

〈原著〉

Knowledge and Skills Required of Midwives in Meiji Era Japan: An Analysis of the Content of the Midwifery Examination after the Promulgation of the “Midwifery Regulations”

Eri Yoshikawa

Faculty of Global Nursing, Otemae University

Abstract

Objective: This study aimed to elucidate the knowledge and skills required of midwives (Hereinafter referred to as *Sanba*) during their formative years as a specialized profession based on the content of the midwifery examination (*Sanba Shiken*) questions conducted after the establishment of professional status through the publication of Midwifery Regulations (*Sanba Kisoku*) in 1899.

Methods: Written and practical questions from midwifery examinations were extracted from historical materials between 1899 and 1905. The questions were categorized according to the subject matter of the midwifery examination and content analysis was conducted.

Results: The theoretical examinations tested Western medical knowledge of the normal and abnormal courses of pregnancy and childbirth. The section on managing abnormal pregnancies and deliveries included many questions on delivering non-cephalic presentations and multiple fetuses. The practical examinations include diagnosis by palpation, auscultation, and management of abnormalities. In addition, questions were asked about the health care of pregnant women, maternity women, and newborns, as well as about disinfection methods used by *Sanba*.

Discussion: Midwives in the era of the establishment of midwifery as a profession acquired the knowledge and skills necessary to perform normal deliveries and deal with non-cephalic presentations. Moreover, they had to cope with sudden abnormalities during childbirth. They were expected to use their specialized knowledge to support women's lives intimately.

Keywords: Midwife, Midwifery examination, Knowledge and skills of midwives, History of the midwifery profession, Meiji Era

I. INTRODUCTION

1. Historical background

The history of midwifery in Japan dates back to the 10th century BCE during the Jomon period (Sugitatsu, 2002). Originally, there was no qualification system for midwifery work, which was carried out through mutual aid within the family or neighborhood

or by semi-professional midwives known as *toriage-baba* (taking up-old women). Around the middle of the Edo period (approximately the mid-17th century), the profession became more common under the name *Sanba*. *San* means to give birth, and *Ba* means an old woman; these are the names of Japan's traditional midwives. In this study, the term *Sanba* was used to refer to midwives.

During the Edo period, *Sanba* had no education or qualification system, and their knowledge and

skills were only passed on through apprenticeships and the transmission of experience (Okamoto, 2003). Their theoretical and technical standards were low (Ministry of Health and Welfare Medical Bureau, 1976a).

During the Meiji period, which began in 1868, Japan rapidly modernized and developed in accordance with policies in all fields including law, education, and medicine (Gomi, Takano, and Toriumi, 1998). Against this background, the Medical Regulations (*Isei*) were promulgated in 1874 in the three main cities of Tokyo, Kyoto, and Osaka, setting out regulations for medical qualifications and medical education as a public health and hygiene system to ensure the health of the nation's citizens.

The Medical Regulations included the first regulations in Japan for midwives (*Sanba*), which stated that a midwife license would be granted to women over the age of 40 years who deal with 10 normal deliveries and two abnormal deliveries in the presence of an obstetrician (Kango gyousei kenkyu kai, 2012). In response, midwives' education to obtain licenses began in various locations.

In 1899, the first nationwide unified regulation for midwives, the Midwifery Regulations (*Sanba Kisoku*), was promulgated. It was stipulated that only those women who had passed the midwifery examination (*Sanba Shiken*), were at least 20 years old, and who had been registered on the midwife list managed by the regional governor could work as *Sanba* and that only those who had studied midwifery for at least one year could take the midwifery examination. With the establishment of these midwife regulations, all new *Sanba* were required to pass midwifery examination (Kango gyousei kenkyu kai, 2012).

2. On the conduct of Midwifery Examination

In 1899, the Midwifery Examination Regulations (*Sanba Shiken Kisoku*) were enacted, outlining the eligibility criteria and content of midwifery examinations.

According to the regulations, there are two

parts to the midwifery examination: a theoretical examination (four subjects) and a practical examination (Article 2). Only those who pass the theoretical exam are eligible to take the practical exam (Article 3). Individuals who pass the theoretical exam but fail the practical exam or do not take it can only take it on subsequent attempts (Article 4). Those intending to take the midwifery examination must submit a graduation certificate from a midwifery training school or a resume verified by two midwives or physicians (Article 5) (Kango gyousei kenkyu kai, 2012).

With regard to the practical examination, historical material from the time states that "sometimes they would bring in a woman who was actually in labor and ask the *Sanba* for their opinions on various situations, or sometimes they would simply use a pelvis or obstetrical model of a fetus made from tanned leather to conduct the examination" (Takada, 1920, p. 51).

The number of questions for the theory and practical examinations was confirmed to be eight in total, with two questions for each subject for the academic exam and two questions for the practical exam, as outlined in the Regulations on the Number of Midwifery Examination Questions and the Grading Method (*Sanba Shiken mondai narabini saitenhou ni kansuru ken*), published by the Ministry of the Interior in 1899. Furthermore, the instructions explicitly delineate the criteria for evaluating the questions, emphasizing that midwifery examination must adhere to the stipulations outlined in the legislation (Sugimoto, 1903, p. 648) (Table 1).

In addition, the Regulations for the Establishment of Midwife Examiners (*Sanba Shiken iin secchi kitei*), promulgated in 1901, stipulated that the prefectural governor should select the chairperson and members of the midwife examination committee (Sugimoto, 1903, p. 51).

At that time, midwifery examination was conducted and managed independently by each prefecture, in accordance with the various regulations previously mentioned.

Table 1. Midwifery Examination Subjects and Grading Methods

	Examination subjects	Number of questions	Passing criteria
Theoretical examination	1. Normal pregnancy and childbirth, and their management	2	Each question is worth 10 points. At least 5 points for each question, for a total of 40 points or more to pass
	2. Progression of normal postpartum period and nursing methods for postpartum women and newborns	2	
	3. Abnormal pregnancy and childbirth, and their management	2	
	4. Diseases in pregnant women, women in labor, postpartum women and newborns, methods of disinfection, midwifery knowledge and principles	2	
Practical examination	Exams targeting pregnant women or exams using models	2	Each question is worth 10 points. At least 2.5 points for each question, for a total of 10 points or more to pass

Note The table was created by the researcher based on the content of Ordinance No. 47 of the Ministry of Home Affairs, “Midwifery Examination Regulations (*Sanba Shiken Kisoku*),” which was promulgated in 1899.

3. Current study

Historical research on midwifery during the Meiji era has focused on the establishment and evolution of midwifery education and related regulations in various regions (Kanbara, 1967; Ogawa, 2005; Takahashi, 2001; Usami, 1990; Yumoto, 2000). Studies have also analyzed specific aspects of midwifery techniques, such as perineal protection techniques (Kimura, 2011), management of postpartum hemorrhage (Okuyama et al., 2018), and urine testing techniques (Ogasawara & Takada, 2019).

However, no studies have approached midwives’ knowledge and skills in the Meiji period by focusing on midwifery examination.

The granting of qualifications to midwives meant that they were required to attain a certain level of knowledge and skills. In historical materials from the time, it is stated that the subjects of the midwifery examination were “determined here, that is, how much is tested, or in other words, how much you know is determined as being sufficient to qualify as a *Sanba*” (Takada, 1920). Therefore, by examining the content of the midwifery examination questions, we thought it would be possible to clarify the knowledge and skills required by midwives.

This study aimed to clarify the knowledge and

skills required for *Sanba* by society and pregnant, childbearing, and postpartum women, based on the content of the midwifery examination. This study focuses on the period when the Midwifery Regulations, which established the status of *Sanba* as a profession, were promulgated in 1899.

The Midwifery Regulations established qualifications for *Sanba* but did not specify the scope of their duties. By clarifying the above, we can identify the situations that *Sanba* had to deal with at that time—in other words, the specific scope of their duties.

II. METHODS

This study is a historical research. Content analysis of the midwifery examination questions was conducted.

1. Historical materials used in the analysis

“*Sanba-Gaku zasshi*,” Vol. 1-63 (1900-1905), “*Josan no Shiori*,” Vol. 43-115 (1900-1905), and “*Hiroshima Eisei Iji geppou*,” Vol. 76 and 84 (1905).

The above documents are academic journals published by two obstetricians who worked hard to improve midwife education and knowledge to change

the situation of childbirth in Japan as well as local monthly medical reports. "*Sanba-Gaku zasshi*" is the academic journal of the "*Nihon Sanba-Gaku kyoukai* (Japan Midwifery Association)", which was established by the obstetrician Kenzo KUSUDA (1861-1909). Additionally, "*Josan no Shiori*" is the academic journal of the "*Ogata Byouin Josanpu kyoukai* (Ogata Hospital Midwives' Association)," which was established by the obstetrician Masakiyo OGATA (1864-1919).

2. Methods of Collecting Historical Materials

The selection criteria for historical materials were limited to those issued after 1899, when Midwifery Regulations were promulgated, and those containing descriptions of the midwifery examination.

In this study, we reviewed materials published between 1899 and 1906 and extracted those that met the inclusion criteria. The period was set because the publication of the "*Sanba-Gaku zasshi*," which contained many descriptions related to midwifery examination, ended in 1906, and because the historical materials that could be collected for this study were limited to eight years.

3. Analytical Methods

The midwifery examination consists of theoretical and practical examinations. The questions were categorized as follows:

First, theoretical and practical examination questions for midwifery examinations were extracted from the "Current Events" section of "*Sanba-Gaku zasshi*" and from the "Miscellaneous Reports" section of "*Josan no Shiori*" and "*Hiroshima Eisei Igi geppou*." These articles were published between 1899 and 1905.

Next, the theoretical examination questions were categorized into four examination subjects as specified in the midwifery examination Regulations: 1. normal pregnancy and childbirth, and their management; 2. Progression of the normal postpartum period and nursing methods for postpartum

women and newborns. 3. abnormal pregnancy and childbirth, and their management; 4. Diseases in pregnant women, women in labor, postpartum women, and newborns, methods of disinfection, midwifery knowledge, and principles (Kango gyousei kenkyu kai, 2012, p. 1054-1055). Similar questions were further subcategorized for clarification.

Practical examination questions were then categorized into three types based on the examination subjects stipulated in midwifery examination regulations: 1. Examination of pregnant women, 2. examination using models; and 3. Examinations with no description of the questionnaire method. Similar questions were further subcategorized to clarify their content.

Based on these findings, we discuss the knowledge and skills required by midwives.

When conducting the analysis, the following points were taken into consideration.

The researcher is a midwife who has conducted historical research on midwifery. Therefore, historical materials were translated into modern language using an ancient dictionary and repeatedly reviewed with supervisors and midwifery researchers to interpret the semantic content.

To understand the content of midwifery education and techniques in the Meiji era, we referred to the "*Shushi-Sanba ron*" vols. 1-8 (1877-1878), which greatly influenced midwifery education in Japan (Takahashi, 1990), and other textbooks on midwifery at the time. In particular, "*Shushi-Sanba ron*" was a German midwifery textbook written by a German obstetrician, Schultze, B. S. (1827-1919). The textbook was translated into Japanese, widely disseminated throughout Japan, and used in midwifery education for many years (Takahashi, 1990; Ogata, 1980).

III. RESULTS

The historical materials analyzed in this study were published between 1900 and 1905. The theoretical examinations consisted of 89 examinations

with 708 questions and were conducted in 23 prefectures between 1900 and 1905.

Thirty practical examinations, 30 examinations with 63 questions conducted in 17 prefectures between 1901 and 1905 were analyzed. The difference in the number of questions was because, in many cases, only theoretical questions were listed.

The number of examinations, examinees, and successful examinees were taken from data on midwifery examination results in each prefecture for three years from 1901 to 1903 (Ministry of Home Affairs, Bureau of Health, July 1905). The results of this survey were donated to and published in the "*Sanba-Gaku zasshi*," Vol. 48, 57, 58, 59, and 61, and the "*Josan no Shiori*," Vol. 102 and 103. The tables and commentary are identical for all historical materials.

1. Contents of midwifery examination; Theoretical examination questions

The theoretical examination questions did not specify which corresponded to each subject. The researcher categorized all questions into four examination subjects by referring to midwifery textbooks of the time.

1) Normal pregnancy and childbirth, and their management: This subject had 195 questions, consisting of 10 topics and 36 sub-topics. The topics covered included the following: "Anatomy and physiology of the mother and newborn, fetus, and fetal appendages," "Diagnosis of pregnancy," "Assistance with daily life and health guidance for pregnant women," "Physiological changes in a woman's body due to pregnancy," "Fetal growth," "Diagnostic techniques for pregnant and childbearing women," "Progression of childbirth," "Procedures and management during childbirth," "Perineal protection," and "Supplies necessary for midwifery services".

For example, in the topics "Anatomy and physiology of the pregnant woman and newborn, fetus, and fetal appendages," the contents "Anatomy and physiology of the whole body," "Structure of the female pelvis

and pelvic measurements," "Structure and function of the female reproductive organs," "Structure of the newborn skull," "Fetal circulation," and "Structure and function of the fetal appendages," were included in the questions (Table 2).

2) Progression of normal postpartum period and nursing methods for postpartum women and newborns: This subject had 104 questions consisting of four topics and 21 sub-topics. The topics covered included the following: "physiological changes in postpartum women," "daily life assistance and health guidance for postpartum women," "nursing care and hygiene practices for newborns," and the physiological characteristics of newborns".

For example, in the topics "Daily life assistance and health guidance for postpartum women," the contents "Methods of postpartum care," "Methods of external genital care for postpartum women," "Care for postpartum women with urination," "Postpartum conditions requiring the most attention," "Regimen for postpartum," and "Breastfeeding," were included in the questions (Table 3).

3) Abnormal pregnancy, childbirth, and their management: This subject comprised 224 questions with 14 topics and 64 subtopics. The topics covered included the following: "Abnormal pregnancies," "Abnormalities during pregnancy," "The definition of difficult labor," "Abnormal fetal positions and presentations," "Multiple births," "Signs of fetal distress during delivery," "Abnormal conditions of the birth canal," "Abnormal labor contractions," "Abnormal delivery of the placenta," "eclampsia," "Uterine or perineal rupture," "Abnormal bleeding during delivery," "Delayed placental expulsion," "Neonatal asphyxia," and "Neonatal resuscitation".

For example, in the topics "Abnormal fetal positions and presentations," the contents "Breech delivery technique," "Differential diagnosis of breech and face presentation by internal examination," "Breech presentation (symptoms, causes, and mechanisms of delivery)," "Footling presentation," "Transverse presentation," "Face presentation," and "Fetal conditions impeding passage through the birth canal," were

Table 2. Exam contents of "Normal pregnancy and childbirth, and their management"

Topics	Sub-topics
Anatomy and physiology of the mother and newborn, fetus, and fetal appendages	Anatomy and physiology of the whole body
	Structure of the female pelvis and pelvic measurements
	Structure and function of the female reproductive organs
	Structure of the newborn skull
	Fetal circulation
	Structure and function of the fetal appendages
Diagnosis of pregnancy	Principles of pregnancy and its relation to menstruation
	Methods of calculating gestational age
	Signs and symptoms of pregnancy
	Methods for estimating the due date
Assistance with daily life and health guidance for pregnant women	Nursing care for pregnant women
	Regimen for pregnant women
Physiological changes in a woman's body due to pregnancy	Changes in the entire body, particularly in the nervous and digestive systems
	Changes in the reproductive organs during each month of pregnancy
	State of the pregnant woman during each month of pregnancy
Fetal growth	Developmental status of the fetus during each month of
	Characteristics of a mature fetus
Diagnostic techniques for pregnant and childbearing women	Overview and requirements of examination methods performed by midwives
	Purpose, method, considerations, and contraindications of internal examination
	Purpose of external examination and methods for determining gestational age
	Overview, purpose, and site for auscultation of fetal heart
	Characteristics and diagnostic methods for fetal presentation and position
	Differential diagnosis between primiparous and multiparous women
Progression of childbirth	Signs of onset of labor
	Methods for predicting the progression of labor difficulty
	Progression of normal labor
	Mechanisms of fetal delivery
Procedures and management during childbirth	Procedures during normal delivery
	Indications for maternal positioning in lateral recumbent
	Types of abdominal pressure, their effects, indications, and contraindications
	Management of the second stage of labor
	Management of the third stage of labor
Perineal protection	Purpose, method, and timing of perineal protection
	Perineal protection in lateral recumbent position
Supplies necessary for midwifery services	Midwife's essentials
	Facilities in the delivery room

Table 3. Exam contents of "Progression of normal postpartum period and nursing methods for postpartum women and newborns"

Topics	Sub-topics
Physiological changes in postpartum women	The progression of normal postpartum
	Definition of postpartum women
	Condition of the postpartum women immediately after delivery
	Changes in the entire body of postpartum
	Progression of body temperature and pulse rate in postpartum
	Recovery process of the uterus and birth canal
	Causes and treatment of afterpains
	Physiological changes in postpartum hemorrhage
Daily life assistance and health guidance for postpartum women	Methods of postpartum care
	Methods of external genital care for postpartum women
	Care for postpartum women with urination
	Postpartum conditions requiring the most attention
	Regimen for postpartum
	Breastfeeding
Nursing care and hygiene practices for newborns	Methods for neonatal care at birth
	Procedures for umbilical cord care after birth
	Nursing methods and precautions for newborns
	Regimen for newborns
	Changes and procedures after umbilical cord clamping
	Bathing methods
Physiological characteristics of newborns	Characteristics of excretion and digestion

Table 4. Exam contents of "Abnormal pregnancy and childbirth, and their management"

Topics	Subtopics
Abnormal pregnancies	Abnormal Types of Pregnancy
	Ectopic Pregnancy
	Molar Pregnancy
	Twin Pregnancy
	Causes and Cautions for Complications During Pregnancy
Abnormalities during pregnancy	Bleeding During Pregnancy (Causes, Symptoms, Treatment)
	Miscarriage (Causes, Symptoms, Treatment, Prevention)
	Management of Heavy Bleeding in Miscarriage
	Distinguishing Between Miscarriage and Preterm Birth
	Management of Preterm Birth
	Fetal Demise During Pregnancy (Causes, Symptoms, Treatment)
The definition of difficult labor	Definition of Dystocia
Abnormal fetal positions and presentations	Breech delivery technique
	Differential diagnosis of breech and face presentation by internal examination
	Breech presentation (symptoms, causes, and mechanisms of delivery)
	Footling presentation (symptoms, causes, and mechanisms of delivery)
	Transverse presentation (symptoms, causes, and mechanisms of delivery)
	· Causes and symptoms
	· Methods of transverse manipulation
	· Midwifery procedures during transverse delivery
	· Diagnosis and management of umbilical cord or hand prolapse
	· Precautions during upper extremity traction
Face presentation (symptoms, causes, and mechanisms of delivery)	
Multiple births	Fetal conditions impeding passage through the birth canal
	Management and precautions for multiple birth deliveries
Signs of fetal distress during delivery	Signs of fetal distress during delivery
	Methods to determine fetal life or death during delivery
	Causes and symptoms of fetal death during delivery
	Effects of prolonged labor on the fetus
Abnormal conditions of the birth canal	Abnormal pelvis (types, diagnosis, management during delivery)
Abnormal labor contractions	Hypotonic contractions (causes, symptoms, management)
	Hypertonic contractions (causes, management)
	Complications and management of hypertonic contractions
	Spasmodic contractions (causes, symptoms, management)
Abnormal delivery of the placenta	Placenta previa (overview, symptoms, management)
	Causes, symptoms, and management of early placental abruption
	Abnormalities of the amniotic membrane
	Complications arising from resilient amniotic membranes
	Timing of spontaneous rupture of membranes
	Situations and indications for midwife-induced membrane rupture
	Abnormalities in amniotic fluid
	Complications of oligohydramnios and polyhydramnios
	Overview, symptoms, management, and diagnostic methods of polyhydramnios
	Types of umbilical cord abnormalities
	Dangers and management of excessively short umbilical cords
	Distinguishing between umbilical cord prolapse and umbilical cord presentation, causes, management, potential complications
	Umbilical cord coiling
Eclampsia	Causes, symptoms, and management of eclampsia
Uterine or perineal rupture	Sites of injury resulting from delivery
	Uterine rupture (causes, symptoms, treatment)
	Perineal tears (causes, symptoms, treatment, prevention)
Abnormal bleeding during delivery	Causes and emergency management of bleeding during labor
	Each stage of labor
	Abnormal bleeding due to hypotonic contractions
	Signs of life-threatening conditions accompanied by bleeding and treatment
	Acute anemia (causes, symptoms, treatment)
Delayed placental expulsion	Causes and management of delayed placental delivery
	Maternal complications arising from retained placenta
	Methods of placental removal (expression, manual extraction, Crede's method)
Neonatal asphyxia and neonatal resuscitation	Condition of asphyxiated infant
	Causes, symptoms, and treatment of neonatal asphyxia
	Distinguishing between neonatal asphyxia and stillbirth
	Neonatal resuscitation techniques (Schultze's method)
	Signs of resuscitation success in asphyxiated infants

Table 5. Exam contents of "Diseases of pregnant women, women in labor, postpartum women and newborns, methods of disinfection, midwifery knowledge and principles"

Topics	Subtopics
Abnormal conditions in pregnant women (causes, symptoms, management, and prevention)	Major diseases affecting pregnant women
	Hyperemesis gravidarum
	Urinary retention
	Edema
	Varicose veins
	Leukorrhoea during pregnancy
	Retroverted uterus
	Uterine prolapse
	Pendulous abdomen
	Conditions accompanied by bleeding
	Pyelonephritis
	Syphilis during pregnancy
	Uterine fibroids
Abnormal conditions in postpartum women (causes, symptoms, management, and prevention)	Names, causes, and prevention of the most important diseases that occur in postpartum women
	Subinvolution of the uterus
	Postpartum fever
	Swelling of the vulva and perineum
	Urinary and bowel dysfunction
Abnormal conditions in lactating women (causes, symptoms, management, and prevention)	Mastitis
	Treatment for mothers with insufficient milk production and infant feeding methods
	Conditions Where Breastfeeding Should Be Prohibited and Maternal Diseases
	Pathological symptoms in newborns due to breast milk from mothers with beriberi
	The choice of a woman who can provide breast milk in place of the mother
	Formula feeding methods
	Precautions for handling breast pumps
Abnormal conditions in newborns (causes, symptoms, management, and prevention)	Types of infant malformations and midwife's attention
	Major diseases in newborns
	Congenital syphilis
	Conditions causing grinding trismus
	Signs, treatment, and <i>Sanba's</i> attention for erysipelas
	Hordeolum
	Conjunctivitis (purulent ophthalmia)
	Miliaria
	Distinguishing between cephalohematoma and caput succedaneum
	Conditions of the Umbilicus (Umbilical Bleeding, Inflammation, Umbilical Hernia)
	Diaper rash
	Jaundice
	Digestive disorders
Nursing care for premature infants	Nursing care for premature infants
Disinfection methods	Types of disinfectants, their advantages and disadvantages, usage, preparation methods,
	Disinfection methods for internal examination
	Purpose and methods of disinfection during delivery
	Disinfection methods for instruments
Procedures performed by <i>Sanba</i>	Chemicals and methods for vaginal irrigation
	Indications, usage, and precautions for catheterization
	Purpose and method of vaginal tamponade
	Episiotomy
The scope of midwifery duties	When to call a doctor
	Reasons why a <i>Sanba</i> cannot perform certain treatments herself
	Scope of techniques that a <i>Sanba</i> can perform
	Approach to patients seeking abortion

included in the questions. Questions on the transverse position included methods of transverse manipulation, midwifery procedures during transverse delivery, diagnosis and management of umbilical cord or hand prolapse, and precautions during upper-extremity traction (Table 4).

4) Diseases of pregnant women, women in labor, postpartum women and newborns, methods of disinfection, and midwifery knowledge and principles: This subject had 185 questions, consisting of eight topics and 51 sub-topics. The topics covered included the following: "Abnormal conditions in pregnant women (causes, symptoms, management, and prevention)," "Abnormal conditions in postpartum women (causes, symptoms, management, and prevention)," "Abnormal conditions in lactating women (causes, symptoms, management, and prevention)," "Abnormal conditions in newborns, (causes, symptoms, management, and prevention)," "Nursing care for premature infants," "Disinfection methods," "Procedures performed by *Sanba*," and "Scope of midwifery duties."

For example, in the topics "Disinfection methods," the contents "Types of disinfectants, their advantages and disadvantages, usage, preparation methods, necessity," "Disinfection methods for internal examination," "Purpose and methods of disinfection during delivery," and "Disinfection methods for instruments," were included in the questions (Table 5).

2. Contents of midwifery examination; Practical examination questions

The examination for pregnant women had 10 questions and consisted of 6 topics. The topics covered included the following: "Diagnosis of fetal position, fetal lie, and presentation: Using the techniques of palpation and auscultation," "Mechanism of delivery for the target pregnant woman," "Symptoms of pregnancy," "Diagnosis of the number of months of pregnancy and calculation of the expected date of birth," "Diagnosis of fetal size,"

and "Diagnosis of fetal heart sounds location".

The model examination consisted of 26 questions and eight topics. The topics covered included the following: "Diagnosis of fetal position, fetal lie, and presentation," "Diagnosis of fetal position, fetal lie, and presentation by internal examination," "Explanation of the mechanism of cephalic delivery," "Diagnosis, management and methods of delivery: Multiple pregnancy, face presentation, breech presentation, footling presentation, abnormal rotation," "Management of vertex delivery with umbilical cord and arm prolapse," "Diagnosis and treatment of placental abruption with hemorrhage, including emergency treatment for acute anemia," "Perineal protection techniques," and "Schultze method of artificial respiration."

For example, in the topics "Diagnosis of fetal position, fetal lie, and presentation," the contents "Breech position, first fetal position, first presentation," and "Diagnosis of transverse presentation," were included in the questions.

"During the practical examination, each candidate was asked various questions using birth simulator" (as cited in *Nihon Sanba-Gaku Kyoukai*, 1903j). This reveals that obstetrical models were used in the examinations at the time.

The examination with unclear questioning methods contained 27 questions and consisted of eight topics. The topics covered included the following: "Diagnosis of fetal position, fetal lie, and presentation," "Explanation of the mechanism of cephalic delivery," "Diagnosis, management, and methods of delivery: breech presentation, footling presentation, transverse presentation; management of umbilical cord prolapse in transverse presentation," "Perineal protection techniques," "Management of neonatal asphyxia," "Use of midwifery equipment and scope of midwifery duties," and "Examples of postpartum treatments that midwives were permitted to perform" (Table 6).

Table 6. Contents of the practical examination

Questioning Method	Topics
The examination for pregnant women	Diagnosis of fetal position, fetal lie, and presentation: Using the techniques of palpation and auscultation
	Mechanism of delivery for the target pregnant woman
	Symptoms of pregnancy
	Diagnosis of the number of months of pregnancy and calculation of the expected date of birth
	Diagnosis of fetal size
	Diagnosis of fetal heart sounds location
The model examination	Diagnosis of fetal position, fetal lie, and presentation Example -Breech position, First fetal position, First presentation -Diagnosis of Transverse presentation
	Diagnosis of fetal position, fetal lie, and presentation by internal examination
	Explanation of the mechanism of cephalic delivery
	Diagnosis, management and methods of delivery: Multiple pregnancy, face presentation, breech presentation, footling presentation, abnormal rotation
	Management of vertex delivery with umbilical cord and arm prolapse
	Diagnosis and treatment of placental abruption with hemorrhage, including emergency treatment for acute anemia
	Perineal protection techniques
	Schultze method of artificial respiration
Examination with unclear questioning methods	Diagnosis of fetal position, fetal lie, and presentation
	Explanation of the mechanism of cephalic delivery
	Diagnosis, management and methods of delivery: breech presentation, footling presentation, transverse presentation
	Management of umbilical cord prolapse in transverse
	Perineal protection techniques
	Management of neonatal asphyxia
	Use of <i>Sanba</i> 's equipment and scope of midwifery duties
	Examples of postpartum treatments that <i>Sanba</i> were permitted to perform

3. Number of examinations, number of examinees, number of passers, and pass rate by prefecture

Between 1901 and 1903, 192 midwives were examined nationwide. The region with the highest number of examination sessions was 7, whereas the lowest was 1. Only one prefecture did not conduct any midwifery examinations during the three-year period.

The total number of examinees during the study period was 4546. Tokyo Prefecture had the highest number of examinees (1127), whereas other regions had fewer than 300, 100, or even 10 examinees, showing regional variations.

The pass rate for each prefecture was calculated by dividing the total number of successful candidates

over the three years by the total number of candidates who took the exam. The national passing rate was 57.8%. The three prefectures with 100% pass rates were Aomori, Miyagi, and Okinawa, and the four with pass rates of 90% or more were Shizuoka, Wakayama, Tottori, Okayama, and Kochi. The lowest pass rate was 23.8% in Tokyo, with 1127 examinees.

In addition, there were 11 prefectures nationwide with a pass rate of less than 57.8%, and these were distributed across urban and non-urban areas from Yamagata in the north to Kumamoto in the south (Table 7).

Table 7. Midwifery Examination (*Sanba Shiken*) results for each prefecture from 1901 to 1903

Prefecture	The total over a span of three years			
	Number of Examinations	Number of examinees	Number of passers	Pass rate
Tokyo	6	1127	268	23.8
Kyoto	6	173	132	76.3
Osaka	2	113	47	41.6
Kanagawa	5	26	18	69.2
Hyogo	5	230	161	70.0
Nagasaki	2	54	27	50.0
Niigata	6	380	228	60.0
Saitama	4	29	24	82.8
Gunma	6	59	30	50.9
Chiba	2	30	22	73.3
Ibaragi	2	11	9	81.8
Tochigi	4	43	38	88.4
Nara	6	62	34	54.8
Mie	4	76	63	82.9
Aichi	4	154	118	76.6
Shizuoka	5	67	61	91.0
Yamanashi	6	67	27	40.3
Shiga	5	130	73	56.2
Gifu	2	75	62	82.8
Nagano	2	70	47	67.1
Miyagi	4	46	46	100.0
Fukushima	5	229	72	31.5
Iwate	5	85	60	70.7
Aomori	2	6	6	100.0
Yamagata	3	78	45	57.7
Akita	2	19	12	63.2
Fukui	3	53	42	79.2
Ishikawa	6	18	14	77.8
Toyama	0	0	0	0
Tottori	5	43	39	90.7
Shimane	7	33	29	87.9
Okayama	1	30	27	90.0
Hiroshima	5	63	46	73.0
Yamaguchi	3	21	15	71.4
Wakayama	6	313	304	97.1
Tokushima	6	17	13	76.5
Kagawa	3	24	21	87.5
Ehime	6	62	54	87.1
Kochi	3	25	23	92.0
Fukuoka	6	199	154	77.4
Oita	3	8	6	75.0
Saga	4	64	31	48.4
Kumamoto	4	71	24	33.8
Miyazaki	4	17	13	76.5
Kagoshima	3	9	7	77.8
Okinawa	2	8	8	100.0
Hokkaido	7	47	38	80.9
Total	192	4564	2638	57.8

Note The results of a statistical survey of midwife examination results in each prefecture over a three-year period from 1901 to 1903, conducted by the Ministry of Home Affairs' Sanitation Bureau in July 1904, were published in "*Sanba-Gaku zasshi* , Vol. 48, 57, 58, 59, 61" and "*Josan no Shiori* , Vol. 102, 103". The researcher created a table by quoting the figures from this. The researcher calculated the passing rate.

IV. DISCUSSION

1. The breadth and specificity of the exam questions and the scope of midwives' duties

The questions in the theoretical examination covered a wide range of Western medical knowledge related to normal pregnancy and delivery, postnatal nursing and management methods, abnormal pregnancy and delivery, diseases in pregnant women and newborns, and disinfection methods. This shows the breadth of knowledge required of *Sanba* at that time. In addition, the practical examination included many questions related to specific diagnostic, management, and delivery assistance techniques. The fact that the practical examination included questions on specific techniques using pregnant women and childbirth models shows that the practical skills required by *Sanba* were emphasized.

The midwifery examination questions collected this time included many questions on abnormal cases from midwifery textbooks of the time, including "*Syushi Sanba-Ron.*" Among these, there was a particular trend towards questions on abnormal deliveries, with a heavy emphasis on knowledge and skills. For example, questions were asked about how to handle abnormal deliveries, such as breech, footling, and transverse positions, as well as their symptoms, causes, and delivery mechanisms. In addition, questions were asked about how *Sanba* should respond to extremely urgent situations, such as the diagnosis and management of umbilical cord and finger prolapse in transverse deliveries, and the precautions to be taken when performing upper limb traction.

During the Meiji period, childbirth took place mainly at home, and *Sanba* were in charge of deliveries even before Midwifery Regulations were promulgated. Regarding how *Sanba* should respond to abnormal deliveries, some midwifery textbooks state that they should promptly request a doctor to visit (Kinoshita,

1903). However, in situations where transport and communication methods were not well developed, it was often too late to call a doctor in an emergency, and in some cases, obstetricians were too far away to make house calls or refused to come. In addition, expectant mothers could not call a doctor because of poverty (Ode, 2003). Even if they were able to call a doctor, there were only 35,289 doctors in the whole country in 1904 (Ministry of Health and Welfare Medical Bureau, 1976b), of which only about half had studied Western medicine, and the other half were traditional Chinese medicine doctors who had been in practice for some time. At the time, there was a disparity in the number of doctors and the state of medical care in urban areas and the rest of the country; therefore, it can be inferred that the number of doctors who could deal with childbirth, especially abnormal childbirth, was not particularly large.

Given these circumstances, *Sanba* had to be able to respond to any situation they faced, whether normal or abnormal, and needed detailed knowledge and skills to respond to abnormal deliveries and emergencies.

In addition, the midwifery examination questions analyzed in this study were administered immediately after the Midwifery Regulations were promulgated. *Sanba* has traditionally led to abnormal deliveries. Although Midwifery Regulations stipulate that doctors should be called upon in the event of an emergency, it is likely that both *Sanba* and obstetricians were aware that deliveries were a domain handled by *Sanba*. This had a significant impact on midwifery education in Japan, and can be seen in the unique Japanese additions made when the "Syushi *Sanba-Ron*" was translated into Japanese and used as a midwifery textbook across the country (Tsukizawa, 2015). According to Tsukizawa (2015), who first discovered this, the content added to *Syushi Sanba-Ron* is extremely specific and detailed, assuming that the midwife will take responsibility for the situation until the end, even in the event of an abnormal delivery.

Sanba in the Meiji period were required to acquire a wide range of specific knowledge and skills based on Western medicine, according to Midwifery Regulations. However, their roles in protecting the safety of mothers and children through their proximity to the lives of pregnant women, mothers, new mothers, and newborns remain unchanged.

2. Variations in the number of exams and pass rates by region

At that time, midwifery examinations were held in each prefecture, and there were significant differences in the number of times the exam was held and the pass rate in each region, with the number of applicants being particularly high in Tokyo and the pass rate being particularly low. This was due to the establishment of Midwifery Regulations, which meant that, across the country, women who had passed both theoretical and practical exams would take on the role of *Sanba*, replacing the traditional apprentice system. This study focused on the transition period immediately following the promulgation of Midwifery Regulations. Therefore, many *Sanba* did not meet the required standards, even though they were expected to have Western medical knowledge and standard midwifery techniques based on that knowledge as well as experience.

Next, we consider the educational system in each region. In this study, prefectures with a midwifery examination pass rate of 90% or more were mostly located far from urban areas. The number of applicants for examinations in these prefectures ranged from six to 300. Nine years after the midwifery examination survey results referred to in this article, in 1912, approximately half of the modern midwives (Hereinafter referred to as *Shin-Sanba*) who had studied modern medicine and passed the midwifery examination, were in urban areas, and the number of *Shin-Sanba* in urban areas was twice that of traditional midwives (*Kyu-Sanba*) (Ogata, 1980). This suggests that there may have been a situation where the training of *Shin-Sanba* was being rush outside urban

areas. This suggests that there may have been a situation where the training of the so-called *Shin-Sanba* was being rushed outside urban areas. Midwife education in Japan began in 1874, after the Medical Regulations were promulgated, mainly in the Tokyo, Kyoto, and Osaka prefectures. Subsequently, they spread to various places either independently or by imitating the styles of the three capitals (Kanbara, 1967; Ogawa, 2002; Sugaya, 1978; Usami, 1990). Looking at the process of establishing midwifery schools, the first midwifery schools were established in Mie in 1877 and Tokyo in 1880. Subsequently, midwifery schools gradually opened in each prefecture, increasing to three schools in 1886, 16 schools in 1896, and 51 schools in 1906. However, the number of schools and the timing of their establishment varied from prefecture to prefecture (Ogata, 1980). Thus, it is possible that the pass rate was affected by differences in the demand for *Sanba*, educational systems, and the way the midwifery examination was conducted in each region. In this study, we could not examine the difficulty of the midwifery examination or the differences in the quality of education in each region; however, it cannot be said that the quality of *Sanba* in prefectures with high pass rates is necessarily good.

The editor of *Sanba-Gaku zasshi* (1901b) stated that there were large differences in the number of successful candidates between prefectures; however, this did not necessarily mean that the ability of examinees in prefectures with a large number of successful candidates was superior. Furthermore, it is also stated that the current problems could be prevented by unifying midwifery examination questions, establishing standards for selecting questions, and paying attention to the selection of examiners. The phrase "current problems" shows that there was already an awareness of the problems between regions at the time, and that attention was being paid to solving them.

In this study, we analyzed certification examinations conducted over a six-year period (1900–1905),

immediately following the promulgation of the Midwifery Regulations. This allowed us to examine the role of midwives from a historical perspective and gain insights into the knowledge and skills required of *Sanba* at that time when their status as a recognized profession was established.

However, as the analysis in this study only covered the content of midwifery examinations and focused solely on a portion of the examinations held during a specific period based on available historical materials, it was not possible to definitively determine the knowledge and skills required by *Sanba* throughout the Meiji era. There is also the possibility of further analysis, such as considering the differences in the state of midwife education and medical conditions in each region at the time, and the differences in the content of midwifery examinations in each prefecture.

Future issues include not only the transition period immediately following the promulgation of the Midwifery Regulations, which was the focus of this study, but also an analysis of the midwifery examination questions and model answers before the promulgation of the Midwifery Regulations. Additionally, it is essential to analyze regional differences in education and medical practices. These analyses aimed to clarify the knowledge and skills required by midwives throughout the Meiji period and to understand the changes that have occurred over time, including regional disparities.

V. CONCLUSION

1. At the time, *Sanba* were required to have a wide range of detailed, Western medical knowledge.
2. *Sanba* were required to have knowledge and skills related to abnormal deliveries, such as handling abnormal fetal positions (breech, transverse, etc.) and multiple pregnancies, and the ability to respond appropriately in emergency situations that could endanger the lives of their mothers and children. These abilities were especially critical because *Sanba* were often the primary caregivers for deliveries.

Acknowledgements

I would like to express my sincerest gratitude to my supervisors for their invaluable advice and meticulous guidance throughout the preparation of this thesis. Their support and expertise have been instrumental in defining the direction and quality of this work.

Disclosure statement

No potential conflict of interest was reported by the authors.

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