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## Self-Efficacy and Expectations of Mothers Receiving Continuity of Care from Midwifery Students: A Cross-Sectional Study

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### ABSTRACT

**Background:** Despite the documented benefits of continuity of care (CoC) for both pregnant women and midwifery students, research on the self-efficacy and expectations of mothers receiving student-led CoC remains limited. **Objectives:** To explore the self-efficacy and expectations of mothers who received continuity of care provided by midwifery students. **Methods:** This study employed a descriptive-analytic design with a cross-sectional approach. A total of 80 mothers who received student-led CoC between June and August 2023 participated in the study and provided written informed consent. Data were collected using demographic, self-efficacy, and expectations questionnaires. The data were analyzed and presented using frequency distributions. **Results:** The mean age of the participants was  $30.40 \pm 7.39$  years. Most participants had a secondary education (50%), were unemployed (57.5%), and were primiparous (52.5%). Self-efficacy was assessed across three dimensions: perceived difficulty (high in 77%), strength of belief (high in 73%), and breadth of knowledge (high in 76%). Most mothers reported that the care met their expectations during pregnancy (90%), labor (83.8%), the postpartum, and breastfeeding period (88.8%). **Conclusion:** Women receiving student-led continuity of care in primary healthcare settings generally reported high maternal self-efficacy and experiences that met their expectations throughout pregnancy, childbirth, postpartum, and breastfeeding. Establishing trusting relationships is crucial to supporting these continuity models. Prospective cohort studies are warranted to examine longitudinal associations with maternal self-efficacy and birth preparedness.

## INTRODUCTION

Maternal self-efficacy and expectations within the context of continuity of care (CoC) provided by midwifery students remain underexplored, despite growing evidence that CoC significantly enhances the clinical learning experience of students and improves maternal outcomes. Understanding these aspects is

crucial for enhancing the quality of midwifery education and the overall standard of care delivered to expectant and new mothers.

According to Bandura's theory, self-efficacy refers to an individual's belief in their capacity to perform tasks and achieve desired outcomes. In the context of maternity care, maternal self-efficacy is a critical psychological factor that influences a woman's confidence in adapting to pregnancy, childbirth, the postpartum period, and breastfeeding. It also reflects a woman's perception of her need for support and empowerment throughout her transition into motherhood.

Although pregnancy is a natural physiological process, it carries potential risks that may threaten both maternal and fetal health. This highlights the importance of continuous and comprehensive care to maintain maternal and neonatal well-being. Continuity of care in midwifery involves a consistent and holistic approach across all stages of maternity-antenatal, intrapartum, postnatal, and newborn care- tailored to the individual's needs and circumstances [1]. The CoC model has demonstrated effectiveness in improving the knowledge of young pregnant women by addressing their specific needs and challenges throughout the early stages of parenthood [2]. The implementation of continuity of midwifery care interventions has furthermore been associated with maternal perceptions of satisfactory and safe birth outcomes [3]. Moreover, CoC has also been recognized as a key strategy in reducing maternal mortality rates.

Maternal mortality remains a major global health concern and is a principal indicator of healthcare quality and equity. It is consequently a central target of the Sustainable Development Goals (SDGs) [4]. In Indonesia, the maternal mortality rate (MMR) remains above 100 deaths per 100,000 live births as of 2024 [5]. Contributing factors include sociodemographic conditions, women's access to education, and the availability of healthcare services. Strengthening midwifery education, particularly through clinical exposure models such as CoC, is essential to improve maternal outcomes and reduce preventable mortality.

In Indonesia, midwifery education mandates student participation in CoC models to ensure integrated, hands-on learning across the continuum of maternity care. Through CoC, students gain the opportunity to build strong relationships with mothers, apply holistic care principles, and engage in supervised clinical decision-making. This experiential model fosters deeper understanding, improves communication, and provides better preparation for real-world practice

Previous studies have demonstrated the value of CoC in midwifery training. Existing research has shown that CoC enhances student learning and maternal satisfaction [6], while highlighting its effectiveness as a maternity care model in high-income countries [7]. Another study reported that final-year midwifery students involved in CoC developed better knowledge, clinical skills, and communication, thereby contributing positively to maternal and infant health indicators [8].

Mothers who receive continuous care from student midwives report feeling emotionally supported, individually cared for, and well-prepared for childbirth. Prior research observed that CoC improves women's birthing experiences by fostering trust and a sense of safety [9]. Furthermore, CoC interventions enhance both the knowledge and practical abilities of families, while also strengthening their readiness to provide support to pregnant women throughout the antenatal and postnatal periods [10]. In these setups, women recognized the meaningful contributions of students, leading to relationships that gradually evolved into a mutually reinforcing learning setting [11], with highly positive maternal responses to student-led care [12].

Moreover, women highly appreciate the relationship established with midwifery students who provide continuity of care. The most significant aspects valued by women are the ongoing interpersonal connection developed during care and the consistent presence of the midwifery student throughout labor, childbirth, and the postnatal period. Given these findings, it is necessary to explore maternal perspectives, particularly self-efficacy and expectations, regarding the receipt of continuity of care from midwifery students. This study contributes novel evidence by investigating maternal self-efficacy and expectations as key psychosocial outcomes of continuity of care (CoC) provided by midwifery students relative to licensed midwives. Existing research on student-led CoC has largely emphasized educational benefits and clinical outcomes, with limited exploration of how such care influences mothers' psychosocial perceptions and confidence during pregnancy and childbirth. By addressing this underexplored area, the present study extends the current understanding of CoC beyond traditional outcome measures and offers a new

perspective for evaluating the effectiveness of student-led maternity care. The findings have implications for optimizing midwifery education programs and advancing the integration of psychosocial indicators into holistic maternity care evaluation frameworks. This study focuses on providing insights into how mothers perceive and respond to student-led CoC, which can inform curriculum development, improve clinical training strategies, and ultimately contribute to safer, more person-centered maternity care. Ultimately, this study aims to explore the self-efficacy and expectations of mothers who receive continuity of care provided by midwifery students.

## METHOD

This study employed a quantitative approach with a cross-sectional design to investigate the self-efficacy and expectations of pregnant women receiving continuity of care (CoC) from midwifery students. The research was conducted at community health centers in Klaten, Central Java, Indonesia, between July and December 2023.

The study population consisted of 137 pregnant women who received CoC services from midwifery students. The sample size was calculated using the single population mean formula, incorporating a standard deviation of 4.13 from previous research [3], an absolute deviation of 0.7, and a 95% confidence interval. Based on these parameters, estimating the mean in this finite population yielded a minimum requirement of 68 participants. To account for an anticipated attrition rate of 15%, the final sample size for this study was set at 80 participants. Participants were selected via purposive sampling based on the following inclusion criteria: pregnant women who had access to a smartphone or electronic device to complete the questionnaire via Google Forms and who voluntarily agreed to participate by signing an informed consent form in Bahasa Indonesia. While the requirement for smartphone access reflected the mode of questionnaire administration rather than an intentional selective recruitment criterion, the potential for bias remains. Because all participants were recruited from the same target population and assessed using identical eligibility criteria, the risk of systematic selection based on study outcomes was minimized; however, unequal access to digital resources among certain socioeconomic groups may have affected overall participation[13].

In accordance with academic requirements outlined in the midwifery education curriculum, midwifery students are required to implement the CoC model. To initiate this process, students coordinate with practicing midwives to identify eligible clients, specifically pregnant women with a gestational age of greater than or equal to 36 weeks. An initial meeting was conducted to obtain informed consent and the mother's approval to participate in the CoC practice. Students then provided continuous midwifery care, covering the antenatal, intrapartum, and postnatal periods, as well as newborn care and breastfeeding support.

The variables in this study were maternal self-efficacy and maternal expectations. Self-efficacy was defined as a mother's self-assessment of her competence in performing tasks related to infant care, postpartum self-care, and breastfeeding, as well as overcoming challenges in the maternal role. Maternal expectations referred to the mothers' anticipation regarding the continuity of care provided by midwifery students.

Data collection was conducted through online self-administered questionnaires distributed during the antepartum, intrapartum, and postpartum periods. Instrument validity was evaluated using the corrected item-total correlation method, with a minimum acceptable threshold of 0.30. The results indicated that 18 of the 20 self-efficacy items and all three expectation items met the validity criterion, with corrected item-total correlation coefficients ranging from 0.329 to 0.722 for the self-efficacy scale and from 0.816 to 0.878 for the expectation scale. Two self-efficacy items did not meet the required threshold and were subsequently revised. Subsequent reliability analysis demonstrated satisfactory internal consistency for both scales, with Cronbach's alpha coefficients of 0.803 for the self-efficacy scale and 0.792 for the expectation scale. Following this revision process, all questionnaire items were confirmed to be valid and reliable, indicating that the instrument was suitable for the main study.

Respondents completed the demographic and self-efficacy questionnaires during pregnancy, while the expectations questionnaire was administered across the pregnancy, childbirth, and postpartum periods. The self-efficacy instrument consisted of 20 items rated on a 4-point Likert scale: 1 (strongly disagree), 2

(disagree), 3 (agree), and 4 (strongly agree). Total scores were obtained by summing individual item responses, resulting in a score range of 20 to 80, with higher scores indicating stronger perceived maternal self-efficacy [14]. The expectations questionnaire evaluated maternal satisfaction with care received, using a 3-point scale: 1 (below expectations), 2 (met expectations), and 3 (exceeded expectations). The normality of continuous variables was assessed using the Shapiro–Wilk test, with statistical significance set at  $p < 0.05$ . Variables with a Shapiro–Wilk test result of  $p > 0.05$  were considered normally distributed and were summarized using the mean and standard deviation (SD). For proportion estimates, 95% confidence intervals were calculated to evaluate precision, and final data were expressed as frequency distributions.

Ethical approval for this study was obtained from the Ethics Committee of the Health Polytechnic of the Ministry of Health Surakarta (reference number: DP.04.04/1/2289/2023).

## RESULTS AND DISCUSSION

### Respondent Characteristics

The characteristics of the respondents, including age, education, employment status, and parity, are presented in Table 1. The average age of the participants was 30 years, with the majority (76.2%) falling within the healthy reproductive age range (20–35 years). Half of the respondents (50%) had a secondary level of education (high school or vocational school). More than half (57.5%) were unemployed, and a slight majority (52.5%) were primiparous.

**Table 1. The Characteristics of Pregnant Women (n=80)**

| Characteristics                           | n (%)      | Mean±SD    |
|-------------------------------------------|------------|------------|
| Age (years)                               |            | 30.40±7.39 |
| Age category:                             |            |            |
| Healthy reproduction (20-35 years)        | 61 (76.2%) |            |
| Unhealthy reproduction (<20 or >35 years) | 19 (23.8%) |            |
| Education categories:                     |            |            |
| Primary (Elementary and Middle School)    | 13 (16.3%) |            |
| Secondary (Senior High School)            | 40 (50%)   |            |
| Higher (College)                          | 27 (33.8%) |            |
| Women's Occupation                        |            |            |
| Working                                   | 34 (42.5%) |            |
| Not working                               | 46 (57.5%) |            |
| Parity:                                   |            |            |
| Primigravida                              | 42 (52.5)  |            |
| Multigravida                              | 38 (47.5)  |            |

The distribution of respondents' age showed that the majority were between 20 and 35 years old, with a mean age of 30 years. This finding aligns with previous research indicating that pregnant women outside the 20–35-year age are at a higher risk of complications, such as hemorrhage and prolonged labor. Furthermore, maternal reproductive status, including age and parity, has been found to have a significant correlation with the incidence of labor complications [15]. This supports the World Health Organization (WHO) recommendation that the ideal maternal age for pregnancy is between 20 and 35 years, due to optimal fertility and maternal health during this period.

Age is also understood to influence cognitive and emotional maturity. Pregnant women within this age group tend to demonstrate better decision-making capacities and are more receptive to information, which can subsequently enhance their self-efficacy and shape realistic expectations throughout pregnancy, childbirth, and the postpartum period. In terms of parity, the majority of respondents were primiparous,

with 42 women having given birth to one child. Parity refers to the number of pregnancies in which the fetus has reached viability, and it is typically categorized into primiparity, multiparity, and grand multiparity. Higher parity (defined as more than four deliveries) poses an increased risk due to uterine weakness, which may lead to prolonged labor and postpartum hemorrhage [16]. This emphasizes the importance of parity as a determinant of both maternal outcomes and perceptions, including self-efficacy and care expectations during maternity.

### Self-Efficacy in Pregnant Women Receiving Continuity of Care by Midwifery Students

Table 2 shows the distribution of maternal self-efficacy responses across three dimensions: perceived difficulty, strength, and breadth of knowledge. Scores were calculated using a 4-point Likert scale (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1). Total responses were 480 for difficulty, 560 for strength, and 560 for breadth (Table 3). In the difficulty dimension, the majority of responses indicated agreement: 55 responses (11.46%) strongly agreed, 265 (55.21%) agreed, 138 (28.75%) disagreed, and 22 (4.58%) strongly disagreed. In the strength dimension, responses were distributed as follows: 78 (13.93%) strongly agreed, 248 (44.29%) agreed, 199 (35.54) disagreed, and 35 (6.25%) strongly disagreed. In the breadth of knowledge dimension, 45 respondents (8.04%) strongly agreed, 288 (51.43%) agreed, 205 (36.61%) disagreed, and 22 (3.93%) strongly disagreed.

As shown in Table 3, participants demonstrated a moderate-to-high level of self-efficacy across the measured dimensions, with an overall mean score of  $2.68 \pm 0.71$  on a 4-point scale. The mean score for the strength of confidence was  $2.57 \pm 0.74$ , indicating that participants generally possessed a moderate degree of confidence in their ability to manage tasks related to pregnancy, childbirth, the postpartum period, and breastfeeding. The mean score for the breadth of knowledge was slightly higher ( $2.61 \pm 0.70$ ), suggesting that participants perceived themselves as having a relatively broad understanding of the knowledge and skills required to navigate maternal health challenges. The Shapiro-Wilk normality test indicated that the data for all dimensions of self-efficacy were normally distributed ( $p > 0.05$ ). This finding aligns with Bandura's conceptualization of self-efficacy, in which higher scores reflect stronger beliefs in one's capability to successfully perform specific behaviors and cope effectively with challenging situations.

**Table 2. Frequency distribution of self-efficacy of pregnant women at the Klaten District Health Center (n= 80)**

| No                                 | Statement                                                                               | Strongly Agree    | Agree              | Disagree           | Strongly disagree |
|------------------------------------|-----------------------------------------------------------------------------------------|-------------------|--------------------|--------------------|-------------------|
| <b>Aspect of Difficulty Level:</b> |                                                                                         |                   |                    |                    |                   |
| 1                                  | Able to find solutions to difficulties encountered during daily activities.             | 14(17.5)          | 64 (80)            | 2(2.5)             | 0                 |
| 2                                  | More frequently engages in sleeping rather than performing daily activities             | 3(3.8)            | 8(10)              | 59(73.8)           | 10(12.5)          |
| 3                                  | Consumes healthy food despite personal aversions                                        | 11(13.8)          | 62(77.5)           | 6(7.5)             | 1(1.3)            |
| 4                                  | Experiences difficulty thinking logically when solving problems since becoming pregnant | 1(1.3)            | 9(11.3)            | 61(76.3)           | 9(11.3)           |
| 5                                  | Does not perceive problems as disasters.                                                | 13(16.3)          | 58(72.5)           | 7(8.8)             | 2(2.5)            |
| 6                                  | Enjoys offering alternative solutions to problems, even during pregnancy                | 13(16.3)          | 64(80)             | 3(3.8)             | 0                 |
| <b>Total</b>                       |                                                                                         | <b>55 (11.46)</b> | <b>265 (55.21)</b> | <b>138 (28.75)</b> | <b>22 (4.58)</b>  |
| <b>Aspect of Strength</b>          |                                                                                         |                   |                    |                    |                   |
| 7                                  | Tends to avoid problems when they arise.                                                | 2(2.5)            | 2(2.5)             | 57(71.3)           | 19(23.8)          |
| 8                                  | Addresses problems one at a time when facing multiple challenges                        | 25(31.3)          | 51(63.8)           | 4(5)               | 0                 |
| 9                                  | Feels overwhelmed when completing tasks                                                 | 1(1.3)            | 8(10)              | 62(77.5)           | 9(11.3)           |
| 10                                 | Demonstrates enthusiasm in seeking meaningful activities during pregnancy               | 14(17.5)          | 59(73.8)           | 7(8.8)             | 0                 |



| No                                     | Statement                                                                                             | Strongly Agree    | Agree              | Disagree           | Strongly disagree |
|----------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------|--------------------|--------------------|-------------------|
| 11                                     | Perceives personal problems as more numerous than those experienced by peers                          | 2(2.5)            | 9(11.3)            | 62(77.5)           | 7(8.8)            |
| 12                                     | Is capable of finding solutions when problems occur                                                   | 6(7.5)            | 70(87.5)           | 4(5)               | 0                 |
| 13                                     | Frequently feels anxious about the condition of the pregnancy                                         | 28(35)            | 49(61.3)           | 3(3.8)             | 0                 |
| <b>Total</b>                           |                                                                                                       | <b>78 (13.93)</b> | <b>248 (44.29)</b> | <b>199 (35.54)</b> | <b>35 (6.25)</b>  |
| <b>Aspect of Breadth of Knowledge:</b> |                                                                                                       |                   |                    |                    |                   |
| 14                                     | Feels positive about the pregnancy despite difficulties in getting adequate rest                      | 12(15)            | 64(80)             | 4(5)               | 0                 |
| 15                                     | Does not engage in any specific activities during pregnancy                                           | 0                 | 1(1.3)             | 70(87.5)           | 9(11.3)           |
| 16                                     | Makes an effort to complete tasks during pregnancy despite experiencing fatigue and physical weakness | 4(5)              | 55(68.8)           | 20(25)             | 1(1.3)            |
| 17                                     | Becomes anxious when unable to resolve problems effectively                                           | 2(2.5)            | 33(41.3)           | 43(53.8)           | 2(2.5)            |
| 18                                     | Able to perform daily activities effectively despite being pregnant                                   | 12(15)            | 65(81.3)           | 3(3.8)             | 0                 |
| 19                                     | Unable to maintain usual nutritious dietary intake during pregnancy                                   | 0                 | 6(7.5)             | 64(80)             | 10(12.5)          |
| 20                                     | Confident in the ability to complete tasks efficiently during pregnancy                               | 15(18.8)          | 64(80)             | 1(1.3)             | 0                 |
| <b>Total</b>                           |                                                                                                       | <b>45 (8.04)</b>  | <b>288 (51.43)</b> | <b>205 (36.61)</b> | <b>22 (3.93)</b>  |

**Table 3. Distribution of Maternal Self-Efficacy Responses by Dimension of self-efficacy of pregnant women at the Klaten District Health Center**

| Dimension/ Response Category | Frequency n x scale (%) | Mean ± SD (1–4 scale) | Shapiro-Wilk | p-value |
|------------------------------|-------------------------|-----------------------|--------------|---------|
| <b>Difficulty Level:</b>     |                         |                       |              |         |
| Strongly Agree               | 55 (11.46)              | 2.68 ± 0.71           | 0.987        | 0.142   |
| Agree                        | 265 (55.21)             |                       |              |         |
| Disagree                     | 138 (28.75)             |                       |              |         |
| Strongly Disagree            | 22 (4.58)               |                       |              |         |
| <b>Total</b>                 | <b>480 (100)</b>        |                       |              |         |
| <b>Strength:</b>             |                         |                       |              |         |
| Strongly Agree               | 78 (13.93)              | 2.57 ± 0.74           | 0.983        | 0.089   |
| Agree                        | 248 (44.29)             |                       |              |         |
| Disagree                     | 199 (35.54)             |                       |              |         |
| Strongly Disagree            | 35 (6.25)               |                       |              |         |
| <b>Total</b>                 | <b>560 (100)</b>        |                       |              |         |
| <b>Breadth of Knowledge:</b> |                         |                       |              |         |
| Strongly Agree               | 45 (8.04)               | 2.61 ± 0.70           | 0.985        | 0.115   |
| Agree                        | 288 (51.43)             |                       |              |         |
| Disagree                     | 205 (36.61)             |                       |              |         |
| Strongly Disagree            | 22 (3.93)               |                       |              |         |
| <b>Total</b>                 | <b>560 (100)</b>        |                       |              |         |

These findings are consistent with the proposition that CoC is associated with higher maternal self-efficacy through the reduced perceived difficulty of maternal tasks, increased confidence in managing caregiving demands, and a broader understanding of the continuum of maternity care[17]. Self-efficacy was assessed through three dimensions: perceived difficulty, strength, and breadth of knowledge. Each dimension provides insight into how pregnant women perceive their confidence and ability during the maternity period when supported through CoC by midwifery students.

The first aspect is perceived difficulty. The results indicate that the majority of respondents (66.67%)

agreed or strongly agreed when asked about their confidence in handling challenges during pregnancy. This finding suggests that most pregnant women feel reasonably capable of managing pregnancy-related demands; however, 33.33% of respondents expressed a lack of confidence, indicating that a notable minority still struggle with low self-efficacy. This aligns with earlier studies showing that low self-efficacy is often associated with primiparous status, unplanned pregnancies, an age less than or equal to 24 years, severe fear of childbirth, anxiety, low social support, and poor knowledge [18]. By maintaining a continuous relationship with a familiar caregiver across the perinatal continuum, student-led CoC may promote a sense of trust, predictability, and emotional security. Findings from continuity models involving student midwives indicate that women often value sustained support across successive maternity experiences, which may lessen feelings of uncertainty associated with later pregnancies and births [19].

Interestingly, in this study, 47.5% of respondents were multiparous, suggesting that prior pregnancy experience may contribute to increased self-efficacy due to familiarity with the physical and emotional changes of pregnancy. However, according to Bandura's theory, previous successful experiences are crucial; subsequent failures can reduce self-efficacy, especially if it has not been firmly established [18]. The findings also suggest that both primiparous and multiparous women may exhibit similar levels of self-efficacy, potentially due to the proactive information-seeking behavior and strong support networks often found among first-time mothers. High self-efficacy is negatively correlated with anxiety during pregnancy, emphasizing the importance of psychological support [16]. This finding highlights the need for antenatal care models that not only address physical health, but also integrate psychosocial interventions to strengthen maternal self-efficacy during pregnancy.

The second aspect is strength of belief. In terms of belief strength, 67.08% of participants reported positive responses (agreeing/strongly agreeing), indicating that most pregnant women felt mentally strong in coping with the emotional and physical changes of pregnancy. Nonetheless, 32.91% disagreed (29.58%) or strongly disagreed (3.33%), suggesting a considerable portion of women still experience insecurity or doubt, particularly in managing anxiety and pregnancy-related stressors. A plausible explanation for the association between student-led CoC and higher maternal self-efficacy is the sustained emotional and informational support provided by a consistent caregiver. Through ongoing reassurance, encouragement, and opportunities for open communication, student midwives may help women navigate concerns encountered during pregnancy, childbirth, and the postnatal period. Furthermore, individualized guidance during labor, postpartum care, and breastfeeding may contribute to positive caregiving experiences and greater confidence in managing maternal tasks. Previous research showing improved psychological outcomes, including reduced anxiety and depressive symptoms among women receiving midwife-led continuity models, provides additional support for the proposition that continuity of care may be linked to stronger perceived coping abilities and emotional well-being [20].

Self-efficacy strength reflects a mother's conviction in her ability to overcome obstacles during the perinatal period. This aspect is heavily influenced by prior success, social support (especially from spouses and family) and the quality of health education. Other studies reporting similar findings, where the majority of respondents had moderate levels of self-efficacy, also found that high self-efficacy correlates with better preparedness for labor and more effective stress management [21]. For instance, incorporating stress management counseling into breastfeeding education programs has the potential to enhance maternal self-efficacy and support sustained breastfeeding practices [22]. A strong sense of self-efficacy equips mothers with the psychological resilience needed to manage physical, emotional, and social challenges throughout pregnancy, thereby contributing to improved maternal well-being and preparedness for childbirth.

The last aspect of self-efficacy is breadth of knowledge. Regarding the breadth of knowledge, 53.55% of respondents reported confidence in their understanding of pregnancy-related information, whereas 46.46% expressed limited confidence or comprehension. This reflects a significant information gap among pregnant women concerning key topics such as physiological changes, danger signs, nutrition, birth preparation, and postpartum care. A possible explanation for these findings is that repeated home visits and antenatal consultations provided by student midwives offer ongoing opportunities for health education on pregnancy, childbirth, newborn feeding, and postpartum recovery. Such continuity in information sharing may be associated with a broader understanding of maternity care and greater preparedness for maternal responsibilities [23].

This disparity may stem from several contributing factors: educational background, health literacy levels, limited access to information, insufficient participation in maternal classes, and inadequate support from healthcare providers. Prior research has revealed that multiple factors shape the development of self-efficacy in maternal contexts, such as socio-demographic characteristics such as relationship status and socioeconomic position; as well as the availability of general social support [24]. Furthermore, maternal self-competence, prior childbirth experiences, migration status (such as giving birth outside one's country of origin), and the availability of both formal and informal social support systems during pregnancy play critical roles [25]. Collectively, these insights demonstrate that maternal self-efficacy is a multi-faceted construct shaped by diverse individual, clinical, and contextual determinants.

### Maternal Expectations Regarding Continuity of Care Provided by Midwifery Students

The expectations questionnaire assessed women's perceptions of the extent to which the care they received met their expectations across the CoC provided by midwifery students. Responses were rated on a 3-point Likert-type scale ranging from 1 (below expectations) to 3 (exceeded expectations), with 2 indicating that care met expectations. Maternal expectations were evaluated separately during the antenatal, intrapartum, postpartum, and breastfeeding periods. As shown in Table 4, the majority of participants reported that their expectations were met across all measured phases. Therefore, subsequent analysis was conducted within the "met expectations" category.

Table 4 presents the distribution of maternal expectations across the maternity periods. During the antenatal period, 72 mothers (90%) reported that care met their expectations, with a 95% confidence interval (CI) of 82.1%–95.0%, indicating high precision. During the intrapartum period, 67 mothers (83.8%) expressed that care met expectations (95% CI: 74.2%–90.6%), while in the postpartum and breastfeeding period, 71 mothers (88.8%) felt that care aligned with their expectations (95% CI: 79.6%–94.4%).

**Table 4. Distribution of Women' Expectations Regarding Continuity of Care by Midwifery Students Across Three Maternity Periods in Health Centers in Klaten Regency (n= 80)**

| No           | Statement                                                                | Below Expectations<br>n(%) | Met Expectations<br>n(%) | Exceeded Expectations<br>n(%) | Met Expectations<br>95% CI |
|--------------|--------------------------------------------------------------------------|----------------------------|--------------------------|-------------------------------|----------------------------|
| 1            | CoC by midwifery students during the antenatal period                    | 1(1.3)                     | 72(90)                   | 7(8.8)                        | 82.1–95.0                  |
| 2            | CoC by midwifery students during the intrapartum period                  | 2(2.5)                     | 67(83.8)                 | 11(13.8)                      | 74.2–90.6                  |
| 3            | CoC by midwifery students during the postpartum and breastfeeding period | 1(1.3)                     | 71(88.8)                 | 8(10)                         | 79.6–94.4                  |
| <b>Total</b> |                                                                          | <b>4 (1.67)</b>            | <b>210 (87.5)</b>        | <b>26 (10.83)</b>             |                            |

The results of this study indicate that maternal expectations regarding continuity of care (CoC) provided by midwifery students during the antenatal period were largely met, with 90% of respondents reporting experiences that aligned with their expectations. This finding underscores the potential of CoC practices involving midwifery students to deliver high-quality care, particularly for pregnant women—a vulnerable population that requires consistent, individualized, and empathetic services. CoC in midwifery emphasizes an ongoing relationship between the care provider and the woman, spanning the antenatal, intrapartum, and postnatal phases. Previous research supports the premise that this model enhances maternal empowerment and satisfaction [6].

Factors contributing to maternal satisfaction during antenatal care included consistent communication and home visits, students' interpersonal skills, empathy, responsibility, and personalized attention. The involvement of students in CoC not only enriches their clinical learning but also builds trust and rapport with the women they serve. Students who consistently accompany pregnant women are better able to understand their clients holistically and provide more individualized education and support [1].

During the intrapartum period, 83.8% of mothers expressed that their expectations were met by the



student-led CoC model. This is a critical metric for evaluating both the quality of midwifery education and the effectiveness of CoC in supporting laboring women. Labor is a physically and emotionally intense period, often associated with high stress and risk. Consistent accompaniment by a familiar caregiver, such as a midwifery student involved since pregnancy, fosters trust and reduces maternal anxiety, thereby increasing satisfaction with the birthing experience [9].

Key elements influencing the fulfillment of expectations during labor include continuous presence, emotional and physical support, clear communication, empathetic care, and responsiveness to individualized needs. Prior research has shown that women receiving CoC from pre-registration midwifery students had better clinical outcomes, including lower rates of smoking after 20 weeks of gestation, fewer episiotomies, and a reduced incidence of severe perineal trauma [26]. These findings reinforce the position that CoC is a gold standard in maternity care, widely implemented in high-income countries. Women cared for by a known midwife during labor are more likely to have vaginal births without epidural anesthesia, labor augmentation, or complications, leading to more positive birth experiences [7].

In the postnatal phase, 88.8% of women indicated that the care they received from midwifery students met their expectations. This result highlights the success of CoC implementation within midwifery education, particularly during the crucial postpartum period, which often receives insufficient attention in traditional healthcare models. This phase involves physical recovery, psychological adaptation, and the initiation of breastfeeding. Through CoC, postpartum women receive continuous support from a known caregiver who provides comprehensive care, including education, emotional support, and the early detection of complications.

These findings align with previous research that emphasizes the positive impact of CoC on health behaviors ranging from pregnancy to postpartum contraceptive use, where women are more informed, motivated, and likely to deliver in healthcare facilities [27]. The high percentage of fulfilled expectations suggests that midwifery students effectively build interpersonal relationships with clients, provide structured and continuous care, and attend to women holistically-not just medically but also emotionally. Furthermore, continuous, high-quality maternal care enables women to enhance their self-awareness and confidence throughout pregnancy and the postpartum period, while the involvement of competent healthcare professionals ensures the delivery of comprehensive, personalized care [9], [28].

This aligns with earlier studies reporting that 73.03% of mothers expressed high satisfaction with CoC provided by midwifery students [29]. Another review found that midwifery continuity of care in low-middle-income countries (LMICs) significantly improves maternal and newborn health, increases physiological births, and increases maternal satisfaction and breastfeeding rates [30]. The CoC model strengthens students' competence in empathy, accountability, communication, and health education. For mothers, the presence of a continuous, trusted companion throughout the maternity journey offers reassurance, comfort, and a sense of being genuinely cared for.

Regarding study limitations, data collection relied on online questionnaires, which required participants to own a smartphone. Although this criterion was uniformly applied across the study population and facilitated efficient data collection, differential access to digital technologies across socioeconomic groups may have limited the inclusion of some eligible women. As a result, a degree of coverage bias remains possible [13]. Future studies should consider mixed-mode data collection strategies to improve inclusiveness.

## Conclusion

This cross-sectional study demonstrated that pregnant women receiving continuity of care provided by midwifery students at primary healthcare centers exhibited predominantly high self-efficacy across three dimensions-perceived difficulty, strength of belief, and breadth of knowledge-and reported experiences that largely met their expectations across the antenatal, intrapartum, postpartum, and breastfeeding periods. Furthermore, establishing effective, trusting relationships between midwifery students and expectant mothers is essential for ensuring the successful implementation of the CoC model. Future prospective cohort research should examine whether ongoing exposure to student-led CoC is associated with measurable longitudinal changes in maternal self-efficacy and birth preparedness, while accounting for variations in sociodemographic characteristics.

## Author Contributions

Sri Wahyuni: Conceptualization, Data Curation, Visualization, Writing - Original Draft, Writing - Review & Editing. Henik Istikhomah: Methodology, Investigation, formal analysis, Software, Writing - Review & Editing. Dewi Susilowati: Project administration, Investigation, Validation, Funding acquisition, Writing - Review & Editing. Heni Puji Wahyuningsih: Verification, Resources, Writing - Review & Editing.

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