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A comparison of midwife-led care versus obstetrician-led care for low-risk women in Japan

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ABSTRACT

Background: Continuity of midwife-led care is recommended in maternity care because of its various positive outcomes. In Japan, midwife-led care is receiving broad attention as well. In order to popularise midwifery care within the entire system of perinatal care in Japan, there is a need to show evidence that continuity of midwife care for women will bring about positive outcomes.
Aim: The objectives of this study were to compare the health outcomes of women and infants who received midwife-led care with obstetrician-led care in Japan.
Methods: This was an observational study using non-random purposive sampling with a survey questionnaire. Settings where midwife-led care and obstetrician-led care were chosen by purposive samples. Participants were low-risk women who received antenatal care and delivered a term-singleton-infant at the participating settings during the research period. Measurements were: Women-centred care pregnancy questionnaire, Stein's maternity blues questionnaire, and Edinburgh Postnatal Depression Scale.
Findings: Midwife-led care was perceived by women to be beneficial and had no adverse outcomes compared to obstetrician-led care. Main findings are: (1) Perception of Women-centred care was higher; (2) Less premature rupture of membranes, and the Apgar scores of the infants were similar; (3) Exclusively breast-feeding during hospitalisation and at one-month postpartum; (4) Stein's maternity blues scale scores was lower in women who received midwife-led care than those who received obstetrician-led care.
Conclusions: Continuity of midwife-led care was perceived by women to be beneficial and had no adverse outcomes. Therefore, midwife-led care in low-risk pregnancy could be applicable and recommended.

1. Introduction

Continuity of care, especially continuity of midwife-led care is recommended in maternity care[1,2] because of its various positive outcomes for the woman and infant. In Japan, midwife-led care is receiving broad attention as well. Japan's Ministry of Health, Labour and Welfare[3] announced a vision whereby obstetricians and midwives should work collaboratively. Their report said that midwives should attempt to develop midwife-led care units in hospitals to manage normal births where they can work in collaboration with obstetricians and also share their expertise with them. Towards this end, outcomes regarding midwifery care should enhance collaborative efforts.

2. Literature review

Researchers have conducted studies to evaluate the effectiveness of midwife-led (MW) care compared to obstetrician-led (OB) care.[4–11] Studies report that women's satisfaction with care was higher among women who received MW care compared to those who received OB care and the obstetric outcomes were the same or better.[12,13] A Cochrane review[14] which included 13 studies comparing midwifery-led continuity models of care with other models of care concluded that although there are cautions, positive outcomes demonstrate that women should be offered midwife-led continuity of care. In addition, Tracy et al.,[15] reported that

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caseload midwifery care is safe and cost-effective compared to standard maternity care.

While in Japan, there is a study that evaluated the continuous psychological support provided by midwives,[16] there are no studies that measure both the physical and emotional outcomes regarding the continuity of MW-led care. Even so, some hospitals in Japan are establishing MW-led care units as part of the regular hospital services because of the decreasing number of obstetricians. Even the number of facilities in Japan where women could give birth was affected by a dwindling number of obstetricians. The facilities decreased 36% from 3991 in 1996 to 2567 in 2008, respectively.[17] To decrease the burden on obstetricians and to fully use midwives, Japan's Ministry of Health, Labour and Welfare announced a vision to increase in-hospital midwife-led care units. The Japanese Nursing Association is working towards the implementation of this system of care as well.[18] Although the number of settings which provides in-hospital midwife-led care units are gradually increasing, these are few in number compared to the total. In order to popularise midwifery care within the entire system of perinatal care in Japan, there is a need to show evidence that continuity of MW-led care for women will bring about positive outcomes.

The objectives of this study were to compare the health outcomes of women and infants who received MW-led care with OB-led care. Specifically, this study asked: (1) is there a difference in women's perception of care, (2) are there differences in obstetric outcomes; physical outcomes, breast-feeding status, and mood status.

3. Participants and methods

3.1. Study design

This was an observational study using non-random purposive sampling with a survey questionnaire.

3.2. Participants

The inclusion criteria of the participants were: (1) low-risk women who received antenatal care delivering a term-singleton-infant at the participating settings during the research period, February to October in 2011; (2) women who could read and write Japanese and (3) women who consented to participate in the study. Excluded women were those who had a caesarean section or who were in seriously poor physical condition.

3.3. Sample size

Previous studies[12,13] indicated that the score of the Women's Centred Care pregnancy (WCC-preg) questionnaire at birth centres was 233.3 points and at hospitals 199.8 points ($p < .001$, SD = 31.6). It was assumed that the birth centres provided continuity of MW-led care and the hospitals provided OB-led care. Setting alpha = .01, power = .9, the sample size ended up to be 58 women in total. Although 58 women would be enough to measure the main outcome, the 50-item WCC-preg questionnaire is still in its early use. Therefore, it is important to conduct a factor analysis, with at least five times the number of participants needed.[19] Considering the dropout rate to be 20% from the preliminary studies, an adequate sample size for each group would be 156 women.

3.4. Settings

There were two settings for each type of care. All four settings were in an urban part of Tokyo, Japan. Characteristics of MW-led and OB-led care groups are shown in Table 1.

3.4.1. MW-led care group

In this purposive sample women received continuity of MW care in one of two midwifery clinics. A small team of midwives provided continuity of antenatal, intrapartum, and postpartum care. If any risk occurs, women would be transferred. This is because the law dictates that when midwives work independently from obstetricians, they may only manage low-risk women and normal births.

3.4.2. OB-led care group

Women in this group received care mainly from obstetricians with attendance by midwives and nurses in one of two hospitals. This group's care was provided with different caregivers across the antenatal, intrapartum, and postpartum period. The obstetrician is the one who has the final approval for the care provided.

3.5. Procedure for conducting the study

The Research Ethics Committee at St. Luke's College of Nursing, Tokyo, Japan (no. 10-065), and St. Luke's International Hospital, Tokyo, Japan (no. 10-123) approved this study.

Women who were hospitalized at the place where they gave birth at least three-days postpartum, were asked to participate.

Table 1
Characteristics of midwife and obstetrician led care groups.

	Midwife-led care group	Obstetrician-led care group
Target women	Low-risk women	Low-risk women
Lead caregiver	Midwife (MW)	Obstetrician (OB)
Other staff	OB provides care at least three times during the antenatal period	MW and nurse (NS)
System of care	Same MW or a team MW provides care Refer to OB when needed	OB mainly provides antenatal care MW or NS provide health advice when needed
Continuity of care from midwife	Intend to provide continuity of care throughout the maternity period	Depends on shifts Intrapartum and postpartum care will be provided by OB, MW, and NS
Medical intervention	At the minimum or refer to OB, e.g. coded Prescription, transfer to obstetricians when needed	Conduct when needed
Other characteristics of care	Sufficient time for each antenatal visit Provide specific advice to support women's good physical condition	Standard care provided at the setting Early detection, rapid cure of risk condition
Schedule of antenatal checkups	Recommended to receive approximately 14 antenatal checkups: three times until 11 weeks gestation, once in every 4 weeks from 12 to 23 weeks gestation, once in every 2 weeks from 24 to 35 weeks gestation, and once a week from 36 weeks gestation to delivery (Japan Society of Obstetrics and Gynecology (2011). Guidelines for obstetrical practice in Japan: Japan Society of Obstetrics and Gynecology (JSOG) and Japan Association of Obstetricians and Gynecologists (JAOG) 2011 edition)	