

Prenatal Patient Preferences for Delivery Facility: A Pilot Study

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Home for the Summer Program – June to August 2017

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Introduction

The option to give birth close to home is a privilege that often gets taken for granted. Most prenatal patients from rural and remote areas must travel a significant distance to reach a care center that has the means to provide obstetrics services for them. In the Interlake Eastern Regional Health Authority (IERHA), the only hospital that currently provides obstetrical services is the Selkirk Regional Health Centre. The new hospital, which recently opened its doors on June 25, has a Family Birthing Unit with 6 Labor, Delivery, Recovery, Postpartum (LDRP) rooms, and two Post-Caesarean Section (CS) rooms. With both Obstetricians and Family Physicians with special training in obstetrics providing on call obstetrics services, IERHA patients with low-risk pregnancies have the option to deliver in Selkirk.

Even with these services available within the IERHA, some prenatal patients still travel to Winnipeg to deliver. In cases where prenatal patients are deemed to have a high-risk pregnancy (e.g., gestational diabetes on insulin, multiple pregnancy, uncontrolled hypertension in pregnancy, vaginal birth after cesarean (VBAC), etc.), they are automatically referred for delivery in Winnipeg, as Selkirk does not have as many resources available for them to deliver safely (e.g., NICU availability). However, among prenatal patients with low-risk pregnancies who have the option to deliver in Selkirk, the proportion of patients choosing to deliver in Winnipeg rather than Selkirk has yet to be quantified, and their reasons for doing so has yet to be explored.

There are many factors that may influence where a woman chooses to deliver. A study done by Zelek et al showed that delivering close to home and delivering where it was easy for a partner to be present were of high importance in selecting a place to deliver.¹ Another highly influential factor in the decision-making process were the beliefs of the patient.¹ Johnson et al

state that beliefs are based on women's prior experiences and interactions with their health care providers, as well as their attitudes, values, and current perception of themselves and their concern for themselves and their infants.² Beliefs a woman could have in favor of delivering in a rural center could include the importance and convenience of delivering closer to home, as well as having a perceived higher sense of control in decision-making in a rural center.¹ Meanwhile, in support of an urban center delivery were beliefs that it would be a safer option in terms of services available, and especially so for those women with complications in prior pregnancies.¹ Interestingly, the same study showed the woman's knowledge of local obstetrical services did not have a significant influence on her beliefs and chosen site of delivery.¹

Our study on prenatal patients in Selkirk sought to determine where prenatal patients were choosing to deliver, their reasons for their choice of delivery site, and how important some of the factors discussed above were to them. With this initial data, we hope to identify some of the factors determining why prenatal patients in the IERHA choose to deliver in a rural or urban center. Previous research done by Grzybowski et al found that there are increased rates of adverse perinatal outcomes associated with women who must travel to access maternity services.³ Thus, keeping patients closer to home when possible and safe to do so is the ultimate goal for maternity care providers in the IERHA. By improving our understanding of what influences prenatal patients' beliefs, and the factors contributing to their decision-making, we will be better able to provide and tailor interventions to ensure the optimal use of obstetrical services in rural areas within the IERHA.

Method

Participants

Fifty-three prenatal patient participants between the ages of 15 and 42 years ($M = 28.4$) were surveyed at the Eveline Street Clinic and Selkirk Medical Centre between June 12 – 22, 2017. Fifty-two participants were from the Eveline Street Clinic, and 1 was from the Selkirk Medical Centre. All participants completed the developed Prenatal Patient Preferences for Delivery Facility survey. Informed consent was obtained from all individual participants. All procedures were approved by Dr. Margaret Speer at the Eveline Street Clinic in Selkirk, MB.

Procedure

All prenatal patients presenting to the Eveline Street Clinic and the Selkirk Medical Centre in Selkirk, MB were presented with the Prenatal Patient Preferences for Delivery Facility survey (see Appendix) upon checking in at the reception desks from June 12 – 22, 2017. Patients were handed the survey, surveys were completed while awaiting appointments, and were handed back to the receptionist upon their completion.

Measures

The survey created was a single 8 x 11 page comprised of a total of 18 questions. The survey was designed to be easily readable at a grade 8 level, and completed within approximately 5 minutes. Survey items were created to identify factors previous research has indicated may influence prenatal patients' delivery site preference, such as geographical access or proximity, and safety and efficacy of delivery care.^{1,2,4} The initial 4 questions at the beginning of the survey gathered demographic information such as age, home location, relationship status, and highest

level of education completed. Items A through C of the survey identified whether it was the patient's first delivery, where the patient planned to deliver, and self-identified reasons for the patient's choice of delivery site. Patient responses to item C were read and coded as 11 different categories by the authors for analysis. Items 1 and 2 reflect patient satisfaction levels of care. Items 3 through 5 reflect perceived quality, safety, and efficacy of care. Items 6 through 8 reflect patient values regarding the geographical location of their preferred delivery site. Items 9 through 11 reflect patient values and beliefs regarding their preferred delivery site. For items 1 through 11, a 5-point Likert scale was used to assess individual attitudes regarding their preferred delivery site (1 = *strongly disagree* and 5 = *strongly agree*; see Appendix). Written instructions were provided at the beginning that informed participants of how to complete the survey.

Results

Data Analyses

Four prenatal patients attending the clinics during the period of data collection were unable to complete the survey due to significant language barriers. Excluding these 4 prenatal patients, the response rate for completing the survey was 100% among the 53 prenatal participants attending the clinics. Combined across all survey items, there was a missing response rate of 1.89% of all survey data. Missing responses for survey items were coded and excluded from further analysis. All analyses were run using IBM SPSS Statistics version 20. A series of chi-square (χ^2) tests for independence were conducted to determine whether there was an association between the factors identified by prenatal patients as reasons for their chosen site of delivery, and the facility at which they plan to deliver. χ^2 tests of independence were also

conducted to determine whether there was an association between patient levels of agreement with belief statements and the facility at which they plan to deliver. When statistical significance was found and the null hypothesis was rejected, Cramer's *V* tests were carried out to determine the strength of the association between variables. For all statistical analyses, the alpha level was set at .05.

Frequencies and Percentages

Table 1 shows a summary of the demographics of the prenatal patient participants. The majority of patients were between the ages of 26 and 30 (38.5%). Patients attending the clinics resided at 22 different locations across the IERHA, but 16 patients (30.2%) were from Selkirk, 7 were from Arborg (13.2%), and 4 were from Beausejour (7.5%). Table 2 shows the frequencies of participants' delivery experience assessed by item A (see Appendix) of the survey. Of the 53 prenatal patients, 18 indicated their upcoming delivery would be their first. For item B, 44 (83%) of participants indicated they planned to deliver at the Selkirk Regional Health Centre in Selkirk, 7 (13.2%) planned to deliver at Women's Hospital in Winnipeg, 1 (1.9%) planned to deliver at St. Boniface Hospital in Winnipeg, and 1 (1.9%) was undecided.

Table 1. Prenatal patient participant demographics.

Age in Years^a	Frequency	Percent (%)^d
15-20	4	7.7
21-25	10	19.2
26-30	20	38.5
31-35	14	26.9
36-42	4	7.7
Relationship Status^b		
Single	8	15.4
Engaged	1	1.9
Married	31	59.6
Common-law	12	23.1
Education^c		
Grade 8	1	2.1
Grade 9	1	2.1
Grade 10	2	4.2
Grade 11	3	6.3
Grade 12	20	41.7
Post-secondary diploma/degree	21	43.8

^a1 missing response for current age

^b1 missing response for current relationship status

^c5 missing responses for highest level of education completed

^dPercent was calculated as valid percentages that excluded missing responses.

Table 2. Prenatal patient deliver history.

# of Deliveries	Frequency	Percent (%)
1 st	18	34
2 nd	17	32.1
3 rd	11	20.8
4 th	2	3.8
5 th	1	1.9
6 th +	4	7.5

Influential factors most commonly identified by participants for their choice of delivery facility were: the facility was close to home, feeling comfortable with staff at the facility, and having previously delivered at that facility. Factors least commonly identified were having a

low-risk pregnancy (allows for the option to deliver at a rural centre) and services offered at the facility, followed by how new the facility was, the facility size, and the availability of personal space (e.g., private rooms). Table 3 summarizes these results below.

Table 3. Factors influencing decision to deliver at chosen facility.^a

Factors	Frequency^b	Percent (%)^c
Facility is close to home	36	67.9
Comfortable with staff (friendly/good service)	15	28.3
Previously delivered at facility chosen	10	18.9
Facility recommended by others	6	11.3
Facility where patient's OB physician delivers	7	13.2
High-risk pregnancy (better equipped facility)	7	13.2
New facility	3	5.7
Low-risk pregnancy	1	1.9
Facility smaller than those in Winnipeg	3	5.7
More 'personal' experience (e.g., private rooms)	3	5.7
Services offered (e.g., epidurals)	1	1.9

^aPatients indicated factors influencing preferred site of delivery freely, with many indicating multiple factors.

^bFrequency was calculated by tallying all instances of each factor category.

^cPercent of the total 53 participants.

For items 1 through 11, participants indicated their level of agreement with each statement in relation to their preferred delivery site for their current pregnancy. Median scores for each item were calculated (see Table 4). Overall, 100% of patients agreed that they felt satisfied with their prenatal primary caregiver, and 72.6% believed it was more likely that their preferred health care provider would be present at their chosen site of delivery. 90.6% of patients agreed with the belief that their chosen site of delivery would provide them with quality care. However, only 56.6% of patients believed that their chosen site of delivery would provide them with better quality care compared to other facilities, while 37.7% expressed neutrality. Similarly, only 39.7% of patients agreed that their chosen site of delivery would be better equipped to deal

with possible delivery complications compared to other facilities considered, while 45.3% expressed neutrality. An overwhelming majority of patients agreed that their preference for delivery facility was influenced by geographical location (77.4%), and proximity to their home (81.1%). Patients were split on their level of agreement with preferring to deliver at a different facility closer to their home if possible (item 8), as 41.5% disagreed, 22.7% agreed, and 32.1% expressed neutrality. 47.2% of patients agreed that their preference for facility was influenced by past personal experiences at that facility, while 35.8% expressed neutrality. In contrast, 60.4% of patients agreed that their preference for facility was influenced by experiences of others they knew, while 30.2% expressed neutrality. Overall, 73.6% of patients agreed that it was important to them that they deliver at their preferred delivery site, while 24.5% expressed neutrality.

Table 4. Patient beliefs and values in decisions about where to give birth: *Rated on a 5-point Likert scale where 1 – strongly disagree, 2 – tend to disagree, 3 – neither agree nor disagree, 4 – tend to agree, 5 – strongly agree*

Beliefs ^a	Median Score
I am satisfied with my prenatal primary caregiver	5
It is more likely that my preferred health care provider will be present at the facility at which I have chosen to deliver	4
The facility I have chosen to deliver at will provide me with quality care	5
The facility I have chosen to deliver at will provide me with better quality care compared to other facilities	4
The facility I have chosen to deliver at is better equipped to deal with possible delivery complications compared to other facilities I considered	3
My preference for facility was influenced by geographical location	4
My preference for facility was influenced by its proximity to my home	5
If possible, I would prefer to deliver at a different facility closer to my home	3
My preference for facility was influenced by past personal experiences at that facility	3
My preference for facility was influenced by experiences of other people I know	4
It is important to me that I deliver my child at my preferred facility	4

^aBeliefs listed are items 1 through 11 as administered on the Prenatal Patient Preferences for Delivery Facility survey.

χ^2 Tests for Independence

χ^2 testing revealed strong evidence of a moderately strong relationship between prenatal patients planning to deliver in Selkirk and the facility being close to their home ($\chi^2 = 13.599$, $df = 3$, $p = .004$, $V = .507$). Additionally, there was a very strong relationship between prenatal patients planning to deliver in Winnipeg (7 at Health Science's Centres' Women's Hospital and 1 at St. Boniface Hospital) and having a high-risk pregnancy ($\chi^2 = 45.523$, $df = 3$, $p < .001$, $V = .927$). No evidence of a relationship was found between comfort with staff, previous deliveries at the facility chosen, the facility being recommended by others, or the facility being one where the patient's physician delivers and the patient's preference for delivery site (i.e., all χ^2 tests were non-significant, $p > .05$). χ^2 tests were not carried out on factors 7 through 11 (see Table 3) due to small sample size.

A χ^2 test of independence was carried out for each of the 11 survey items (see Table 5) to determine whether there was an association between the belief statements and the facility at which patients plan to deliver. The planned delivery site variable was collapsed to 2 options, Selkirk, or Winnipeg. Only 1 patient planning to deliver in Winnipeg agreed that their preferred health care provider would be more likely to be present at their chosen delivery site, compared to 35 patients that planning to deliver in Selkirk. Only 1 patient planning to deliver in Winnipeg agreed that the facility they planned to deliver at would provide them with better quality care compared to other facilities (5 were neutral, and 1 strongly disagreed). In contrast, 7 patients planning to deliver in Winnipeg agreed (1 strongly) that the facility they planned to deliver at would be better equipped to deal with possible delivery complications compared to other facilities, while 24 patients planning to deliver in Selkirk neither agreed nor disagreed. Thirty-eight patients planning to deliver in Selkirk and 3 patients planning to deliver in Winnipeg

agreed that their preference for facility was influenced by geographic location. Forty patients planning to deliver in Selkirk agreed that their preference for facility was influenced by its proximity to their home, compared to 2 planning to deliver in Winnipeg. Interestingly, 31 patients planning to deliver in Selkirk agreed that their preference for delivery site was influenced by the experiences of others they know, while 0 patients planning to deliver in Winnipeg agreed.

Table 5. χ^2 test results of patient beliefs and values in decisions about where to give birth.^a

Beliefs	χ^2	<i>df</i>	<i>p</i>	<i>V</i>
I am satisfied with my prenatal primary caregiver	.596	1	.440	-
*It is more likely that my preferred health care provider will be present at the facility at which I have chosen to deliver	24.033	3	< .001	.693
The facility I have chosen to deliver at will provide me with quality care	2.598	2	.213	-
*The facility I have chosen to deliver at will provide me with better quality care compared to other facilities	16.087	4	.003	.562
*The facility I have chosen to deliver at is better equipped to deal with possible delivery complications compared to other facilities I considered	22.403	4	< .001	.669
*My preference for facility was influenced by geographical location	24.598	4	< .001	.688
*My preference for facility was influenced by its proximity to my home	25.418	4	< .001	.706
If possible, I would prefer to deliver at a different facility closer to my home	6.597	4	.159	-
My preference for facility was influenced by past personal experiences at that facility	8.843	4	.065	-
*My preference for facility was influenced by experiences of other people I know	25.713	3	< .001	.710
It is important to me that I deliver my child at my preferred facility	10.064	3	.18	-

^a * indicates statistically significant result, - indicates not applicable due to lack of association.

Discussion

The goal of the present pilot study was to quantify the proportion of prenatal patients with low-risk pregnancies choosing to deliver in Winnipeg rather than in Selkirk, and gain new insight into their reasons for doing so. To accomplish this, we designed the Prenatal Patient Preferences for Delivery Facility survey (see Appendix), and distributed it to all prenatal patients attending clinics in Selkirk for a 2-week period during the Home for the Summer Program.

The frequency and χ^2 analyses suggest that for most prenatal patients surveyed, their decision to deliver at a given facility was influenced by its proximity to their home. This agrees with previous research findings that delivering close to home is an important factor in selecting a delivery site.¹ However, the χ^2 tests did not reveal evidence of a relationship between comfort with staff, previous deliveries at the facility chosen, the facility being recommended by others, or the facility being one where the patient's physician delivers and the patient's preference for delivery site.

Additionally, there was lacking evidence of a relationship between a patient's preference for delivery site and the patient's past personal experience at that facility. This finding is somewhat contradictory to previous findings suggesting that delivery site preferences are influenced by a woman's prior experiences with health care providers.² Interestingly, there was significantly strong evidence of a relationship between patient preference for delivery site and the experiences of other people the patient knew. One possible explanation for this finding is that when prenatal patients lack personal knowledge or experience, they may rely significantly more on the knowledge and experiences of others.

For item 8 of the survey which stated: "If possible, I would prefer to deliver at a different facility closer to my home" it was found that most patients (33.3%) expressed neutrality.

However, 43.2% of patients disagreed with the statement, and 31.4% strongly disagreed. There could be many reasons for this split in opinions. One is that patients may have interpreted this statement differently. It is possible some responded by interpreting it as a hypothetical statement where they imagined a facility being closer to their home, while others may have disagreed with the statement because they knew there was no alternative facility closer to their home to deliver at. It could also be the case that this result comes from our sample size being too small, or it may be the influence of a strong response bias in our sample, as nearly all the prenatal patients surveyed were attending a single clinic in Selkirk.

While the pilot data from this study provides some valuable information about where prenatal patients in the IERHA are choosing to deliver, their reasons for their choice of delivery site, and the importance of certain factors in their decision-making, further study on a much larger sample across more clinics within the IERHA region is required to draw any clinically significant conclusions that might alter health care practice and organization. It is unlikely that the prenatal patient participants in this study were wholly representative of the patients we were attempting to survey in the IERHA. We attempted to better reach our target population of prenatal patients across the IERHA and reduce response bias by submitting the survey and instructions for its use out to clinics across the region. However, the time required to have the survey reviewed and approved by regional staff prior to its distribution was too long within the context of the Home for the Summer Program, and made this goal unfeasible.

Future studies could also look at expanding the Prenatal Patient Preferences for Delivery Facility survey to include additional items to examine beliefs and values that other researchers have demonstrated may influence prenatal patients' preference for delivery site, such as perceiving a higher sense of control of decision-making at rural centers.¹ Additionally, one could

test the reliability and validity of the Likert scale items of the survey to ensure they are accurately assessing the beliefs and values they are intended to. Finally, it is recommended that in the future, additional measures be put in place to prevent random responding and acquiescence, as it was found that one prenatal patient circled all of one response on all the 5-point Likert scale items. Such preventive measures may involve including a faking or random response scale that participants complete in addition to the Prenatal Patient Preferences for Delivery Facility survey items, or simply motivating participants by giving them a brief speech about why accuracy in research is important and emphasizing the voluntary nature of their participation.

In conclusion, this study has provided a novel exploration of preferences of prenatal patients followed in the IERHA for delivery facility by developing a brief survey that can be easily administered to patients while they await their appointments at clinics. While we successfully identified that the proximity of the delivery site to a patient's home was an important factor in deciding where to deliver, and some evidence suggestive that patients may rely on experiences and information from those they know in choosing their delivery site, we did not have a larger enough sample size to gather evidence suggesting why prenatal patients with low-risk pregnancies may be choosing to deliver in Winnipeg rather than in Selkirk. It is likely that many factors other than those identified in this study significantly influence where prenatal patients choose to deliver,^{1,2,3,4} but further studies with much larger sample sizes across the IERHA will be required to identify them. An improved understanding of prenatal patient preferences for delivery site will better inform safe and efficacious health care practices, as past research suggests keeping patients closer to their homes for deliveries when possible is associated with reduced rates of adverse perinatal outcomes.³

References

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Appendix

Instructions: Thank you for agreeing to take part in this survey on prenatal patient preferences for delivery facility. Your thoughts and opinions will be used to better serve prenatal patients in the IERHA. The survey should only take ~5 minutes to complete. All answers you provide will be anonymous, and any personal or identifying information collected will be kept strictly confidential.

Name: _____ **Age:** _____ **Town/City:** _____

Relationship Status: Single Engaged Married Common-law Divorced Widowed

Education (highest level completed): Grade 8 9 10 11 12 Post-secondary diploma/degree

A	Will this be your first delivery? [Circle your response]	Yes	No (2 nd 3 rd 4 th 5 th 6 th +))
B	Where do you plan to deliver your baby (i.e., what facility/location)?		
C	What influenced your decision to deliver your baby at the facility identified above? List factors/reasons below:		

Instructions: Read the following statements carefully and use the scale below to indicate how strongly you agree or disagree with each statement. Indicate your level of agreement by circling a number in the space to the right of each statement. **Consider the statements in the context of your current pregnancy.**

1	2	3	4	5
Strongly Disagree	Tend to Disagree	Neither Agree nor Disagree	Tend to Agree	Strongly Agree

1	I am satisfied with my prenatal primary caregiver	1 2 3 4 5
2	It is more likely that my preferred health care provider will be present at the facility at which I have chosen to deliver	1 2 3 4 5
3	The facility I have chosen to deliver at will provide me with quality care	1 2 3 4 5
4	The facility I have chosen to deliver at will provide me with better quality care compared to other facilities	1 2 3 4 5
5	The facility I have chosen to deliver at is better equipped to deal with possible delivery complications compared to other facilities I considered	1 2 3 4 5
6	My preference for facility was influenced by geographical location	1 2 3 4 5
7	My preference for facility was influenced by its proximity to my home	1 2 3 4 5
8	If possible, I would prefer to deliver at a different facility closer to my home	1 2 3 4 5
9	My preference for facility was influenced by past personal experiences at that facility	1 2 3 4 5
10	My preference for facility was influenced by experiences of other people I know	1 2 3 4 5
11	It is important to me that I deliver my child at my preferred facility	1 2 3 4 5

Comments:

