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Neonatal Health Outcomes and Access to Care

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Abstract

This paper will review existing research regarding the importance of prenatal healthcare. The research included covers the barriers existing to pregnant mothers and the consequences these barriers pose for mothers and babies with prenatal care that is unobtainable or undesired. This paper will also review current interventions that have provided underserved mothers with the resources they need to better ensure a healthy pregnancy and delivery. Research analyzing mother's attitudes and beliefs regarding prenatal care will be addressed in addition to how these beliefs may attribute to the health outcomes of their babies. Finally, this paper will include my own research study conducted to gain further insight on the impact of certain barriers on mother's ability to access prenatal care.

Key words: access, barriers, neonatal health outcomes, prenatal care

Introduction

The overall health of newborn babies is dependent on a variety of factors, however, a leading factor largely affecting the health of pregnant mothers and their babies is access to necessary prenatal healthcare. Prenatal care provides mothers with proper education to ensure a safe and healthy pregnancy. Such education includes the importance of adequate nutrition and folic acid consumption, regular physical activity, recognition of harmful exposures dangerous to both the mother and baby, such as tobacco and alcohol, and certain medications unsuited for pregnancy. Furthermore, prenatal care provides healthcare professionals the opportunity to identify and treat complications early (National Institutes of Health, 2017).

Prenatal visits help to ensure both mother and baby are adapting and growing appropriately as pregnancy continues to progress. During a prenatal visit, a pregnant mother can anticipate providing a family health history, completing a physical exam, and expect blood tests that identify harmful diseases that could potentially be passed on to the baby if left unidentified. Healthcare providers will continue to monitor the mother's blood pressure, weight, fundus, and neonatal heart rate during routine visits. Each of these assessments and tests would assist in recognizing health complications and therefore establish the need for necessary intervention. With proper equipment, testing, and knowledge, healthcare professionals can provide pregnant mothers with the necessary care to better sustain a healthy pregnancy and a safe delivery. A lack of access to such care can prove dangerous for both the mother and the baby, and in some circumstances can even be fatal.

Problem Statement

The first few years of life are crucial for child development and overall health. Consistent and quality prenatal care will better allow mothers to bring their babies into the world without the heartbreak of health setbacks, as routine healthcare before and during pregnancy is necessary to decrease the risk for both pregnancy and delivery complications. Unfortunately, not all women are able to afford or access this essential care and consequently are unable to achieve a safe, healthy delivery.

This paper will explore research identifying barriers that exist to accessing prenatal care. Who are these barriers a problem for? Do babies whose mothers lack healthcare during pregnancy have poorer neonatal health outcomes? The overall purpose of this research is to further identify trends surrounding those who are unable to access care during pregnancy as well as the effects and threats this lack of care poses to pregnant mothers and their babies throughout gestation and delivery. Furthermore, this paper will explore what has been done and what more can be done to assist pregnant women needing additional support.

Barriers to Prenatal Care for Pregnant Women

While many women remain uninformed about the health advantages of prenatal care, a large majority of women are prevented from accessing prenatal care due to various physical and social barriers. Such barriers include education level, socioeconomic status, geographic location, citizenship, race or ethnicity and unfortunately, scarce available resources to tackle these barriers.

Race remains a significant barrier to accessing prenatal care. Studies have shown that certain racial groups are less likely to access care in comparison to other racial groups. For example, a cross-sectional, observational survey of obstetric care in the United States found that

White women and Asian women are the most likely to receive prenatal care early on in pregnancy (Anderson, 2014) while African American women and Native American women are significantly less likely to have assessed prenatal care within the first trimester (Alexander et al., 2002). In 2017, 5% of Non-Hispanic white women and 6% of Asian or Pacific Islander women received late or no prenatal care, while 10% of Non-Hispanic Black women, 8% of Hispanic women, and 12% of American Indian women failed to receive early prenatal care or any care at all (Phillipi, 2009).

Another study gathering data from the U.S. natality files compared the data of White and African American women. While significant data was indicative of a decrease in disparities over time, the numbers still illustrate a need for further improvement. For example, White women demonstrated an almost 5% increase in their ability to access care within the first trimester, improving from 80.1% to 84.8%, and African American women improved more than 10%, with 61.1% to 72.8% of women accessing care in the first trimester. This is a significant improvement for both racial groups, however, interventions such as community programs providing necessary services and education, remain in place to continue to decrease the racial gap. This study also found a significant difference in access to care between different age groups with 5-6% of women ages 25-40+ receiving late to no prenatal care, and 27% of women under 15 years and 11% of women ages 15-19 receiving late to no prenatal care. Age and race are only a few factors contributing to access to care and consequently, a smooth pregnancy and delivery (Child Trends, 2019).

Perhaps one of the most consistent barriers for all women is the cost of healthcare. Mothers enduring financial barriers or poverty are likely to experience significant stressors affecting their health. These stressors may include pregnancy at a young age, overcrowded living

spaces, unemployment, and limited access to health resources (Larson, 2007). The U.S. survey of obstetric care also revealed significant findings related to insurance status, area of residence, and education level. The data from this survey unveiled that uninsured women in general are 77% less likely to seek obstetric care in comparison to women with private insurance. The survey did not find significant results when comparing those women under Medicaid and other governmental insurances (Anderson, 2014). Even when able to afford care, many mothers still reported numerous barriers preventing them from participating in prenatal care visits including additional costs of transportation, parking, childcare for existing children, and medical costs (Phillipi, 2009).

In regard to region within the United States, women in the Central/Midwest were 53% less likely and women in the West were 54% less likely to seek care compared to women in the Northeast (Anderson, 2014). In addition, almost a quarter of women in the United States reside in rural areas, significantly limiting their access to necessary care during pregnancy. Not only is there a shortage of obstetric and birthing facilities in rural areas, but working obstetric physicians remain limited within the area. This, in addition to lengthened travel time to the nearest specialist or facility, places these women at an increased risk for adverse neonatal outcomes. There is an obvious barrier for women residing in rural areas indicating a need for alternative care and further intervention (Nethery et al., 2017).

When considering level of education, women who have completed high school were almost twice as likely to receive prenatal care in comparison to those women who did not complete high school. Pregnant women who had achieved a bachelor's degree were more than three times as likely as those who did not complete high school to receive care during pregnancy (Anderson, 2014). Furthermore, both White and African American women with lower levels of

education, in addition to younger age during the time of pregnancy, were more likely to receive intensive care, meaning their overall health required more intense and frequent attention or intervention (Alexander et al., 2002).

It is important for health care professionals to remain aware of the barriers that exist for pregnant women of diverse racial groups, age populations, education levels, and geographical locations. Analyzing data from these surveys and databases provides significant information regarding mothers who are needing assistance. The ability to pull various data from these national databases and surveys provides health care professionals and researchers with abundant data that is both current and relevant. This method of data collection is a convenient way for health care professionals to remain up to date with diverse populations needing assistance. Doing so may increase the percentage of women accessing prenatal care overall, and therefore increase the likelihood of healthy outcomes for women and newborns.

Neonatal Health Outcomes Related to Limited Prenatal Care

Further data collection has allowed researchers and healthcare professionals to find a direct link between barriers to accessing care and poorer neonatal health outcomes. As long as barriers such as low income, young age, and limited education exist, pregnancy outcomes will continue to be affected. Mothers and families experiencing these barriers are at increased risk for detrimental health outcomes. Such outcomes include varying congenital abnormalities, preterm births, fetal demise, and even maternal morbidity and mortality. Women who are unable to receive adequate care become two to four times more likely to experience poor birth outcomes in relation to women who are receiving sufficient prenatal care (Anderson, 2014).

In a study analyzing the health of pregnant mothers of different races, researchers found that minority races had increased BMI’s, more frequent use of antihypertensive medications

prior to pregnancy, and were more likely to have been diagnosed with pre-gestational diabetes than white pregnant women. Babies born to mothers with hypertension can require additional assistance breathing at birth, are slower to feed, may have lower muscle tone, and can have lower red blood cells, white blood cells, and lower calcium levels. Babies born to mothers with pre-gestational diabetes can experience difficulty breathing, low glucose levels, and jaundice. Additionally, minority races had increased rates of intrauterine growth restriction (IUGR), preeclampsia, placenta previa, preterm birth, cesarean delivery, and heavy vaginal bleeding when compared to white pregnant mothers. All of these health issues create an increased risk for the baby and the mother and may predispose the baby to adverse health outcomes such as low birth weight, preterm birth, lower APGAR scores, infection, and more (Healy, 2006).

Women living in poverty are at increased risk for pregnancy and neonatal complications due to an inability to afford healthcare. Children born into poverty are more likely to experience detrimental health outcomes including premature birth, intrauterine growth restriction, a condition in which the baby fails to achieve normal, healthy weight during pregnancy, and even neonatal mortality. These children born into poverty often have behavioral, cognitive, and developmental health problems as they evolve into adolescents (Larson, 2007).

Studies continue to identify that many of the causes of neonatal mortality such as asphyxia, prematurity, and infections can be further prevented with adequate neonatal care prior to, during, and after pregnancy. Studies gathering data at the national level have indicated that increased efforts and interventions allowing neonatal care to become more accessible have significantly decreased neonatal mortality rates in poorer countries, allowing their rates to become comparable to those in higher income nations. In pulling this data, researchers found that

71% of neonatal deaths worldwide could be prevented with complete access to prenatal care and development of necessary interventions throughout pregnancy (Nonyane et al., 2018).

A study done in Malawi measured the risk factors attributing to neonatal mortality in their country. The neonatal mortality rate in Malawi is 18.5 for every 1,000 live births. Of the mothers surveyed, 50% of them failed to attend four or more antenatal care visits necessary for ensuring the health and normal progression of the fetus. Other risk factors addressed in the study include insufficient family planning needs, limited access to institutional delivery or presence of specialist during delivery, experience of prior neonatal mortality, and short intervals in between pregnancies. Many of these women seek advice regarding prenatal care from village elders or refrain from disclosing pregnancy during the first trimester even to healthcare professionals. Many healthcare professionals share the same beliefs and refrain from providing care to those mothers who may attempt to seek care during their first trimester (Nonyane et al., 2018).

Healthcare professionals seek to identify risk factors for poor neonatal outcomes as early as possible in the United States. And while the women in Malawi differ from women in the U.S. in their cultural beliefs, barriers, and unique healthcare systems, this study magnifies the problem of accessing prenatal care from a national issue to a global issue. These risk factors are commonly addressed during prenatal and postnatal visits. While these visits are used to assess the health status of the mother and baby, they are also used to obtain relevant health history and crucial patient education making a mother's participation in these visits that much more worthwhile and essential (Nonyane et al., 2018).

Efforts Promoting the Health of Pregnant Women

The need for women to be able to access obstetric care has been recognized both nationally and worldwide. While further quality intervention remains necessary for women in need of

healthcare when planning for a family or during pregnancy, numerous measures have been taken to provide for mothers in need across various communities. Such interventions include providing prenatal care and education at community centers serving populations facing one or more barriers and even bringing maternal care to women in their homes for women who do not have a hospital or doctor within reasonable distance.

One community-based program, known as WIC, provides necessary services for women, infants, and children. Their mission is to serve underserved populations to improve their overall health and well-being. WIC remains the U.S.'s largest public health nutrition program and in 2016 alone served approximately 7.7 million participants monthly, including 53% of the nation's infants. Making healthy dietary choices is important to maintain good health and becomes even more crucial when providing required nutrients to a fetus. To ensure quality optimal nutrition for pregnant women, WIC has implemented community farmers markets and gardens, non-pharmaceutical diet and exercise programs, and has even encouraged local restaurants and local stores to include healthy dietary options (Phelan, 2017).

WIC also provides families with quality education crucial to family development including education on nutrition, breastfeeding, vaccinations, and references to health and social services. Mothers under this program are highly likely to birth full-term infants of normal, healthy weight. Aside from nutritional services and quality education, WIC also screens expecting mothers for health conditions that could negatively affect pregnancy including anemia, smoking, substance abuse, and hypertension. Health screening of pregnant mothers is important when attempting to prevent any adverse health outcomes of the newborn (Phelan, 2017). Community Health Centers in general serve 20% of low-income women of child-bearing age. WIC is one of many community-

based programs serving expecting mothers, and their progress may serve as motivation for further implementation of similar programs worldwide.

Further support and intervention include targeting women who are unable to access care due to location or a lack of available medical centers within their designated geographical location. Pregnant women who face the barrier of dangerously long travel times to a hospital may consider midwifery. In a 2014 statement acknowledging rural health disparities in the United States, the ACOG stated, “Less than one half of rural women live within a 30-minute drive to the nearest hospital offering perinatal services.” This travel time may demotivate women to seek perinatal services and furthermore could provoke danger in the case of an emergency or delivery. Midwifery is a plausible alternative to women unwilling or unable to travel the distance to receive proper care.

A study, pulling data from the Midwives Alliance of North America, found that these women are at an additional risk due to lower education levels, younger age, higher BMIs, and higher usage of government assisted insurance such as Medicaid. Researchers found that of these women, those classified as “low-risk” had an extremely low risk of cesarean delivery or adverse delivery outcomes when delivering with a midwife in their own homes. When comparing non-rural and rural pregnancies, women residing in rural areas also showed no increased risk for poor neonatal or maternal outcomes when classified as a “low-risk” pregnancy and provided a midwife. While this route is not ideal or sustainable for everyone, it is a reasonable alternative to women fearing the risk of extended travel times to necessary services (Nethery et al., 2017).

The following resources such as community programs and in-home health care are few of many extended to mothers in need. Continuous analyzation and research of underserved populations is necessary to further plan and implement essential interventions geared toward improving access to prenatal care. Community centers in specific provide a variety of services

ranging from nutritional support to free health screening. More significantly, these services are more affordable, convenient, and accessible than other alternatives. These services yield families with imperative education, assessment, and resources to better guarantee a safer pregnancy and delivery. In addition, these services are unique to specific populations and communities to provide care particular to their needs.

Women's Thoughts on Prenatal Care

Limited access to perinatal care is made evident through various studies and national data collection. Many mothers, however, remain unaware of the advantage of prenatal care or possess negative attitudes about its effectiveness. While many mothers simply cannot access care, many mothers may remain indifferent toward its purpose. Studies done to evaluate women's thoughts on prenatal care are important to further understand why they may fail to utilize resources even when they are accessible.

A literature review posted in the Journal of Midwifery and Women's Health collected data from several qualitative and quantitative studies finding several connections amongst studies exploring women's perceptions on prenatal care. These studies interviewed or surveyed women during pregnancy or postpartum and divided barriers into three categories: maternal, structural, and societal. One of the key barriers preventing mothers from accessing available care was simply a lack of motivation to begin prenatal care. Other women reported they did not want to initiate care due to an unintended pregnancy or because they were considering abortion. Many women were unaware they were pregnant, were too depressed, or were fearful of divulging their pregnancy to others or being judged, proving prenatal care and family planning as not only essential to women planning to become pregnant, but to women wanting to prevent pregnancy. Recreational drug use also impacted mother's willingness to seek care due to fear of judgement

or the possibility of losing their child at birth. Other social barriers consisted of conflicting cultural beliefs or previous pregnancies that were successful despite no prenatal care (Phillipi, 2009).

Many mothers did, however, feel motivated to receive prenatal care. The number one reason to receive prenatal care reported by mothers was to ensure the health of their newborn. Understanding women's perceptions on prenatal care and the existing barriers they face may ensure that women in requiring additional education are properly educated and furthermore, provided the resources necessary to eliminate health disparities and optimize health outcomes (Phillipi, 2009).

Healthy People 2020

The United States has fallen short of their Healthy People 2000 and 2010 goals as determined by the number of pregnant mothers accessing prenatal care. Healthy People 2020 continues to make the health of women, infants, and children a priority, emphasizing the importance of the health and well-being future generations. Healthy People recognizes a number of factors that may affect pregnancy and delivery, including a mother's preconception health status, age, income level, and finally, their access to sufficient preconception, prenatal, and postnatal healthcare. Healthy People also takes initiative in examining the factors that may predispose infants and children to poorer health outcomes such as education level of household members, family incomes, race and ethnicity, health insurance coverage, and access to high-quality healthcare that encourages and teaches breastfeeding and sleep safety for infants. The nation's inability to meet these goals is indicative of the need for further intervention and education for pregnant women or those trying to conceive.

The Health Belief Model

The health of newborn infants is dependent on the health of their mothers. The research discussed displays the need for further improvement in ensuring the health of pregnant mothers and their babies. This begins with further identification of barriers to neonatal healthcare and specifically, how significantly each of these barriers is affecting various communities.

One model that may be applied in improving this clinical issue is the Health Belief Model. This model states that people are more likely to seek preventative care if they are under the perception that the health risks involved are serious, that they personally are at risk, and if they believe there are more advantages than disadvantages in taking action. Thus, interventional measures geared toward changing behaviors are more successful when addressing the beliefs and perceptions of the populations involved. In this case, this would include identifying the perceptions surrounding prenatal care, its benefits, and women's own disadvantages, advantages, barriers, and self-efficacy (Laranjo, 2016).

Proper identification of women's attitudes toward prenatal care, education about the purpose of prenatal care, and the risks involved if mothers choose not to initiate care would increase the likelihood that women choose to initiate care if possible. Prenatal care visits enable mothers to guarantee their health is adequate to supply and provide for their growing baby during pregnancy. These visits will help mothers create a reproductive family plan and give mothers further insight as to how to prepare for both pregnancy and an expanding family. Additionally, prenatal health visits inform mothers about the importance of adequate nutrition and folic acid consumption, keep immunizations current, control preexisting medical conditions such as diabetes or hypertension, and finally, inform mothers about the need to abstain from smoking and drinking alcohol, maintain a healthy weight throughout pregnancy, and provide further

insight on how to manage mental health throughout the entire process. This model will play a crucial role in the development of research in the future, as change consists of altering false perceptions and ensuring proper education.

Further Research & Intervention

After analyzing the research regarding the relationship between a lack of access to prenatal care and neonatal health outcomes, it is evident that prenatal care is in fact, essential, and an increase in its accessibility is necessary. In order to gather necessary data, a survey has been generated, gathering deeper insight into how significantly certain barriers affect mother's ability to access care.

Background and Rationale

The purpose of this study is to gather valuable information regarding barriers that may prevent mothers from accessing prenatal healthcare. Prenatal care services are set in place to keep women healthy during pregnancy, identify and treat health conditions when necessary, and ultimately assist in the delivery of a healthy baby. Identifying these barriers may help allow for further intervention so prenatal care may be more readily accessible to all women. This study seeks to identify both mother's and nurse's perceptions regarding the accessibility of prenatal care, as discussed in the health belief model.

Sample and Recruitment

Those invited to complete the survey include mothers, expecting mothers, and registered nurses with experience in maternal health, all of 18 years of age. A single survey was generated for both mothers and nurses to voluntarily participate in. In addition, an introductory letter and the survey link were made available via Facebook for participation. A mixed methodology approach was utilized when creating the survey, including both quantitative and qualitative

questions. This survey requests information regarding mother's and nurse's perceptions of prenatal care, the ability to access prenatal care and when, how specific barriers impacted mother's experiences accessing prenatal care, and finally, participant's thoughts on what more can be done in the U.S. to increase accessibility.

Procedures

Participants were able to access the introductory letter (Appendix A) via Facebook or through email, in which they were provided with a link to the survey (See Appendix B). The letter describes the purpose of the survey. Participants were informed that all their answers will remain confidential, and that participation is completely voluntary.

The survey was generated using Google Forms and consists of seven questions. These questions include six quantitative questions (two yes-or-no questions, one with a follow up question; three questions which can be answered with a 5-point Likert scale, and one question that asks for participant's perspective on the impact of seven different potential barriers to prenatal care, using a 5-point Likert Scale). There is one open-ended qualitative question. The survey takes approximately 10 minutes to complete.

To minimize the potential risk, the procedures included in this study avoid the collection of participant's names, email addresses, or other personally identifying information. Participant answers were accessed without the researcher knowing who did or did not answer. Participants were asked not to provide any identifying information. Everything feasible was done to ensure participant's confidentiality.

Quantitative Results

A total of 52 people participated in the survey, 46 mothers and 6 registered nurses. After data collection was complete, data was transferred from Google Forms to SPSS to gather

descriptive statistics. All data was reviewed with experienced registered nurses to sustain validity.

Of the 46 mothers who completed the survey, 100% of them were able to access prenatal care. 95.3% of them were able to access prenatal care in their first trimesters of pregnancy. 2.3% of the sample population accessed prenatal care in the second trimester and another 2.3% in the third trimester. When asked about prenatal care's essentiality, 80.8% of the population felt prenatal care is extremely essential, a score of 5 on the 5-point Likert scale while much of the remaining population, 17.3% found it very essential, a score of 4 on the 5-point Likert scale. However, when asked about accessibility, the majority of the population, 61.6 %, felt prenatal care is limited-medium in its accessibility, a score of 2-3 on the Likert scale. The remaining population found prenatal care very accessible-extremely accessible, scoring accessibility a 4-5 on the Likert scale.

While all mothers participating in this survey were fortunately able to access prenatal during pregnancy, all of the barriers listed: income, insurance, distance to hospital/facility, transportation, marital status, lack of childcare, and citizenship, had a medium impact-extreme impact on their ability to access care. The participants were asked to rate each of these barriers on a 5-point Likert scale. A score of 1 represents no impact, 2 represents slight impact, 3 represents medium impact, 4 represents strong impact, and a score of 5 represents extreme impact.

Most participants, 48.1%, felt income has an extreme impact on the ability to access prenatal care. Most participants also felt insurance (73.1%), transportation (48.1%), and citizenship (30.8%) also has an extreme impact on the ability to access prenatal care. Most participants, 30.4%, felt distance to hospital or facility has a strong impact on the ability to

access care. The majority of participants felt marital status (28.8%) and lack of childcare (30.8%) has a medium impact. The following barriers were concluded to have the greatest impact on mother's ability to access prenatal care: insurance, income, and transportation. Not only did these barriers receive the highest sores, but also the largest number of votes on the 5-point Likert scale.

Qualitative Results

Qualitative analysis included the process of searching for common phrases to determine categories and potential themes in the data. When asked the open-ended question, "What more can be done in the United States to make prenatal care more accessible?" many participants suggested universal healthcare, more affordable or free healthcare, patient education, and home health visits or telenursing.

Suggestions included ensuring resources and clinics are "more widely known and recognized," reassuring undocumented women that "prenatal care will not affect them negatively," educating the public that "prenatal care is essential for the good health of the baby and all are welcome," and finally implementing "home health visits to rural communities who have childcare issues." Another mother shared a positive experience receiving prenatal care over the phone, noting the clinic provided necessary assessment data usable from home such as a blood pressure monitor and a doppler to listen to the baby's heart. Asking mothers about their own personal experiences provides researchers and healthcare professionals with the opportunity to learn first-hand from those suffering the consequences of these barriers. Noting what more could be done to better improve each of their unique experiences will hopefully allow for future interventions that are applicable for all mothers across the nation.

Discussion

While all 52 participants agreed prenatal care is essential for the delivery of a healthy baby, only 8 participants found prenatal care to be extremely accessible for all communities in the United States, exposing an obvious clinical issue requiring additional support and resources. This study revealed that the barriers evaluated play a significant role in a woman's ability to access prenatal care. The research reviewed in this paper demonstrates that mothers across the U.S. and the world are facing significant barriers. Insurance played a huge role in allowing mother's proper access to prenatal care. Beyond insurance coverage, mothers reported an abundance of barriers including additional costs of transportation, parking, childcare for existing children, and medical costs (Phillipi, 2009). Mothers residing in rural areas experience the unique barrier of limited facilities or hospitals within a safe duration of their homes (Nethery et al., 2017).

The literature included successfully identifies barriers to prenatal care including income, insurance, distance to hospital, transportation, lack of childcare, marital status, and citizenship, all of which were included in this study. However, none of the research analyzed sought to determine which barriers are having the greatest impact on mother's ability to access care. In addition, there is limited literature on women's perceptions surrounding prenatal care, an important aspect of the health belief model, and necessary step in motivating women to seek care. While literature has shown improvements over time, there are still more improvements to be made. It is important to not only identify which barriers mothers face, but how significantly these barriers affect their prenatal healthcare experiences.

Conclusion

Continuing research efforts will help inform health care professionals about potential target populations as well as progress towards achieving healthy neonatal outcomes amongst all populations. Identification of the barriers mothers are facing as well as effective interventions, such as educating diverse populations on the importance of prenatal care, is essential. In addition, available resources that are central to reproductive health, such as regular, affordable clinic visits with home health follow-up have potential for leading to better health outcomes for women and their babies. Effective interventions may accelerate positive change.

Additional research will allow for further identification of effective interventions to prepare mothers for a healthy pregnancy and delivery, optimizing the health of existing and future generations for years to come.

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Appendix A - Introductory Letter

My name is Riki DesJarlais. I am a senior nursing major in the Honors Program at Dominican University of California. As I complete my final semester, I will be conducting research on existing barriers to perinatal healthcare. The purpose of this study is to gather valuable information regarding barriers that may prevent mothers from accessing the care necessary to better ensure a safe pregnancy and the delivery of a healthy baby.

The following survey intends to identify existing barriers that prevents mothers from accessing prenatal care. You are invited to complete this survey if you are at least 18 years of age and

1) You are a woman who has given birth or you are currently pregnant

OR

2) You are a registered nurse who cares for pregnant women

OR

3) You are both of the above (1 and 2) . If so, please choose only one of these roles for your perspective in answering the survey questions.

Completion of the following survey is completely voluntary, and you may choose to not answer any question. You also may withdraw from the survey and stop answering survey questions at any time. Submission of this survey signifies your consent to participate in this research.

The survey will take approximately 10 minutes or less of your time to complete. This survey is set up so that no identifying information is collected. Please do not include any identifying information in your responses. In the unlikely event that your identity can be connected to a particular survey answer, all information in the survey will remain completely confidential.

If you are currently experiencing any concerns about pregnancy, you may call the pregnancy help hotline. Pregnancy Help Hotline: 1-800-712-4357.

If you have questions about the research, you may contact me at my email address: riki.dejarlais@students.dominican.edu. If you have further questions, you may contact my research supervisor, Patricia Harris at patricia.harris@dominican.edu or the Dominican University of California Institutional Review Board for the Protection of Human Participants (IRBPHP), which is concerned with the protection of volunteers in research projects. You may reach the IRBPHP Office by calling (415) 482-3547 and leaving a voicemail message, or FAX at (415) 257-0165, or by writing to IRBPHP, Office of Associate Vice President for Academic Affairs, Dominican University of California, 50 Acacia Avenue, San Rafael, CA 95901.

Thank you in advance for your participation.

Best Regards,

Riki DelJarlais

To complete this survey, please click this link: **Link To Google Forms Survey**

Appendix B - The Survey

The following survey intends to identify existing barriers that prevents mothers from accessing prenatal care. You are invited to complete this survey if you are at least 18 years of age and

1) You are a woman who has given birth or you are currently pregnant

OR

2) You are a registered nurse who cares for pregnant women

OR

3) You are both of the above (1 and 2). If so, please choose only one of these roles for your perspective in answering the survey questions.

Completion of the following survey is completely voluntary, and you may choose to not answer any question. You also may withdraw from the survey and stop answering survey questions at any time. Submission of this survey signifies your consent to participate in this research.

1. Are you completing this survey as a mother or a registered nurse (please choose one role)?

   ( ) Mother ( ) Registered Nurse

   If you selected '<u>Mother</u>,' please proceed to question 2. After completing question 2, please skip to question 4 and complete the remainder of the survey.

   If you selected '<u>Registered Nurse</u>,' please skip to question 3 and proceed to complete the remainder of the survey.

2. Were you able to access prenatal care during your pregnancy?

   ( ) Yes ( ) No

   If yes, when?

   ( ) 1st Trimester ( ) 2nd Trimester ( ) 3rd Trimester

3. How long have you been a Registered Nurse?

   ( ) 1-4 years ( ) 5-9 years ( )10-19 years ( ) 20+ years

4. How essential is prenatal care for a healthy pregnancy and the delivery of a healthy baby, with 1 being nonessential and 5 being extremely essential?

   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

5. How accessible is prenatal care for all communities in the U.S., with 1 being inaccessible and 5 being extremely accessible?

   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

6. How significantly do the following barriers impact your or your patient's access to perinatal care, with 1 being no impact and 5 being extremely impactful?

   Income

   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

   Insurance Coverage

   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

   Distance to hospital or facility

   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

   Transportation

   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

   Marital Status

   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

   Lack of childcare for existing children

   ( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

   Citizenship

( ) 1 ( ) 2 ( ) 3 ( ) 4 ( ) 5

7. What more can be done in the U.S. to make prenatal care more accessible (i.e. free educational prenatal clinic)?

_____

_____

Thank you for your time and participation in completing this survey!