RESEARCH ARTICLE

How Women Choose Prenatal Care Providers in the Twin Tiers

Alicia Harbison, DO, PGY-2[1]; Michael Gillan, DO[1]

1. Robert Packer Hospital

KEYWORDS:

Midwives

Obstetrics

Prenatal Care

Women's Health Issues

Objective: There are three main options for women seeking prenatal care: Obstetricians (OB), Midwives (MW), and Family Medicine physicians (FM). This study aims at determining how women choose prenatal care providers, at what point in pregnancy women choose their provider, what factors guide their choice, if women would repeat their choice, and if they know that FM can provide prenatal care.

Methods: A list of obstetrical patients who delivered at Institute Name between June 1, 2015, and May 31, 2016, was obtained from Epic, institute's electronic medical record. Patient exclusion criteria: patients under the age of 18 during delivery, patients who delivered stillbirths, patients that had died since delivery, and deaf patients who may not be able to participate in a phone call. Surveys were conducted via phone during normal business hours. Descriptive statistics were used to summarize survey data.

Results: A total of 212 patients were surveyed; average age of a participant was 27 years old. On average, they had 3 pregnancies of which 2 resulted in live births. The majority of patients saw an OB for care. Women chose based off recommendations and prior usage. Most women selected a provider during the trimester they discovered pregnancy. Of the 88 patients who received survey 1, 52% were aware FM can perform prenatal care and 50% were willing to see FM for care.

Conclusion: A significant number of women are willing to see FM for prenatal care. FM should receive additional prenatal training and exposure to prenatal patients.

INTRODUCTION

A woman's choice of provider plays an important role in her pregnancy by sharing information, resolving concerns, providing access to resources, and administering care during childbirth.[1] Therefore, it is important that women make an informed decision on who they select for prenatal care.

There are three main prenatal care options for women: OB (Obstetricians), MW (Midwives), and FM (Family Medicine physicians). MWs provide more direct support during the laboring process while OBs rely more on nurses to provide direct care.[2] This has resulted in two distinct models of care: a Medical Model and a Midwifery Model.[1] OBs use the Medical Model, which views pregnant women and their unborn child as being potentially at a medical risk, leading to increased monitoring of pregnancy. MWs utilize the Midwifery Model which emphasizes wellness and focuses on women making their own decisions about pregnancy, generally refraining from costly interventions. FMs tend to use a blend of both models, frequently take care of the patient before becoming pregnant, and both patients after delivery.[1,3]

When women search for a prenatal care provider, they use personal and impersonal sources.[1] Personal sources include: prior use of the provider, recommendations from family and friends, providers with similar values, and female gender. Impersonal or system sources include: recommendations from physicians, insurance coverage, advertisements, or assignment.[3] Women tend to select prenatal providers quickly without considering alternate practitioners.[4]

Important characteristics women consider when selecting a provider include: good communication skills, time commitment, participation in decisions, being respectful, feeling valued, empathy, and provider expertise.[1,4] Other valued aspects encompass ease of scheduling, flexible clinic hours, emotional support, and tending to the psychosocial aspects of their lives.[5] Having a meaningful relationship between patient and provider makes it easier for a patient to accept guidance from providers.[5]

CORRESPONDENCE:
Alicia Harbison, DO, PGY-2 | Alicia.harbison@guthrie.org

 Print ISSN: 1877-573X

This study aims to increase understanding of how women choose prenatal care providers. The main objectives of this study are: 1) to determine the factors that influence how pregnant women choose their prenatal care provider; 2) to determine how women choose between a MW, OB or FM for prenatal care; 3) to determine when women discovered their pregnancy and when they first saw a prenatal care provider; 4) to determine if women are aware that they can use a FM provider for prenatal care; 5) to determine if women would be willing to change their provider type.

METHODS

An IRB-approved, descriptive survey study was conducted to assess how women choose prenatal care. Study participants were recruited from Institute Name, a 254-bed tertiary care teaching hospital in Sayre, Pennsylvania that serves the regions of the Northern Tier of Pennsylvania and the Southern Tier of New York, also known as the Twin Tiers. This is a rural underserved region of the country. Institute is part of the Guthrie Health Care System, a not-for-profit, integrated health care organization. A list of obstetrical patients with infants delivered between June 1, 2015 and May 31, 2016 at Institute was obtained from Epic, Institute's electronic medical record. Inclusion criteria: the mothers of all infants delivered between June 1, 2015 and May 31, 2016 at Institute. Exclusion criteria: patients under the age of 18 during delivery, patients who delivered stillbirths, patients that had died since delivery, and deaf patients who may not be able to participate in a phone call. The eligible participants were called on the phone, by the author and medical students from a private room, to determine interest in participation in a research study. An individual who granted verbal consent would be given the survey. Each potential subject would be contacted up to three times between the hours of 8am and 5pm. After three missed attempts, that woman was excluded. If the interview with a woman stopped abruptly, and she was willing to continue at a later time, then a continuation call would occur. The patients would be asked to answer questions based on their prenatal care experience *(Survey 2, page 15)*. Patients could withdraw from the study by refusing the phone call, ending the call prematurely, or skipping questions. Patient data was collected on Institute secure computers.

About halfway through data collection, the last two questions were changed to address a patient concern. The original survey *(Referred to as Survey 1)* questions "Would you ever consider seeing a Family Doctor?" and "Did you know that Family Doctors can do prenatal care?" were revised in what is referred to as Survey 2 to read, "Since you saw (OB/MW/FM) for prenatal care, would you ever consider seeing either of the two remaining providers?"

Statistical analysis was performed using the computer program, R studio Version 1.0.136 and R version 3.3.1.

RESULTS

Initially, 845 patients were reported. Of those, 26 patients were excluded from participation as follows: duplicate patients (mothers of twins were counted once instead of twice, 6), underage patients (9), those who delivered stillbirths (8), 2 patients had since died after delivery, and one patient was deaf and excluded due to the nature of the phone survey, giving a total of 819 potential patients. A total of 212 patients completed the survey, which represents 25.9% of eligible patients that delivered over the year *(Figure 1)*.

GENERAL CHARACTERISTICS

Of the 212 patients surveyed, the youngest was 18 and the eldest was 44. The average age of patient at delivery was 27.2 years. The highest gravity (number of times a woman has been pregnant)

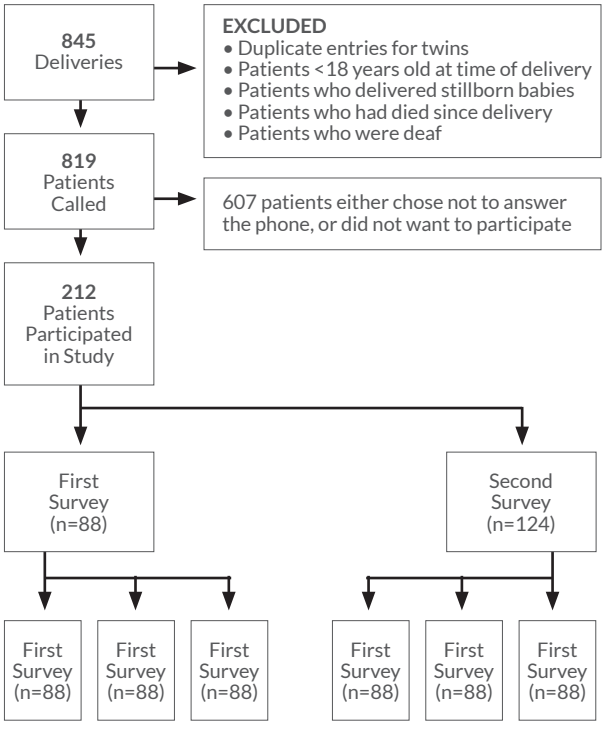
TABLE 1:

Provider type and whether a recommendation was how the provider was selected. Bottom half compares OB with combination of FM and MW.

Category	Patient Did Not Choose Provider Based On Recommendation	Patient Did Choose Provider Based On Recommendation
FM	15	4
MW	53	16
OB	77	47
FM/MW	68	20
OB	77	47

FIGURE 1:

Flowchart of how patients were selected.



was 11 with an average of 3.1, and the highest parity (number of times a woman delivered) was 9 with an average of 2.4. About 66% of pregnancies led to live births, which is consistent with literature.[6,7] Survey 1 was completed by 88 patients and survey 2 was completed by 124 patients. There were a total of 70 MW patients (33%), 123 OB patients (58%) and 19 FM patients (8.9%).

HOW WOMEN CHOOSE PROVIDERS FOR CARE

The responses to the question: "How did you choose (provider name)?" showed 32% of providers were chosen from a recommendation and 25% of providers were selected from a prior pregnancy. Most of the 32% of providers that were chosen from a recommendation were OB. There was an insignificant relationship between the individual provider type and a recommendation for initial usage (p = 0.06343). Analyzing OB compared to the other two providers combined (MW/FM), there was a significant relationship of provider type and recommendations for initial usage (p = 0.02838) *(Table 1, see page 11)*.

Another question, "What did you like about (provider name)?" investigated desired characteristics in a provider. Examples of preferred characteristics include: their provider's personality, thoroughness, knowledge, amount of time spent with patient, personability, addressing concerns, and mannerisms. For MW responses included, using fewer medications, wanting a more natural childbirth, or being holistic.

For the question, "Would you recommend family members or friends to use a/an (OB/MW/FM)?" 94% of patients stated they would recommend their provider type. There was an insignificant relationship between provider type and whether the patient would refer provider type (p = 0.2069) *(Table 2)*.

A relationship was identified between the provider and if the patient would consider seeing another provider type (p = 0.03446). Patients which selected FM had the largest proportion of patients willing to see another provider type, which occurred in 7 of 8 cases. Patients that selected MW had the lowest proportion of patients willing to see another provider, 17 of 43 *(Table 3)*. No relationship was identified between if a provider was initially recommended and if the patient would recommend the same provider to others (p = 1).

To determine if a patient would continue with their same provider was analyzed via the question, "Would you use the same provider again?" The relationship between the question and provider type was evaluated and was insignificant (p = 0.07911). There was a marginally significant relationship between whether a provider would be selected again when comparing OB to the other providers. The proportion of OB providers which would not be seen again is higher than the other provider types combined (p = 0.0631) *(Table 4)*.Data was evaluated to determine if a two-way correlation existed between if a provider would be reselected and if the provider clearly explained tests, procedures, and if the patient felt comfortable communicating concerns with the provider. A correlation was identified for all variables.

- Clearly explain procedures and select provider again: p = 9.999e-05
- Clearly explain tests and select provider again: p = 0.0012
- Felt comfortable communicating concerns and select provider again: p = 3e-04

Similar correlations were evaluated for the data for whether a provider would be recommended:

- Clearly explain procedures and recommend provider: p = 2e-04
- Clearly explain tests and recommend provider: p = 5e-04
- Felt comfortable communicating concerns and recommend provider: p = 3e-04

TABLE 2:

Provider type and whether the provider would be recommended to family and friends. Bottom half compares OB with combination of FM and MW.

Category	Patient Would Not Recommend	Patient Would Recommend
FM	0	19
MW	2	67
OB	10	114
FM/MW	2	86
OB	10	114

TABLE 3:

Provider type and whether the patient would consider using another provider.

Category	Patient Would Not Recommend	Patient Would Recommend
FM	1	7
MW	26	17
OB	35	38

TABLE 4:

Provider type and whether the provider would be used again. Bottom half compares OB with combination of FM and MW.

Category	Patient Would Not Use Again	Patient Would Use Again
FM	0	19
MW	2	67
OB	12	112
FM/MW	2	86
OB	12	112

AT WHAT POINT IN PREGNANCY WOMEN CHOOSE THEIR PROVIDER

Women typically selected providers the same trimester in which they discovered pregnancy *(Table 5)*.

TABLE 5:

Trimester that a woman discovered pregnancy in comparison with when she saw a provider for the initial visit.

Trimester Discovered Pregnancy	Trimester Patient Saw A Provider			
	Unknown	1	2	3
Unknown	1	0	0	0
1	3	191	9	2
2	0	0	4	0
3	0	0	0	2

PATIENT'S AWARENESS OF USING FM FOR PRENATAL CARE

In Survey 1, the questions, "Would you ever consider seeing a Family Doctor?" and "Did you know that Family Doctors can do prenatal care?" were asked. Patients answered "yes" 50% of the time and 52% of the time, respectively.

In Survey 2, the new question asked the participants if they would consider seeing any of the provider types (OB/MW/FM) that they had not already met. Results were, 49 patients answered no (40.5%), 35 patients answered yes to all provider types (28.9%), 6 answered only if needed (5%), 4 were unsure of seeing other providers (3.3%), 4 had already seen all three providers (3.3%), 10 would consider switching to a MW (8.3%), 13 would consider switching to a FM (10.7%), and 0 would consider switching to an OB (0%).

DISCUSSION

The two largest factors contributing to a woman selecting a provider were: recommendations (from friends, family, or doctors) and prior usage of the provider. If a woman had seen a certain provider before, they were likely to continue with that provider for subsequent pregnancies.

Most women discovered they were pregnant and sought care during the first trimester. This matches the literature, which states that on average women realized they are pregnant at 10 weeks.[8] Obstetricians were the most frequently referred specialist. Patients who had providers that explained tests and procedures and felt like they could bring up concerns were more likely to use the same provider again, or to recommend the provider to others.

Patients preferred providers that were understanding, knowledgeable, caring, honest, and made time for them. If patients desired a more medically based pregnancy, they chose a FM or an OB. If patients desired a pregnancy with fewer interventions, they chose a MW, in keeping with the current theory on models of care. While many patients who saw a provider would refer them to family members or friends, a small majority of patients who saw an OB would not refer them.

On the topic of OB, it appeared as if fewer patients would be willing to switch to an OB for care. This possibly occurred since the majority of patients saw OB initially, and therefore could not answer that they would be willing to switch to an OB for care. Another possibility is that patients who saw MW or FM would be willing to see others in general.

A sub-group analysis based on the demographics of the patients was unable to be performed. Location, race, and ethnicity were analyzed, but none of them showed any significant differences. Questions were not asked concerning income. The location of this study in the Twin Tiers is considered rural underserved.

Of the patients surveyed, about half are willing to see a FM, but only 9% went to a FM for pregnancy. If this data was to be extrapolated to fit the full prenatal patient workload, about 380 patients a year would be willing to see a FM for pregnancy. Two factors leading to such a small number of patients seeing FM for pregnancy are that the patients are unaware that FM is an option and many FMs do not offer prenatal care.

Approximately half of the patients are unaware of the possibility of a FM providing prenatal care. To increase awareness, the FM doctor should inform the patient that they do prenatal care prior to the patient becoming pregnant. FM prenatal care would fill the need of more continuity of care for the patient and their family. Since many patients see a FM doctor for primary care, they would be comfortable with that provider, and after delivery, the FM could take care of both the patient and the newborn.

Another problem is that few FMs provide prenatal care. The retention rate of prenatally trained FMs is low from the extra burdens it imposes. Tong *et al*. found that the proportion of United States FM who reported providing maternity care declined from 23.3% in 2000 to 9.7% in 2010.[9] Numerous causes for the decline of FM's taking care of prenatal patients have been identified. These include: malpractice litigation, physical exhaustion from hours needed, intimidation by new procedures, government regulations, hospital closures, stresses at home, bad outcomes, and pressure by OB-GYNs not to deliver.[10]

The trend of FM providers choosing not to offer prenatal care can lead to a lack of prenatal providers in rural regions. Graduates from OB-GYN tend to practice in urban regions, whereas FM and MW cover rural regions. Since almost 50% of counties in the United States have no OB provider, about 10 million women are unserved.[10] The FM physician needs to be educated about the population to be cared for and be strengthened if they decide to care for pregnant patients.

A strength of this study is the large sample size. Participants were sampled from all three provider types allowing them to be compared. The weaknesses include: low statistical significance for some findings, the study was performed in a rural setting with few

provider options, and the need to change the questions between Survey 1 and Survey 2 as previously discussed.

Future research should be aimed at increasing women's awareness of a FM as a prenatal care option and investigating determine how FM residents view prenatal care. A similar survey could be completed in a multicenter to assess generalizability since these surveys were completed in a rural setting. Future research could be done to determine if there are any benefits in seeing one provider over another.

LIMITATIONS

The study was performed about 1.5 to 2 years after the women delivered, and they may have had subsequent pregnancies since then. This was retrospective, leaving room for potential recall bias. There is also a possibility of social desirability bias in the honesty of their responses.

Multiple hypothesis tests were performed simultaneously without compensating for a larger type 1 error rate. The study had an adequate sample size to detect differences in proportions of up to 0.3 without compensating for the inflated type 1 error rate. Additional studies may be needed to confirm observed relationships. In this rural setting another limitation is observations may not be independent, since a single provider could represent multiple data points and bias the results.

CONCLUSIONS

Prenatal care is a momentous time in a woman's life. Providers are chosen that are knowledgeable, understanding, timely, and can help alleviate patient concerns. This study suggests that 52% of patients are aware of having a FM physician do prenatal care and 50% would be willing to see a FM physician. This suggests that there is many opportunities to expand a FM practice with prenatal and young patients, which is especially needed in rural regions.

ACKNOWLEDGEMENTS

We wish to thank the medical students: Abbi Woll, Charlita Lockett, Jee Moon, and Rachel Lovely for their assistance with data gathering. Also, thanks to Raymond Brown, Laura Fitzgerald, Timothy Harbison, and Vicky Hickey for their help with editing the paper. Special thanks also to Matthew Dittler for his statistical analysis.

AUTHOR DISCLOSURES:
No relevant financial affiliations

REFERENCES:

1. Callister LC. Finding a fit: choice of a health care provider by childbearing women. [Doctor of Philosophy's thesis]. Salt Lake City, Utah: The University of Utah; 1993.
2. Fullerton JT, Hollenbach KA, Wingard DL. A comparison of obstetricians and nurse-midwives. Journal of Nurse-Midwifery. 1996;41(3):243-250.
3. Kozhimannil KB, Attanasio LB, Yang T, Avery M, Declerq E. Midwifery care and patient-provider communication in maternity decisions. Journal of Maternal Child Health. 2015;19(7):1608-1615.
4. Hoerger TJ, Howard LZ. Search behavior and choice of physician in the market for prenatal care. Medical Care. 1995;33(4):332-349.
5. Sword W, Heaman MI, Brooks S, et al. Women's and care provider's perspectives of quality prenatal care: a qualitative descriptive study. BMC Pregnancy & Childbirth. 2012;12(29):1-19.
6. MacDorman MF, Gregory EC. Fetal and Perinatal Mortality: United States, 2013. Natl Vital Stat Rep. 2015 Jul;64(8): 1-24.
7. Wang X, Chen C, Wang L, et al. Conception, early pregnancy loss and time to clinical pregnancy: a population-based prospective study. Fertil Steril. 2003;79(3):577.
8. Bartholomew K, Morton SM, Atatoa Carr PE, Bandara DK, Grant CC. Provider engagement and choice in the lead maternity care System: evidence from growing up in New Zealand. Australian and New Zealand Journal of Obstetrics and Gynecology. 2015;55:323-330.
9. Tong STC, Makaroff LA, Xierali IM, et al. Proportion of family physicians providing maternity care continues to decline. JABFM. 2012;25:270-271.
10. Avery DM, McDonald JT. The declining number of family physicians practicing obstetrics: rural impact, reasons, recommendations and considerations. American Journal of Clinical Medicine. 2014;10(2):70-78.

Follow-up Script – Prenatal Care *(Survey 2)*

Participant B#: _____ Age: _____ Date of Call: _____/_____/_____

Treating Physician or NP: ◯ *Midwives* ◯ *Obstetrician* ◯ *Family Medicine Doctor* | *Attempt #:* ◯ *1* ◯ *2* ◯ *3*

Hello, this is (Student name here), I'm a medical student working with the Guthrie Medical Group. I am working with Drs. Harbison and Gillan with the Section of Family Medicine at Guthrie. We are conducting a follow-up research study on patients who had infants born at Robert Packer Hospital from June 1, 2015-May 31, 2016. We want to evaluate how patients chose their provider for prenatal care.

Our records show that you first received prenatal on or about __/__/__ (date).
Does that sound right? ◯ Yes ◯ No

Would you mind if I ask you some questions about your treatment? This is voluntary and completely confidential, I only have 12 questions and it will take about 10 minutes of your time. ◯ Yes ◯ No

If no: *"Is there a better time for me to call you back?"* _____

If no: *"Thank you for your time."* End call.

If yes: Proceed with Questionnaire

Thank you. You can stop me at any time, or skip any questions you do not wish to answer.

1. *How far along were you when you found out you were pregnant?*
   ◯ First 3 months ◯ 3-6 months ◯ 6-9 months
2. *When in your pregnancy did you first go to the doctor for prenatal care?* _____
3. *Did you see an* ◯ *obstetrician* ◯ *a midwife* ◯ *or a family doctor for pregnancy care?*
4. *I see that you saw* (insert name of provider), *how did you choose* (insert name of provider)*?* _____
5. *What did you like about* (insert name of provider)? _____
6. *Did* (insert name of provider) *explain procedures to you in a way you understood?* ◯ Yes ◯ No
   If yes: What about the explanation made it understandable? _____
   If no: What about the explanation made it not understandable? _____
7. *Did* (insert name of provider) *explain testing to you in a way you understood?* ◯ Yes ◯ No
   If yes: What about the testing made it understandable? _____
   If no: What about the testing made it not understandable? _____
8. *Did you feel like you could bring up questions or concerns to* (insert provider name) *about your pregnancy?*
   ◯ Yes ◯ No
   If yes: What made (insert name of provider) approachable? _____
   If no: What made (insert name of provider) unapproachable? _____
9. *Would you use the same* (obstetrician/midwife/family doctor) *again?* ◯ Yes ◯ No
10. *Would you recommend to family members or friends to use a/an* (obstetrician/midwife/family doctor)?
    ◯ Yes ◯ No
11. **If the woman saw an OB for prenatal care**
    Would you ever consider seeing a family doctor or midwife for prenatal care? ◯ Yes ◯ No
12. **If the woman saw a midwife for prenatal care**
    Would you ever consider seeing an OB or family doctor for prenatal care? ◯ Yes ◯ No
13. **If the woman saw a family doctor for prenatal care**
    Would you ever consider seeing an OB or a midwife for prenatal care? ◯ Yes ◯ No

That's all of the questions I have for you. Thank you so much for your time. If you have any follow-up questions, please call our Institutional Review Board at (570) 887-4885.