DOI: 10.1097/JPN.0000000000000413

CE **Continuing Education**

J Perinat Neonat Nurs • Volume 33 Number 4, 312–321 •

Healthcare Providers' Perceptions of Single-Room Versus Traditional Maternity Models

A Concurrent Mixed-Methods Study

Marc Hall, MSc, CCRP; Lorelli Nowell, PhD, RN; Nina Castrogiovanni, BN, RN; Luz Palacios-Derflingher, PhD; Jill M. Norris, MSc, ACC; Deborah E. White, PhD, RN

ABSTRACT

While many hospitals have transitioned from traditional maternity care to a single-room maternity model, little is known about how healthcare providers' practice differs between the models. This mixed-methods study compared healthcare providers' job satisfaction and team collaboration between traditional and single-room maternity care and explored how each model shaped providers' practice. Data were collected via questionnaires and interviews with healthcare providers from 2 hospitals. Independent *t* tests, Mann-Whitney *U* tests, and thematic analysis were used in analysis; findings were then triangulated. No difference was found in team collaboration and job satisfaction scores between single-room ($n = 84$) and traditional ($n = 42$) maternity care; however, providers described different means toward satisfaction and collaboration in the interviews ($n = 18$). Single-room maternity care providers valued interprofessional teamwork, patient/family involvement, and continuity of care. Traditional maternity care providers enjoyed specialization but described teamwork as uniprofessional and disconnected across professions; transfers between units weakened communication and fragmented care. While single-room maternity care providers described less tension and a more holistic patient-family journey, further research must be undertaken to examine whether and how interprofessional collaboration and communication impact patient and health system outcomes.

Key Words: delivery rooms, healthcare providers, hospital, maternity, mixed methods

Globally, maternity care is becoming more family-centered, shifting from a medicalized process toward recognizing childbirth as a normal family event rooted in wellness.[1] This translates to care that incorporates both the physical and psychosocial needs of the mother, newborn child, and family.[2] Single-room maternity care (SRM), a model created in South Africa in the 1970s using family-centered principles, was developed as an alternative to traditional maternity care (TMC).[3–5] In TMC, families are transferred from unit to unit for intrapartum and postpartum care. Nurses specialize in one area of maternity care, as each unit is separate and staffed with different nurses.[6] In contrast, SRM is a nontransfer model; families remain in a single room with the same team of healthcare providers (eg, registered nurses [RNs], obstetricians, and other allied health professionals) over the duration of the stay.[2,3] Nurses must be cross-trained in all aspects of childbirth and newborn care from

Author Affiliations: Faculty of Nursing (Mr Hall and Ms Norris), Taylor Institute for Teaching and Learning (Dr Nowell), and Faculty of Kinesiology (Dr Palacios-Derflingher), University of Calgary, Calgary, Alberta, Canada; Alberta Health Services, Calgary Zone, Calgary, Alberta, Canada (Ms Castrogiovanni); and Faculty of Nursing, University of Calgary in Qatar, Doha, Qatar (Dr White).

This project was supported by Alberta Health Services and the Faculty of Nursing, University of Calgary. The authors acknowledge the hospital units involved in the study.

Disclosure: The authors have disclosed that they have no significant relationships with, or financial interest in, any commercial companies pertaining to this article.

Each author has indicated that he or she has met the journal's requirements for Authorship.

Corresponding Author: Marc Hall, MSc, CCRP, Faculty of Nursing, University of Calgary, 2500 University Dr NW, Calgary, AB T2N 1N4, Canada (hallm@ucalgary.ca).

Submitted for publication: November 1, 2018; accepted for publication March 16, 2019.

admission to discharge.[3] For both types of models in Canada, newborns usually room-in with the mothers. If the infant requires more thorough care, neonatal intensive care units are typically separate from these units. The purpose of this study was to compare healthcare providers' satisfaction and collaboration between SRM and TMC models and to explore how each model of care shaped providers' practice.

BACKGROUND

While mothers have reported high satisfaction with the single-room maternity model,[7–9] and patients prefer and may benefit clinically from single rooms in neonatal intensive care units[10] and in hospitals generally,[11] little is known about how the single-room maternity model impacts healthcare providers and team dynamics. Early research from one hospital study suggested that most nurses and physicians who had worked in both models preferred the single-room model because of the increased focus on family-centered care, the physical environment, enhanced teamwork, and increased privacy.[12,13] However, the same nurses also reported delays in patient care. Nurses surveyed from another single-room maternity unit reported that they were generally satisfied working in the single-room model.[9] Despite the rise of single-room maternity models in hospitals globally, there have been no new peer-reviewed studies over the past 15 years to understand the impact single-room maternity models have on providers.[14]

Recent reviews of the evidence to support hospital single rooms[15–17] indicated that providers may not only perceive improved hygiene and infection control, patient-centeredness, privacy, and visitor experience but also struggle with increased stress, workload, and the physical demands of the work. Mixed-methods research further delineated how the shift from shared rooms to single-room accommodation can negatively impact providers' practice and experience overall.[14,18] While shared rooms were seen to support patient care through greater contextual and preconscious information (eg, peripheral vision, ability to hear patients and providers), providers reported that single rooms hindered patient visibility, surveillance, and subsequent safety. The reduced sensory information and situational awareness required staff members to walk further and significantly changed work patterns; staff members were separated from one another, which seemed to have negatively affected communication and requests for assistance.

While the evidence for hospital single rooms can help anticipate potential barriers that providers might face when implementing single-room maternity, a key distinction is that SRM is a model of care embedded into a single-room physical environment. Given the dearth of single-room maternity literature, the purpose of this study was to (1) compare providers' satisfaction and collaboration between SRM and TMC models, (2) explore providers' descriptions of SRM and TMC models, and (3) explore how these models shape providers' practice.

METHODS

Design

A concurrent triangulation mixed-methods design was used whereby qualitative and quantitative data were collected and analyzed simultaneously, and priority was equal for both forms of data to triangulate study findings.[19,20] The analysis of the qualitative data and quantitative data occurred independently, with integration occurring at the data interpretation and discussion stage where the quantitative and qualitative data were merged to show how the data converged or diverged.[20]

Participants and recruitment

The study was conducted in a Western Canadian city in 2 large tertiary hospitals—one that offered SRM and one that offered TMC. See Table 1 for similarities and differences between the 2 hospitals. Recruitment occurred from March 2016 to October 2016. All single-room maternity ($n = 211$) and traditional maternity ($n = 397$) healthcare providers—including nurses, physicians, and allied health professionals—were invited to participate in the study through information sessions, posters, and e-mails. Several reminders about the opportunity to participate were given to try to facilitate recruitment. Following informed consent, those interested were asked to complete a paper or online questionnaire. All providers who indicated interest in an interview (via a survey question) were contacted. Data were collected until all interested providers completed interviews. Data saturation, the point at which no new codes or themes were identified, was assessed through the structure codebook that detailed changes and definitions of themes.[21]

Data collection

Demographics

Demographic survey items included age, gender, employment position, years of clinical practice, and level of education.

Satisfaction

To measure *job satisfaction*—the perception of a person's positivity about his or her work experience—the subscale of the Safety and Attitudes Questionnaire–Labor and Delivery Version was used.[22] Five questions

Table 1. **Similarities and differences in single-room maternity versus traditional maternity care models at the two hospitals**

	Single-room maternity care	Traditional maternity care
Nurse-patient ratio (labor and delivery)	1:1	1:4
Nurse-patient ratio (postpartum)	1:1	1:4
Transfers between units/rooms	No transferring – labor, delivery and postpartum in one room	Transfer from labor and delivery unit to postpartum unit
Number of suites/rooms	24	12 (labor and delivery) and 20 (postpartum)
Physical environment/space	All private rooms	All private labor and delivery rooms; 15 private and 5 semiprivate postpartum rooms
Family time	Families welcome at any time	Families welcome during specific hours
Number of healthcare providers	211	397
Charge nurse on unit	Yes	Yes
Number of deliveries (Feb 2016-Sep 2017)	4618 singleton births	8645 singleton births

were rated on a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). Means (SDs) for each of the 5 items were calculated and then summed. The composite scale has evidence for reliability (Raykov's $P = .90$).[22]

Team collaboration

The Assessment of Interprofessional Team Collaboration Scale,[23] a 37-item tool with 3 subscales, *Partnership, Cooperation*, and *Coordination*, was used to measure team collaboration, defined as positive and constructive team-based practice. Questions used a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*). Means (SDs) for each item were calculated and then summed for each subscale. The tool has evidence for validity (confirmatory factor analysis using a 3-factor solution explaining 61.02% of the variance) and reliability (total scale Cronbach $\alpha = 0.98$, subscales' Cronbach $\alpha = 0.80$-0.97).[22]

Interviews

Telephone interviews were conducted by an experienced interviewer using a semistructured interview guide. Interviews focused on providers' descriptions of SRM and TMC models, job satisfaction and team collaboration, and how these models shaped practice. Interviews explored common practices, experiences, values, and beliefs, as well as how unit culture influenced care practices, including "How do you feel about the nursing and medical care provided in the unit?"; "What factors (organizational, unit, individual, team) facilitate your day-to-day work?"; "How would you describe your job satisfaction?" Interviews lasted approximately 30 to 45 minutes, were digitally recorded, and transcribed verbatim.

Data analysis

Quantitative data

Descriptive statistics including means (SD) were used for normally distributed variables (median [minimum, maximum or min, max] for skewed data) and frequency (%) for categorical variables. To examine differences in the models of care, independent-samples t tests for normally distributed scales and Mann-Whitney U tests for nonnormally distributed scales were used, with the significance level set at $P = .05$. Bonferroni correction for multiple comparisons was utilized ($P = .5/4 = 0.0125$). Scales and subscales were treated as numerical, whereby each provider's mean scale score was calculated and used to generate a mean score for all providers. Data analysis was conducted with SPSS v24.

Qualitative data

Transcripts were anonymized and imported into NVivo 10 for data management and analysis. Data analysis was conducted by 2 coders using Braun and Clark's[24] 6-step thematic analysis,[25] which guided an iterative and reflective process involving a constant moving back and forward between each of the 6 steps. Two coders first independently reviewed all the transcripts at least once to become immersed in the data. Next, coders assigned sections of text to provisional inductive codes and themes. Weekly meetings between the coders helped refine and ensure mutual understanding of the codes. Once all data were coded, coders independently

reexamined each transcript and sorted and collated codes into themes. Themes were refined and then further defined and named. Finally, coders produced a report on the themes and associated quotes.

Trustworthiness

Multiple steps were undertaken to meet Lincoln and Guba's[26] concept of trustworthiness. A rigorous approach to coding and themes. Dependability was noted by using written memos to provide records of decision making throughout the analysis process and using an auditable codebook to establish an audit trail. Other research team members besides the coders reviewed the decision-making record and made sure the process was logical. There were many instances of peer debriefing and team feedback on coding and analysis within the team. Credibility was established with triangulation of findings. Both quantitative and qualitative data to examine the research questions. A report of these findings was distributed to both of the units involved in the project, and comments and questions from the participants were welcomed. Transferability was accomplished by providing detailed descriptions of the types of settings and participants involved in the project (ie, SRM and TMC units). Many team members were trained in multiple disciplines (nursing, psychology, neuroscience), which provided neutral and balanced perspectives, helping establish confirmability. Furthermore, confirmability was achieved as all criteria of dependability, credibility, and transferability were met.[25]

Ethical considerations

Ethical approval was granted through the authors' Western Canadian university Research Ethics Board. Local site arrangements were made to meet research governance requirements at individual hospital settings. All Tri-Council Policy Statement guidelines were followed for obtaining consent and protecting confidentiality and anonymity.

RESULTS

Participants

In total, 84 of 211 SRM providers (39.8% response rate) and 42 of 397 TMC providers (10.6% response rate) completed the questionnaires. Table 2 outlines the demographic characteristics of providers by type of model. Their median age was 32.5 years for SRM providers and 34.5 years for TMC providers. Most participants on the SRM unit were female (96.4%), RNs (76.2%), had 0 to 9 years of clinical experience (65.4%), and held a bachelor's degree in nursing (70.2%). Similarly, for the TMC unit, most were female (95.2%; others did not provide information), were RNs (76.2%), had 0 to 9 years of clinical experience (61.9%), and held a bachelor's degree in nursing (61.9%).

Eighteen female nurses participated in interviews: 4 from SRM, 6 from TMC, and 8 currently employed on the SRM unit, but with previous experience in TMC at other Canadian hospitals. Interviewees had a median age of 38.5 years, were predominantly RNs (88.8%), had clinical experience ranging from 1 to 9 years (66.6%), and held a bachelor's degree in nursing (88.9%; see Table 3).

Job satisfaction and team collaboration

Providers in both units rated job satisfaction and team collaboration as high. No significant differences were found between units for job satisfaction ($P = .24$), with a median score of 4.7 (min, max: 2-5) for SRM providers and 4.6 (min, max: 3-5) for TMC providers. No significant differences were found between units for the total team collaboration score (mean difference [SRM − TMC] of 0.086; 95% CI, −0.15 to 0.33; $P = .39$) or subscale scores: partnership/shared decision-making (mean difference of 0.121; 95% CI, −0.10 to 0.34; $P = .18$), cooperation (mean difference of −0.014; 95% CI, −0.31 to 0.29; $P = .91$), or coordination (mean difference of 0.134; 95% CI, −0.18 to 0.44; $P = .30$). While quantitative differences were not observed in job satisfaction between SRM and TMC providers, the qualitative findings suggest that providers were satisfied for different reasons. The themes and subthemes identified within the interviews with providers are summarized in Table 4 and presented by model of care.

Traditional model of care

TMC nurses indicated that the flow of care and transfer of care were distinct to stages of the birthing and postdelivery of the infant. They indicated that "they are like two units right now" (P 14). The first step is "when a mum goes into labor she would be admitted at the triage desk in labor and delivery and then once she is on active labor ... she would be transferred [to the] labor beds" (P 17). Following delivery, "Once they are stable, mum and babe, they come to our unit" (P 16). "Probably an hour and a half-to-two hours postdelivery they're moved over to the postpartum unit with baby" (P 18).

Providing specialized care is satisfying

Nurses noted they enjoyed the specialization of working in labor/delivery or postpartum and purposely chose to specialize in one area. They chose to work in the TMC model to meet the goal of specialization and support

Table 2. **Survey participant characteristics**

Characteristic	Single-room maternity ($n = 84$), n (%)	Traditional maternity ($n = 42$), n (%)
Gender		
Male	3 (3.6)	0 (0.0)
Female	81 (96.4)	40 (95.2)
Missing data	0 (0.0)	2 (4.8)
Occupation		
LPN/healthcare aide	3 (3.6)	4 (9.5)
Physician	7 (8.3)	3 (7.1)
RN	64 (76.2)	32 (76.2)
Allied health	8 (9.5)	0 (0.0)
Other	1 (1.2)	3 (7.1)
Missing data	1 (1.2)	0 (0.0)
Years of clinical experience		
<1	0 (0.0)	2 (4.8)
1-4	31 (36.8)	9 (21.4)
5-9	24 (28.6)	15 (35.7)
10-14	7 (8.3)	2 (4.8)
15-19	4 (4.8)	6 (14.3)
20-24	5 (6.0)	4 (9.5)
25+	10 (11.9)	3 (7.1)
Missing data	3 (3.6)	2 (2.4)
Education[a]		
LPN	4 (4.8)	4 (9.5)
RN	11 (13.1)	9 (21.4)
BSN	59 (70.2)	26 (61.9)
MSN	3 (3.6)	1 (2.4)
PhD	1 (1.2)	0 (0.0)
MD	7 (8.3)	4 (9.5)
Other diploma or degree	37 (44.0)	9 (21.4)
Age,[b] median (min, max), y	32.5 (21, 60)	34.5 (23, 62)

Abbreviations: LPN, licensed practical nurse; RN, registered nurse.
[a]Some participants indicated they had more than 1 degree.
[b]Fourteen participants did not indicate their age (SRM: $n = 10$; TMC: $n = 4$).

their interests in different facets of maternity care, acknowledging that the skill set and level of training can differ between labor/delivery and postpartum nursing.

> I'm mostly very satisfied with my job, because I actually really love working in postpartum. And for me, I have never applied [to work in SRM] because I was not interested in the labor and delivery side of it. (P 13)

Teamwork means a team of two

Teamwork was described as being a team of two, where an RN and a licensed practical nurse (LPN) pair provided care for mother-baby dyads. The pairs often worked together when additional help was needed or for specific tasks, such as care for cesarean delivery patients or those experiencing complications.

> We work in teams of two, so that if our partner needs help there's help. Or I should say yeah, there's always one nurse that can help you. (P 13)

> So we operate as a team nursing in our units. So an RN and LPN team up to care for up to nine mums and nine babies per shift. (P 17)

Nurses also described teamwork as limited to those within the same health profession, hindering opportunities for interprofessional collaboration. Nurses indicated that using charge nurses as a hub of communication decreased their level of interaction and teamwork with providers from other disciplines, such as physicians.

Charge nurse is the hub of communication

There were defined channels of communication to ensure information was shared among the providers, with the charge nurse as the hub of cross-communication between units and individual nurses. Charge nurses were also the conduit for communication between the nurses and the physicians.

> The communication is basically based on the charge nurse. (P 14)

Table 3. **Interview participant characteristics (*n* = 18)**

Characteristic	*n* (%)
Hospital	
Single-room maternity	4 (22.2)
Traditional maternity	6 (33.3)
Currently in SRM with previous TMC experience	8 (44.5)
Occupation	
LPN/healthcare aide	1 (5.6)
RN	17 (94.4)
Years of clinical experience	
1-4	5 (27.7)
5-9	7 (38.9)
15-19	3 (16.7)
25+	3 (16.7)
Education[a]	
LPN	1 (5.6)
RN	4 (22.2)
BSN	16 (88.9)
MSN	3 (16.7)
Other diploma or degree	6 (33.3)
Age,[b] median (min, max), y	38.5 (26-59)

Abbreviations: LPN, licensed practical nurse; RN, registered nurse; SRM, single-room maternity care; TMC, traditional maternity care.
[a]Some participants indicated they had more than 1 degree.
[b]Two SRM participants did not indicate their age.

> We have a charge nurse . . . if we're having a difficulty with a patient we can't get a hold of a doctor . . . we're having to go through our charge nurse. (P 15)

Postpartum nurses noted the difficulties in getting to know doctors, as they would only see the physicians briefly at admission and at discharge.

Disconnect between providers impacts patient care

Nurses noted a disconnect between labor/delivery and postpartum care. The nurses did not always understand the concerns of the other unit or why things happened the way that they did.

> There's a disconnect between the two units. I feel like we don't always understand the concerns of the other unit and why things happen the way that they do. (P 18)

Because of this disconnect, nurses noted opportunities for breakdowns in communication, which may result in critical information not being exchanged between units. They indicated that cross-training might increase the connection between units. A further area of disconnect occurred around discharges. Primary nurses did not discharge patients; rather, a discharge nurse completed final teaching and discharge, which led to fragmented care:

Table 4. **Summary of qualitative themes by type of maternity model**

Single-room maternity care	Traditional maternity care
Continuity of care helps providers understand the big picture	Providing specialized care is satisfying
Accessibility enhances communication	Teamwork means a team of two
Teamwork means everyone including the patient	Charge nurse is the hub of communication
Cross training enhances teamwork	Disconnect between providers caused by working on separate units and the impact on patient care
Work variety is satisfying	Continual push for beds leads to unnecessary interventions

> It's very fragmented care. It's not very satisfying for the primary nurse who might have done all the teaching . . . . There's no continuity . . . to have a stranger come in who doesn't know the patients and to discharge and just hurry up and get them out. (P 15)

Continual push for beds leads to unnecessary interventions

The push to move mothers and infants from one unit to another impacted patient care. Nurses often intervened and augmented labor to speed up delivery. Furthermore, forcing mothers to move 2 hours after delivery directly impacted the amount of care provided. Postpartum interventions, such as inserting catheters, were used to ensure patients met requirements to move to postpartum units, but some providers described that these extra procedures increased risks of complications for patients. The need for beds triggered unnecessary interventions:

> You're committed to bringing that person through labor and then moving them so that you can get another labor into that room . . . they would then be hurried through their labor process, so that we could get them out. So then it became a course of us intervening not because they needed an intervention, but because we needed the room. (P 5)

Single-room maternity model

The SRM model was described by providers as "involving the patient and their family" (P 1). Many participants described the process that "the person who is delivering a baby is admitted as an inpatient to a private room and then they don't have to move from labor and delivery

to a postpartum unit" (P 4). They also indicated that this approach "improved continuity of care in my opinion" (P 3). Since they stay in the same room, "hopefully [patients] continue with the same nurses . . . to help with the continuation of care" (P 1).

Continuity of care helps providers understand the big picture

Nurses described continuity and consistency of care without pressure to discharge patients from labor/delivery to postpartum. They believed they had a greater understanding of the total birthing process because all stages of childbirth occurred in one room. There was also a new respect for labor/delivery and postpartum care as providers recognized "what you're doing in labor impacts your postpartum directly and quite often even beyond that" (P 5) and without an "us and them mentality" (P 12). Some nurses discussed how the single-room maternity model was a more holistic model of care, allowing providers to gain a greater sense of the whole continuum of care.

Accessibility enhances communication

The accessibility of team members in the single-room maternity model allowed for multiple opportunities for communication among providers. Nurses identified that they were able to work closer with physicians and other various providers who were dedicated to the unit, which enhanced building of relationships:

> I worked a little closer with physicians because they're strictly on our unit . . . they're pretty much always on our floor, so we get to know them . . . better. (P 1)

> We have pharmacy staff and we have social work staff that are dedicated to the unit . . . they can also see the woman throughout the whole stay and even follow the woman throughout her postpartum care if she follows up at our clinic as well. (P 8)

Teamwork means everyone, including the patient

When asked about teamwork, nurses emphasized that everyone, including the patient and family, were part of the team. This contributed to high levels of interprofessional and family- and patient-centered care, elements in alignment with the SRM model. Higher levels of teamwork were perceived to increase consistency of care and enhance understanding of patient care for all team members:

> There is so much inter-staff discussion and teamwork surrounding the care of the mum and baby . . . it's easier to make sure that there's a consistent standard of care being applied and that the patient and their family are included in decisions made. (P 8)

Cross-training enhances teamwork

Nurses noted that the cross-training of the nursing staff allowed for better teamwork and that "there's more help working where we are now because almost everybody is cross-trained in postpartum and L and D" (P 5). Many nurses previously worked in labor/delivery or postpartum and therefore had more experience in one area than another. They noted this as strength, allowing those with previous experience to assist with meeting various patient needs across the spectrum of maternity care and increasing the opportunities for teamwork to be enacted.

> If the woman and her baby have particular questions or particular needs, you know then the staff is really willing to ask for guidance or help from other staff that might have a little more experience in one area or the other. (P 8)

> I think that it is really nice that everyone is cross-trained. So you really get that whole spectrum of care and I really think that makes a big difference to being able to communicate and take care of your patients a little bit better. (P 9)

Variety is satisfying

Nurses enjoyed opportunities to work with women during all phases of maternity care. This required being trained in multiple areas and resulted in nurses having a more expanded skill set.

> I like how you are trained in multiple areas, you feel a little bit more well-rounded. It's not the same thing every day. You get to see something different every day. (P 1)

Some nurses moved from TMC to SRM because it allowed them to work multiple areas, thereby diversifying their practice.

> I went to SRM care because I could do so many things and I could be so many different types of a nurse, rather than focusing on just labor or just postpartum. (P 7)

However, others identified that learning the specialties took time:

> There's a lot to learn for a nurse who comes here. So the time to become proficient is longer than in the other units where each one of those is a specialty. (P 11)

DISCUSSION

The purpose of this study was to compare providers' satisfaction and collaboration between SRM and TMC models and to explore how each of these models of care shaped providers' practice. Quantitatively, providers from both models had similar levels of job

satisfaction and team collaboration; however, qualitative results indicated that providers were satisfied for different reasons. Single-room maternity providers were satisfied in providing a full spectrum of maternity care, whereas traditional maternity providers enjoyed specializing in labor/delivery or postpartum care. Teamwork was described differently in each model, with patients and families being viewed as integral team members in the single-room model whereas in the traditional model, teamwork was often limited to those within the same health profession. Continuity of care was a further difference between models, and those working in SRM perceived they had better understanding of care processes and a greater appreciation for the complete childbearing experience of the patient and family.

The high level of job satisfaction for both single-room maternity and traditional maternity providers contrasts with findings from a single hospital study that compared satisfaction with the workplace environment among nurses ($n = 72$) before and after they worked in SRM to nurses working in a TMC setting. Compared with TMC colleagues, single-room maternity nurses reported higher satisfaction with responding to patients' needs, opportunities for teaching families, the nursing practice environment, peer support, and competency.[12] Employee satisfaction has been linked to patients' perceptions of quality of care and overall satisfaction.[27,28] A comparative study that explored differences in patient satisfaction found mothers who delivered at a single-room maternity unit ($n = 205$) were significantly more satisfied with nursing care, provision of information, physical environment, patient education, assistance with feeding, respect for privacy, and readiness for discharge than those who delivered in the TMC unit ($n = 211$).[8] TMC providers' satisfaction could potentially be enhanced by examining some of the identified concerns about communication, fragmentation, scope of practice, and expertise.

Although providers had similar collaboration scores, the qualitative findings indicated less favorable perceptions of teamwork in the TMC model. Patient transfer between traditional maternity units resulted in a disconnected and fragmented collaboration and communication and negatively impacted continuity of care. Deficiencies in collaboration and communication between providers may have a negative impact on the provision of healthcare and on patient outcomes.[29,30] Multiple transfers in the TMC model can result in compartmentalization of nursing care to distinctive areas, which may negatively impact delivering holistic family-centered care as providers involved in each phase of patient care need to establish a new relationship with the family and develop a new plan of care.[12] Patients and families were not identified as part of the team in TMC, and visitors were restricted to certain times and locations.

In comparison, the SRM model was described as family- and patient-centered, which reflects others' findings. Mothers who delivered in an SRM site were more satisfied with time spent with their support person and family inclusion in patient teaching than those who delivered at the TMC site.[8] This study suggests that SRM care may provide better continuity of care. With increased continuity of care, patients may accumulate knowledge about providers and the care setting, increasing the likelihood of satisfaction.[31,32] The safety, quality, and efficiency in patient care delivery may be strengthened by structures that promote provider collaboration and teamwork while eliminating traditional hierarchical systems and cultures.[33]

Models of maternity care, the naming of the models, and the utilization of health providers differ within and across countries. Several models include humanized versus biomedical models of care[34] (United Kingdom), rooming-in care and ordinary care (United States), and mother-baby labor/delivery and recovery. Countries also have different models regarding the scope of practice for midwives.[35] As a result of the heterogeneity of models of care, the type of providers in the provision of care, as well as different payment systems in Europe, the United States, and Canada, comparisons, and strong inferences about the similarities and differences between SRM care and other models, is difficult.

Implications

Both SRM and TMC models have yet to reach full potential in these 2 settings. Within TMC, it would be beneficial to mitigate identified challenges related to structural differences leading to fragmentation of care as a result of omissions and breakdowns in communication between providers when patients are transferred from unit to unit. As well, ensuring interprofessional exchange between physicians and TMC nurses at the point of care has the potential to optimize scope of practice for providers, create a more fulsome understanding of patients, and contribute to better continuity of care. Clinical workshops focused on topics such as transition in care and shadowing between nurses on labor/delivery with postpartum would contribute to further role clarity, as well as understanding challenges of roles, and would offer opportunities to improve care processes.

In this study, higher levels of teamwork were perceived to increase consistency of care and enhance understanding of patient care. A closer understanding of the differential characteristic attributes of teams (skills, mix, team climate, leadership, culture) in different models of care could provide opportunities for intervention

Table 5. **Recommendations for further study**

1. Cross-provincial and cross-country studies to examine differences in single-room and traditional maternity care models at broader levels
2. Studies with much larger sample sizes, more diversity in healthcare professions, and higher response rates to increase generalizability
3. Studies comparing maternal, infant, and health system outcomes between single-room maternity care and traditional maternity care

and improved teamwork and care. While teams are espoused as a core aspect of quality, it is not well understood how team functioning influences this work.[36,37] Organizational and unit structures, processes, facility design, and their effect on shaping practice and care ought to be considered in the planning of new maternity care units.

Limitations

This study was undertaken in 2 sites within one city, limiting the generalizability and transferability to other geographic locations and countries. A major limitation was the very low response rate of the traditional providers. The teams on the units were aware of the project through meetings and e-mails, and the research assistants were present during recruitment. Although incentives may have increased participation, we were unable to do so because of funding limitations. Although there was a small sample size in terms of responses to the quantitative measures, which could have been the reason for not finding quantitative differences, there were rich qualitative data that provided significant descriptions about job satisfaction and teamwork, which answered the research questions. While it was planned to recruit a diverse sample of providers, only nurses agreed to participate in interviews. The lower response rate of the TMC providers and the inability to compare responders with nonresponders may have introduced selection bias. Finally, the TMC unit underwent significant renovations and units were physically moved to a new floor in the hospital, possibly influencing the perception of team dynamics. See Table 5 for recommendations for further study.

CONCLUSION

While SRM providers reported a stronger focus on continuity and family-centered care and more favorable perceptions of interprofessional teamwork, the impact of these factors on outcomes requires further examination. A more comprehensive comparison of differences and similarities of maternal, infant, and health system outcomes of TCM and SRM and the factors influencing outcomes is an important next step. Consistently in the organizational and business literature, authors note the increasing importance of high-performing teams due to their contribution to organizational performance.[38,39] Exploration of the attributes of teams and factors that affect their success can provide insights into how team functioning shapes clinical practice and outcomes.

References

1. Waller-Wise R. Mother-baby care: the best for patients, nurses and hospitals. *Nurs Womens Health*. 2012;16(4):273–278.
2. Gerrits P, de Hosson M, Semmekrot B, Sporken J. Less hypoglycaemias in single-room maternity care. *Open J Pediatr*. 2013;3(3):183–185.
3. Phillips CR, Fenwick L. *Single-Room Maternity Care: Planning, Developing, and Operating the 21st Century Maternity System*. New York, NY: Association of Women's Health, Obstetric and Neonatal Nurses; Lippincott; 2000.
4. Zwelling E, Phillips CR. Family-centered maternity care in the new millennium: is it real or is it imagined? *J Perinat Neonatal Nurs*. 2001;15(3):1–12.
5. Public Health Agency of Canada. *Canadian Hospitals Maternity Policies and Practices Survey*. Ottawa, ON, Canada: Public Health Agency of Canada; 2012.
6. Stolte K, Myers ST, Owen WL. Changes in maternity care and the impact on nurses and nursing practice. *J Obstet Gynecol Neonatal Nurs*. 1994;23(7):603–608.
7. Janssen PA, Dennis CL, Reime B. Development and psychometric testing of the Care in Obstetrics: Measure for Testing Satisfaction (COMFORTS) scale. *Res Nurs Health*. 2006;29(1):51–60.
8. Janssen PA, Klein MC, Harris SJ, Soolsma J, Seymour LC. Single-room maternity care and client satisfaction. *Birth*. 2000;27(4):235–243.
9. Olson ME, Smith MJ. An evaluation of single-room maternity care. *Health Care Superv*. 1992;11(1):43–49.
10. Shahheidari M, Homer C. Impact of the design of neonatal intensive care units on neonates, staff, and families: a systematic literature review. *J Perinat Neonatal Nurs*. 2012;26(3):260–266; quiz 267–268.
11. van de Glind I, de Roode S, Goossensen A. Do patients in hospitals benefit from single rooms? A literature review. *Health Policy*. 2007;84(2/3):153–161.
12. Janssen PA, Harris SJ, Soolsma J, Klein MC, Seymour LC. Single-room maternity care: the nursing response. *Birth*. 2001;28(3):173–179.
13. Harris SJ, Farren MD, Janssen PA, Klein MC, Lee SK. Single-room maternity care: perinatal outcomes, economic costs, and physician preferences. *J Obstet Gynaecol Can*. 2004;26(7):633–640.
14. Maben J, Griffiths P, Penfold C, et al. One size fits all? Mixed methods evaluation of the impact of 100% single-room accommodation on staff and patient experience, safety and costs. *BMJ Qual Saf*. 2016;25(4):241–256.
15. Taylor E, Card AJ, Piatkowski M. Single-occupancy patient rooms: a systematic review of the literature since 2006. *HERD*. 2018;11(1):85–100.
16. Voigt J, Mosier M, Darouiche R. Private rooms in low acuity settings: a systematic review of the literature. *HERD*. 2018;11(1):57–74.

17. Dunn MS, MacMillan-York E, Robson K. Single-family rooms for the NICU: pros, cons and the way forward. *Newborn Infant Nurs Rev.* 2016;16(4):218–221.
18. Donetto S, Penfold C, Anderson J, Robert G, Maben J. Nursing work and sensory experiences of hospital design: a before and after qualitative study following a move to all-single room inpatient accommodation. *Health Place.* 2017;46:121–129.
19. Hanson WE, Creswell JW, Clark VLP, Petska KS, Creswell JD. Mixed methods research designs in counseling psychology. *J Couns Psychol.* 2005;52(2):224–235.
20. Creswell J. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 4th ed. Thousand Oaks, CA: Sage; 2014.
21. Kerr C, Nixon A, Wild D. Assessing and demonstrating data saturation in qualitative inquiry supporting patient-reported outcomes research. *Expert Rev Pharmacoecon Outcomes Res.* 2010;10(3):269–281.
22. Sexton JB, Helmreich RL, Neilands TB, et al. The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. *BMC Health Serv Res.* 2006; 6(44):44.
23. Orchard CA, King GA, Khalili H, Bezzina MB. Assessment of Interprofessional Team Collaboration Scale (AITCS): development and testing of the instrument. *J Contin Educ Health Prof.* 2012;32(1):58–67.
24. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3(2):77–101.
25. Nowell LS, Norris JM, White DE, Moules NJ. Thematic analysis: striving to meet the trustworthiness criteria. *Int J Qual Methods.* 2017;16(1):1–13.
26. Lincoln Y, Guba EG. *Naturalistic Inquiry*. Newbury Park, CA: Sage; 1985.
27. Judge TA, Weiss HM, Kammeyer-Mueller JD, Hulin CL. Job attitudes, job satisfaction, and job affect: a century of continuity and of change. *J Appl Psychol.* 2017;102(3):356–374.
28. Collins KS, Collins SK, McKinnies R, Jensen S. Employee satisfaction and employee retention: catalysts to patient satisfaction. *Health Care Manag (Frederick).* 2008;27(3):245–251.
29. Gougeon L, Johnson J, Morse H. Interprofessional collaboration in health care teams for the maintenance of community-dwelling seniors' health and well-being in Canada: a systematic review of trials. *J Interprof Educ Pract.* 2017;7: 29–37.
30. Zwarenstein M, Goldman J, Reeves S. Interprofessional collaboration: effects of practice-based interventions on professional practice and healthcare outcomes. *Cochrane Database Syst Rev.* 2009;3:CD000072.
31. Adler R, Vasiliadis A, Bickell N. The relationship between continuity and patient satisfaction: a systematic review. *Fam Pract.* 2010;27(2):171–178.
32. van Walraven C, Oake N, Jennings A, Forster AJ. The association between continuity of care and outcomes: a systematic and critical review. *J Eval Clin Pract.* 2010;16(5):947–956.
33. Ponte PR, Gross AH, Milliman-Richard YJ, Lacey K. Interdisciplinary teamwork and collaboration: an essential element of a positive practice environment. *Annu Rev Nurs Res.* 2010;28(1):159–189.
34. Conesa Ferrer MB, Canteras Jordana M, Ballesteros Meseguer C, Carrillo Garcia C, Martinez Roche ME. Comparative study analysing women's childbirth satisfaction and obstetric outcomes across two different models of maternity care. *BMJ Open.* 2016;6(8):e011362.
35. Sandall J, Soltani H, Gates S, Shennan A, Devane D. Midwife-led continuity models versus other models of care for childbearing women. *Cochrane Database Syst Rev.* 2016;(4):CD004667.
36. Brennan SE, Bosch M, Buchan H, Green SE. Measuring team factors thought to influence the success of quality improvement in primary care: a systematic review of instruments. *Implement Sci.* 2013;8:20.
37. Kash BA, Cheon O, Halzack NM, Miller TR. Measuring team effectiveness in the health care setting: an inventory of survey tools. *Health Serv Insights.* 2018;11:1178632918796230.
38. Keighran H, Adikari S. *Developing High-Performing Teams: A Design Thinking Led Approach*. Vol 9746. Cham, Switzerland: Springer International Publishing; 2016.
39. Harvard Business Review; Katzenbach JR, Eisenhardt KM, Gratton L. *HBR's 10 Must Reads on Teams (With Featured Article "The Discipline of Teams," by Jon R. Katzenbach and Douglas K. Smith)*. Boston, MA: Harvard Business School Publishing Corporation; 2013.

The CE test for this article is available online only. Log onto the journal website, www.jpnnjournal.com, or to www.NursingCenter.com/CE/JPNN to access the test. For another continuing education article related to the topic of maternity care, go to NursingCenter.com.

Instructions:

- Read the article. The test for this CE activity is to be taken online at www.NursingCenter.com.
- You will need to create (its free!) and login to your personal CE Planner account before taking online tests. Your planner will keep track of all your Lippincott Professional Development online CE activities for you.
- There is only one correct answer for each question.
- A passing score for this test is 13 correct answers. If you pass, you can print your certificate of earned contact hours and access the answer key. If you fail, you have the option of taking the test again at no additional cost.
- For questions, contact Lippincott Professional Development: 1-800-787-8985.

Registration Deadline:
December 3, 2021

Provider Accreditation:

Lippincott Professional Development will award 1.5 contact hours for this continuing nursing education activity.

Lippincott Professional Development is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This activity is also provider approved by the California Board of Registered Nursing, Provider Number CEP 11749. Lippincott Professional Development is also an approved provider of continuing nursing education by the District of Columbia Board of Nursing, Florida Board of Nursing, and Georgia Board of Nursing, CE Broker #50-1223.

Your certificate is valid in all states.

Disclosure Statement:

The authors and planners have disclosed that they have no financial relationships related to this article.

Payment:

- The registration fee for this test is $17.95.