is thought that clinical staff consider that the necessity of mastering midwifery care skills with higher difficulty by students is low, as they have less opportunity to gain such experience.

Regarding the necessity of postpartum observation and care, the results from the clinical staff members showed that to be a lower priority as compared to the teachers. This may be because while clinical staff consider that to be necessary, it is often implemented based on the indication of a physician. In Japan, a physician attends the delivery in most cases. Even with a pregnant woman considered to have a low level of risk, it has been pointed out that abnormal events can occur during labor in approximately 30% of all cases, with medical intervention required, thus trainers might have difficulty imagining diagnosis and care provided only by a midwife in such situations<sup>16)</sup>.

**Achievement of midwifery care skills for delivery period**

Answers regarding achievement were significantly different between the teachers and those given by trainers and responsible nurses, while there were no such differences between the trainers and responsible nurses, indicating disparities between educational and clinical sites. Among the items with a significant difference, teachers expected a significantly higher level of achievement. Teachers answered "can com-

plete alone" for seven items, while trainers and responsible nurses answered "can complete with coaching" for more than half of the items, indicating that they do not expect a level of training that allows the newly graduated midwife to be able to decide and act alone even with advice. This may be because of the low level of achievement of midwifery students regarding assisted childbirth skills at the time of graduation. Liantanty et al found that the module and preceptorship method was effective in teaching stage IV maternity care. However, even with this effective teaching method, 23-30% of the participants failed to master the skills in "performing postpartum procedures" and "postpartum evaluation skills"<sup>17</sup>. Thus, the results indicate that some items of assisted delivery skills remain difficult even at the time of graduation. The same has been reported by JSME, which noted that attainment of an ability to judge comprehensively, and predict and modify based on the expected time of delivery by collecting various types of information or providing birth assistance, especially techniques related to delivery of the fetus, is not adequate<sup>18</sup>. Additionally, Sato *et al.* reported that ratings by trainers about cognitive and technical fields are lower than the results of self-evaluation by students<sup>19</sup>. Thus, when considering the low ability of students for care during labor, one reason for lower achievement may be a sense of resignation by clinical staff such as "lower achievement is expected because actual achievement is low".

On the other hand, settling for a lower level of achievement by accepting the low attainment of skills may reduce midwifery care skills. Currently, it is difficult to conduct birth assistance practice because of the decreased number of live births, while it is difficult to provide practice at intensive birthing facilities<sup>20</sup>. In particular, several educational institutions in recent years have restricted birth assistance practice in clinical settings or shortening its duration because of the COVID-19 pandemic, thus birth assistance practice may become increasingly difficult to obtain<sup>21</sup>. Even in such circumstances, in order to target a higher level of achievement, educational sites should make efforts to review their curriculum and decide optimum methods with an aim for the required achievement. In particular, to fulfill the requirement of providing meaningful simulations of clinical situations or introduction of an objective structured clinical examination as a tool before beginning practice.

Furthermore, The period of study for midwifery education in Japan is set at one year or more, which is shorter than the period of study indicated by ICM. It cannot be denied that the educational institutions and clinical instructors who are the subjects of this research may feel the limit to learning in a short period of time. Taking the number of cases of assisted childbirth as an example, EU countries require a minimum of 40 cases of assisted childbirth<sup>22</sup>, while in Japan the number is as low as about 10 cases. Thus, because of the short training period, it is difficult to meet the global standard<sup>23</sup>. As JSME "Vision for the Future of Midwifery Education 2015"<sup>24</sup> that "the duration of midwifery education should be two years based on basic nursing education," it is necessary to extend the current training period to at least one and a half years, the global standard.

This also relates to whether or not to introduce a practical skills test in the national examination. While some other countries have introduced a practical skills test for the midwifery certification examination, Japan has not. If students are able to experience a sufficient number of cases during their studies, there is little need to evaluate them through a practical skills test. Therefore, it is necessary to consider extending the study period in order to enrich the learning content and ensure practical skills.

### Limitations of this study

The necessity of midwifery care skills was confirmed by the present results. However, the general versatility of these findings should be increased by adding additional educational institutions and institutions that are conducting midwifery practice. It may be necessary to increase the visibility of these assessment items by placing them on the JSME website or performing a survey regarding the true state of assessment using items related to midwifery care skills during the delivery period. Additionally, a questionnaire about achievements needed by the time of graduation and validation by acquired data is required.

The response rate was low, and the number of respondents from educational institutions was 36 for the two-year program, 84 for the one-year program, and 81 for the parallel university nursing education program, while the number of respondents was 13 for the two-year program, 39 for the one-year program, and 13 for the parallel university nursing education program. However, although it is necessary to examine the responses carefully, all of the respondents were almost in agreement in terms of the level of necessity and attainment of teachers at all

of the educational facilities. Therefore, it is thought that there is no difference in the education that students consider necessary and want to achieve in terms of midwifery care skills for the delivery period.

## CONCLUSION

The results of this study showed no significant differences regarding items considered to be required as midwifery care skills for the delivery period between educational and clinical sites. However, regarding achievement of specific requirements, there were differences between them, which suggests that clinical sites may accept a lower level of achievement as compared to educational sites. For improving midwifery care skills needed for the delivery period, educational institutions must consider education standards and methods to achieve those, along with extension of the course term. Together, the present findings provide factors for an important agenda for midwifery education in Japan.

## CONFLICT OF INTEREST

The author declares no conflict of interest relevant to this article.

## ETHICAL CONSIDERATION

The study protocol was approved by the Ethics Committee of the Kobe City College of Nursing (18219-09).

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