

# Twinning Project between the Japanese Midwives Association and Mongolian Midwives Association for Organisational Strengthening as Shown by MACAT

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## Research

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# Abstract

## Background

The Japanese Midwives Association (JMA) collaborated with the Mongolian Midwives Association (MMA) on the twinning project under the guidance of the International Confederation of Midwives (ICM) towards the achievement of the Sustainable Development Goals. The purpose of this study was to evaluate the outcomes of the organisational strengthening of the MMA through the twinning project with the JMA. ICM's Member Association Capacity Assessment Tool (MACAT) was used as an indicator of MMA's organisational strengthening—first in the year 2015 and then at the end of 2018—for a comparative analysis. For a comprehensive evaluation, qualitative interviews were conducted with the board members and general members of the MMA in 2018, and the results were compared with the issues identified during the first visit to MMA in 2014.

## Results

In 2015, 27 (28.1%) of the 96 MACAT items were achieved, while in 2018, 66 items (68.8%) were achieved. The average progress rate was 40.7%. Items with a high progress rate corresponded to: Governance (50.0%), Management Practices and Leadership (50.0%), Functions (43.8%), and Financial Resource Management (37.5%). Four themes emerged from the interviews: Professional identity, Strengthening midwifery services, Advocacy for midwives, and Recognition of midwives as autonomous professionals.

## Conclusions

The organisational strengthening of the MMA through the twinning project resulted in more positive outcomes than expected. These outcomes were apparent from the evaluation of the MACAT items and the opinions and impressions of the MMA members, as elicited through the qualitative interviews. The MACAT was selected as an easy-to-understand index. However, instead of following the concept of 'equal participation on the ground level', a mentorship approach was adopted in line with the concept of equity. Equity and a mentorship approach can serve as key variables of success in international co-operation.

## Background

The United Nations Millennium Development Goals (MDGs) revealed that medical aspects and socio-economic factors related to poverty, education, gender equality, and women's empowerment have a major impact on maintaining and promoting women's health [1]. It is imperative to deal with these challenges with inputs from experts in each discipline. To achieve these goals, midwives, who are a vital resource for improving access to reproductive and sexual healthcare, need to be relied upon. To guarantee the quality of care and promote active participation, it is essential to strengthen and revitalise the organisation of midwives on a national scale. The United Nations MDGs for maternal mortality and infant mortality continue to be Sustainable Development Goals (SDGs); within this context, midwives are expected to be more active than ever as health professionals.

The World Health Organization (WHO) recommended the twinning project as one of the strategies for achieving the MDGs [2]. The International Confederation of Midwives (ICM) adopted the twinning project in 2009, and has encouraged midwives' associations around the world to pursue the MDGs [3]. The Japanese Midwives Association (JMA) carried out a joint twinning project with the Vietnamese Association of Midwives (VAM) from 2012 to 2014 under the guidance of the ICM in order to work towards the MDGs [4–6]. In 2015, we initiated the twinning project with the Mongolian Midwives Association (MMA).

## **History of the Mongolian Midwives Association and the Japanese Midwives Association**

In 2006, when Ms Chieko Nohno, who was a member of the parliament of Japan and a midwife, visited Mongolia, the situation of maternal and child health in Mongolia was extremely dire; the maternal mortality rate per 100,000 live births was 93, the infant mortality rate per 1,000 live births was 26, and the total fertility rate was 1.9 [7].

As a strategy to improve maternal and child health in Mongolia, Ms Nohno argued that it was necessary to establish the MMA to strengthen the organisational activities of midwives because midwives are the first-line caregivers for mothers and children. In December 2006, the MMA was established through the collaborative efforts of the Mongolian Ministry of Health and related members of the parliament, along with Ms Nohno. However, a well-qualified and suitable president could not be appointed for the MMA. Until 2012, the president of the MMA was an obstetrician and gynaecologist instead of a midwife [8]. We made the acquaintance of a provisional midwife president of the MMA, at the 2014 ICM triennial council meeting at the Prague ICM Convention. In October of that year we visited the MMA to determine the current situation of Mongolian midwifery. Our visit revealed the challenges of the MMA, such as an immature professional association and the abysmal maternal and child health scenario in Mongolia. The MMA was evaluated as an undeveloped form of governance for a professional group. We recognised that the JMA could play a particularly important role in improving the MMA's governance, financial resource management, and the quality of midwifery services.

At the beginning of the ICM Asia Pacific Yokohama regional conference in 2015, a twinning inauguration and orientation was held under the guidance of the ICM Secretariat at both the JMA and the MMA. According to the ICM, an association is one of the three pillars of a strong midwifery profession [9]. At this first meeting, the MMA was interested in clarifying the issue of obesity during pregnancy, which resulted in an increased number of overweight babies being born in Mongolia. Consequently, the incidences of dystocia, postpartum bleeding, and C-section had been increasing. This phenomenon was the biggest challenge for Mongolian clinical midwives because it caused increased workload and eventual exhaustion.

Collaboration on this issue by the board members at the headquarters and midwives' branches nationwide as a tool for strengthening the organisation of the MMA was expected to facilitate smooth communication from the MMA headquarters to the local midwives' branches. It was also expected to improve unification. In other words, it was expected that strengthening the organisation of the MMA

would help in enlivening the organisation itself, and we decided to accomplish this by conducting the first midwifery-led study to address the nationwide issues being faced by the MMA, and started collaborating on the twinning project with the MMA.

The purpose of this study was to evaluate the outcomes of the organisational strengthening of the MMA through a twinning project with the JMA.

## **Methods**

### **Research process**

The JMA resolved to strengthen the organisation of the MMA by building a joint platform and carrying out an obesity prevention programme during pregnancy. We used ICM's MACAT as an indicator of the MMA's organisational strengthening, first in 2015, and again at the end of 2018, for a comparative analysis. In 2018, we interviewed the MMA board members and general members to qualitatively analyse whether the twinning project was effective in strengthening the organisation of the MMA. We added the achievement level of the issues of the MMA during our first visit in 2014.

### **ICM's MACAT**

MACAT consists of 7 major items including sub-items in each section. The number of sub-items is shown in parentheses in the following list: A. Governance: a board (9), a vision and a mission (6), goals and strategies (7), and a legal status (6); B. Management Practices and Leadership: administrative policies and procedures (3), infrastructure and information systems (3), authority and accountability (2), and human resources (4); C. Financial Resource Management: accounting (3), budgeting (2), and financial information (3); D. Functions: membership services (10), advancing professional practice (3), quality control for care (7), communication (5), advocacy (4), and service delivery (3); E. Collaboration, Partnerships, and Networks: with women, government, and other NGOs (4) and relationship with donors and the private sector (3); F. Visibility including Media Relations (6); and G. Sustainability (3). There are 96 sub-items in total. The answer options include 'yes', 'no', and 'not applicable' [10].

### **Opinions and impressions of the board members and the general members of the MMA about the twinning project with the JMA**

Focus group interviews were conducted with 7 current board members and 110 general members of the MMA nationwide in 2018, and were analysed qualitatively.

### **The obesity prevention programme during pregnancy**

This programme was conducted as an action research using a Plan-Do-Check-Act cycle involving all members of the MMA. A seminar and a workshop were held in Ulaanbaatar, the capital of Mongolia, for 100 Mongolian midwives from all over the nation each summer from 2016 to 2018. After the seminar and workshop, health guidance for obesity prevention during pregnancy based on the seminar and workshop

was provided to pregnant women for six months using an information brochure and a portable application devised by midwives both at hospitals and clinics nationwide until early February of the following year. For the evaluation of this programme, a nationwide survey was conducted with all the midwife members and 2,000 postpartum mothers using stratified sampling in March 2017 and 2018.

### **Dealing with the issues identified in 2014**

We made appropriate use of our platform and conducted face-to-face meetings once each in summer and winter, paid attention to the issues faced by the MMA, and provided appropriate advice. At times, we responded to urgent matters by telephone or email with the assistance of an interpreter.

### **Ethical approval**

This study was approved (28-111) by the Ethics Review Committee of Kyushu University Hospital and the Ethics Review Committee of Mongolian National University of Medical Sciences.

## **Results**

Through the successful implementation of the MMA national surveys, the following outcomes of the organisation strengthening of the MMA were achieved.

### **Evaluation of the Member Association Capacity Assessment Tool (MACAT)**

The first MACAT evaluation was conducted at the 2015 Twinning Inauguration in Yokohama, Japan, by five board members of the MMA invited by the ICM. The final MACAT evaluation was conducted by seven board members at the end of the obesity prevention programme during pregnancy in 2018.

Table 1 shows the number of achievements and progress rates of the seven major items, including the sub-items, of MACAT in 2015 and 2018. Overall, at the beginning of 2015, only 27 out of the total 96 MACAT items had been achieved, but in 2018, the number rose to 66 items, which is approximately 70% of the total. Looking at the progress rate over the three years, the average progress rate was 40.7%.

The major items with a high progress rate over the three years included: Governance (50.0%), Management Practices and Leadership (50.0%), Functions (43.8%), and Financial Resource Management (37.5%). For the item of Governance, 82% of its sub-items were achieved in 2018. The sections related to a board and a vision and mission were achieved completely. Management Practices and Leadership reached 66.7%; in particular, the sections of administrative policies and procedures, and authority and accountability were achieved 100%. The item of Functions reached 56.2%, and section of communication from this item increased from 20% to 100%. Financial Resource Management reached 75%, and the budgeting and financial information sections of this item reached 100%. Sustainability started at 0% and increased to 33%. The progress rates for Collaboration, Partnerships and Networks (71.4%), and Visibility including Media Relations (83.3%)—that had been achieved to a level of more than 70% even in 2015—were 0.0% and 14.3%, respectively, showing the lowest progress rates.

Table 1

The number of items of MACAT achieved in 2015 and 2018 by the Mongolian Midwives Association

Items	n	Number of Items Achieved (%)			Progress Rate	P
		2015	2018	Difference		
A. Governance	28	9(32.1)	23(82.1)	14	50.0 %	**
Board	9	6(66.7)	9(100.0)	3		
Vision, Mission	6	0(0.0)	6(100.0)	6		
Goals and Strategies	7	0(0.0)	4(57.1)	4		
Legal Status	6	3(50.0)	4(66.7)	1		
B. Management Practices and Leadership	12	2(16.6)	8(66.7)	6	50.0 %	*
Administrative Policies and Procedures	3	2(66.7)	3(100.0)	1		
Infrastructure and Information Systems	3	0(0.0)	1(33.3)	1		
Authority and Accountability	2	0(0.0)	2(100.0)	2		
Human Resources	4	0(0.0)	2(50.0)	2		
C. Financial Resource Management	8	3(37.5)	6(75.0)	3	37.5 %	ns
Accounting	3	0(0.0)	1(33.3)	1		
Budgeting	2	0(0.0)	2(100.0)	2		
Financial Information	3	3(100.0)	3(100.0)	0		
D. Functions	32	4(12.5)	18(56.2)	14	43.8 %	**
Membership Services	10	3(30.0)	8(80.0)	5		
Advancing Professional Practice	3	0(0.0)	2(66.7)	2		
Quality Control for Care	7	0(0.0)	2(28.5)	2		
Communication	5	1(20.0)	5(100.0)	4		
Advocacy	4	0(0.0)	1(25.0)	1		
Service Delivery	3	0(0.0)	0(0.0)	0		
E. Collaboration, Partnerships, and Networks	7	4(57.1)	5(71.4)	1	14.3 %	ns

Progress rate = (2018 - 2015)/n x 100

Chi-square test \*\* p < 0.001, \* p < 0.05

Items	<i>n</i>	Number of Items Achieved (%)			Progress Rate	<i>P</i>
		2015	2018	Difference		
With Women, Government, and Other NGOs	4	2(50.0)	3(75.0)	1		
Relationship with Donors and the Private Sector	3	2(66.7)	2(66.7)	0		
F. Visibility including Media Relations	6	5(83.3)	5(83.3)	0	0.0 %	ns
G. Sustainability	3	0(0.0)	1(33.3)	1	33.3 %	ns
Total Average	96	27(28.1)	66(68.8)	39	40.7 %	
Progress rate = (2018 – 2015)/n x 100						
Chi-square test ** p < 0.001, * p < 0.05						

### Opinions and impressions regarding the Twinning Project with the JMA

Three of the authors of this paper visited the MMA for a national survey and seminar/workshop meetings in March 2018. We interviewed seven current board members of the MMA using a focus group format. Moreover, the opinions and answers of the general members of the MMA were summarised from 11 group discussion of 10 midwives each who participated from all over the country at the time of the workshop in August 2018.

The significant statements of the board members and the general members of the MMA about the twinning project were analysed qualitatively and inductively, and were expressed in four themes, as shown in Table 2. The themes were as follows: Professional identity, Strengthening midwifery services, Advocacy for midwives, and Recognition of midwives as autonomous professionals.

With regard to 'Professional identity', through the twinning project with the JMA, the MMA board members recognised their midwifery competency, leadership, and professionalism. The general members of the MMA also renewed their self-recognition as professionals by conducting midwives-led health guidance. With regard to 'Strengthening midwifery services', the board members promoted the strengthening of the organisation by working with the JMA. The general members belonging to the MMA experienced growth and pride as midwives by interacting with domestic and international midwives. With regard to 'Advocacy for midwives', the board members promoted the importance of the existence of midwives in society and helped improve their social status. The general members were able to appeal to the existence of midwives with the confidence that they were the correct information providers for health guidance at clinical sites. With regard to 'Recognition of midwives as autonomous professionals', the conduct of a nationwide survey through the institutional review board by the midwives promoted the midwives' autonomy and enhanced their confidence. Furthermore, the general members felt that the improved

guidance being provided by them would lead to safe births, and that good leadership would lead to confidence.

Table 2. Positive Outcomes of the Mongolian Midwives Association

Themes	Board Members	General Members/Midwives
I. Professional Identity	<ul style="list-style-type: none"> <li>Establish our own expertise</li> <li>Recognise the necessity of the midwife's own ability and leadership ability</li> </ul>	<ul style="list-style-type: none"> <li>Professional identity by midwife-led health guidance for obesity during pregnancy programme using the brochure and application</li> </ul>
II. Strengthening Midwifery	<ul style="list-style-type: none"> <li>Enhanced organisational strength through the twinning project with JMA</li> </ul>	<ul style="list-style-type: none"> <li>Participating as a member of the MMA led to growth and pride as a midwife through exchanges with midwives throughout the country as well as through international exchange with the JMA.</li> </ul>
III. Advocacy for Midwives	<ul style="list-style-type: none"> <li>Appeal for the presence of midwives</li> <li>Improve midwife's social status</li> </ul>	<ul style="list-style-type: none"> <li>Became a source of accurate information by teaching the use of correct knowledge</li> </ul>
IV. Recognition of Midwives as Autonomous Professionals	<ul style="list-style-type: none"> <li>The first nationwide survey conducted by midwives approved by the IRB of x</li> <li>Recognize the significance of a midwife as well as experience a sense of achievement about being a midwife</li> </ul>	<ul style="list-style-type: none"> <li>Led to safe birth by instruction improvement measures</li> <li>Led to improvements in leadership and confidence</li> </ul>
MMA: Mongolian Midwives Association; JMA: Japanese Midwives Association		

### Confirmation of the issues of the MMA in 2014

According to the MMA president, the first annual general assembly of the MMA was held on December 7, 2016, in opposition to the old governance, and the current president was officially appointed as the president in this meeting. She replaced the older board members with younger board members. As a result, the average age of the board members decreased from 53 years to 42.5 years. The MMA's organisational work became more efficient after replacing the former board members. Moreover, the number of board members increased from 11 to 15. The number of general members also increased from 814 to 880 in the three years since 2014. The membership fee for the association was tripled at the 2016 general assembly from 4,000 MNT (\$1.4 USD) to 12,000 MNT (\$4.2 USD). The membership fee payment rate was 10%, but after raising the membership fee, the rate gradually increased, and the current payment

rate has reached approximately 50%. The number of members has been consistently increasing since then and has reached over 900. The income of the MMA also increased, which was another contributor to its ease of operation. However, there is still no head office or clerical staff for the MMA. In addition, the original constitutions of the Midwifery Association have not been revised, and guidelines for midwifery care have not been sufficiently prepared. The current situation of maternal and child health in local areas has improved slightly. In Mongolia, midwifery education was suspended for 10 years beginning in 1990. Since 2016, midwifery education became a four-year baccalaureate system with midwifery education being offered at the university level. Although the teachers are obstetricians and gynaecologists, several midwife teachers have been trained to teach midwifery.

## Discussion

In the twinning project of the JMA and the MMA, we conducted an obesity prevention programme during pregnancy as a strategic method for strengthening the MMA that involved all members of the MMA branch offices nationwide for three consecutive years, from 2015 to 2018. By building a joint platform as a place for interaction, such as twinning consultations between the JMA and the MMA [11], we promoted the project in dynamic ways and cultivated good relationships.

As a result, more positive outcomes than expected were observed. The outcomes were clear through the evaluation of the items of the MACAT, and the opinions and impressions of the MMA members, as elicited by the interviews. In particular, the MACAT, which is an index for organisational evaluation, was set as an easy-to-understand index, such that the goals that the MMA should aim for could be clearly presented.

As of 2015, the focus was on strengthening the five major items in which less than 50% of the sub-items were achieved. They were the following: Governance (32.1%), Management Practice and Leadership (16.6%), Financial Resources Management (37.5%), Functions (12.5%), and Sustainability (0.0%). In 2015, MMA was achieving approximately 30% of all MACAT items, but by the end of 2018, this percentage had reached 70%. It can be said that the MACAT was an appropriate index for organisational evaluation. The ICM introduced the MACAT evaluation in 2011, but so far no studies have been conducted using this evaluation. While applying the factors of the positive organisational strengthening to the factors that lead to the success of the ICM's twinning project, we combined evaluations from the MACAT, qualitative data analysis of the focus group interviews conducted with the MMA's board members and general members, and the opinions at the platform meetings.

### **Factors that have succeeded in strengthening the organisation in the twinning project**

The following factors, which are expected in the ICM twinning project, have been achieved in our project as well.

1. Visibility of midwives and midwifery

With regard to the Governance items in the MACAT, the MMA was an organisation with no annual general meetings and no clear vision or mission statements. The JMA explained the importance and significance of holding an annual general assembly and urged it to be held. Finally, under the pressure of the former organisational power, the MMA's president was officially elected at its first general assembly in 2016. This was a big step and a historic change towards the MMA becoming a recognised professional organisation. With this reform, the MMA was able to replace its former board members with members from a younger generation, thereby establishing its vision, mission, goals, and strategies. The MMA clarified the position of the organisation in the medical profession. In this international joint research with the JMA, it was the first time that the MMA applied for a research proposal to an ethics committee at the Mongolian National University of Medical Sciences, which impressed the existence of midwives in the academic field. Through the obesity prevention programme during pregnancy, the midwives learnt that it was important to provide accurate information directly to pregnant women using brochures and apps for guidance. The midwives found that midwifery care centred around the delivery room expanded the scope of health guidance and led to the improvement of quality care, and that it was essential for normal pregnancy, childbirth, and puerperium. The midwives also demonstrated the value of the existence of a midwife not only to pregnant women, but also to their families, and became advocates in the society for the protection of pregnant women and their children. Doctors and healthcare professionals working together in clinical sites were also inspired by the power of the midwives and the changes in their clinical practice.

## 2. Professional confidence in the association

With regard to the item of Management Practices and Leadership in the MACAT, the MMA was able to clarify its authority and accountability as professionals, and consider human resources as members. The qualitative survey also showed that the midwife-led practice of health guidance improved the awareness of specialists, and the importance of midwifery skills, leadership, and autonomy. As a result, the nationwide survey showed that pregnant women and their families had more confidence in their midwives. In addition, considering the item of Financial Resource Management in the MACAT, the annual budget was recorded appropriately by raising the membership fee, and the number of members also increased annually due to a stronger financial base. This may be the result of being able to consider member services.

## 3. Accessibility of resources

It was not easy to obtain external funds for operating the twinning project. However, in addition to the limited funds of the JMA and the MMA, a limited amount of funding was also obtained from other funds. The operating cost was shown as transparency, and the seminar and national survey were conducted with the agreement of both associations. With regard to the item of Sustainability in the MACAT, the MMA, through the twinning project, learnt from the collaborative research project on obesity during pregnancy, and used this learning in a sustainable way in the next 'Happy Birth and Happy Baby' project,

which was a training programme in which all member midwives acquired the Neonatal Cardio-Pulmonary Resuscitation (NCPR) skills.

#### 4. Unity among midwives of different nations

We worked on the twinning project as an international joint research initiative, which included about 800 MMA midwives of branch offices nationwide. Recognising the importance of health guidance in particular, the MMA members worked on the obesity prevention programme during pregnancy, and were able to improve the overall work of the midwives and appeal for their expertise. Through the twinning project with the JMA and the seminars/workshops conducted nationwide, the MMA's board members as well as general members mentioned that being a part of the organization was an important contributor to their experience of growth and pride as a midwife. This positive outcome was also shown as the growth in the achievement of the sub-item of Communication in the major item 'Functions' of the MACAT from 20% to 100%.

In addition, the important elements of our twinning project were the members' attitudes, including their enthusiasm, sincerity, humility, and gratitude. Regarding enthusiasm, the young midwives had a desire for the MMA to reach the level of global standards by participating in the ICM International Convention, and to gain more knowledge about the ICM Global Standards by interacting with the JMA [12]. We were especially thankful to Ms Chieko Nohno, a Japanese midwife and a member of the Japanese parliament who was devoted to the establishment of the MMA, and the strength of our willingness to carry out her aspiration.

Further, importantly, both the JMA and the MMA empowered and motivated each other, maintained good relationships, and produced positive outcomes.

#### 5. Good human resources that resolve the barrier of language

This was a new factor discovered in our research. The language barrier was large and there were very few Mongolian midwives who could understand English. Fortunately, the MMA president's best friend had the experience of studying abroad in Japan and was able to communicate fluently in Japanese. From the beginning to the end, this individual helped us in multiple ways, bridging the language barrier and arranging a proper interpreter. It can be said that we were blessed with reliable personnel who contributed to ensuring a well-functioning relationship between the JMA and the MMA.

### **The concept of 'equality' as a limitation in the twinning project**

The twinning project is expected to result in an equal sharing of knowledge and skills with one another, and consequently, in an equal amount of growth [3,13–16]. It is indicated as 'a two-way mutually beneficial exchange started on an equal footing' in the ICM's operational manual 2014 for twinning [3]. However, there is considerable misunderstanding regarding the concept of 'on equal footing', which insists on mutual 'equality' as a prerequisite for the twinning project [11,17]. In general, the twinning project is a co-operative relationship between developed and developing countries. There are huge

differences in all aspects between the two countries in terms of maternal and child health, life expectancy, and socio-economic status. In addition, the JMA has a long history of midwives' association dating back approximately 100 years, while the MMA was established only 14 years ago. It seems that this concept of 'equality' is the reason behind twinning projects being slow to progress globally. We also experienced difficulties in this regard during our first twinning project with the VAM (2011–2014).

Accordingly, it may be more reasonable if we strive towards promoting 'equity' instead of 'equality' in twinning projects [18]. Crespo [19] noted that equity is the leading attribute of reciprocity, which involves a system of giving, receiving, and returning. The relationship between the JMA and the MMA can be thought of as one between elder and younger sisters who carefully teach each other. With a commitment to improve maternal and child health in the Asian region, the JMA has taken the lead in fulfilling its roles of leadership, and nurturing and helping the members of its sister associations who wish to grow into world-class midwives [13,20]. It was a pleasure for us to raise funds for the operation of the twinning project, and to provide knowledge, skills, and research methods to the MMA. Moreover, it was surprising, joyful, and inspiring to see our sisters grow beyond our expectations whenever we met. This process seemed similar to an empowerment circle wherein our objectives continued to expand and get bigger than before [20]. Hence, within the context of this discussion, 'equity' can be described as both a tangible and intangible leading attribute of reciprocity.

While conducting the twinning project, we adopted a mentorship approach with the twinning programme as the backbone [11]. A mentor is defined as an individual with expertise who can help develop the career of a mentee by the Centering on Mentoring Presidential Task Force established by the American Psychological Association in 2006 [21]. The mentor is a coach who provides advice to enhance the mentee's professional performance and development in career-related functions; the mentor further acts as a role model for the mentee in psychological functions [18]. Mentorship can also serve as the key to success in international co-operation. Our twinning project provided a platform that enhanced mutual understanding and empowerment of the two organisations through the concept of equity and a mentorship approach.

### **Future research participants**

In the last 10 years in Mongolia, midwives' education had been suspended and midwifery work had been restricted due to government policies. However, recently, the medical law has changed, midwifery expansion has been strengthened, and the need for midwifery expertise has been increasingly noted. Currently, the 'Happy Birth and Happy Baby' project has been conducted nationwide to acquire NCPR skills for the advanced certification as a profession to reduce infant mortality in pursuit of the SDGs. An accreditation system has been devised and implemented for this training. Even during the coronavirus disease 2019, training has steadily continued at each facility, and more than 80% of the members have already participated and acquired NCPR skills. This programme follows a leader system wherein NCPR-approved midwives become leaders and guide newly graduated midwives and midwives who have not yet acquired NCPR certification. It is expected that the sustainability of the major items on the MACAT will

improve in the future because the 'Happy Birth and Happy Baby' project is being implemented as a sustainable programme led by midwives.

It is difficult to describe the outcomes of international co-operation projects in a short span of three years, and it is necessary to follow such international co-operation in the long term [22]. International co-operation needs a sustainable plan to support the autonomy of the partners involved in the project.

## **Conclusion**

The organisational strengthening of the MMA in the twinning project between the JMA and MMA brought about more positive outcomes than were expected. The scores on the MACAT clearly reflected these outcomes. The MACAT was determined to be an easy-to-use tool that clarified the goals to be achieved by the MMA, and was effective in evaluating the outcomes as well. Through this study, we recognised that the concept of equity and a mentorship approach would be the keys to success in international co-operation.

## **Abbreviations**

ICM

International Confederation of Midwives

JMA

Japanese Midwives Association

MACAT

Member Association Capacity Assessment Tool

MDG

Millennium Development Goals

MMA

Mongolian Association of Midwives

SDG

Sustainable Development Goals

VAM

Vietnamese Association of Midwives

WHO

World Health Organization

## **Declarations**

### **Ethics approval and consent to participate**

In carrying out this study, we obtained approval (No.28-111) from the Ethics Review Committee of the Kyushu University Medical Division and the Ethics Review Committee of the National Medical University

of Mongolia.

### **Consent for publication**

Not applicable

### **Availability of data and materials**

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

### **Competing interests**

Not applicable

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### **Authors' contributions**

Hatsumi Taniguchi, PhD, MSN, MPH, RNM: Planned, supervised the research project and was a major contributor in writing the manuscript.

Yoshiko Suetugu, PhD, MSPsy, RNM: Contributed to the practice of the seminar and analysis the data of this study.

Yoko Sato, MS, RNM: Contributed to the practice of the seminar and analysis the data of this study.

Yuki Nakamichi, MS, RNM: Contributed to the practice of the seminar and analysis the data of this study.

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