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Olivia Nicolais-Julian, MD

Jefferson Abington Hospital, oxn012@jefferson.edu

Michael Monaghan, MD

Robert Wood Johnson Medical School, monaghanm5@rowan.edu

Jocelyn Mitchell-Williams MD, PhD

Cooper Medical School of Rowan University, Williamsjo@rowan.edu

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Behavioral Health Models to Understand High-Risk Prenatal Patient Adherence to Visit Schedule in Camden

Behavioral Health Models to Understand High- Risk Prenatal Patient Adherence to Visit Schedule in Camden

Olivia Nicolais-Julian, MD¹, Michael Monaghan, MD² & Jocelyn Mitchell-Williams, MD, PhD, FACOG³

¹Obstetrics and Gynecology Residency, Jefferson Abington Hospital, Abington, PA

²Robert Wood Johnson Medical School

³Obstetrics and Gynecology, Cooper Medical School of Rowan University

E-mail: oxn012@jefferson.edu (Olivia Nicolais-Julian, MD)

ABSTRACT

Introduction: Despite improvement initiatives, patient non-adherence remains an issue in healthcare. Patients with high-risk pregnancies require more frequent monitoring to reduce complications. This study aims to better understand visit non-adherence with high-risk prenatal appointments. We hypothesized that patients' perceived logistic barriers would be the most prominent determinant of visit non-adherence.

Methods: This study included adult, English speaking patients of the high-risk prenatal clinic at Cooper University Hospital that missed at least one appointment. We completed three, one hour focus groups with seven participants. Constant comparison analysis was used to determine common themes discussed by participants. Axial coding and basic unit descriptors were defined by both facilitators to determine common themes discussed during the focus group sessions.

Results: We identified two main themes in regards to patient visit non-adherence in our population: logistic issues and perceived relationship issues between the patient and the care team. Logistic issues included issues with rescheduling, seeing different providers, parking, wait time and office hours. In regards to patient-care team relationships, subjects frequently brought up issues with respect, feeling heard by providers, communication and professionalism. All seven patients identified at least one of the five domains of logistic barriers as a concern. Five of the seven participants identified an issue across the four domains of relationship issues.

Discussion: The focus group analysis illustrated recurrent themes of logistic barriers and deficiencies in patient-care team relationships that contributed to high-risk prenatal visit non-adherence. A follow-up survey study is necessary to quantitatively assess the most prominent reasons for visit non-adherence based on the themes identified in our study.

Keywords: HighRisk Prenatal Clinic, Appointment Adherence, Health Behaviors

INTRODUCTION:

A constant challenge in healthcare is that of understanding and improving health behavior in patients. While a focus on making policy changes is important, understanding the patient's beliefs and perspectives is instrumental to creating effective and progressive change¹. Health behaviors have been defined as “those personal attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional states and traits; and overt behavior patterns, actions, and habits that relate to health maintenance, to health restoration, and to health improvement”^{2,3}. Additionally, health behavior can be affected by multiple levels of influence such as interpersonal, intrapersonal, organizational, community or public policy factors⁴. Health behaviors drive health outcomes of individuals, and understanding them is instrumental to improve the health and wellness of those individuals and the broader population⁵.

Since the 1950's, the Health Beliefs Model (HBM) has been one of the most widely used theories to explain the changes and maintenance of health behaviors and has been used as a model to support interventions to help change health behavior⁶. The Health Beliefs Model hypothesizes that health related behavior depends on several factors such as susceptibility, perceived benefits, perceived barriers, perceived severity and self-efficacy. Perceived susceptibility refers to the degree of risk a person believes they have in developing a disease or condition. Perceived severity refers to beliefs about the seriousness of contracting an illness or having a condition or of leaving it untreated. Perceived benefits are the positive outcomes a patient believes are possible related to an event or action. Thus, high perceived risk, severity and benefits will all influence a person towards executing a health behavior. Perceived barriers are aspects that a patient believes may prevent her from a given health action. Self-efficacy is defined as “the conviction that one can successfully execute the behavior required to produce the outcomes”⁷.

Self-efficacy is particularly important in the initiation and maintenance of behavioral change⁷. Other variables that play a role in health related behavior include structural, demographic and socio-psychological variables that also influence the perceptions of susceptibility, severity, benefits and barriers.⁶ These factors all contribute to the action taken by a patient⁶. Over time, this model has developed to evaluate behaviors in response to a diagnosed illness, and adherence to medical regimens. For this reason, the authors of the study believe that this model can be applied to a high-risk pregnancy diagnosis with adherence to attending appointments as the medical regimen in question Figure 1.

The Theory of Planned Behavior Figure 2 is used to understand and predict behaviors and hypothesizes that behaviors are created by behavioral intention, attitude towards behavior, subjective norms, normative

beliefs and perceived behavioral control⁶. These descriptors can be elicited from patients to determine common themes of health behavior. Overall, this theory hypothesizes that behavioral intention is the most important determinant of behavior⁶. Attitude is determined by a person's belief about the outcomes or attributes of completing a given behavior. For example, a person who believes that an action will lead to a positive outcome will complete that behavior. A person's subjective norm is determined by what an individual approves of or disapproves of in regards to a particular behavior as well as their motivation to comply with those beliefs. Perceived behavioral control is an aspect of the model that accounts for factors that are outside of the control of the individual that may affect behaviors and intentions. Perceived control depends on the existence of barriers or facilitators to a specific action as well as the individual's perception of the weight of those barriers or facilitators. Thus, a behavior is determined by a person's belief in their ability to perform that action despite external factors, as well as the person's own intrinsic motivation or intention to complete the action⁸.

Patients with high-risk pregnancies require more frequent healthcare monitoring to reduce maternal and fetal complications⁹. High-risk prenatal patients in impoverished communities like Camden, New Jersey represent a particularly vulnerable group¹⁰. Camden has a large population of people with low socioeconomic status and without regular access to healthcare. Due to increased vulnerability of these patients, the authors aim to understand the health behavior choices that lead to non-adherence of patient visits. Our clinical research uses focus group analysis to investigate the issue of non-adherence to patient visits in the high-risk prenatal Camden population. The study evaluates patient behavior via two most commonly noted psychological models of individual health behavior: the 'Health Beliefs Model' and the 'Theory of Planned Behavior'.

This study uses these two theoretical models to help frame the cognitive decision processes in this patient population. The results of this focus group evaluation can be used as a framework for future implementation of a prospective quantitative study to further characterize the scope and magnitude of patient perceived issues that contribute to appointment non-adherence. Ultimately, the results may help to elucidate an intervention to increase adherence and reduce complications in high-risk pregnancies. The purpose of this pilot analysis is to determine possible barriers, susceptibility, perceived benefits, perceived severity, self-efficacy, attitudes, normative beliefs and perceived behavioral control with regard to treatment adherence in this population. The authors hypothesized that patients' perceived logistic barriers would be the most prominent determinant of visit non-adherence.

PATIENTS/METHODS:

The study conducted focus groups to elicit perceptions, ideas and opinions regarding attitudes towards, and barriers to attending all high-risk prenatal appointments. Focus groups are an economical,

efficient and fast way to obtain information from multiple participants in a feasible amount of time¹¹. The group dynamic can also increase participant's participation and cohesiveness, allow for more spontaneous responses and provide a platform for participants to discuss issues and possible solutions more in depth¹²⁻¹⁴. This study was approved as exempt by the Cooper University Hospital IRB.

Thirty-eight patients were approached and twenty-seven patients consented in person to participate in this qualitative research study between October 2020 and February 2021 at the Jaffe Women's Care Center at Cooper University Hospital in Camden, New Jersey. The goal of the study was to have 3 focus groups with 3-5 participants and given a predicted participation of 50% cited by Silverman, this number of consented patients would yield slightly more than goal participation.¹⁵

Patients were eligible for the study if they were 18 years of age or older, a patient at the high-risk prenatal clinic, English speaking, and had at least one self-reported missed high-risk prenatal appointment. Patients were considered high-risk if they had medical conditions requiring evaluation by a maternal fetal medicine physician in the high-risk clinic including chronic hypertension, diabetes, substance use disorders, immune deficiencies, history of preterm delivery, and recurrent pregnancy loss. No high-risk prenatal conditions were excluded in this study. Exclusion criteria included inability to participate in a focus group outside of clinic appointed time. Patients in the clinic were all physician referred.

Patients were approached during high-risk clinic for possible recruitment in examination rooms for patient privacy. Participants who consented to the study were also consented to be contacted by text message or phone call regarding the times and dates of the upcoming focus groups at which point the participant would notify the facilitator the time and date that they planned to attend via phone conversation.

Each focus group was planned to be one hour in length^{16,17}. Each focus group met one time for discussion via conference phone call due to ongoing COVID-19 restrictions. One facilitator (either ON or MM) was present for the focus group discussion and a focus group discussion flow sheet was used to guide the general discussion. The focus group discussion flow sheet aimed to elicit patient perceptions on importance of high-risk prenatal visits, perceived barriers, perceived benefits, perceived severity, self-efficacy, attitudes regarding treatment and care, normative beliefs and perceived behavioral control. Areas for potential barriers were broken down into logistic (i.e. transportation, clinic hours, financial), interpersonal (i.e. relationship with providers) and intrapersonal (i.e. family obligations, other acute illness, health literacy) categories. Different experiences brought up by participants were to be allowed to develop if they extended beyond the original flow-sheet outline in order to best capture all possible barriers or hurdles experienced by the participants. The role of the moderator was also to encourage participation from all participants.

Participants were given a meeting phone number and access code and joined the meeting via their personal

telephones. No video component was utilized. The WebEx platform blinded each participant's phone number to protect participant personal information. At the beginning of each focus group, participants were reminded that the meeting would be recorded, and participants were discouraged from sharing any personal identifying information including their name, address and phone number. Each focus group was recorded and then transcribed verbatim removing any identifying information stated during the discussion. Once the interviews were transcribed, a constant comparison analysis was used in the analysis of the focus group. This analysis was originally used in theory research but was deemed appropriate for focus group data by Leech and Onwugbuzie^{18,19}. Three major stages are used in constant comparison analysis: First, the data are chunked into small units (open coding). Second, a descriptor or theme is attached to each of the units (axial coding). In the third and final stage (selective coding), the codes are grouped into categories²⁰. For this study, each response was deemed a unit in open coding, a theme was attributed to each response for axial coding, and finally, themes were grouped into categories for selective coding. Each moderator independently reviewed the responses to generate themes related to barriers, hurdles or viewpoints that the participants discussed during the focus group. Any themes that were not in agreement were discussed and a consensus was made on an acceptable theme that could be attributed to the response. Final groups of themes were agreed upon by both facilitators.

RESULTS:

The focus groups were originally planned to take place in person at the Jaffe Women's Care Center. Due to the COVID-19 pandemic, the in-person focus groups were deemed an unnecessary risk and instead, focus groups were held via teleconference using WebEx. Of the twenty-seven patients consented to the study, seven patients participated in the study. The patients who participated all had self reported barriers to care such as limited form of transportation, inability to find childcare, or concerns regarding health insurance. Five participants identified as African American and two identified as White. The first group had four participants, the second group had two participants after one participant left the call, and the third focus group had only one participant. The third session was rescheduled four times because only one or zero patients arrived in the meeting despite agreeing to participate. On the fifth planned attempt, only one participant arrived despite three additional participants confirming their attendance less than ten minutes before the planned meeting time and the decision was made to proceed with the focus group discussion. Of the seven participants, two patients (29%) reported feeling that making all appointments in the high-risk clinic was not important or not important at all (Figure 3). The authors of the study identified two main themes in regards to patient visit non-adherence in the study population: logistic issues and perceived relationship issues between the patient and the care team (hereafter referred to as relationship issues).

Logistic issues included issues with rescheduling, seeing different providers, parking/transportation, office wait times and office hours. Relationship issues included a perceived lack of respect, not feeling heard or understood by providers, and issues related to communication and professionalism. The number of patients that endorsed a complaint in each domain is depicted in Figure 4. All seven patients identified at least one of the five domains of logistic barriers as a concern. Five of the seven participants identified an issue across the four domains of relationship issues. Communication challenges were the most commonly referenced domain, with five of seven patients noting a communication challenge. Additionally, six of the seven participants also endorsed the COVID-19 pandemic as a factor contributing to difficulty with appointment adherence. Examples of participant statements related to each domain of the major themes are displayed in Table 1.

DISCUSSION:

While the number of participants in this study was small, the participant demographics were representative of the larger Camden population and these patients had intimate knowledge of the clinic experience through their entire pregnancy. Some participants had also received care for previous pregnancies at this same clinic. Additionally, the purpose of this study was to identify possible barriers for patients for possible future large-scale data collection at the clinic so a large number of participants was not necessary for this goal. While some authors have recommended that focus groups should consist of 6-12 participants²¹ for a better yield of diversity of information, others²² have endorsed the use of “mini focus groups” when participants have specialized experiences to discuss. Due to limitations in scheduling availability of participants, and their intimate knowledge of high-risk prenatal clinic, the study proceeded with two focus groups consisting of 2-4 participants and one individual discussion.

This focus group based study brought to light several barriers identified by participants including logistic and relationship barriers. Of the two main themes identified, logistic barriers can be explained well by the Health Beliefs Model; specifically, these logistic issues can be considered perceived barriers. Perceived barriers act as impediments to undertaking recommended behaviors. Patients may make an initial determination that attending a visit is important after considering the perceived benefits, susceptibility and severity, but may still not attend an appointment if they perceive the logistic barriers to be insurmountable. Similarly, the Theory of Health Beliefs Model could explain the contributory effects of these issues as extrinsic factors beyond the patient’s control. In this sense, the patient’s perceived power and control is insufficient to attend their appointment despite their attitude toward the health behavior of attending an appointment.

The authors hypothesized that logistic challenges would be identified by patients as a contributing factor to

missed appointments. Some logistic challenges such as transportation are well-established barriers to care, especially in impoverished communities such as Camden. Other logistic challenges referenced, such as wait time and having to see multiple providers, are not unique to this patient population. One consideration to decrease the perceived weight of these factors in impeding visit adherence would be to improve communication and set realistic expectations. Thus, while these are identified as logistic issues, there may be an underlying component of decreased communication that could impact the patient's perception of these barriers. The five domains of the logistic barrier theme should be evaluated further via a survey instrument to quantify the percent of patients that feel each to be an issue.

Of the two themes identified in this study, the relationship issues including lack of communication, poor professionalism, lack of understanding and lack of respect are highly concerning. The relationship issues mentioned by participants were not limited to any specific role in the office. Participants cited issues with doctors, front desk staff, social workers and medical assistants. The manner in which these issues may impact appointment adherence may be partially explained by either the Health Beliefs Model or the Theory of Planned Behavior. In the Health Beliefs Model, perceived barriers not only include tangible barriers, but also psychological costs of the advised action. For example, if a patient feels as if she will have a poor social experience during an appointment, that may outweigh the benefit of going to that appointment. If a patient has experienced poor communication with their provider or the ancillary staff, they may believe that the caliber of care they will receive will be suboptimal. This may contribute to the perception that there is no benefit in coming to the appointment. The issues identified under this theme can also be explained as an issue of perceived power or control under the Theory of Planned Behavior. When a patient feels that they are not heard by their provider, the likelihood of attending an appointment with a provider decreases as the patient feels a lack of control in the relationship.

Lastly, the concepts of perceived susceptibility and perceived severity under the Health Beliefs Model warrant discussion. Two out of seven patients reported a belief that attending all high-risk prenatal visits was not important or not important at all. Under the Health Beliefs Model, the lower the perceived susceptibility (i.e. chance of getting a disease such as gestational hypertension) and the lower the perceived severity (i.e. the severity or risk associated with a high-risk pregnancy) there is a lower chance of the planned behavior to reduce that risk/susceptibility will occur. The patient's perceived benefit may also play a role in determining the importance of appointment adherence, though in the high-risk prenatal population, better understanding of the likelihood and severity of complications will have a larger impact on overall patient perception of importance of appointment adherence. The authors also acknowledge that, five of the seven patients reported that appointment attendance was important or very important, yet they still faced perceived barriers that precluded them from attending every appointment.

LIMITATIONS:

The greatest limitation of this study was the participation by subjects after enrollment. The study enrolled 27 participants but only seven ended up participating in the study despite multiple attempts to hold focus groups to accommodate participant schedules. The study participation rate was lower than the expected 50% participation rate that was identified for focus groups in the study's literature review. This may be partially explained by the inherent challenges faced by our target patient population; that is, patients that are at increased risk of missing appointments also may be less likely to arrive and participate in a focus group. The study's recruitment challenges were exacerbated by COVID-19 restrictions and not being able to hold in person focus groups. Additionally, the low participation rate forced the third focus group to be converted to a single patient interview. This is sub-optimal, as the authors were unable to leverage a group dynamic in that interview. Another limitation of this study is the subjective nature of focus groups. Given the inherently small sample size, the study cannot conclude that these viewpoints are representative of the entire population and therefore a follow up quantitative survey is warranted to gather opinions from a larger sample size. The focus groups are adequate only to generate hypotheses for further study in the Camden high-risk prenatal clinic. Lastly, with any interpretation of the discussion, there is room for bias on the part of the study team in labeling participant responses with themes. The authors attempted to combat this risk of bias to the greatest degree possible through the use of two independent study personnel to review the transcripts, independently identify cross-study categories and then discuss to arrive at our final themes.

CONCLUSIONS:

Multiple focus group analysis demonstrated concerns with logistic barriers, patient-care team relationships, and the COVID-19 pandemic as problem areas that may contribute to decreased appointment adherence. A survey targeting the high-risk prenatal population is necessary to quantify the findings of this study. This survey should evaluate logistic barriers and patient provider relationships on a quantitative scale to determine areas where one or more quality improvement interventions may improve appointment adherence. The survey should also further quantify the number of patients that perceive appointment adherence to be of decreased importance.

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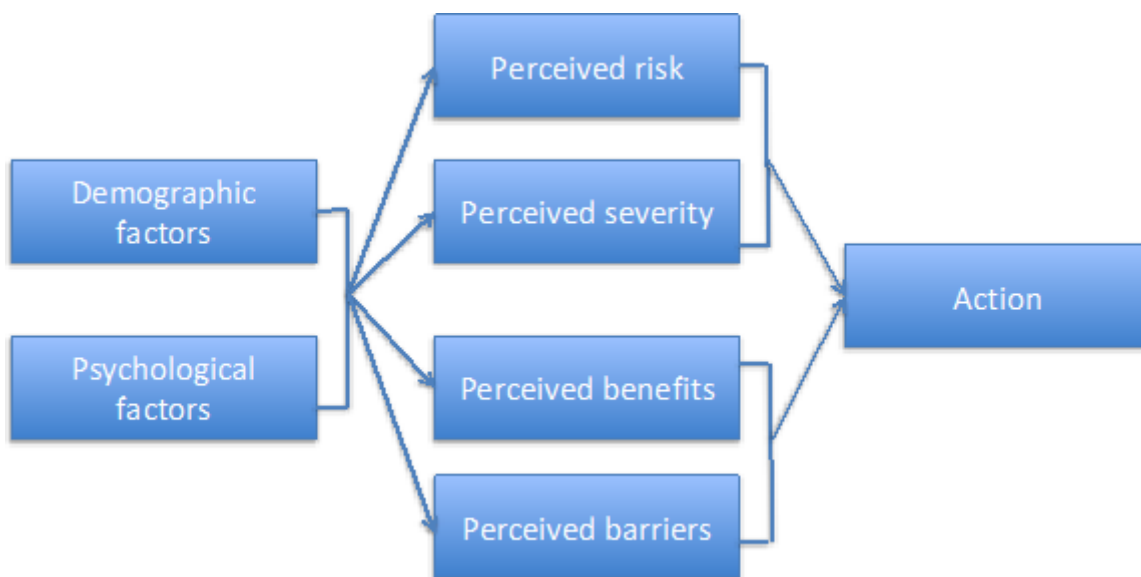


Figure 1 Health Beliefs Model flow diagram, based on image from Glanz et al.⁶ but constructed by the authors

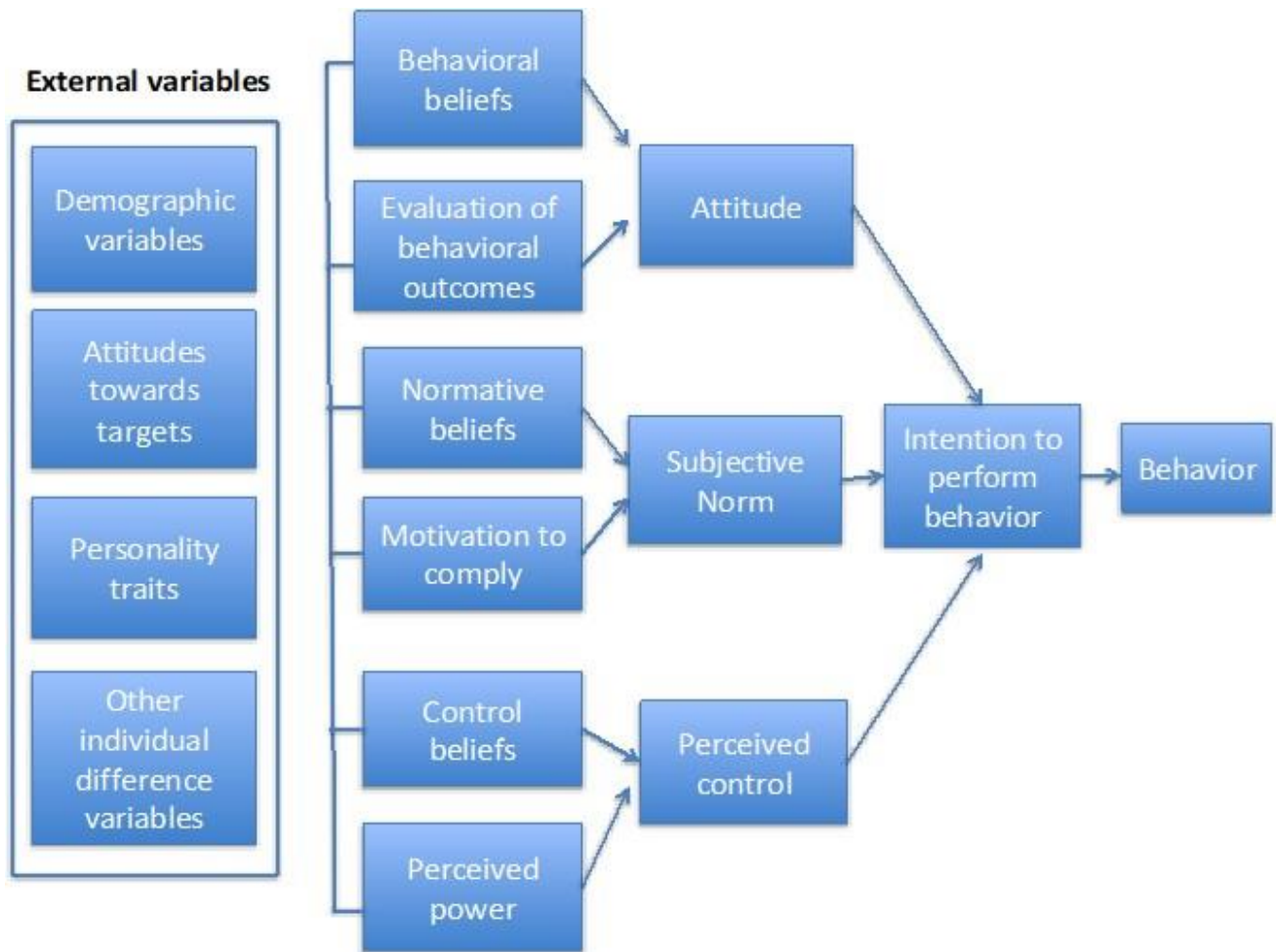


Figure 2 Theory of Planned Behavior flow diagram, based on image from Glanz et al.⁶ but constructed by the authors

SELF REPORTED IMPORTANCE OF ATTENDING ALL PRENATAL VISITS

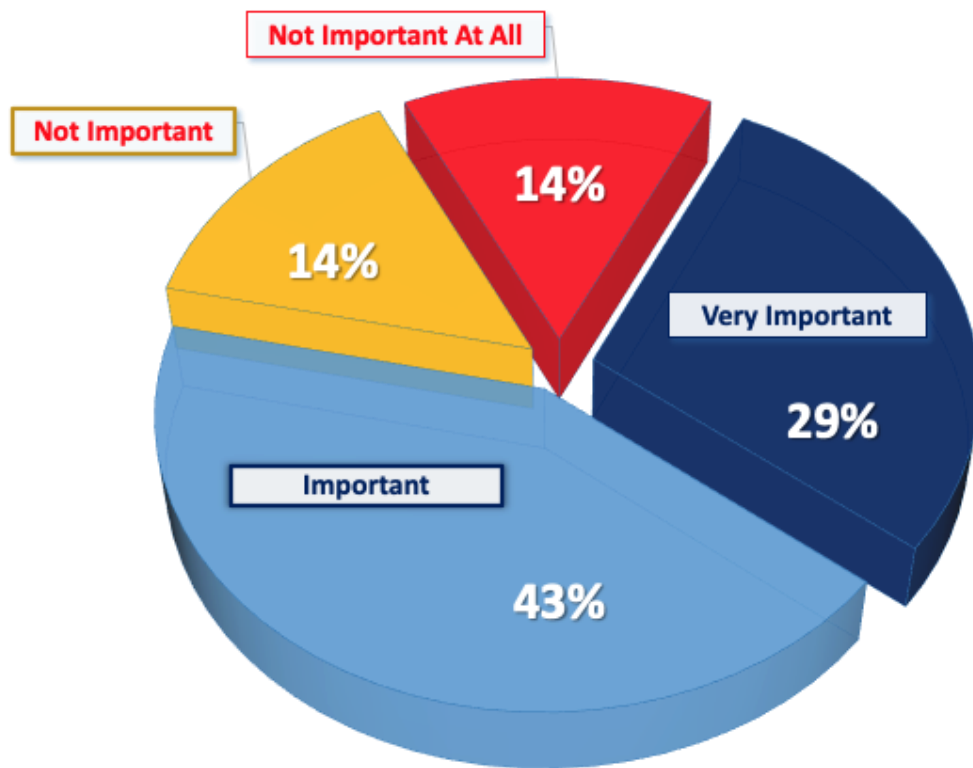


Figure 3 Patient-reported importance of attending all prenatal visits.

COMMON THEMES FOR HIGH-RISK PRENATAL VISIT NON-ADHERENCE

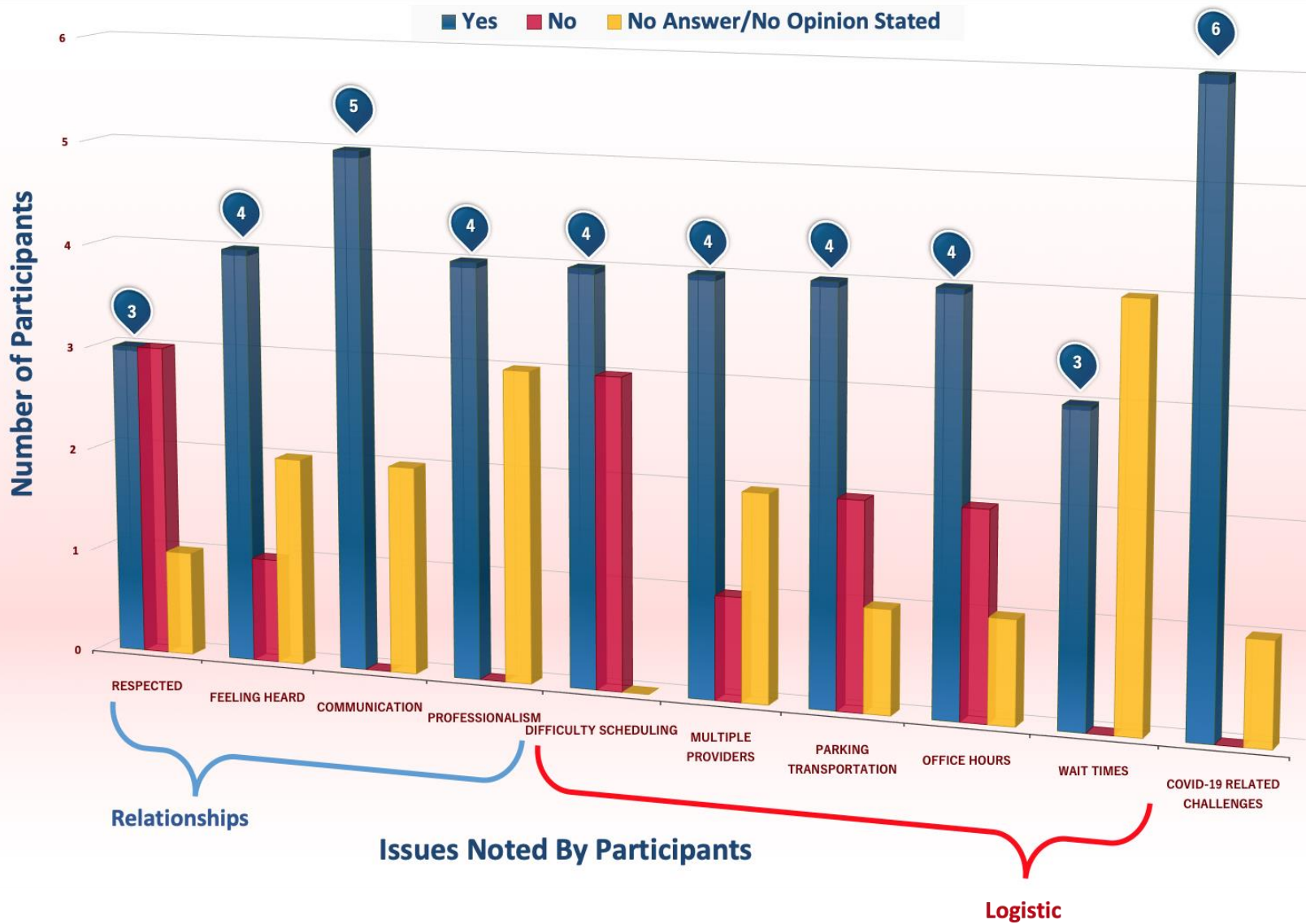


Figure 4 Major domains identified by each patient for each of the two major themes. Patient-Care team relationship domains included: Lack of respect, feeling heard or understood, communication challenges, and issues with professionalism. Logistic domains included: Difficulty with scheduling, having to be seen by multiple providers, parking or transportation issues, office hours, and office wait times.

Table 1 Example quotes from transcript for each identified subcategory of the two major themes.

Domain (Theme)	Participant Quotes
Rescheduling (Logistic)	“I couldn’t always make it in with the timing and it was difficult to reschedule.” • (participant 4)
Seeing different providers (Logistic)	“I was okay with having one doctor, one person who I was comfortable talking with. You know, then I would show up and there might be a new doctor who might not have even tried to read your case file.” • (participant 3)
Parking /Transportation (Logistic)	“I don’t have a car and I don’t have transportation.” • (participant 6)
Office Hours (Logistic)	“I just think that they should work on their high-risk hours and their flexibility with high-risk patients.” • (participant 1)
Wait Times (Logistic)	“Now I checked in, a lady checked-in in front of me, and they call her within like 2 minutes, maybe 5 minutes. Me? 45 minutes later they called me...I’m sort of on the back burner!” • (participant 7)
Respect (Relationship)	“I just can’t tolerate someone being plain disrespectful because they woke up on the wrong side of the bed.” • (participant 5)
Feeling heard by providers (Relationship)	“So it just makes it more difficult when you have to keep speaking to the supervisor and they’re still not listening.” • (participant 2)
Communication (Relationship)	“I just feel like communication– that’s the problem” • (participant 5)
Professionalism (Relationship)	“They don’t really know how to act professionally like a doctor” • (participant 2)