INTRODUCTION

Despite leading the world in health care advances for newborns, the United States has the highest infant mortality rate of any developed country in the world. A closer examination of infant mortality rates in the United States revealed stark disparities between White and non-White infants. For example, in the United States, African American infant mortality rates were 10.8 per 1,000 live births compared to 4.6 per 1,000 live births for Whites in 2018. Ohio has one of the highest infant mortality rates in the United States. Rankings released by the Centers for Disease Control and Prevention revealed that Ohio ranked 10th in the nation in infant mortality rates in 2018 (the most recent data reported). Specifically, the report noted that there were a total of 938 infant deaths, thus reflecting an infant mortality rate of 6.9 per 1,000 live births. Further examination of Ohio infant mortality rates reveals that while African Americans comprise 12.4% of the population in Ohio and Whites make up 81.5% of the population in Ohio, African American infants were 3 times more likely to die than White infants.

In light of these numbers, this study focused on gaining a better understanding of pregnant women’s communicative experiences when receiving prenatal care in Ohio.
when receiving prenatal care in Ohio. This paper presents a brief background on patient-provider communication and prenatal care, followed by our study methods and results, discussion, and public health implications.

**Patient-Provider Communication**

Patient-provider communication, which includes multiple aspects of communication such as verbal and nonverbal interactions between patients and providers, is a vital provision of safe and high-quality health care. Important aspects of patient-provider communication include enabling patient self-management, fostering healing relationships, making medical decisions, respect, trust, effective communication skills, and exchanging information. Effective patient-provider communication affords patients the ability to engage in their health care, comprehend health information, and communicate with providers.

In the context of prenatal care, research suggests that patient-provider communication is important in determining pregnant women’s prenatal care utilization rates. However, although effective patient-provider communication plays an important role in influencing pregnant women’s beliefs regarding prenatal care, as many as 40% of pregnant women reported ineffective communication with their prenatal care provider. Ineffective patient-provider communication is perceived as a barrier to prenatal care and impacts infant morbidity and mortality rates, in part due to the prenatal care provider’s negative attitudes and interpersonal characteristics, which decrease utilization rates of prenatal care services and facilities.

A vast body of literature calls attention to commonly noted communication-related issues between providers and their racial and ethnic minority patients. In short, racial and ethnic minorities are more likely to experience inadequate communication when interacting with their provider. Previous studies also suggest that inadequate patient-provider communication can, in part, be explained by clinician biases, stereotypes, and the pervasive notion that racial and ethnic minorities are noncompliant or less intelligent than their White counterparts.

Therefore, 2 empirically validated factors may be useful concerning pregnant women’s health outcomes. First, the provider’s use of culturally competent health care, which is the ability of health care providers to provide high-quality care to patients from diverse racial and ethnic backgrounds, is an important strategy in reducing racial and ethnic disparities in health care outcomes and in effective patient-provider communication, access to health care, and health care service utilization. Second, social concordance, which includes shared characteristics such as race, age, gender, and education, between the provider and patient influences positive patient perceptions. Further, when assessing racial concordance, which involves shared characteristics of race, findings from a comprehensive review of literature containing 27 studies revealed that provider and patient race concordance was associated with positive health outcomes, specifically for minorities.

**Patient-Provider Communication: A Conceptual Framework**

The patient-provider communication framework is especially useful when examining one-on-one conversations between patients and their health care providers. This framework has been previously used to examine patient-provider communication among cancer patients. Because the infant mortality rates in Ohio have been relatively high in the country, infant mortality and prenatal care are closely related, and poor communication between prenatal care provider and patient may lead to poor birth outcomes, we extended the patient-provider communication framework to focus on pregnant women’s communicative experiences. The patient-provider communication framework encompasses 4 tenets: (1) the health care provider and patient interaction to establish goals; (2) the health care provider and patient’s needs, values, beliefs, skills, and emotions used to address their goals; (3) the communication process, which encompasses verbal, nonverbal, or silent communication that focuses on conveying and receiving messages; and (4) the environment in which the communication occurs. We aimed to explore the third tenant of prenatal care providers and pregnant women in this study.

We found that the insight gained from Feldman-Stewart and colleagues, particularly the third tenet (i.e., the communication process), is useful to assist prenatal care patients in receiving prenatal care while supporting prenatal care providers in providing prenatal care through effective communicative experiences. Therefore, the purpose of this study was to gain a better understanding of pregnant women’s communicative experiences when receiving prenatal care in Ohio. The research question that guided this study is “How does your primary prenatal health care provider communicate with you?”

**METHODS**

**Setting**

All interviews were conducted face-to-face at a public library, a YMCA, or via phone based on the participant’s preference. The decision to conduct interviews face-to-face or via telephone was mutually determined based on availability and geographical location of the interviewee.

**Design**

Semi-structured interviews, which are structured conversations using an interview script with pre-drafted questions, were conducted. These interviews are beneficial because they allow interviewers the flexibility to modify questions within the interview script as needed to collect rich descriptive data. The interview script was prepared in advance, yet interviews deviated from the script whenever necessary to gain more insight or understand the context of the discussion.
Participants

The eligibility criteria for the study required women to be between the ages of 18 to 45 years, reside in Ohio, and be in their second or third trimester of pregnancy. As recommended by the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists, pregnant women should have one prenatal visit a month during weeks 4 to 28, two visits a month during weeks 28 through 36, and weekly visits beginning at 36 weeks of their pregnancy.27 In reality, only about three-quarters of pregnant Ohio women with live birth started their prenatal care from the first trimester.28 Therefore, women in their second or third trimester of pregnancy have a higher likelihood of experiencing recurrent visits with their prenatal care providers. Because patient provider communication may influence the quality and frequency of prenatal visits, focusing on Ohio pregnant women’s communicative experiences may shed the light for future investigations on infant mortality.

Thirty women were recruited from health fairs, hospitals, neighborhood clinics, private medical offices, a county health department, and other community-based agencies located in Ohio using convenience sampling. Recruitment strategies included flyers posted at the various recruitment sites as well as referrals made by social workers and hospital, clinic, and health department staff.

Procedures

Study approval was obtained from the Institutional Review Board (IRB) of the first and second author’s institution prior to the start of recruitment and data collection. Our colleagues reviewed the interview guide and made recommendations to help improve face validity. Further, the research team improved content validity by inviting an expert panel to review the interview guide to seek feedback on the wording of the interview questions.29

Pregnant women interested in participating in the study were directed to contact the first author to complete an eligibility screening. Participants deemed eligible and who agreed to participate were instructed to complete an informed consent and demographic questionnaire prior to their scheduled interview. Consent forms and demographic questionnaires were collected in person or via email prior to the start of the interviews.

The first author conducted all interviews. Each interview started with an explanation of the purpose of the study. All participants were given the opportunity to ask questions about study procedures, were reminded that interviews would be audio recorded for later transcription, and were told that their answers would not be shared with their provider or affect their current or future care. At the end of the interviews, the participants were thanked and given a pack of diapers in exchange for their time. The interviewer worked with a research assistant to transcribe each file. On average, each interview lasted from 20 to 30 minutes.

Instruments

This study used 2 instruments during data collection. For the first instrument, participants were provided a 12-item questionnaire to assess participants’ demographic characteristics, including race, ethnicity, age, educational attainment, household income, type of prenatal health care provider, length of prenatal health care provider relationship, gender of prenatal health care provider, type of prenatal health care facility, type of insurance, trimester status, and current relationship status.

The second instrument was a semi-structured interview guide developed by the research team to conduct the individual interviews. The semi-structured interview guide focused on patient-provider communication practices during prenatal care. All interview questions were drafted with the intent to capture pregnant women’s communicative experiences while receiving prenatal care. Because pregnant women may have encounters with multiple providers during prenatal care, participants were directed to discuss the provider they interacted with the most.

Data Analysis

Researchers applied a thematic analysis approach to analyze the data. Thematic analysis is a multistep process that guides researchers through the process of identifying recurring patterns within the data that can be categorized into themes.30 Consequently, themes are the outcome of patterned responses most relevant to our research questions.31

We followed the two-staged thematic analytic technique to conduct data analysis.32 The first stage, open coding, consisted of line-by-line coding of each individual transcript in order to develop codebooks. To enhance the validity of our findings, the first and second authors independently coded during the open coding phase of data analysis. The authors then discussed each code until consensus was reached among the authors. Data were then compared and categorized in order to create a master codebook that represented all interview data.33 In the second stage of analysis, axial coding was employed. In this stage, transcripts were reviewed, and recurrent themes and specific quotes within each theme were extracted and categorized.32,34

All data were analyzed inductively using NVivo version 12 data analysis software (QSR International).35 NVivo 12 data analysis software allows researchers the ability to browse text, link ideas, search and explore patterns during coding, and annotate responses.36,37 Further, NVIVO 12 data analysis software is designed to reduce divisions between data and the researchers’ interpretation.

Data saturation was reached through our interviews with 30 pregnant women. Data saturation is an exhaustive process of continuing to collect data until no new data are discovered. The research team was also mindful to ask each participant interview question in the same manner.31,38
**RESULTS**

Participant demographics are shown in Table 1. The final sample consisted of 30 pregnant women between the ages of 19 to 39 years. The vast majority was aged 19 to 30 years. Only 3 participants were between the ages of 34 to 39. The majority of participants self-identified as African American women with an education of high school/GED or less. Most participants utilized governmental health insurance (Medicaid/Medicare), earned less than $20,000, were not married, and saw a female midwife in a clinic. It is also important to note that 10 participants were in their second trimester of pregnancy and 20 were in their third trimester of pregnancy during data collection.

Qualitative findings suggest that pregnant women’s communicative experiences receiving prenatal care are based on 4 overarch-

| Characteristics                        | n (%)  |
|----------------------------------------|--------|
| **Race**                               |        |
| African American                       | 20 (66.7%) |
| White                                  | 6 (20.0%)  |
| Multiple                               | 3 (10.0%)   |
| Other                                  | 1 (3.3%)    |
| **Age**                                |        |
| 19-20 years old                        | 5 (16.7%) |
| 21-25 years old                        | 8 (26.7%)  |
| 26-30 years old                        | 14 (46.6%) |
| 31-40 years old                        | 3 (10.0%)  |
| **Level of education**                 |        |
| Some high school                       | 2 (6.7%)   |
| High school/GED                        | 12 (40.0%) |
| Some college or technical school       | 11 (36.6%)  |
| Bachelor’s degree or master’s degree   | 5 (16.7%)  |
| **Annual household income**            |        |
| Less than $9,999                       | 15 (50.0%) |
| $10,000 to less than $14,999           | 3 (10.0%)   |
| $15,000 to less than $19,999           | 3 (10.0%)   |
| $20,000 to less than $49,999           | 3 (10.0%)   |
| $50,000 or higher                      | 5 (16.7%)   |
| **Length of primary prenatal care provider relationship** |        |
| Less than 2 months                     | 7 (23.3%) |
| 2-4 months                             | 4 (13.3%)  |
| 5-7 months                             | 9 (30.0%)   |
| 8-10 months                            | 5 (16.7%)   |
| Was already provider                   | 5 (16.7%)   |
| **Type of primary prenatal care provider** |        |
| Medical doctor or physician assistant  | 10 (33.3%) |
| Midwife                                | 18 (60.0%) |
| Multiple providers                     | 2 (6.7%)    |
| **Gender of primary prenatal care provider** |        |
| Male                                   | 3 (10.0%)  |
| Female                                 | 27 (90.0%) |
| **Location of care received**           |        |
| Hospital                                | 2 (6.7%)   |
| Clinic                                 | 24 (80.0%) |
| Private Office                         | 3 (10.0%)   |
| Other                                  | 1 (3.3%)    |
| **Type of insurance**                  |        |
| Medicaid/Medicare                      | 24 (80.0%) |
| Health insurance (from work/spouse)    | 5 (16.7%)   |
| **Trimester status**                   |        |
| 2nd                                    | 10 (33.3%) |
| 3rd                                    | 20 (66.7%) |
| **Relationship status**                |        |
| Married                                 | 8 (26.7%)  |
| Single                                 | 15 (50.0%) |
| Unmarried, in committed relationship   | 7 (23.3%)  |
ing salient themes: (1) dialogue with the prenatal care provider, (2) time required for the prenatal care visit, (3) the prenatal care provider’s interpersonal and personality characteristics, and (4) continuity of care. A description and frequency of participant themes are shown in Table 2. These results are organized by theme names and definitions for each theme, and include supporting quotes. As such, the most salient themes are discussed first.

**Theme One: Dialogue with Prenatal Care Provider**

A total of 90% (27) of the participants’ communicative experiences were classified as “dialogue with prenatal care provider.” Interview data coded in this category indicated words or phrases that highlighted women’s experiences asking questions, getting their questions answered, receiving explanations from providers, and/or conversing with prenatal care providers. Overall, participants valued dialogue with their prenatal care provider and considered it an important aspect of the communication process.

For instance, a 22-year-old African American participant stated, “She [the provider] just basically explains everything that is going on in my pregnancy and if there is anything wrong she explains everything. . . . She breaks down what I need to be doing or how I need to be doing it”

Similarly, a 39-year-old African American participant stated, “She [the provider] tries to explain things clearly, and she will ask, like, ‘Are you sure that we discussed this?’ or ‘Do we need to discuss this again? Did we discuss this?”

Likewise, a 27-year-old White participant mentioned, “She normally comes in first, asks me if I have any questions or concerns, before she kind of talks about whatever she needs to discuss.”

The majority of participants valued the opportunity to communicate with their prenatal care providers and felt positively about their communicative experience. This result signified the importance of the dialogue between prenatal care providers and pregnant women. Pregnant women are more favorable of an interactive communicative experience when the prenatal care provider stays patient and receptive, converses with patients in a warm, caring, supportive attitude, and listens and answers their questions.

**Theme Two: Time Required for Prenatal Visit**

Half of the participants’ communicative experiences were around “time required for prenatal visit.” This theme coded from the interview data indicated words or phrases that highlighted time with the prenatal care provider and wait time. Participants spoke negatively of feeling rushed or long wait times and saw this as an important aspect of the communicative process.

For instance, a 29-year-old African American participant stated, “I mean, sometimes it feels like it might be a little rushed or whatnot. Usually, I have to wait a while once I’m actually back there, and then when she [the provider] does come in, but it’s super quick, and usually I have to tell her, like, ‘I have a question too’ because she’s already about to go out the door.”

**Table 2. Description and Frequency of Themes that Emerged from Interviews**

| Theme                                             | Description                                                                 | Example Quote                                                                                                                                                                                                 | Frequency N (%) |
|---------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Dialogue with prenatal care provider              | Words or phrases that highlighted women’s experiences regarding asking questions, getting their questions answered, receiving explanations from providers, and/or conversing with prenatal care providers. | A 20-year-old mixed race woman stated, “She [the provider] will answer it [my questions]. She will sit there and listen. She’s really good, you know, being able to listen and answer the questions without acting like I’m dumb.” | 27 (90%)        |
| Time required for prenatal visit                  | Words or phrases that highlighted time with prenatal care provider and wait time. | A 29-year-old African American woman noted, “I’m not asking you to stay for like 10 minutes or something, but just at least for a few minutes to see if there is anything else going on that I may need.” | 15 (50%)        |
| Prenatal care provider’s interpersonal and personality characteristics | Words or phrases that highlighted patient’s perceptions of their prenatal care provider’s personality traits | A 39-year-old African American participant explained, “She is very respectful.” | 12 (40%)        |
| Continuity of care                                | Words or phrases that highlighted concerns with receiving quality of care over time with one provider or communication between providers when specialists are required to join a patient’s care team | A 20-year-old African American participant explained, “So I didn’t really like that [seeing multiple providers], and that is also what turned me off.” | 7 (23%)         |
A 27-year-old African American participant shared a similar perspective:
“I mean . . . she [the provider] kind of made me feel rushed and stuff like . . . kind of like I was a customer at a store.”

A 27-year-old White participant mentioned,
“He doesn’t spend much time with you. It is pretty quick, in and out.”

Further, wait times to see the prenatal provider were also identified as an important aspect of a participant’s communicative experiences.

A 30-year-old African American participant described the following:
“Sometimes I’m in the office waiting a long time, [which] is the only thing that I do have an issue with. I might be there for 45 minutes to an hour before she comes to the door.”

A 29-year-old African American participant shared a similar perspective:
“Sometimes it’s like 30 minutes of just sitting in the back [in the exam room] after I already sat in the waiting room.”

Similarly, a 30-year-old White participant stated,
“She normally comes in first, asks me if I have any questions or concerns before she kind of talks about whatever she needs.”

Long time spent waiting for and short time conversing with the provider appeared a concern among half of the participants when the voicing women’s age tend to be older (27+) without obvious difference in their race or gender of the providers. Pregnant women felt the 30 minute to one hour waiting time in the examination room before the providers showed up was too long without mentioning the time in the waiting room.

**Theme Three: Prenatal Care Provider’s Interpersonal and Personality Characteristics**

More than one-third of the participants’ communicative experiences were related to “prenatal care provider’s interpersonal and personality characteristics.” Interview data coded in this theme indicated words or phrases that highlighted patients’ perceptions of their prenatal care provider’s personality traits, including but not limited to being “nice” or “respectful.” Several participants noted that their interactions with their provider were positive, particularly in cases where they were pleased with their provider’s interpersonal skills or personality.

A 25-year-old African American participant provided a similar perspective:
“She treats me with respect. You know, she is real nice.”

A 20-year-old mixed race patient said,
“They are doing pretty well. They were respectful, like if I have questions, if it’s a weird or stupid question, she doesn’t look at me like I’m dumb.

Similarly, a 30-year-old White participant shared,
“She was really nice.”

This theme showed individual differences among prenatal care providers. Pregnant women (without similar age or race) felt positive about their communicative experiences when the provider’s personality traits are nice and respectful. However, only under half of the pregnant women perceived their providers being nice and respectful. The finding from Theme Two (long wait time and short contact time) may contribute to participants’ perception about providers being nice or respectful.

**Theme Four: Continuity of Care**

Close to a quarter of the participants’ communicative experiences exhibited the fourth theme, continuity of care. Interview data coded in this theme indicated words or phrases that highlighted receiving quality care over time with one provider or within a health care facility. Some participants explained the negative communicative experiences, such as seeing a different doctor for each visit or having to switch health care facilities, resulted in poor patient-provider communication.

For example, a 27-year-old African American participant stated,
“I wish that I saw one doctor. I just see too many new people.”

A 20-year-old African American participant stated,
“I switched over because [the hospital] wasn’t doing what they [the provider] were supposed to do, and they had me very backed up on the things I was supposed to be getting.”

The Continuity of Care theme reflected participants’ intentional or unintentional switches of prenatal care providers, exhibiting lower satisfaction in their prenatal care and interruption in their communicative experiences. While African American women tended to report the lack of continuity of care, a larger and representative sample is required to examine this hypothesis.

**DISCUSSION**

Our findings provide insight into pregnant women’s communicative experiences receiving prenatal care in Ohio. Participants’ experiences were made up of 4 salient themes related to how they described patient-provider communication during their prenatal care visits. We list these themes in the order of significance: (1) dialogue with the prenatal care provider, (2) time required for the prenatal care visit, (3) the prenatal care provider’s interpersonal and personality characteristics, and (4) continuity of care. Ultimately, these communicative experiences reveal not only what the women experienced but also what they value during their interactions with their prenatal care provider.

According to participants in this study, 90% of the participants stated that dialogue with a prenatal care provider was the most important component of communicative experiences, thus indicating that it was the most relevant theme. Consistent with previous findings, dialogue with prenatal care providers may improve pre-
natal care communicative experiences. Further, Handler et al. revealed that participants’ satisfaction increased when their prenatal care provider explained procedures, asked questions, and answered their questions. These findings suggest that pregnant women value their interactions with prenatal care providers.

Conversely, dissatisfaction was most commonly attributed to time required for the prenatal care visit, specifically the wait time and time with the prenatal care provider. Fifty percent of participants stated that time required for prenatal visits impacted their visits. Participants frequently noted that ineffective communication from prenatal care providers resulted in long wait times or in them feeling rushed during their encounter. Long wait times to see a prenatal care provider were noted by participants as a factor that impacted their communicative experiences. Consistent with the literature, it was reported that wait times were the most common complaint for prenatal care patients. When examining time spent with the prenatal care provider, similar to findings by Handler et al., our study determined that participants encountered more favorable communicative experiences when their prenatal care providers spent more time with them. Health care systems should address wait times and the lack of time spent with prenatal care patients in order to provide effective communicative experiences.

Forty percent of participants stated that the prenatal care provider’s interpersonal and personality characteristics influenced their prenatal care outcomes, which is consistent with previous research. For example, Korenbro et al. reported that a provider’s interpersonal style and personality characteristics, which included friendliness, courteousness, respectfulness, the provision of emotional support, and a lack of perceived discrimination, were found to positively influence patient-provider communication. When patient-provider communication practices and interpersonal skills are improved, providers are able to offer patients with increased support, prevent medical crises and expensive interventions, and detect problems earlier.

In terms of continuity of care, 23% (7) of participants experienced negative experiences with continuity of care, and it was found to negatively influence communicative experiences. Dissatisfaction most often resulted from being seen by multiple providers rather than by a single provider across the participant’s pregnancy. Although there has been limited assessment of the role that continuity of care plays in prenatal care, there is a large body of literature to suggest that continuity of care plays a role in a patient’s satisfaction in other contexts. For example, Lori et al. found that women stressed the importance of being able to see the same prenatal care provider at each prenatal visit.

We expanded implementation of the patient-provider communication framework outside the cancer context to better understand patient-provider communication among pregnant women in Ohio. This conceptual framework may assist with patient-provider communication during prenatal care. Feldman and colleagues noted that the patient-provider communication framework assists health care providers in promoting discussion and influencing patient engagement, thereby enhancing prenatal care patient outcomes. By implementing the patient-provider communication framework, we can determine how inadequate communication during prenatal care visits may be improved. Additionally, by focusing on the third tenet, the communication process, we can identify outcomes that can be used in evaluating the effectiveness of prenatal care during communicative experiences.

This study provides additional insight into gaining a better understanding of pregnant women’s communicative experiences receiving prenatal care in Ohio. Many of the results are consistent with findings from previous investigations and, therefore, help confirm some of what is known about the importance of patient-provider communication within the context of prenatal care. However, our study focused on pregnant women in Ohio; therefore, data revealed information that has not, to our knowledge, been reported previously in the research literature, thus adding new insights.

We would like to acknowledge study limitations, especially from sample composition due to geographic region, sample size, demographics of participants, and unmatched race/age composition. First, because we opted to have in-depth discussions with pregnant women receiving prenatal care in Ohio to better understand their experiences, the sample was drawn from a particular region in Ohio. Thus, our findings may not be representative of pregnant women’s experiences outside of our study context. Second, our analysis reached saturation at the sample size of 30. We acknowledged a potential in which new theme may not be included. Additionally, while we attempted to recruit a diverse sample, our sample was composed mostly of African American women (20 out of 30), Medicaid recipients (24 out of 30), females earning less than $20,000 per year (21 out of 30), and females having low-risk pregnancies, who therefore used a midwife (18 out of 30). Furthermore, we did not account for ethnic or age differences in the recruitment of participants. Such a convenient sample may present voices without matching the racial or age composition of the pregnant women in the Ohio population. We acknowledge that the women are not homogenous and that experiences vary across ages and race and ethnicity.

PUBLIC HEALTH IMPLICATIONS

Recent statistics revealed that approximately 1 in 6 infants in Ohio is born to a woman who did not receive adequate prenatal care during pregnancy. A closer look at these statistics highlight stark racial and ethnic disparities among the women who receive inadequate prenatal care. From 2016-2018, 25.6% of African American women received inadequate prenatal care in Ohio compared to 13.4% of White women. Likewise, infant mortality rates by race and ethnicity in Ohio follow this same pattern. Between 2015-2017, the average infant mortality rate (per 1,000 live births) was highest among African American infants (14.6 per 1,000 live births) and then Whites (5.7 per 1,000 live births).
To increase effective patient-provider communication to reduce infant mortality rates in Ohio, we suggest that attention be paid to increasing societal awareness on how the health care systems and prenatal care providers impact infant health outcomes, specifically for pregnant African American women residing in Ohio. Conversations are needed to dismantle the structural inequalities that exist at the micro- and macro-levels to counter systemic barriers to prenatal care that ultimately impact infant mortality rates in Ohio.

Prenatal care providers should work to offer culturally competent prenatal care to their patients. Providing culturally competent health care may be a key strategy and initiative to reduce racial and ethnic disparities during prenatal care.\(^\text{21}\) Therefore, cultural competency trainings may be beneficial to increase effective patient-provider communication by increasing health care providers’ awareness.\(^\text{22}\)

We suggest that future studies examine the communicative experiences of at-risk pregnant women, such as African American women receiving prenatal care in Ohio. Doing so will aid in better understanding patient-provider communication experiences during prenatal care among groups that are disproportionately impacted. Additionally, future research should consider exploring how our findings influence infant mortality, preterm birth, and low birth weight metrics to determine how prenatal appointments can be used to improve health outcomes.

**ACKNOWLEDGMENTS**

The authors would like to thank all participating hospitals, clinics, private doctor’s offices, the county health department, community agencies, and their staff members. We thank Lilian Coll for her assistance and support.

**Funding sources** This research did not receive any funding.

**Disclosures** The authors declare that they have no conflict of interest.

**REFERENCES**

1. David RJ, Collins JW. Layers of inequality: Power, policy, and health. *Am J Public Health*. 2014;104:S8-S10.  
   https://doi.org/10.2105/ajph.2013.301765

2. Mathews TJ, MacDorman MF. Infant mortality statistics from the 2007 period linked birth/infant death data set. *Natl Vital Stat Rep*. 2011;59 (6):1-30. Accessed September 28, 2020.  
   https://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59_06.pdf

3. Tyler CP, Grady SC, Grigorescu V, Luke B, Todem D, Paneth N. Impact of fetal death reporting requirements on early neonatal and fetal mortality rates and racial disparities. *Public Health Rep*. 2012;127(5):507-515.  
   https://doi.org/10.1177/0033354912700506

4. Infant mortality. Centers for Disease Control and Prevention. Updated September 10, 2020. Accessed September 24, 2020.  
   https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm

5. Stats of the State of Ohio. Centers for Disease Control and Prevention. Updated April 9, 2018. Accessed September 24, 2020.  
   https://www.cdc.gov/nchs/pressroom/states/ohio/ohio.htm

6. 2017 Ohio infant mortality data: General findings. Ohio Department of Health. Accessed September 24, 2020.

7. Duthie EA, Drew EM, Flynn KE. Patient-provider communication about gestational weight gain among nulliparous women: A qualitative study of the views of obstetricians and first-time pregnant women. *BMJ Pregnancy Childbirth*. 2013;13:231.  
   https://doi.org/10.1186/1471-2393-13-231

8. Lee SJ, Back AL, Block SD, Stewart SK. Enhancing physician-patient communication. *ASH Education Program Book*. 2002;1:464-483.  
   https://doi.org/10.1182/asheducation.2002.1.464

9. McCarthy DM, Buckley BA, Engel KG, Forth VE, Adams JG, Cameron KA. Understanding patient-provider conversations: What are we talking about? *Acad Emerg Med*. 2013;20:441-448.  
   https://doi.org/10.1111/acem.12138

10. McCathern RM. *Exploring the Predictive Relationship Between General Health Literacy Levels and Prenatal Care Health Literacy Levels* [dissertation]. South Orange, NJ: Seton Hall University; 2011.

11. Korenbrot CC, Wong ST, Stewart AL. Health promotion and psychosocial services and women’s assessments of interpersonal prenatal care in Medicaid managed care. *Matern Child Health J*. 2005;9:135-149.  
   https://doi.org/10.1007/s10995-005-4871-9

12. Evans NM, Sheu JJ. Validating a path model of adherence to prenatal care recommendations among pregnant women. *Patient Educ Couns*. 2019;102:1350-1356.  
   https://doi.org/10.1016/j.pec.2019.02.028

13. Leiferman J, Snatra E, Huberty J. Pregnant women’s perceptions of patient-provider communication for health behavior change during pregnancy. *Open J Obstet Gynecol*. 2014;4:672-684.  
   https://doi.org/10.4236/ojog.2014.411094

14. O’Malley AS, Sheppard VB, Schwartz M, Mandelblatt J. The role of trust in use of preventive services among low-income African-American women. *Prev Med*. 2004;38:777-785.  
   https://doi.org/10.1016/j.ypmed.2004.01.018

15. Attanasio L, Kozhimannil KB. Patient-reported communication quality and perceived discrimination in maternity care. *Med Care*. 2015;53:863-871.  
   https://doi.org/10.1097/mlr.0000000000000411

16. Raine R, Cartwright M, Richens Y, Muhamed Z, Smith D. A qualitative study of women’s experiences of communication in antenatal care: identifying areas for action. *Matern Child Health J*. 2009;14:590-599.  
   https://doi.org/10.1007/s10995-009-0489-7

17. Madula, P, Kalembo, FW, Yu, H, Kaminga, AC.. Healthcare provider-patient communication: A qualitative study of women’s perceptions during childbirth. *Reprod Health*. 2018;15, 135.  
   https://doi.org/10.1186/s12978-018-0580-x

18. Patak L, Wilson-Sronkos A, Costello J, Kleinpell RM, Henneman EA, Person C, Hap, MB. Improving patient-provider communication: A call to action. *J Nurs Adm*. 2009;39:372-376.  
   https://doi.org/10.1097/NNA.0b013e3181b41ca

19. Meghani SH, Brooks JM, Gipson-Jones T, Waite R, Whitfield-Harris L, Deatrick JA. Patient-provider race-concordance: Does it matter in improving minority patients’ health outcomes? *Ethn Health*. 2009;14:107-130.  
   https://doi.org/10.1080/1355785080227031
20. Thornton RLJ, Powe NR, Roter D, Cooper LA. Patient-physician social concordance, medical visit communication and patients’ perceptions of health care quality. *Patient Educ Couns*. 2011;85(3):e201-e208. https://doi.org/10.1016/j.pec.2011.07.015

21. Like RC. Educating clinicians about cultural competence and disparities in health and health care. *J Contin Educ Health Prof*. 2011;31(3):196-206. https://doi.org/10.1002/chp.20127

22. Sequist TD, Fitzmaurice GM, Marshall R, Shaykevich S, Marston A, Safarian DG, Ayanian JZ. Cultural competency training and performance reports to improve diabetes care for black patients. *Ann Intern Med*. 2010;152(1):40. https://doi.org/10.7326/0003-4819-152-1-201001050-00009

23. Feldman-Stewart D, Brundage MD. A conceptual framework for patient-provider communication: A tool in the PRO research tool box. *Qual Life Res*. 2008;18:109-114. https://doi.org/10.1007/s11136-008-9417-3

24. Feldman-Stewart D, Brundage MD, Tishelman C. A conceptual framework for patient-professional communication: An application to the cancer context. *Psychooncology*. 2005;14:801-809. https://doi.org/10.1002/pon.950

25. Fylan F. Semi-structured interviewing. In: Miles J, Gilbert P, eds. A Handbook of Research Methods for Clinical and Health Psychology. Oxford, UK: Oxford University Press; 2005:65-78.

26. Weiss RS. *Learning from Strangers: The Art and Method of Qualitative Interviews*. New York, NY: Free Press; 1994.

27. American Academy of Pediatrics and American College of Obstetricians and Gynecologists. *Guidelines for Perinatal Care*. 8th edition. Elk Grove Village, IL: American Academy of Pediatrics; Washington, DC: American College of Obstetricians and Gynecologists; 2017.

28. Osterman MJK, Martin JA. Timing and adequacy of prenatal care in the United States, 2016. *Natl Vital Stat Rep*. 2018;67(3):1-14. Accessed September 28, 2020. https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_03.pdf

29. Yeong, M, Ismail, R, Ismail, N, & Hamzah, M. Interview protocol refinement: Fine-tuning qualitative research interview questions for multi-racial populations in Malaysia. *Qual Rep* 2018; 23(11): 2700-2713. Accessed September 28, 2020. https://nsuworks.nova.edu/tqr/vol23/iss11/7

30. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77-101. https://doi.org/10.1191/1478088706qp063oa

31. Guest G, MacQueen KM, Namey EE. *Applied Thematic Analysis*. Thousand Oaks, CA: Sage; 2011.

32. Strauss A, Corbin J. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks, CA: Sage; 1998.

33. Guest G, Bunce A, Johnson L. How many interviews are enough? *Field Methods*. 2006;18(1):59-82. https://doi.org/10.1177/1525822x05279903

34. Patton MQ. *Qualitative Research and Evaluation Methods*. Thousand Oaks, CA: Sage; 2001.

35. QSR International. 2020. NVivo. Accessed August 14, 2020. https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home

36. Bazeley P, Jackson K. *Qualitative Data Analysis with NVivo*. Thousand Oaks, CA: Sage; 2013.

37. Bazeley P, Richards L. *The NVivo Qualitative Project Book*. Thousand Oaks, CA: Sage; 2000.

38. Creswell JW, Poth CN. *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Thousand Oaks, CA: Sage; 2018.

39. Definition of continuity of care. American Academy of Family Physicians. Published 2010. Accessed September 24, 2020. https://www.aafp.org/about/policies/all/definiton-care.html

40. Dahlem CHY, Villaruel AM, Ronis DL. African American women and prenatal care: Perceptions of patient-provider interaction. *Western J Nurs Res*. 2015;37:217-235. https://doi.org/10.1177/0193945914533747

41. Walker LV, Miller VJ, Dalton VK. The health-care experiences of families given the prenatal diagnosis of trisomy 18. *J Perinatol*. 2007;28:12-19. https://doi.org/10.1038/jjp.7211860

42. Handler A, Rosenberg D, Raube K, Lyons S. Satisfaction and use of prenatal care: Their relationship among African-American women in a large managed care organization. *Birth*. 2003;30(1):23-30. https://doi.org/10.1046/j.1523-536x.2003.00213.x

43. Byrd TL, Mullen PD, Selwyn BJ, Lorimor R. Initiation of prenatal care by low-income Hispanic women in Houston. *Public Health Rep*. 1996;111(6):536-540. Accessed September 28, 2020. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1381903/pdf/pubhealthrep00045-00666.pdf

44. Yeh J, Nagel EE. Patient satisfaction in obstetrics and gynecology: Individualized patient-centered communication. *Womens Health*. 2010;3:23-32. https://doi.org/10.4137/cmwh.s5070

45. Ha JF, Longnecker N. Doctor-patient communication: A review. *Ochsner J*. 2010;10(1):38-43. Accessed September 28, 2020. http://www.ochsnerjournal.org/content/ochjn/10/1/38.full.pdf

46. Lori JR, Yi CH, Martyn KK. Provider characteristics desired by African American women in prenatal care. *J Transcult Nurs*. 2011;22:71-76. https://doi.org/10.1177/1043659610387149

47. Kotelchuck M. An evaluation of the Kessner Adequacy of Prenatal Care Index and a proposed Adequacy of Prenatal Care Utilization Index. *Am J Public Health*. 1994;84:1414-1420. https://doi.org/10.2105/ajph.84.9.1414