Women and Birth xxx (xxxx) xxx

Contents lists available at ScienceDirect

Women and Birth

journal homepage: www.sciencedirect.com/journal/women-and-birth

# Evaluation of a regional midwifery caseload model of care integrated across five birthing sites in South Australia: Women's experiences and birth outcomes

Pamela Adelson *, Julie-Anne Fleet, Lois McKellar

*Rosemary Bryant AO Research Centre, Clinical & Health Sciences, University of South Australia, Australia*

ARTICLE INFO

*Keywords:*
Midwifery
Models of midwifery care
Maternal Newborn Quality Care Framework

ABSTRACT

*Introduction:* The ongoing closure of regional maternity services in Australia has significant consequences for women and communities. In South Australia, a regional midwifery model of care servicing five birthing sites was piloted with the aim of bringing sustainable birthing services to the area. An independent evaluation was undertaken. This paper reports on women's experiences and birth outcomes.

*Aim:* To evaluate the effectiveness, acceptability, continuity of care and birth outcomes of women utilising the new midwifery model of care.

*Method:* An anonymous questionnaire incorporating validated surveys and key questions from the Quality Maternal and Newborn Care (QMNC) Framework was used to assess care across the antenatal, intrapartum and postnatal period. Selected key labour and birth outcome indicators as reported by the sites to government perinatal data collections were included.

*Findings:* The response rate was 52.6% (205/390). Women were overwhelmingly positive about the care they received during pregnancy, birth and the postnatal period. About half of women had caseload midwives as their main antenatal care provider; the other half experienced shared care with local general practitioners and caseload midwives. Most women (81.4%) had a known midwife at their birth. Women averaged 4 post-natal home visits with their midwife and 77.5% were breastfeeding at 6–8 weeks. Ninety-five percent of women would seek this model again and recommend it to a friend. Maternity indicators demonstrated a lower induction rate compared to state averages, a high primiparous normal birth rate (73.8%) and good clinical outcomes.

*Conclusion:* This innovative model of care was embraced by women in regional SA and labour and birth outcomes were good as compared with state-wide indicators.

Regional and rural midwifery care, Women's experience caseload midwifery.

**Problem or Issue:**
The unequitable closure of regional maternity services puts women at risk.

**What is already known:**
National initiatives promote choice for woman-centred, continuity of care as close as possible to a woman's home. Women want to be able to access maternity care in their geographic location. Midwifery caseload models provide safe, effective, care, but most are metropolitan based.

**What this paper adds:**
A five-site caseload model in regional South Australia addressed the needs of women and delivered highly regarded continuity of care, with good clinical outcomes. The ongoing sustainability of the model was enhanced through community engagement and collaborative interdisciplinary care.

## Background

The closure of maternity services is an ongoing issue across Australia and in South Australia (SA) about 60% of rural maternity services have closed over the past two decades [1]. Although there have been numerous reports and recommendations for women's access to equitable and safe maternity care in regional and rural communities, this remains a challenge for many [2,3]. Closing maternity services has significant consequences for women and communities, with resulting poorer health outcomes and financial and social hardships for women and their families [4,5]. A recent review examining the complex issues

* Correspondence to: GPO Box 2471, Adelaide, South Australia 5001, Australia.
*E-mail address:* pam.adelson@unisa.edu.au (P. Adelson).

https://doi.org/10.1016/j.wombi.2022.03.004
Received 20 December 2021; Received in revised form 9 March 2022; Accepted 10 March 2022
Available online 23 March 2022

of rural maternity closures in Australia identified four interrelated themes that impacted upon women: travel, financial burden, emotional burden and safety concerns [2]. A viable, safe and evidence-based service for women to receive continuity of care in their own region is a midwifery caseload model of care [3,6].

In 2017, a small project team of the Country Health South Australia Local Health Network (CHSALHN), Maternity Services Committee were tasked to address the challenges of developing a sustainable midwifery workforce model in country South Australia (SA) with the aim of keeping birthing as close to home where safely possible. The York and Northern Local Health Network (YNLHN), was chosen as the region to develop the model as there were critical midwifery workforce shortages in some locations along with areas of successful team midwifery. In July 2019 a two year funded pilot of the Midwifery Caseload Model of Care in the Yorke and Northern (Y&N) Region commenced [7]. The Model was an all-risk caseload midwifery model of care (MMoC) whereby 12.9 full-time equivalent midwives were employed to work in collaboration with general practitioners (GP)/obstetricians across five birthing sites (Port Pirie, Crystal Brook, Wallaroo, Clare and Jamestown). In the MMoC all pregnant women in the region could be referred to the programme and allocated to a known midwife once pregnancy had been confirmed. Care was then provided by the MMoC midwife and an obstetric GP or obstetrician. The service delivery model prioritised choice and interdisciplinary care, whereby midwives and doctors worked collaboratively and in partnership with the woman's referring GP, obstetrician, or obstetric GP [7]. Women could choose or need to birth outside the region due to personal choice or level of care required. Those women could still access a MMoC midwife for antenatal and postnatal care and support. Women who were not referred to the MMoC during pregnancy and who gave birth in a metropolitan hospital could still be referred to a MMoC midwife for postnatal care through the Country HomeLink (CHL) Program.

The University of South Australia (UniSA) was contracted at the beginning of the programme to evaluate the pilot, to report upon the effectiveness of the implementation, acceptability, and sustainability of the MMoC to provide evidence-based, woman-centred continuity of care to residents of the Y&N Region. Key clinical outcome data and consumer and provider experiences were explored as part of the 18-month evaluation. Clinical outcome data were included as part of the evaluation to address concerns around "safety" and the quality of maternity care. To ensure contextual relevance and evaluation of all key elements of the pilot programme, an advisory committee was formed and met approximately every four to six weeks over the course of the evaluation. Membership included the executive director of nursing and midwifery for the region, the state midwifery manager of maternal and neonatal services for rural support services, the midwifery unit manager of the five-site MMoC, a consumer representative and members of the evaluation team.

This paper reports on the women's experience with the primary objectives of: (i) reporting on agreed maternity indicators (ii) reporting on the views and satisfaction of women in the MMoC with regard to antenatal, birth and postnatal care. The midwives' and doctors' perspectives and outcomes of the model of care are reported separately in, *An evaluation of care providers' experiences in a South Australia regional multisite midwifery model of care (under review)*.

## Methods

A mixed methods design using qualitative and quantitative methodologies was employed. As the aim of the MMoC evaluation was to assess the implementation of a new service, the evaluation framework for implementation outcomes developed by Proctor [8] was the conceptual framework used to guide the overall evaluation design. To assess key aspects of user and provider care, the evidence-based Quality Maternal and Newborn Care (QMNC) Framework, reported in the Lancet Series on Midwifery [9] was integrated into the evaluation. The framework has been used to assess the quality of care provided through the MMoC during the antenatal, intrapartum and postpartum care period and across the five components of the QMNC framework: practice categories, organisation of care, values, philosophy and care providers [9]. In Australia, the framework has been used to explore key qualities of midwifery-led continuity of care in both a rural and metropolitan setting [10].

Labour and birth outcomes reported as key maternity indicators from each of the five sites were identified for reporting by the advisory group prior to evaluation commencement. These data were obtained from the five rural maternity units' reporting systems for state and national perinatal data collections.

Ethical approval for the study, was provided by the Women's and Children's Human Research Ethics Committee, HREC/19/WCHN/68 and the UniSA Human Research Ethics Committee Application ID: 202393.

### *Women's questionnaire*

The women's questionnaire was based on validated instruments used in previous studies in Australia, including trials assessing women's and provider's perceptions and satisfaction of caseload midwifery care as well as clinical outcomes [11,12]. The questions were designed to assess elements of the QMNC Framework around care providers, organisation of care and values such as; respect, communication, knowledge and understanding from the perspective of the women [13]. There were approximately 35 Likert-type or multiple-choice questions in the survey arranged in five domains as illustrated in Fig. 1. The final questions were free text responses; women were asked to comment on the best aspects of the care they received, ways in which they felt the care could have been improved, and if there was anything else they wanted to say. The questionnaire went through several revisions by the research team, practitioners working in the MMoC and a consumer representative. The format with logic sequences for readability were designed to be completed on either a computer or mobile devices. The draft questionnaire was pilot tested for face validity with ten women who had recently given birth in the Y&N region between Sept and Oct 2019. Minor adjustments were made to the questionnaire following the pilot testing and it was distributed via the secure online platform REDCap (Research Electronic Data Capture) [14]. Completed questionnaires were automatically received at UniSA and not shared with anyone outside the UniSA evaluation team. This was to ensure women's confidentiality and to encourage open reporting of experiences. All pregnant women who received care in the MMoC from December 2019 to December 2020 were approached by a research assistant and provided written information and invited to participate in an anonymous online questionnaire (sent to them 6–8 weeks after birth). Participation was granted following written consent. Questionnaires were sent to women who had consented to participate whether or not they birthed in the region, as women who did not birth in the region would have started their care there and would also receive post-natal care when they returned. Women were assured that the questionnaire was only accessed and viewed by the evaluation team; their care would in no way be affected by their responses. Women who consented to participate were followed up by email or letter by the data manager if the questionnaire was not returned in two to-four weeks' time.

### *Maternity indicators*

Prior to commencing the evaluation selected maternity indicators were identified by the advisory committee to be included in the analyses. These included key labour and birth outcome data that are used for purposes of state and national reporting. The indicators chosen were routinely collected and enabled a comparison with publicly available state and national core maternity indicators. These included, for selected primiparous women: non-instrumental vaginal birth, caesarean section,

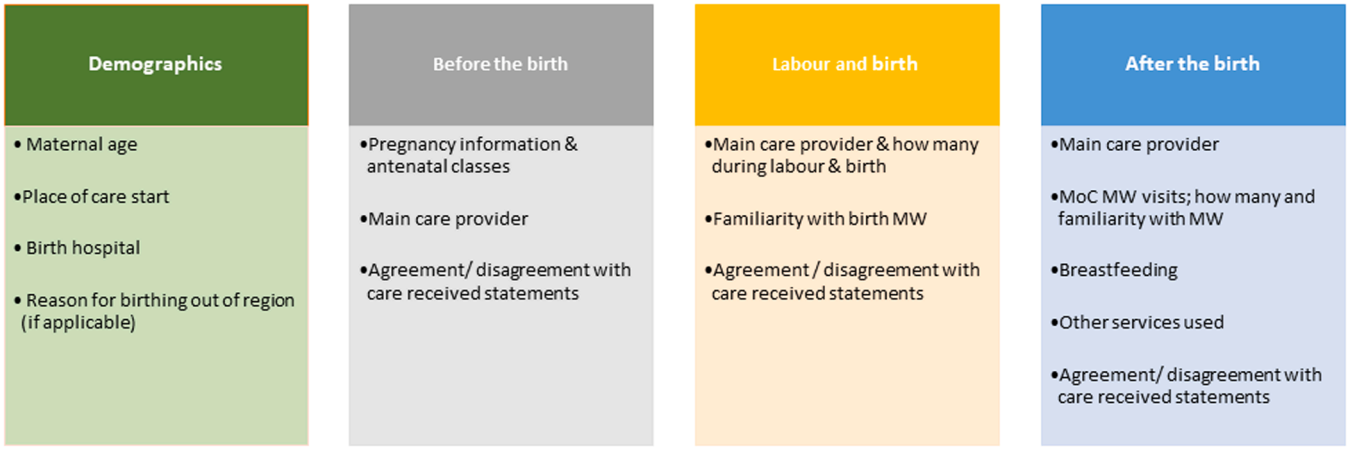


**Fig. 1.** Domains assessed within the Women's Questionnaire.

induction of labour and 3rd or 4th degree tear. For all women: episiotomy, APGAR score, babies live born at term, epidural use all women and total women who birthed vaginally. Antenatal indicators such as smoking and care in the first trimester were not available. Indicators reported for "selected primiparae" are defined in accordance with state/national core maternity indicators as: a woman who was 20–34 years of age at the time of giving birth, giving birth for the first time at $\geq$ 20 weeks of gestation, singleton pregnancy, cephalic presentation and 37–41 weeks gestation. Data from each of the five sites for the 12-month period, 1 January 2020–31 December 2020, were provided to the evaluation team and amalgamated for reporting purposes.

### *Data analysis*

Data were exported from REDCap into the software STATA v16.0 (StatCorp, College Station, TX) for analyses. Frequency analyses were performed on most of the questionnaire items, with valid percent reported. Where applicable, the mean, standard deviation, standard error, and 95% confidence intervals were calculated and reported. Qualitative data from the questionnaire were exported from REDCap with coding and analyses done in Excel (Microsoft 365 Apps). A descriptive approach was taken for these data [15].

## Findings

The women's survey closed at the end of March 2021 to allow sufficient time for women who had birthed (until 31 Dec 2020) at least 6–8 weeks to receive and complete the questionnaire. After removing duplicates, and out of date responses there were 205 questionnaires (complete and mostly complete) for analysis. The overall response rate was 52.6% (205/390).

### *Demographic characteristics*

Approximately 76% of the 205 respondents started their care in the sites of Clare, Wallaroo or Port Pirie with the remaining two sites contributing 19% (Crystal Brook) and 5% (Jamestown) of responses, which were representative of birthing numbers for these sites. The age range of respondents was 16–42 years with a mean of 29.7 years (SD 5.0, median age of 30 years). For 69 respondents (40%), this was their first baby. The median time of completing the questionnaire was 11 weeks after the baby was born. Approximately 17% (n = 34) of respondents did not birth in the Y&N area, the most common reasons being: transferred out of region due to obstetrical or medical condition/complication (n = 14) or planned birth away for risk factors such as high BMI or twin pregnancy (n = 12).

### *Pregnancy care*

#### *Information sources*

A multiple response question asked women "what were your main sources of information about pregnancy and labour?" All 205 women replied to this question, with most women selecting more than one source of information. The vast majority of women (87.8%) indicated that a main source of information was midwives in the MMoC. Other frequently cited sources of information were from previous birth experience (45.9%) family and friends (33.7%) and GPs (31.2%).

#### *Antenatal classes*

Most of the 205 respondents (n = 150, 73.2%) reported not attending antenatal/parenting classes. The most frequently cited reason for not attending were attendance at classes in previous pregnancy(ies) (42.7%), COVID-19 restrictions and other reasons including classes not being available or run at the time, no transportation and having a planned caesarean (18%), had enough information already (17.3%), my midwife told me everything I needed to know (14.7%), too far/inconvenient/did not know about them (7.4%).

#### *Main care pregnancy provider*

Just under half of all respondents (n = 94, 45.9%) reported their main pregnancy care provider as midwives working in the MMoC. A similar proportion (45.4%) identified their GP/GP obstetrician as the lead care provider who worked in partnership with the MMoC midwife

**Table 1**
Main care pregnancy provider and care provider that assisted in the birth.

| | Freq. | Percent |
|---|---|---|
| **Who was your main pregnancy care provider while in the MoC?** | | |
| Midwives working in the MoC | 94 | 45.9 |
| GP/GP obstetrician and midwives working in the MoC (Shared care) | 93 | 45.4 |
| Specialist obstetrician (and midwives working in the MoC) | 16 | 7.8 |
| Private obstetrician | 1 | 0.5 |
| Other: specialist at tertiary hospital | 1 | 0.5 |
| Total | 205 | 100.0 |
| **Who was the care provider that assisted in the actual birth of your baby?** | | |
| Midwife in the MoC | 120 | 58.5 |
| Hospital midwife | 22 | 10.7 |
| GP (general practitioner)/GP obstetrician | 20 | 9.8 |
| Obstetrician working in the MoC | 23 | 11.2 |
| Obstetrician not working in the MoC | 5 | 2.4 |
| Private obstetrician | 4 | 2.0 |
| Not sure | 11 | 5.4 |
| Total | 205 | 100.0 |

(shared care) (Table 1). Of the 94 women who responded their main care provider was a MMoC midwife:

- 75.5% (n = 71) had met all MMoC midwives that provided their care before they were in labour,
- the vast majority of women (86.2%, n = 81) had most of their pregnancy care with their primary midwife,
- most women (71.3%, n = 67) also knew who to contact if they wanted to change their primary midwife.

When asked how many different midwives they had during their pregnancy care (across all types of care), those seeing an obstetrician were more likely to have seen four or more midwives during their care (43.8%) as compared with those having shared care with a MMoc midwife/GP (34.1%) or MMoC midwives only (35.1%).

Women were asked to indicate how much they agreed or disagreed with a series of questions concerning their main care provider during pregnancy (Fig. 2). In response to these statements, respondents were overwhelmingly positive (95%) about the care they received from their MMoC midwife during their pregnancy. In general, most women agreed or strongly agreed with positive statements, e.g., treated with respect, felt listened to, could ask questions, felt confident in the skills and knowledge of their midwife and disagreed or strongly disagreed with negatively worded statements; e.g. treated like just another case, had too little say in what was decided. The statement where there was the most ambivalence was the statement about wanting more information on the test and examinations being carried out with 16% of women neither agreeing or disagreeing and approximately 10% of women agreeing/strongly agreeing to this statement. For the few women who gave unfavourable rankings to statements about care, these tended to be across all statements, suggesting this may have been related to individual experiences with a particular provider (Fig. 2).

Respondents whose main care provider was in a shared care arrangement during pregnancy with doctors and MMoC midwives were very confident in the skills and knowledge of the midwife who worked with their doctor and felt they were treated with respect and could ask all the questions they wanted to. This was similar to the finding of those whose main care provider was a MMoC midwife. However, women in shared care indicated they felt less individualised care in this care arrangement (7.4% agreed with the statement "I was treated as just another case" vs 4.2% MMoC midwife).

*Labour and birth*

Women reported that MMoC midwives provided the vast majority (87.8%) of labour and birth care either as the main care provider (60.3%) or working in share care with GP/GP obstetricians (27.5%).

Approximately three-quarters of all women (73.0%) had only one or two midwives during their labour and birth. The main care provider group with the highest number of midwives during labour and birth were those who had obstetric care with 37.5% (6/16) women having three or more midwives during labour and birth. Most respondents (70.6%, n = 144) reported knowing their midwife well during labour and birth. For all care arrangements, 83.6% (n = 158) of women reported that their birth was a positive experience and 97.3% (n = 182) felt supported by the midwife who provided most of their care (Table 2).

*Post-partum*

Most women (97%) received a postnatal visit from a MMoC midwife and 84.1% reported the MMoC midwives were their main postpartum care provider. Shared care GP/MMoC midwives accounted for 8.9% (n = 17) and 6.9% (n = 13) indicated they had "other" postnatal care such as child and family health nurse, midwives and nurses at the birth hospital, and midwives at referral hospital due to baby's prematurity. Overall women had an average of four postnatal visits. Close to a third of women (32.5%) had six or more visits.

Most women (77%) reported receiving their visit in their home or a combination of home and not at home (20%). Only 3.2% of visits were not conducted at home. In addition, 3.2% of women did not report any visits from MMoC midwives. When asked to rate their MMoC midwives' support during the first week at home, 94% (171/182) rated their support as very good to excellent, with a further 4% rating their care as good. Only 2% (n = 4) rated their support as fair and none rated their care as poor. For approximately 40% of women, midwifery postnatal visits stopped when the baby was 6 weeks of age or older. When asked if

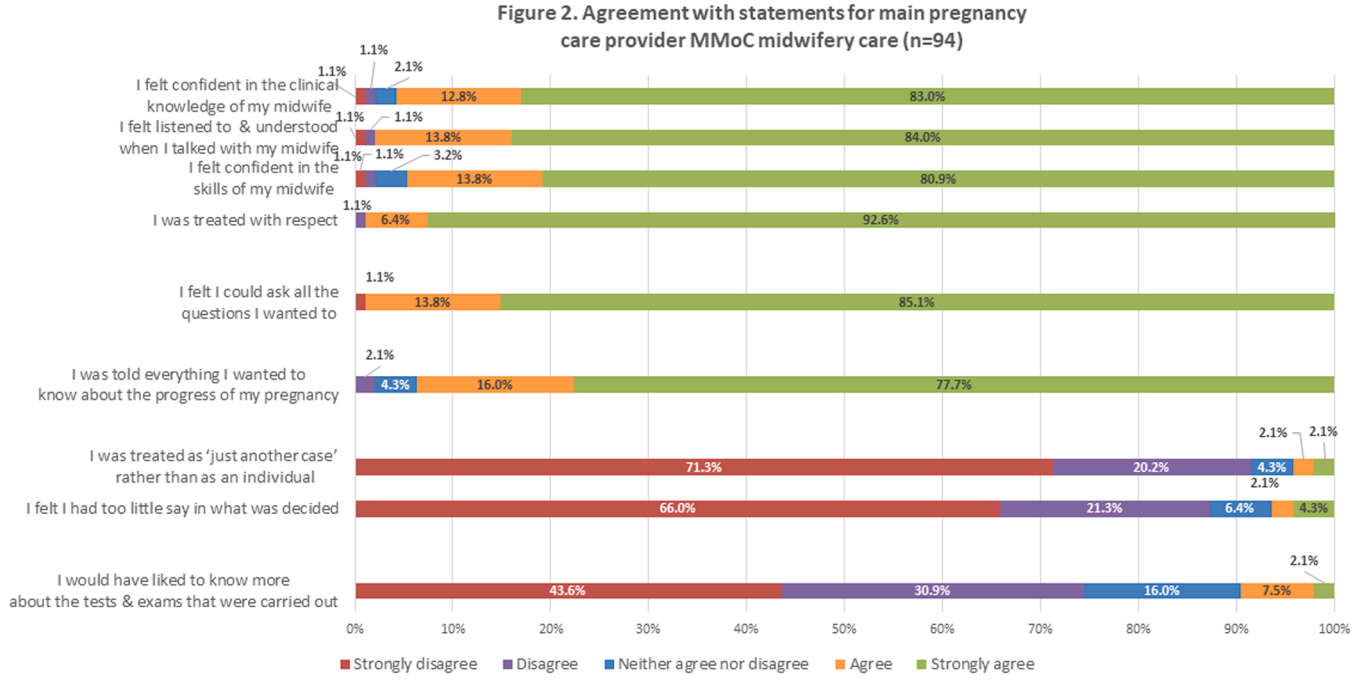


**Fig. 2.** Agreement with statements for main pregnancy care provider MMoC midwifery care (n = 94).

**Table 2**
Respondents' agreement with statements regarding care provided during labour and birth.

| Statement | Strongly disagree *n* (%) | Disagree *n* (%) | Neither agree nor disagree *n* (%) | Agree *n* (%) | Strongly agree *n* (%) | N/A *n* (%) | Total *n* (%) |
|---|---|---|---|---|---|---|---|
| I felt I had too little say in what was decided | 86 (45.5%) | 38 (20.1%) | 14 (7.4%) | 12 (6.4%) | 8 (4.2%) | 31 (16.4%) | 189 (100%) |
| I was treated as 'just another case' rather than as an individual | 111 (58.7%) | 28 (14.8%) | 11 (5.8%) | 6 (3.2%) | 5 (2.65%) | 28 (14.8%) | 189 (100%) |
| I was told everything I wanted to know about the progress of my labour | 1 (0.5%) | 6 (3.2%) | 10 (5.3%) | 39 (20.6%) | 130 (68.8%) | 3 (1.6%) | 189 (100%) |
| I felt I could ask all the questions I wanted to | 1 (0.5%) | 2 (1.1%) | 3 (1.6%) | 39 (20.6%) | 143 (75.7%) | 1 (0.5%) | 189 (100%) |
| I had a birth-plan and this was followed | 6 (3.2%) | 6 (3.2%) | 32 (16.9%) | 34 (18.0%) | 61 (32.3%) | 50 (26.5%) | 189 (100%) |
| Any procedures during labour & birth were explained, & I was asked to consent to these | – | 4 (2.1%) | 5 (2.7%) | 41 (21.7%) | 131 (69.3) | 8 (4.2%) | 189 (100%) |
| I was treated with respect | 1 (0.5%) | 1 (0.5%) | 2 (1.1%) | 26 (13.8%) | 158 (83.6%) | 1 (0.5%) | 189 (100%) |
| I felt confident in the clinical knowledge & skills of my main care provider during labour and birth | – | 3 (1.6%) | 8 (4.2%) | 25 (13.2%) | 152 (80.4%) | 1 (0.5%) | 189 (100%) |
| My birth was a positive experience | 6 (3.2%) | 10 (5.3%) | 14 (7.4%) | 35 (18.5%) | 123 (65.1%) | 1 (0.5%) | 189 (100%) |
| I felt supported by the midwife who provided most of my care | 2 (1.1%) | 1 (0.5%) | 2 (1.1%) | 30 (15.9%) | 152 (80.4%) | 2 (1.1%) | 189 (100%) |
| I felt supported by the doctor who provided care during my labour and/or birth | 4 (2.1%) | 3 (1.6%) | 18 (9.5%) | 37 (19.6%) | 110 (58.2%) | 17 (9.0%) | 189 (100%) |
| I felt my partner/ support person was included during my birth | 2 (1.1%) | 2 (1.1%) | 5 (2.7%) | 32 (16.9%) | 145 (76.7%) | 3 (1.6%) | 189 (100%) |

they would have liked more visits from the MMoC midwife, less than a quarter of respondents (22.5%, n = 41) reported that they would.

Most women (93%) reported these visits were with a midwife they had met before; 93% knew the first midwife who visited them and had an average of 3.7 visits with the first midwife (range 1–12). Two-thirds (n = 121) of women reported having postpartum visits with a second midwife, of which 74% of women knew the second midwife who visited them. Women reported having an average of 1.3 visits with the second midwife. A quarter (25.3%) of women reported having a visit with a third midwife, of which half knew the midwife who visited them.

In addition to midwifery visits, most women (approximately 80%) also used community supports, the most frequently being child and family health nurses, with 71.8% of women reporting use of this service. The other two most commonly used supports were: lactation consultant (16.5%) and physiotherapy (9.6%).

*Breastfeeding and first week at home*

Most respondents intended to breastfeed and reported they were confident they could breastfeed (65.4%, n = 121), or thought they would give it a try (30.8%, n = 57). Only seven (3.8%) women responded that they did not plan to breastfeed.

Of those that were breastfeeding or planning to breastfeed, 87.1% of women (n = 155) were still breastfeeding at the time of their last visit with their midwife. This had decreased to 77.5% (n = 138) of women when asked if they were still breastfeeding at the time of the survey (6–8 weeks or longer). Of the 40 women (22.5%) who were no longer breastfeeding at the time of the survey, the mean age of stopping breastfeeding was at 5.6 weeks (95% CI 3.3–7.8 weeks). When these 40 women were asked as to why they decided to stop breastfeeding, multiple reasons were selected, including: felt there was not enough milk (51.3%), unable to get baby to attach/suck (23%), nipple pain (23%) and other reasons (51%). "Other" reasons cited were: no milk, or milk never came in, baby had reflux, I was ready to stop.

When asked how well they managed the first week at home, most women agreed/strongly agreed that they managed well (n = 150, 81.5%), and that their midwife was readily available (94%). Approximately 15% of women were unsure or disagreed that they felt confident to take care of themselves. Breastfeeding is another area where a small minority of women (14.1%) were unsure or disagreed that they had good breastfeeding support.

*Support, confidence, advice after the birth*

Women were asked a series of statements concerning the care after birth with most (n = 163, 88.1%) agreeing they were given the advice they needed about their own health and recovery, were treated with respect (96%), and felt supported (89%) in their feeding choice. Approximately 18% of women indicated that they would have liked to stay in hospital longer with an additional 12% unsure if they wanted to stay longer (Table 3).

Most women (84%) agreed or strongly agreed that they felt confident as a mother, although first time mothers were less likely to strongly agree with this statement (29%) as compared with those who were had a previous birth (56%).

*Overall experience*

Women were asked to rate how ***important*** specific aspects of their care were in terms of overall importance to their pregnancy and birthing experience. For all women (n = 184, 100%), regardless of who their provider was, there was unanimous agreement that feeling comfortable and supported was important/very important to them. Having one midwife they knew well in the MMoC was important/very important to women (96.2%) as was having one GP they knew well (93.1%).

Eighty-two percent of women reported that it was *very* important for them to know that a doctor was available in case of an emergency, with a further 12% indicating this was important. Feeling in control during labour and birth was important/very important to women (96.7%, where applicable), as was feeling that she was making her own decisions (95.6%).

*Clinicians working together*

Women were asked how much they agreed or disagreed with four statements about how well clinicians worked and communicated together (MMoC midwives and GPs/obstetricians). Most women agreed or strongly agreed that the clinicians worked well together (91.7%) and the care was well connected (88.8%). While the majority agreed or strongly agreed that clinicians passed on information (88.1%) and knew

**Table 3**
Respondents' agreement with statements regarding care received after the birth of their baby.

| Statement | Strongly disagree *n* (%) | Disagree *n* (%) | Neither agree nor disagree *n* (%) | Agree *n* (%) | Strongly agree *n* (%) | N/A* *n* (%) | Total *n* (%) |
|---|---|---|---|---|---|---|---|
| I was given the advice I needed about how to handle, settle or look after my baby | 2 (1.08) | 5 (2.7%) | 15 (8.1%) | 51 (27.6%) | 107 (57.8%) | 5 (2.7) | 185 (100%) |
| I was given the advice I needed about my own health and recovery after the birth | 1 (0.54%) | 7 (3.8%) | 11 (6.0%) | 45 (24.3%) | 118 (63.8%) | 3 (1.6%) | 185 (100%) |
| I was confused with conflicting advice provided by midwives | 85 (46.0%) | 36 (19.5%) | 19 (10.3%) | 16 (8.7%) | 8 (4.3%) | 21 (11.4%) | 185 (100%) |
| I was confused with conflicting advice provided by family and friends | 55 (29.7%) | 42 (22.7%) | 32 (17.3%) | 22 (11.9%) | 6 (3.2%) | 28 (15.1%) | 185 (100%) |
| I was confused with conflicting advice provided by doctors | 78 (42.2%) | 48 (26.0%) | 16 (8.7%) | 13 (7.03%) | 4 (2.2%) | 26 (14.1%) | 185 (100%) |
| I felt confident as a mother | 1 (0.5%) | 8 (4.3%) | 19 (10.3%) | 74 (40.0%) | 82 (44.3%) | 1 (0.5%) | 185 (100%) |
| I understood very little of what was said to me | 103 (55.7%) | 41 (22.2%) | 15 (8.1%) | 5 (2.7%) | 1 (0.5%) | 20 (10.8%) | 185 (100%) |
| I would have liked to know more about what was happening to me | 79 (42.7%) | 43 (23.2%) | 21 (11.4%) | 17 (9.2%) | 6 (3.2%) | 19 (10.3%) | 185 (100%) |
| I was able to get help and felt supported with my feeding choice | 5 (2.7%) | 1 (0.5%) | 11 (6.0%) | 51 (27.6%) | 114 (61.6%) | 3 (1.6%) | 185 (100%) |
| I would have liked to stay longer in hospital | 62 (33.5%) | 53 (28.6%) | 22 (11.9%) | 21 (11.4%) | 12 (6.5%) | 15 (8.1%) | 185 (100%) |
| I was treated with respect | 2 (1.1%) | – | 5 (2.7%) | 28 (15.1%) | 149 (80.5%) | 1 (0.5%) | 185 (100%) |

**Table 4**
Maternity indicators, MMoC, calendar year 2020[a].

| Indicator | Number (%) |
|---|---|
| Total women who birthed vaginally | 270 (72.0%) |
| Total selected primiparous women who birthed vaginally | 62 (73.8%) |
| Induction of labour, all women | 98 (26.1%) |
| Induction of labour, selected primiparous women | 27 (30.7%) |
| Selected primiparous women, non-instrumental vaginal birth following spontaneous onset of labour | 55 (65.5%) |
| Assisted vaginal birth, all women who gave birth vaginally | 13 (4.8%) |
| Assisted vaginal birth, selected primiparous who gave birth vaginally | 6 (9.7%) |
| Epidural use – all women who give birth vaginally | 52 (19.3%) |
| Epidural use – selected primiparous who give birth vaginally | 19 (30.6%) |
| Total women who gave birth by LSCS | 105 (28.0%) |
| Selected primiparous women, who gave birth by LSCS | 22 (26.2%) |
| Pre-labour LCSC following previous primary LCSC | 29 (59.2%) |
| LSCS rate – early planned without medical or obstetric indication | 8 (29.6%) |
| Third or 4th degree tear, selected primiparous women who gave birth vaginally | < 5 (4.8%) |
| Episiotomy – selected primiparous women who give birth vaginally | 11 (17.5%) |
| APGAR score of 6 or less at 5 min post birth – inborn singleton babies live born at term | < 5 (1.1%) |
| Primary midwife present for birth | 243 (64.8%) |
| Primary midwife present for labour/LSCS | 240 (64.0%) |

[a] Data for all n = 375 women who birthed in the York and Northern Local Health Network. Excludes those women who may have received care in the region (antenatal/post-natal) but did not birth in the region. Note- percentages only reported for small numbers < 5.

what care the other providers had done (81.6%), respondents were more likely to be neutral or disagree on these two communication statements (11–17%).

*Final questions and qualitative feedback*

Women were asked if they had another pregnancy if they would seek the MMoC. Of the 173 women who answered this question, almost all (95.4%, n = 165) said they would and 96.5% (n = 167) also replied that they would recommend the MMoC to a friend.

Two optional free text questions on the questionnaire were asked. These were: "*What were the best aspects about the care you received during your pregnancy, birth and following birth*?" (n = 134 responses), and "*Were there ways in which you felt the care you received during your pregnancy, birth and following the birth could have been improved*?" (137 responses). Most of the responses to the later question reinforced how positive the care experience had been rather than how it could have been improved.

The responses to the best aspects of care were extremely positive with a clear mantra that the women felt supported and valued having a known midwife. Some examples of responses representing all 5 birth sites include:

> *The continuity of care and the vast knowledge of my precious pregnancy made the care provided by the midwife with the GP comforting. I liked the idea of having one midwife that I could contact and have appointments with. (P75, site 2)*

> *Consistency, familiarity and a sound rapport with my primary midwife and those others within the MMoC, in addition to the listening ears and support of my wishes / choices per pregnancy and birthing & postnatal experiences. (P31, site 3)*

> *Feeling comfortable, nothing was a hassle and no question was too silly. [x midwife] was the most excellent midwife, as a first time mum I felt completely supported, respected and comfortable in her care. Even though we had difficulties after delivery she remained calm and professional which was reassuring to myself, not knowing at the time exactly what had happened. (p26, site 4)*

> *I am absolutely GLAD that I have 1 assigned midwife and had the support of the same team. I think it is the best idea because you grow comfortable with one person and you know they are always there and you can talk to them whenever. I really hope the MMoC sticks. (P138, site 5)*

There was repeated commentary on the benefit and importance of the continuity of care and knowing their midwife/midwives. Most comments indicated that this had been facilitated very effectively.

> *Having the same midwife all the way through my pregnancy and then through the birth was the best experience. I felt a lot more comfortable and confident in expressing my concerns and felt like I was really listened to.*

*My midwife knew me quite well by the time I was ready to give birth and was able to ensure I had the best experience with the birth. I wish this had happened with my past births. (P35)*

*I wouldn't have my baby anywhere else! Group practice is gold standard and very well implemented here (P11)*

Some of the women commented on the way in which care was shared with the midwife and the doctor.

*The transparency between midwife and doctor was excellent and so important during COVID. Seeing the midwife more often instead of the doctor also ended up being a cheaper process. (P149)*

*I felt completely happy with the care the midwives gave and found it unnecessary for the GP Obstetrician to pop in at the end of each appointment. He was lovely, and it was good knowing he was there in case of any problems. but as I never had any problems during pregnancy and birth, I found it unnecessary for him to appear at every checkup. (P24)*

Additionally, there were comments on the benefit of the model when returning from birthing outside the region.

*This programme was invaluable to me even though I had a private specialist obstetrician and birthed in an Adelaide hospital. It was nice to have support at 'home'. And I had complications, so it was comforting to know I had a local phone number to call if I needed anything. I also looooved my midwife and thought she was amazing- so kind and caring. (P148)*

In response to the how the care could have been improved, there were a few particular areas women brought up. Several women commented that they felt midwives had pushed breastfeeding too hard.

*They pushed the breast feeding very hard- and when I had difficulty feeding my child- I had really bad mum guilt. Wasn't until I made the decision to stop breast feeding I actually got support and was told it was ok. - due to being understaffed I felt a little neglected in the hospital after the birth. However- thoroughly loved and enjoyed all midwives- they were doing the best they could. (P72)*

There was specific feedback about care after birth while in hospital.

*The pre birth was amazing especially with my excellent midwife. I felt the hospital and post birth was better using the previous model especially if you are a first time mum. The ability to call a midwife on the ward to help with feeding when you are feeding, answers questions in a timely manner and help when the baby is distressed builds confidence with motherhood which aids with your confidence at home. I also felt this model 'pushed' you out the hospital door encouraging more home care however it wasn't as supportive as my previous births. This also made me feel very nervous. I would recommend mothers and babies staying for 3 nights unless THEY wish to go home earlier. (P152)*

Some concern was raised regarding communication.

*I felt as all the midwives needed to be on the same page with their information. For example: One midwife would tell me how to do something then the next midwife would tell me that's not how you do it and tell me another way. I was confused with what was right and wrong (P211)*

Some women commented on seeing both midwives and doctors and felt this was not necessary.

*I feel like my midwife could have assisted with the birth of my daughter on her own. The obstetrician didn't really need to be there. (P35)*

A few women also commented specifically on COVID-19 related circumstances.

*The covid situation impacted my experience and it would have been nice to have a covid plan and more information regarding covid, pregnancy and babies. A plan for preterm labour or in any circumstance that you'd have to go to Adelaide was not clear. Also I found it sad that my kids couldn't visit in hospital but aged care could have visitors considering they were higher risk I found this contradictory. I understand it was out of the control of midwives but I feel as though it was part of it for me. (P144)*

*More frequent appointments would have been nice but considering the circumstances of covid 19, I understand. (P69)*

### *Maternity indicators*

During the calendar year 2020 there were 499 women allocated to the MMoC, with 375 of these women (75.2%) birthing in the YNLHN region. The 25% of women (n = 124) who did not birth in the region did so for personal reasons or obstetrical/medical reasons that required tertiary level care. Maternity and birth outcome indicators for the 375 women who birthed in the Y&N region during the year 2020 are presented in Table 4. The indicators demonstrated low intervention rates with good outcomes. For instance, induction of labour for selected primiparous women was 30.7% as compared with the SA rate of 46.9% (national rate 45.3%) and epidural rates were lower than the national and state indicators. Vaginal birth rates were higher (72%) than the SA state average (65.1%), and caesarean birth rates reduced, including those for selected primiparous women (26.2%) as compared with most recent rates for SA (29.4%) and nationally (30.1%). Although there are limitations and potential bias in making these comparisons due to differences in women's characteristics, the reporting of 'selected primiparous women' allows for comparisons of a group of women whose characteristics suggest they have lower risk of complications and gives a better indication of what can be expected in 'standard' cases [16].

## Discussion

The evaluation of the MMoC was a pragmatic 18-month evaluation in regional SA that simultaneously assessed the implementation of the model and examined the clinical and broader consumer and workforce outcomes. In designing the women's survey we assessed key care components of the QMNC framework [10,17,18] and as have been posited as a framework against which midwifery care should be evaluated [19]. These included questions around organisation of care, values (i.e. respect, communication, knowledge and understanding), philosophy (i.e. using interventions only when necessary), care providers (i.e. practitioner knowledge and skills, division of roles and responsibilities [9]. This paper focused on the evaluation from the consumer's perspective which occurred almost entirely during the COVID-19 pandemic. Despite this unforeseen disrupter to usual care, women were able to receive continuity of carer and this relationship of trust and confidence was especially important to women over the evolving background of restrictions and changes during this time.

The majority of women (92%) in the region engaged with midwives in the MMoC and women were overwhelmingly positive about the quality of care they received from the midwives during their pregnancy, birth and postnatal follow up. Women described the service with superlatives, identifying respect, communication, knowledge and compassionate and personalised care with a known midwife as key attributes. This is consistent with literature on midwifery continuity of care models [11,20,21], in which relational attributes enacted through midwifery care influence not only the woman's experience but overall outcomes, such as reduced intervention. In Allen's [11] study, midwives working within continuity models were more likely to go above and beyond, as the model provided the context for developing an authentic therapeutic relationship with women at the centre of care. In a QMNC Framework study comparing women's experiences of different models of care, it was the relational and continuity aspects of care that were most emphasised in the midwifery caseload model of care [18]. As

previously pointed out, continuity is only one characteristic of the organisation of care component of the QMNC Framework, however it is critical in enabling women and midwives to foster connections across the maternity and newborn care spectrum [10].

In this study, most women saw a doctor and a MMoC midwife. This was largely due to existing maternity care service organisation, as many women in the region had long-term established relationships with their GPs. With approximately half of the women in the survey reporting their primary care providers as shared care with GPs and midwives in the model, the continuity of a known midwife over the course of their maternity care was a key advantage of this collaborative arrangement. Women valued seeing their GP and this ensured continuity once care from the MMoC midwife ended at six weeks. It was also important to almost all women (94%) that a doctor was available "in case of an emergency". The issues around contested care in moving towards collaborative care teams in Australia have been previously publicised [22] and it was encouraging in this study to see collaborations working well. This partnership is discussed further in a paper (under review) examining the model from the clinician's perspective.

Overall, women reported being well supported, felt confident in the skills and knowledge of their clinicians and were treated with respect over the course of their maternity care. In the caseload MMoC, there has been a change from having 24-hour hospital-based midwives to midwifery care provided by the MMoC who was on call when the woman attended the hospital in labour. Nursing staff providing any required nursing care for women who remained in the hospital post-birth and the MMoC was called to attend for care as needed. A few women felt that care was compromised due to nurses not having the necessary knowledge and skills to support early mothering. Although there were workshops planned for nursing staff, some were cancelled due to the pandemic and there is need to consider how best to address this aspect of feedback going forward.

The favourable maternal and neonatal outcomes provide additional support towards the efficacy and safety of midwifery caseload as previously reported in an Australian randomised controlled trial and in a Cochrane Database review of 15 trials comparing midwife-led continuity models with other models of care [23–25]. The inclusion of maternal and birth outcome data were important measures to include as many of the closures of Australian regional and rural maternity services have focused on the perceived clinical risk of birthing in regional/rural areas [26]. In this all risk model of care the National Midwifery Guidelines for Consultation and Referral were utilised at every antenatal visit and care was escalated, de-escalated or care modified in accordance with identified risks and collaborative consultation occurred with GPs and higher level specialist providers. Country women's concerns for birthing safely include fear of having to travel long distances and access to skilled, capable staff, who can manage birth and obstetric emergencies [2]. In the MMoC these safety and access concerns were addressed. The high normal birth rate and good birth outcomes for mother and baby reflect care that was well coordinated, risk appropriate and respectful of women's needs.

While all care was rated positively, it was particularly evident that the satisfaction with postnatal care was particularly high when compared to literature of women's experience with standard maternity care, where satisfaction is generally low [27,28]. In the MMoC model, women reported sustained ongoing care after birth with an average four home visits and about a third had six or more visits with near unanimous (98%) rating of these visits as excellent or good during the critical first week at home. This included women who birthed outside of the region and had their care picked up by their designated midwife once they arrived back in the region. This is consistent with research on midwifery continuity of care in which women report receiving more postnatal visits and greater satisfaction with postnatal care [29]. The supportive postnatal care women received likely reflected positively on their early parenting with 84% of mothers agreeing or strongly agreeing that they felt confident as a mother. The initial high rates of breastfeeding and confidence during the first month are consistent with findings of a recent review on women's successful postnatal transitioning to motherhood through midwifery support [27]. Multiple reasons were given for breastfeeding cessation after the first month, consistent with Australian research [30] and observed lower rates in rural SA [31]. Although 72% of women reported utilising or were referred to the child health nurse after birth, it is not known what breast-feeding information or support was sought during these visits.

Qualitative survey feedback was an important part of this evaluation; what aspects women liked best and how the service could be improved. Continuity of carer, trust in the clinician's knowledge and skills and the relationship they had with their midwife were common positive themes. These are consistent with a systematic review and meta synthesis examining the qualitative literature of what women value in midwifery continuity of care models; these being: midwife–woman relationship, personalised care, building of trust and empowerment [21]. Many of the comments for improvement likely reflected the "newness" of the service and getting the balance right on issues such as seeing both midwives and doctors, communication between clinicians and early postpartum hospital care when a midwife was not onsite. The restrictions around COVID-19 impacted upon some aspects of service delivery, for instance maternal/newborn workshops for hospital nurses and GP antenatal clinics were cancelled, as were interdisciplinary meetings and in-person antenatal classes. For a few women they felt the relationship with their midwife was unsatisfactory.

## Conclusion

In this regional/rural MMoC, women were able to receive quality continuity and components of care as have been previously benchmarked against the QMNC Framework. Women embraced the new MMoC, established strong relationships with their midwives and were able to maintain good collaborative arrangements with their local GPs. The generalisability of these results should be considered for other regions which offer maternity services and have GP obstetrician support. The care provided by the MMoC aimed to promote normality and strengthen women's capabilities, enabling women to safely birth in their local area with good maternal and neonatal outcomes. Nearly all women said they would seek the MMoC for future pregnancies and recommend the model to their family and friends. These findings are consistent with existing evidence that supports midwifery continuity of care for women and adds to the growing body of evidence for midwifery caseload outside of metropolitan areas [32,33].

## Limitations

The authors acknowledge the potential for subjectivity of self-reported responses and the potential for non-response bias. However, a response rate of over 50% is considered adequate and all five birth sites were proportionally represented. Strengths include the use of previous questions used in validated surveys and pilot testing of the questionnaire. Maternity indicators were reported for all women birthing in the area.

## Author Agreement

This manuscript is the author's original work. The manuscript has not been submitted or published elsewhere. All authors have seen and approved the manuscript being submitted. All authors agree to abide by the copyright terms and conditions of Elsevier and the Australian College of Midwives.

Ethical approval for the study was provided by the Women's and Children's Human Research Ethics Committee, HREC/19/WCHN/68 on 02/08/2019 and by the University of South Australia (UniSA) Human Research Ethics Committee (HREC) Application ID: 202393 on 14/08/2019.

## Funding

SA Health, Government of South Australia, Australia, provided funding to support a part-time research assistant for this evaluation. The funder had no role in the study design, collection, analysis, interpretation of data or writing of this report. The funder did not have in any role in the decision to submit the article for publication.

The author of this paper declare that the work included has been complied in originality and there are no conflicts of interest in this paper.

## CRediT authorship contribution statement

**Pamela Adelson:** Conceptualization, design, Methodology, Formal analysis, Writing – original draft, Writing – review & editing. **Julie-Anne Fleet:** Conceptualization, design, Methodology, Formal analysis, Writing – original draft, Writing – review & editing. **Lois McKellar:** Conceptualization, design, Methodology, Formal analysis, Writing – original draft, preparation, Writing – review & editing. The STROBE checklist for observational studies has been completed and submitted.

## Declaration of Competing Interest

We have no conflicts of interest to declare. A/Professor Lois McKellar is on the editorial board of Women and Birth.

## Acknowledgement

We would like to thank the over 200 women who completed a survey; finding time to do this soon after a new baby is not easy, and we greatly appreciate the honest feedback. We would like to acknowledge and thank key people who worked with us on the evaluation. Firstly, Lena Boxall, who coordinated all field work for the evaluation, and Kathryn Hansen who provided us with outcome indicator data. We thank the UniSA midwives and consumers who participated in the pilot testing of the survey.

We acknowledge the ground-breaking work of Rachael Yates and Elizabeth Bennett, who championed for years to make sure women in the country can access high quality, evidence-based, maternity services where they live. Supporting the MMoC and the evaluation at the executive level was Michael Eades and the SA Health Rural Support Service, who supported the pilot and evaluation of the model. We also thank Professor Marion Eckert, Director of the RBRC for her ongoing support of the study.

## References

[1] L.P. Sweet, V.A. Boon, V. Brinkworth, S. Sutton, A.F. Werner, Birthing in rural South Australia: The changing landscape over 20 years, Austral J Rural Health 23 (6) (2015) 332–338.
[2] J. Bradow, S.D.-V. Smith, D. Davis, M. Atchan, A systematic integrative review examining the impact of Australian rural and remote maternity unit closures, Midwifery 103 (2021), 103094.
[3] C.J. Catling, C.S.E. Homer, Twenty-five years since the Shearman Report: how far have we come? Are we there yet? Women Birth 29 (1) (2016) 93–99.
[4] S. Kildea, A.C. McGhie, Y. Gao, A. Rumbold, M. Rolfe, Babies born before arrival to hospital and maternity unit closures in Queensland and Australia, Women Birth 28 (3) (2015) 236–245.
[5] R. Evans, C. Veitch, R. Hays, M. Clark, S. Larkins, Rural maternity care and health policy: parents' experiences, Austral. J. Rural Health 19 (6) (2011) 306–311.
[6] M. Brown, E. Dietsch, The feasibility of caseload midwifery in rural Australia: a literature review, Women Birth 26 (1) (2013) e1–e4.
[7] S.A. Health, Midwifery Caseload Model of Care Pilot in Yorke & Northern Region Country Health South Australia Local Health Network Sustainable Midwifery Caseload Model of Care, Country Health South Australia Local Health Network Sustainable Midwifery Workforce, Adelaide SA, 2018.
[8] E. Proctor, H. Silmere, R. Raghavan, P. Hovmand, G. Aarons, A. Bunger, et al., Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda, Admin. Policy Ment. Health Ment. Health Serv. Res. 38 (2) (2011) 65–76.
[9] M.J. Renfrew, A. McFadden, M.H. Bastos, J. Campbell, A.A. Channon, N.F. Cheung, et al., Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care, Lancet 384 (9948) (2014) 1129–1145.
[10] A. Cummins, R. Coddington, D. Fox, A. Symon, Exploring the qualities of midwifery-led continuity of care in Australia (MiLCCA) using the quality maternal and newborn care framework, Women Birth (2019).
[11] J. Allen, S. Kildea, M.B. Tracy, D.L. Hartz, A.W. Welsh, S.K. Tracy, The impact of caseload midwifery, compared with standard care, on women's perceptions of antenatal care quality: survey results from the M@NGO randomized controlled trial for women of any risk, Birth 46 (3) (2019) 439–449.
[12] K.L. Williams, A. Eage, K., The Illawarra Midwifery Group Practice Program – The Evaluation of a Pilot Program to Introduce a Safe and Continuous Model of Care, Centre for Health Service Development, University of Wollongong, Wollongong, NSW, 2005.
[13] A. Symon, J. Pringle, H. Cheyne, S. Downe, V. Hundley, E. Lee, et al., Midwifery-led antenatal care models: mapping a systematic review to an evidence-based quality framework to identify key components and characteristics of care, BMC Pregnancy Childbirth 16 (1) (2016) 168.
[14] P.A. Harris, R. Taylor, B.L. Minor, V. Elliott, M. Fernandez, L. O'Neal, et al., The REDCap consortium: building an international community of software platform partners, J. Biomed. Inform. 95 (2019), 103208.
[15] M. Sandelowski, Whatever happened to qualitative description? Res. Nurs. Health 23 (4) (2000) 334–340.
[16] Australian Institute of Health and Welfare 2020, National Core Maternity Indicators 2018: Summary Report, AIHW, Canberra, 2020.
[17] A. Symon, A. McFadden, M. White, K. Fraser, A. Cummins, Adapting the quality maternal and newborn care (QMNC) framework to evaluate models of antenatal care: a pilot study, PLoS One 13 (8) (2018), e0200640.
[18] A. Symon, A. McFadden, M. White, K. Fraser, A. Cummins, Using the quality maternal and newborn care framework to evaluate women's experiences of different models of care: a qualitative study, Midwifery (2019).
[19] H.P. Kennedy, M. Cheyney, H.G. Dahlen, S. Downe, M.J. Foureur, C.S.E. Homer, et al., Asking different questions: a call to action for research to improve the quality of care for every woman, every child, Birth 45 (3) (2018) 222–231.
[20] M.S. Newton, H.L. McLachlan, K.F. Willis, D.A. Forster, Comparing satisfaction and burnout between caseload and standard care midwives: findings from two cross-sectional surveys conducted in Victoria, Australia, BMC Pregnancy Childbirth 14 (2014) 426.
[21] N. Perriman, D.L. Davis, S. Ferguson, What women value in the midwifery continuity of care model: a systematic review with meta-synthesis, Midwifery 62 (2018) 220–229.
[22] M. McIntyre, K. Francis, Y. Chapman, The struggle for contested boundaries in the move to collaborative care teams in Australian maternity care, Midwifery, vol. 28 (3), pp. 298–305.
[23] S.K. Tracy, D.L. Hartz, M.B. Tracy, J. Allen, A. Forti, B. Hall, et al., Caseload midwifery care versus standard maternity care for women of any risk: M@NGO, a randomised controlled trial, Lancet 382 (9906) (2013) 1723–1732.
[24] S.K. Tracy, A. Welsh, B. Hall, D. Hartz, A. Lainchbury, A. Bisits, et al., Caseload midwifery compared to standard or private obstetric care for first time mothers in a public teaching hospital in Australia: a cross sectional study of cost and birth outcomes, BMC Pregnancy Childbirth 14 (2014) 46.
[25] J. Sandall, H. Soltani, S. Gates, A. Shennan, D. Devane, Midwife-led continuity models versus other models of care for childbearing women, Cochrane Database Syst. Rev. 4 (2016), Cd004667.
[26] L. Barclay, J. Kornelsen, The closure of rural and remote maternity services: where are the midwives? Midwifery 38 (2016) 9–11.
[27] S.B. Walker, D.M. Rossi, T.M. Sander, Women's successful transition to motherhood during the early postnatal period: a qualitative systematic review of postnatal and midwifery home care literature, Midwifery 79 (2019), 102552.
[28] J. McLeish, M. Harvey, M. Redshaw, J. Henderson, R. Malouf, F. Alderdice, First-time mothers' expectations and experiences of postnatal care in England, Qual. Health Res. 30 (12) (2020) 1876–1887.
[29] D.A. Forster, H.L. McLachlan, M.-A. Davey, M.A. Biro, T. Farrell, L. Gold, et al., Continuity of care by a primary midwife (caseload midwifery) increases women's satisfaction with antenatal, intrapartum and postpartum care: results from the COSMOS randomised controlled trial, BMC Pregnancy Childbirth 16 (1) (2016) 28.
[30] K.M. Moss, A.J. Dobson, L. Tooth, G.D. Mishra, Which Australian women do not exclusively breastfeed to 6 months, and why? J. Hum. Lactation 37 (2) (2020) 390–402.
[31] L. McKellar, J. Fleet, S. Dove, It's more than just luck: a qualitative exploration of breastfeeding in rural Australia, Women Birth 31 (3) (2018) 177–183.
[32] T. Tran, J. Longman, J. Kornelsen, L. Barclay, The development of a caseload midwifery service in rural Australia, Women Birth 30 (4) (2017) 291–297.
[33] I. Hildingsson, A. Karlström, B. Larsson, Childbirth experience in women participating in a continuity of midwifery care project, Women Birth 34 (3) (2021) e255–e261.