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Title: Access to prenatal care and the impact on mothers and babies: A comparative study between Hinche, Haiti; Saint-Louis, Senegal; and Reading, Pennsylvania.

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Access to prenatal care and the impact on mothers and babies: A comparative study between Hinche, Haiti; Saint-Louis, Senegal; and Reading, Pennsylvania.

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Candidate for the degree

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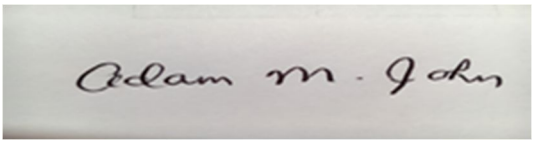

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Introduction

« Je parle d'expérience, vous savez. Et je sais combien nos sociétés les discriminent. Quand un homme est malade, il arrive à l'hôpital accompagné de sa mère, de sa femme, de ses sœurs, de ses tantes. Toute la famille débarque ! Quand une femme est malade, elle arrive seule, à moins qu'elle n'ait une fille pour l'aider. Je voudrais que cela change pendant cette pandémie. Et que les droits des femmes soient respectés » (Cojean).

This quote by Denis Mukwege, a gynecologist in the Democratic Republic of Congo and recipient of the Noble Peace Prize in 2018, translates as, "I'm talking from experience, you know. And I know how much our societies discriminate. When a man is sick, he arrives at the hospital accompanied by his mother, his wife, his sisters, his aunts. The whole family comes in! When a woman is sick, she arrives alone, unless she has a daughter to help her. I would like that to change during this pandemic and ensure that women's rights are respected." Dr. Mukwege's remarks reflect societal attitudes toward women in his country and the healthcare they receive. While they are always supporting others, they usually often have no one, except other females, to support them when they are sick. Consequently, providing women quality care might not be considered a priority, or as important as it is for men, even when they are pregnant. However, women in the Democratic Republic of the Congo and around the world deserve quality access to healthcare, or, at the very least, the same access to healthcare as their male counterparts, for this a basic human right that everyone needs to support.

Access to healthcare services means the timely use of personal health services to achieve the best possible health outcomes. It requires three distinct steps. These include gaining entry into the healthcare system usually through insurance coverage, the State covering the cost of healthcare or cash payments for care; accessing a location where needed healthcare services are

provided (i.e., geographic availability); and finding a healthcare provider whom the patient trusts and with whom she/he can communicate from a purely linguistic perspective and on a personal level. Access to healthcare impacts one's overall physical, social, and mental health status and quality of life. However, not everyone is able to receive adequate healthcare due to certain barriers. These can include the high cost of care, inadequate or no insurance coverage, lack of availability of services and lack of culturally competent care. Culturally competent care is defined as the ability of providers and organizations to effectively deliver healthcare services that meet the social, cultural, and linguistic needs of patients (Betancourt). Access to care can often vary because of race, ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, gender identity, and residential location.

This thesis entails a comparative study of access to prenatal healthcare and the impact access has on pregnant women and their unborn or newborn children. Access to prenatal care will be considered as occurring throughout the three trimesters of pregnancy and at childbirth, which is also part of the perinatal period, since all are connected to healthy outcomes for mothers and children. Access to prenatal care will be evaluated in three different regions with similar number of inhabitants in their respective metropolitan areas. These regions are Reading, Pennsylvania; Saint-Louis, Senegal; and Hinche, Haiti. My hypothesis is that access to quality prenatal care is determined by varying factors in different communities, and some pregnant women may be at a disadvantage because of the barriers they face in attempting to access high quality care. I will also shed light on ways these barriers are being overcome to ensure the survival of more women and their babies.

Prenatal care, also known as antenatal care, is defined as the healthcare a woman receives from professionally trained healthcare providers (e.g., obstetricians, nurse practitioners, nurses or

midwifes) while pregnant. It includes checkups, dietary and lifestyle counseling, weighing to ensure proper weight gain, and examination for problems of pregnancy such as edema and preeclampsia (Shiel). Perinatal care, which is intertwined with prenatal care, is defined as care mothers, fetuses, and newborns receive immediately before and after birth. The perinatal period can vary, and depending on the definition, it starts between the 20th and 28th week of gestation and ends 1-4 weeks after birth (Shiel). Since the beginning of prenatal care in the early 1900s, the focus of care has been on risk reduction instead of health promotion. Prenatal care has long been promoted as a way to identify mothers at risk of delivering a preterm or growth-retarded infant and to provide an "array of available medical, nutritional, and educational interventions intended to reduce the determinants and incidence of low birth weight and other adverse pregnancy conditions and outcomes" (Alexander & Korenbrot). The current approach to prenatal care, which involves visits at 16, 24, 28, 30, 32, 34 and 36 weeks and then weekly until delivery, was established over 80 years ago (Nicolaides). There are, however, more patients who visit their physician much later in their pregnancy worldwide (Nicolaides). The high concentration of visits in the third trimester implies, firstly, that most complications occur at this late stage of pregnancy and, secondly, that most pregnant women are asymptomatic of adverse outcomes during the first or even second trimester and do not seek care. Evidence, however, shows that many pregnancy complications can now be predicted at an integrated first prenatal care visit at 11–13 weeks; therefore, more women are being advised to seek prenatal care earlier than later (Nicolaides).

Prenatal care began as individualized care, but recently group prenatal care has been documented to be very successful in improving birth outcomes (Gennaro et al.). For all women, an emphasis on improving health behaviors is important at this critical time while women are engaging regularly with the healthcare system. An emphasis on mental health promotion may

decrease some of the disparities in birth outcomes that are well documented between minority and majority women, as minority women are known to experience increased levels of stress, anxiety, and depression (Gennaro et al). Providing support for pregnant women and incorporating knowledge and skills through prenatal care may promote both physical and mental health in minority women (Gennaro et al). The World Health Organization previously recommended that pregnant women take part in a minimum of four antenatal visits to spot and treat problems and receive immunizations. These guidelines had been in place until 2016. The number of contacts a pregnant woman should have with health providers throughout her pregnancy has since increased from four to eight (World Health Organization). Recent evidence indicates that a higher frequency of antenatal contacts by women and adolescent girls with a health provider is associated with a reduced likelihood of stillbirths. This is because of the increased opportunities to detect and manage potential complications. Eight or more contacts for antenatal care can reduce perinatal deaths of offspring by up to 8 per 1000 births when compared to 4 visits (World Health Organization). However, global, regional and comparable country reported data are only available for the previous recommendation, which was a minimum of four visits (UNICEF Data). Although antenatal care is important to improve the health of both mother and baby, many women of different social backgrounds, linked particularly to class and education, do not take part in the minimum four visits due to these social disparities or other healthcare barriers.

Reading, Pennsylvania; Saint-Louis, Senegal; Hinche, Haiti

Reading is a city in Berks County, Pennsylvania. As of the 2018 U.S. Census Estimates, it is the fifth-largest city in Pennsylvania with a population of 88,495. Located in the southeastern part of the state, it is the principal city of the Greater Reading Area, which has 420,152 residents. Approximately 35,000 residents live in the immediate areas outside the Reading city limits (US Census Bureau 2018). According to the 2010 census, Reading had the highest share of citizens living in poverty in the nation for cities with populations of more than 65,000 (Tavernise). The population of Reading in 2017 was 64.7% Latino or Hispanic, 23.2% White alone, and 9.05% Black or African American alone (Data USA). Reading's poverty rate in the 2018 five-year American Community survey showed that 35.4% of the city's residents lived below the poverty line, or less "than the infamous 41.3% from 2011, when Reading was declared the poorest small city in the nation" (Richter). Berks County also records an infant mortality rate of 6.5 per every 1,000 live births and a percentage of 80.2 of live births to mothers beginning prenatal care in the first trimester (Pennsylvania Department of Health).

It is important to note that in the United States, 77.1% of women who gave birth in 2016 initiated prenatal care in the first trimester of pregnancy; 4.6% began prenatal care in the third trimester, and 1.6% of women received no care at all (*National Vital Statistics Reports*). Younger women (usually mothers under age 20), women with less education, women having a fourth or higher order birth, and non-Hispanic Native Hawaiian or Other Pacific Islander women were the least likely to begin care in the first trimester of pregnancy and to have at least adequate prenatal care. The percentages of prenatal care beginning in the first trimester and adequate prenatal care varied by state (*National Vital Statistics Reports*). These statistics further emphasize the idea that

education, socioeconomic background and age might play a role and might sometimes be a barrier to receiving prenatal care in various regions. For pregnant women, quality prenatal or antenatal—and by extension, perinatal—healthcare is key for minimizing health risks for mothers and their unborn babies.

Saint-Louis, also known in Wolof as Ndar, is the capital of Senegal's Saint-Louis region and the principal city of the Saint-Louis department, which is a sub-administrative division of the region. It is in the northwest of Senegal. The population of the Saint-Louis department was officially estimated at 279,427 inhabitants in 2012 (*Situation économique* 21). The estimated population of the city of Saint-Louis in 2020 is 176,000 inhabitants (*World Population Review*). Statistics show a fertility rate of 4.1 children per woman in the Saint-Louis metropolitan area and 51% of the population being under 20 years old. With such a young population and high number of births, the local government struggles considerably to manage issues of reproductive healthcare, infant mortality and education (Commune de Saint-Louis). A 2016 government report indicates that 96% of Senegalese women between the ages of 15-49 who gave birth to a living infant reported receiving prenatal care from a healthcare professional, with midwifes being the dominant healthcare professionals administering care (78.6%) (*Sénégal: Enquête démographique* 90). In the greater northern region of the country, where Saint-Louis is located, the percentage of pregnant women receiving prenatal care was slightly lower at 93.2% (*Sénégal: Enquête démographique* 90).

Hinche is a commune (city and metropolitan area) in the Centre department of Haiti. It has an estimated population of 191,500 inhabitants in 2020 (mWaterPortal). The population data is derived from the number of houses in the commune (34,792) multiplied by 5.5 (average number of people per house). It is the capital of the Centre department. In Haiti, antenatal care

coverage is also very high. Nine in ten women (91%) reported receiving antenatal care by qualified personnel during pregnancy between the years of 2016-2017. In the Centre department, the percentage was slightly higher at 92,8% (*Haïti: Enquête Mortalité* 146). A little more than half (53%) reported being seen by a doctor and almost four in ten (38%) by a nurse. Over two-thirds (67%) had at least four prenatal visits with healthcare professionals, and almost 6 in 10 (59%) reported their first prenatal visit taking place during the first trimester of pregnancy (*Haïti: Enquête Mortalité* 136).

Accessing Prenatal Care in Reading, Pennsylvania; Saint-Louis, Senegal; and Hinche, Haiti

While the number of women gaining access to prenatal care in Senegal and Haiti is quite high, and significantly higher than in the United States, there could be other issues pertaining to prenatal (and perinatal) care that have an impact on the health of pregnant women and their newborn children. In Haiti, for example, not all healthcare professionals are Haitian or Creole-speakers, and important information can be miscommunicated in translation. The many foreign NGOs providing healthcare and operating in remote rural areas of Haiti have made strides in improving communication, but more can be done. Some of the NGOs providing healthcare in Haiti include Care, Open Society Institute, Partners in Health, and ACDI/VOCA. In Senegal, Wolof may be the main national language, but not everyone may feel comfortable receiving medical care in that language, as the ethnic make-up of Senegal is quite diverse. Other languages in which women might prefer to receive care include peul, sérère, and dioula. In Reading, Spanish-speaking pregnant women may have a harder time accessing quality prenatal care than their English-speaking counterparts.

In terms of political and economic barriers, there is a limit to how much governments can or are willing to fund the healthcare sector when there is often so much demand for healthcare services. In Haiti, after the 2010 earthquake, many midwife and nursing schools were destroyed (Galietta). These schools could not suddenly be rebuilt due to limited government funding and overwhelming funding needs in so many areas. These schools are particularly important in Haiti, because many pregnant women in Haiti forgo prenatal care in public hospitals because of the poor treatment they receive there and rely mostly on midwives (Felicien). For example, the maternity ward at St. Thérèse Hospital in Hinche, which is a public hospital, does not have running water. (Galietta) Waste is collected in buckets, and when the electricity cuts out, as it does throughout the day, the midwives put on headlamps and keep on delivering babies. Nurses have to be economical with basic supplies. They use antibacterial gel sparingly, not knowing when the next shipment will arrive (Galietta). These conditions underscore why Haiti has one of the highest infant mortality rates in the Western Hemisphere.

Research shows that challenging financial circumstances and traditional beliefs are also obstacles preventing some women from seeking prenatal care in Haiti. Almost three quarters of Haitian women (73%) cite cost as a potential obstacle to accessing prenatal care (*Haïti: Enquête Mortalité* 144). In villages throughout the country, women take herbal remedies and seek guidance from older women who have become midwives, often without formal training (Felicien). This may be due to lack of education of both pregnant women and midwives. Even if women attend prenatal care appointments, they often find it hard to afford the medication or cannot find it at all in the market (Felicien).

In Haiti, educational background and geographical location play an important role in access to prenatal care. In 2017, antenatal coverage by qualified personnel was the lowest

amongst women with no education (78%) and highest among women with a secondary education (97%) (*Haïti: Enquête Mortalit*é 136). In urban areas, the percentage of women who have made at least four antenatal visits, such as recommended by the MSPP (Ministère de la Santé Publique et de la Population), is higher than that observed in rural areas (76% against 61%). The percentage of women having made their first prenatal visit during the first trimester of pregnancy varies from 54% in rural areas to 67% in urban areas (*Haïti: Enquête Mortalit*é 136-7). 37% of Haitian women also report distance to the nearest health facility as a potential barrier to accessing prenatal care, and, therefore, is probably a factor that disproportionately affects women in rural areas (*Haïti: Enquête Mortalit*é 144).

In Senegal**,** important disparities pertaining to access to prenatal care for those living in urban and rural areas can exist as well. Health officials claim that poverty, poor roads and lack of medical care contribute to the country's most alarming rates of maternal and infant mortality (Voice of America). It is a risk that begins long before the delivery room, and health officials still struggle to get rural women to come in for the prenatal care. In Casamance, which is a region in southern Senegal where 75% of the population lives below the poverty level, there are 17 midwifes for 171,000 residents, and one midwife can be responsible for the prenatal and basic medical care for up to 8,500 residents in 14 different villages ("Un combat pour la vie"). In the "local health dwellings" ("cases de santé locale") in these villages, midwifes often assist with births wearing head lamps because there is no electricity (or running water). Some pregnant women attempt to walk or travel on the back of motorcycles to better equipped birth centers, despite the risk of hemorrhaging caused by the physical strain on the body if they walk or the risk of having an accident on motorcycles that must navigate rough terrain. If these pregnant

women give birth on the way to these health centers, the newborn risks asphyxia or infection ("Un combat pour la vie").

Access to healthcare in general, and to prenatal and perinatal care in particular, can equally depend on regional differences. A population-based study of a cohort of pregnant women in Saint-Louis and Kaolack, in west-central Senegal, were analyzed for cases of maternal morbidity. 3,777 pregnant women were followed throughout pregnancy, delivery and puerperium. Morbidity was assessed from women's recall at each visit by the investigator and from obstetric complications diagnosed by the birth attendant within health facilities (Bernis et al). Maternal mortality was higher in the Kaolack area where women gave birth mainly in district healthcare centers, usually assisted by traditional birth attendants, than in Saint-Louis where women giving birth in health facilities went principally to the regional hospital and were usually assisted by midwives (874 and 151 maternal deaths per 100,000 live births, respectively) (Bernis et al). Maternal morbidity, however, was higher in Saint-Louis than in Kaolack area, especially for births in healthcare facilities. Analyses showed that morbidity was mainly associated with the training of the birth attendant in facility deliveries (Bernis et al.). Therefore, midwives in health facilities appear to detect more obstetric complications than traditional birth attendants. Immediate detection leads to immediate care and to lower mortality rates. This could explain differences in maternal outcome between two urban centers with contrasting healthcare availability. These results suggest that one of the strongest weapons in the fight against maternal mortality is the employment of the most qualified personnel possible for monitoring labor (Bernis et al.) These highly qualified healthcare professionals are certainly needed to ensure that patients receive high quality prenatal, perinatal, and postnatal care.

High quality healthcare, including prenatal care, can also be impacted by political reform, as Ellen Foley argues when analyzing the impact of health reforms on healthcare in Senegal. She uses the case of Senegal to analyze how the effects of global health reforms are mediated by social relations and the micropolitics of a given place. The article examines the past two decades of reforms and how they have been shaped by the interface of international health policy, their implementation nationally, and the local structures of power in the city of Saint-Louis (Foley 1). She then highlights the three main reforms that have been carried out in Senegal: decentralization, privatization of the health sector, and the institutionalization of participatory management structures for healthcare facilities (Foley 1). The problem with these reforms is that they have done more harm than good, despite good intentions. According to Foley, decentralization of health centers is supposed to ensure that local officials will have real power to respond to the needs of their constituents (22). However, there are ongoing struggles between medical administrators and city officials over resources. The city is often reluctant to pay for utilities including water and utilities (Foley 23). This means that the healthcare centers could receive less funding. Less funding leads to underpaid workers and to poorer quality healthcare that could deter pregnant women from visiting said facilities. It is also possible that underpaid workers at understaffed facilities will be less likely to participate in community outreach programs to visit pregnant women and deliver homecare prenatal services. Meanwhile, privatization further leads to healthcare disparities. Since insurance is less popular in these regions, and physical cash matters more than an insurance card, those with more wealth will always receive the best care. Those with fewer economic resources, however, face the possibility of inadequate care and remaining sick. This could be even more evident in cases with teenage mothers. Pregnant teenagers may have already been shunned by families and have to fend for

themselves. They might forego prenatal care hoping that no complications arrive from the pregnancy and save money for other necessities.

Foley then addresses women's exclusion from local politics, civil society, and the local health committees in Saint-Louis due to decentralization. A key problem is that elected officials and health sector personnel have failed to engage with women as potential leaders and participants in the community health structures, instead viewing them only as family health managers and the targets of health education messages (Foley 27). Having women in political influential positions could help Saint-Louis and the country implement more beneficial policies that would better cater to the needs of pregnant women and children. However, this opportunity is often denied women. Women are frustrated by having to pay for a healthcare system in which they do not have a voice (Foley 32). They have experienced the difficult aspects of privatization, but they have not been included in the decision-making process. The article ends with some considerations for the future of health sector reform and the kinds of changes that will have to occur to ensure women's equity and full participation in the process of community healthcare management. Foley believes that to achieve a truly participatory strategy for healthcare, women will have to be engaged not just as mothers or caretakers, but as important sources of knowledge about the healthcare system (45).

Clearly, women should be included in the policy-making of issues concerning women to maximize effectiveness of healthcare for women. In their study, Shimamoto and Gipson examined the relationship between women's status and empowerment with Skilled Birth Attendant (SBA) use in Senegal and Tanzania using the 2010 Demographic and Health Surveys (weighted births = 10,688 in Senegal; 6,748 in Tanzania). An SBA is defined as an accredited health professional, such as a midwife, doctor, or nurse who has been trained to manage normal

(uncomplicated) pregnancies (Shimamoto & Gipson). Therefore, the professional care provided by an SBA could be considered both prenatal and perinatal, as well as key to the survival of more mothers and newborns. Overall, Shimamoto & Gipson found that women's status and empowerment were positively related to the use of a skilled birth attendant. Some sociodemographic characteristics had similar effects across countries. These characteristics included age, wealth, residence, and marital relationship (Shimamoto & Gipson). However, in Tanzania, women's higher household decision-making power and employment were related to SBA use, while in Senegal more progressive perceptions of gender norms and older age at first marriage were related to SBA use. Results indicate that efforts to increase SBA use and to reduce maternal mortality through the improvement of women's status and empowerment should focus both on improving girls' education and delaying marriage, as well as transforming gender norms and decision-making power (Shimamoto & Gipson). The results also provide further evidence to me that women are best at helping to improve healthcare, and certainly reproductive care, for other women, for their empowerment sets examples for other women and leads to the empowerment of more women. Furthermore, it is essential that women be equal partners in policy making on healthcare to ensure that all needs of women are met and that men clearly understand what these needs are.

Over the years, extra measures have been taken to address prenatal care in Senegal and progress has been made. Since 2012, the level of prenatal care has stabilized at a high level, with more than nine in ten women receive antenatal care from a trained provider (96% in 2014 and 96% in 2016) (*Sénégal: Enquête démographique* 89). 53.8% of women had four or more prenatal consultations with a trained provider, and 61.2 % had their first consultation in the first trimester of their pregnancy (*Sénégal: Enquête démographique* 91). Between 2012-2016, a little over

three-quarters of births took place in a healthcare facility (76%). This proportion increased slightly from 2012 when it was already at 71%. In the same period, the proportion of women whose childbirth was assisted by a trained provider increased from 51% to 59% (*Sénégal: Enquête démographique* 89). These statistics demonstrate that Senegal is improving and placing more importance on women's care and prenatal care. More women are taking prenatal seriously and utilizing services provided to them.

The country also values the work that midwives do and understands how essential their role is to help pregnant women, especially economically disadvantaged pregnant women, obtain prenatal care. (As stated earlier, Senegalese women are consulting them 76.8% of the time for prenatal care). However, more midwifes are needed to contribute to further reductions in maternal mortality and morbidity. The ratio of 17 midwifes for 171,000 residents in the Casamance region is underscored by a nationwide ratio or 0.309 of midwifes and nursing personnel per 1,000 inhabitants in 2016 (World Health Organization).

In Haiti, the contribution midwifes make to quality prenatal care is also emphasized through increased training, even though statistics show that the country has only one midwife for every 50,000 women and the highest infant mortality rate in the Western Hemisphere (Galietta). As one measure to combat this trend, "Midwives for Haiti" was organized in 2006, in conjunction with the Ministry of Health and the NGO Partners in Health, by American nurse midwives and physicians (Callister). Volunteers from the United States have trained Haitian nurses to become skilled birth attendants. The curriculum is based on international midwifery care standards and then translated into Haitian creole. Student midwives and graduates of the program provide 24-hour, seven-day-a-week services in the St. Thérèse Hospital in Hinche (Callister). The program has also added a Mobile Prenatal Clinic that sends midwives to twenty-

two villages in the Central plateau of Haiti, Hinche included (Callister). The Midwives for Haiti mobile clinic visits require a river crossing outside of the commune of Hinche. Sometimes, midwives must walk up to two hours to remote locations. However, before the clinic opened, women seeking a skilled birth attendant for prenatal care would have to walk up to four hours and cross 20 rivers and streams to reach the nearest hospital (Galietta). Now a mobile clinic travels to the Hinche metropolitan area and rural areas that do not have medical professionals. The team members set up folding tables in the village square, and they offer lessons in family planning and suggestions for how pregnant women can monitor their health. Pregnant women are also screened and provided medications (Galietta). This initiative has shown progress, and more women have been found to have healthier babies. Women who were seen by healthcare professionals and educated on how to monitor their health during pregnancy also learned how to eat better and space out their births. Another positive sign in these communities is the reduction in the number of cases of mortality and morbidity for pregnant mothers and children (Galietta).

In the United States, Paul et al. demonstrate the racial differences in prenatal care of mothers delivering very low birth weight infants at Christiana Hospital in Delaware. To determine whether there are any racial differences in the prenatal care of mothers delivering very low birth weight infants (VLBW), a cohort study of infants cared for at a single regional level III neonatal intensive care unit over a 9-year period, July 1993–June 2002 was performed with 1234 patients (Paul et al.). The main outcome variables investigated included antenatal administration of steroids, delivery by cesarean section, and use of tocolytic medications. After controlling for potential confounding variables, white mothers delivering VLBWs had increased odds of cesarean delivery (odds ratio 1.5, 95% confidence intervals (CI) 1.1–2.0), receiving antenatal steroids (1.3, CI 1.01–1.8), and tocolysis (1.4, CI 1.1–2.0) compared to black mothers. The

models controlled for gestational age, multiple gestation, premature labor, clinical chorioamnionitis, maternal age, income, year of birth, and presentation (Paul et al.). In the population of VLBWs, white mothers are more likely to receive antenatal steroids, tocolytic medications, and deliver by cesarean section when compared to black mothers. Antenatal steroids have been proven to reduce respiratory distress syndrome, intraventricular hemorrhage, and mortality in VLBWs. In the United States alone, the infant mortality rate (IMR) in 2001 was 5.7/1000 for whites and 14.0/1000 for black infants, while 11% of white births were preterm compared to 17.5% of black births (Paul et al.). Patients in this study that had better prenatal care delivered fewer babies with lower birth weight. In emergency cases, women who had access to skilled personnel were given the option of cesarean and antenatal steroids to ensure the health of both the mother and the baby (Paul et al.).

In Berks County, there is on average nearly 5,100 births annually**.** The *Berks County Community Health Needs Assessment* for 2016 states that the Berks County birth rate (64.2 per 1,000 women 15-44 years of age) is slightly higher than the state rate (58.7). In Berks County as a whole, Latina women have the highest birth rate (119.8 per 1,000 women 15-44), followed by Asian (90.6) and Black (83.9) women, women of another race (70.6), and White women (54.9) (*Berks County Community Health* 26). Reasons that Latinas have such a high rate of birth include many Latino cultures viewing women as adults at age 14, so many marry and have children during their teen years (*Berks County Community Health* 27). Adolescent births are associated with several negative birth outcomes, including prematurity and low birth weight. The City of Reading has the highest adolescent birth rate (28.1) of all the areas in the County (*Berks County Community Health* 27). Statistics from the assessment continue to show that the city of Reading rate is four times the county-wide rate. This rate represents an average of 134 births to

adolescents annually. Two-thirds of adolescent births in the County are to adolescents in the City of Reading (67.8%). The rate in the City of Reading is more than four times the rate of the state of Pennsylvania (6.9), and three times the rate of Berks County (9.4) (*Berks County Community Health* 27). In contrast to the City of Reading, the West Berks area has the lowest adolescent birth rate (2.8; representing an average of 11 births annually). (*Berks County Community Health* 27).

Delayed prenatal care and inadequate prenatal care can be associated with poor infant health, including low birth weight. Low birth weight infants (<2,500 grams or <5 lbs. 8 oz.) are at greater risk for dying within the first year of life than infants of normal birth weight. In Berks County, 7.7% of infants are low birth weight, comparable to the statewide average (8.3%) and the Healthy People 2020 target goal (7.8%) (*Berks County Community Health* 27). This percentage represents an annual average of almost 400 low birth weight infants. The percentage of low birth weight infants is higher among Black infants (12.1%) than Latino (8.2%) and White (7.2%) infants, and infants of another race (7.2%) (*Berks County Community Health* 27-8). In general, these percentages are comparable to statewide percentages. The Berks County infant mortality rate is 4.9 infant deaths per 1,000 live births. This represents an average of 25 infant deaths annually (*Berks County Community Health* 28). The percentage of mothers with prenatal care in the first trimester is better in Berks County than in Pennsylvania (Berks County=76%; PA=72%) (*2015-2016 Berks County Community Health* 3). In both Berks County and in PA, white mothers are significantly more likely to receive prenatal care in the first trimester than black mothers (PA: White=78%, Black=57%; Berks County: White=80%, Black=63%) (*2015-2016 Berks County Community Health* 3). While these statistics indicate that the majority of women in the Berks County are proactive and receive prenatal care, they also suggest that race

seems to be a factor in determining when one receives prenatal care since more white women receive early prenatal care than black women.

Insider perspective from healthcare professionals

To supplement my research and further address socioeconomic, racial, geographical, and linguistic barriers when accessing prenatal care, I was able to interview a nurse practitioner at the Berks Community Health Center in Reading, as well as a doctor in his first year as an intern at the Hospital Bienfaisance in Pignon, Haiti. This doctor has already begun his training in obstetrics, gynecology and pediatrics at the hospital and has some knowledge about the healthcare situation in Hinche, since it is only 15 miles from Pignon and some of his colleagues from medical school are completing their intern program at the public hospital there. Before interviewing this doctor, I had contacted the pediatrician at the hospital in Hinche, but he never replied to my emails. Unfortunately, my attempts to interview a healthcare worker in Saint-Louis fell apart in late February as my contact and healthcare workers turned their attention to the growing threat of the coronavirus in that country.

Erin Churico, a nurse practitioner at the Berks Community Health center (BCHC) just a block from the Albright campus (1110 Rockland St.), was able to provide me with some valuable information pertaining to access to prenatal care and barriers to access at this location of BCHC, one of four locations in Reading. I was interested in interviewing healthcare workers at BCHC because of the center's commitment to providing "high quality healthcare to anyone, regardless of their ability to pay" (BCHC website). Tackling head on of the most important barriers to good healthcare (cost) also made me wonder what other barriers BCHC was addressing and what barriers might be the hardest to overcome. Additionally, I chose to interview someone from

BCHC because I wanted to learn more about what my current community is doing to help its population of pregnant women.

After my discussion with Ms. Churico, I gathered that in her thirteen years of pediatric service and her complementary knowledge of prenatal and perinatal care, the number of patients who have sought prenatal care has shot up over the years. When asked if she felt as though patients were coming in because they felt obliged to, she answered by saying, "The majority of the patients are coming because they truly care about their kids, and they should be coming to their visits to get their vaccines; and if there are issues, we catch them. There are only a few who come because they feel forced" (personal interview). Most patients call very early on in their pregnancy to start their prenatal care. Ms. Churico stated that there is a correlation between women who receive prenatal care and the effects that it has on the baby and society. She indicated that those who avoid prenatal care, especially in the Reading area, might suffer from hypertension, high cholesterol levels and gestational diabetes. These patients tend to have babies who have worse outcomes at birth because the mother has not received the prenatal care needed. She declared that these babies tend to have trouble feeding, which hinders initial growth, and then do not receive the care they need during childhood: "These moms who did not care for themselves during the pregnancy are also not the ones who are going to make sure that their children are seen either. This becomes a continuum of not getting care" (personal interview).

Ms. Churico continued by shedding more light on the policies that the state of Pennsylvania has put in place for women's healthcare. She mentioned that in Pennsylvania, the law states that if a pregnant mother lacks insurance, the state covers the cost of insurance. Ms. Churico admitted that not many people are aware of this practice and, therefore, might not take advantage of it. Pregnant mothers who come into Berks Community Health center without insurance are

redirected to Outreach, an insurance company, to check if they meet the requirements for the insurance. The requirements often include a social security number, a job and some income. This coverage through Outreach indicates that there are alternatives for financing prenatal care in Reading, but there is still a population of women who are not aware that these options exist.

Ms. Churico estimated that "we are probably just staying steady" in terms of a rise in patients who end up morbid or face infant mortality (personal interview). In the Reading community alone, she mentioned that there are many more teenage pregnancies than there are pregnancies that happen later in life. Although these patients may be young, they still may not be the healthiest. However, teenage mothers are not the only ones who have unhealthy eating habits. She mentioned that a lack of education and immigration may be the cause of unhealthy eating, which leads to hypertension, and high cholesterol levels: "For a lot of people who come from other countries where they did not have a lot of access to food, they come here, and the access is huge. But this is not always good, so they are eating all the bad food" (personal interview). She highlighted that "putting on extra weight becomes a status symbol, because they were used to being hungry, so the fact that they cannot be hungry anymore is a huge step" (personal interview). Obesity is one of her major concerns in pregnant women as it leads to further complications such as an unhealthy birth. Women who receive prenatal care at BCHC are educated early in the process about a healthy diet may be able to curb obesity throughout their pregnancy, as long as they comply with the advice of their physician.

Ms. Churico also acknowledged that location plays a major role in access to prenatal care. I learned that the BCHC where Ms. Churico works was constructed in Northeast Reading after a study that showed that there was no healthcare facility in that zip code. With no facility in that zip code, pregnant women seeking prenatal care could face even more obstacles to receiving

care, for they might not be able to take time off from work to go to a facility that is farther away, or they might simply lack a means of transportation to access the facility. Although BCHC does not have a mobile clinic, they do alleviate some problems linked to location by providing a transportation service that can pick up expectant mothers for their appointments. The BCHC facility in Northeast Reading is also a stop on two BARTA (Berks Area Regional Transit Authority) bus routes.

As with transportation, the issue of language as a barrier for receiving prenatal care is being tackled. Ms. Churico pointed out that there are translators for all languages (personal interview). Most of the healthcare workers are bilingual and speak Spanish. LanguageLine Solutions, an on-demand interpretation and translation service, is also used for patients who speak other languages. Hence, the needs of pregnant mothers can be addressed by healthcare workers like Ms. Churico, and they can relay information directly back to the patient in the language in which she is most at ease.

However, Ms. Churico pointed out that there are not enough healthcare professionals working at this BCHC location, given the demand of patients that they have. At the time of our interview, there was no gynecologist employed at the center. The center does employ a midwife, but she is only available for postnatal care. Ms. Churico also made a troubling reference to the potential link between a shortage of healthcare professionals at the center and the community they serve when she stated, "Some healthcare workers would rather not work with the Hispanic population, which comprises many patients, because many of them lack insurance and have other issues" (personal interview).

When asked if she believes that the community plays a role in assuring pregnant women receive prenatal care, Ms. Churico answered, "Oh absolutely! The more programs a society has,

the more opportunities mothers have to be well educated on their health during pregnancy and post pregnancy" (personal interview). An example provided by Ms. Churico of a community outreach program available for mothers is Nurse Family Partnership. They have centers all over the nation, and Reading is fortunate enough to house one of them. This program is responsible for helping first-time mothers. They go to her place of residence and assist with whatever services she may need.

Undoubtedly, the city of Reading has its shortcomings in terms of prenatal healthcare, but it also has programs in place to help overcome these shortcomings, as Ms. Churico reported during our interview. These programs help educate women about the benefits of prenatal care and explain where to go to receive quality care. The city and the health centers serving it also conduct studies to ensure that clinics are placed in strategic locations for easier access. As a result, transportation as a barrier to high quality prenatal care is substantially diminished. And with more education and more convenient access, there should be a substantial increase in the number of healthy pregnancies and births for all women in Reading and Berks County.

I was able to gain an insider's perspective about access to prenatal care in Hinche and Pignon, Haiti from Dr. Darlin Orelus, a healthcare worker of six years and intern at the Hospital Bienfaisance in Pignon, who believes that access to prenatal care has definitely evolved over the time. He mentioned that the healthcare of his mother's era, was not the same as his grandmother's era, and is definitely not what is currently available in Pignon. He said that there has been a peak in patients who seek prenatal care in general, but he could not cite specifics for other hospitals (personal interview). Most patients come in as soon as they find out they are pregnant for prenatal treatment. He is grateful for this because he believes that there is a correlation between patients who receive prenatal care and how the children are born. He

believes that the better the healthcare, the healthier the baby. He also pointed out that access to prenatal care influences society, and that the government has a responsibility to the population to ensure that maternal healthcare is prioritized (personal interview).

Dr. Orelus believes that the area in which a hospital is located plays a major role in the patients who visit. Larger hospitals in larger cities are at an advantage in Haiti as they have more resources and more personnel. They also receive more funding. Smaller hospitals in smaller cities, however, always have an influx of patients with almost not enough personnel to meet their needs. The waiting areas in these hospitals are often filled past capacity. As a result, some pregnant women who cannot spend hours and hours in waiting rooms may be deterred from seeking prenatal care at smaller hospitals, thereby putting themselves and their unborn children at risk (personal interview).

Dr. Orelus indicated that transportation may be a barrier for some pregnant women as it is more difficult to get to the hospital because of bad roads. He also worries that poor transportation often hinders women from being able to receive their scheduled routine medications. This may be particularly true for an intestinal anti-parasite drug, which only 10% of Haitian women reported taking during their last pregnancy (*Haïti: Enquête Mortalité* 137). This statistic is in stark contrast with the 78% of Haitian women who reported taking recommended iron supplements during their last pregnancy. This figure, 10%, also represents a 4% drop from 2012 to 2016. While iron supplements are prescribed almost universally by healthcare workers and pharmacies and the anti-parasite medication is not, Dr. Orelus explained that at the hospital in Pignon, the doctors have no trouble prescribing and providing anti-parasite medication to women in their second or third trimester of pregnancy if needed (personal interview). (He also estimates that the percentage of pregnant women in Haiti who take anti-parasite medications should reach

at least 20%.) However, pregnant women must find a way to get to the hospital to access the medication. Confounding the problem of transportation is the fact that there are no mobile clinics in Pignon, unlike in Hinche, where midwives and physicians visit patients to administer care (personal interview).

Dr. Orelus emphasized that money is a constant issue in hospitals. Since hospitals in smaller communities have less funding, cash is almost always collected as a form of payment after hospital visits. (And as stated earlier, the ability to pay is a major factor for 73% of pregnant women in Haiti when considering accessing prenatal care.) In comparing Hinche to Pignon, where he is located, he stated that the hospital in Hinche is a public hospital and is cheaper than the hospital in Pignon (personal interview). Hence, Hinche may see more pregnant women than Pignon. Pregnant women from Pignon often opt to give birth in Hinche because of lower cost and proximity to Pignon.

Dr. Orelus affirmed that the relationship between a physician and a pregnant woman plays an important role in delivering a healthy baby. He believed that there should be a good patient-doctor rapport to ensure that the patient is comfortable in confiding in the physician for medical advice. He also stated that patients seeking prenatal care can communicate with physicians and other healthcare professionals at the hospital in Pignon because they all speak Haitian Creole, and the physicians speak French (personal interview). Thus, language at the hospital in Pignon is not a barrier to receiving prenatal care for any pregnant woman in the region, no matter her education or socioeconomic status.

Another measure being taken to help overcome barriers to prenatal care is the midwifery training program at the Institut National Supérieur de Formation de Sages-Femmes (INSFSF). Dr. Orelus stated that this program began operating in 2011 and that it has a two-year track

instead of the traditional three-year track. Its goal is to produce more midwives to help meet the demand for prenatal care in the communities (personal interview). When considered in the context of the 2010 earthquake that destroyed several important training facilities of midwifes and the critical shortage of midwifes across the country, the existence of this program represents a step in the right direction to meeting this high demand for prenatal and perinatal and care. It also underscores the commitment to addressing barriers that prevent women from accessing high quality prenatal care in Haiti.

Some hospitals, like the one in Mirebalais operated by *Zanmi Lasante*, which is the name of the NGO Partners in Health in Haitian Creole, have a maternal waiting home to help women with difficult pregnancies (Partners in Health 2018). They provide free lodging at the University Hospital campus in Mirebalais in Haiti to patients who are seeking healthcare at the hospital of Mirebalais and have no housing in the area. (This is relevant to my study because Mirebalais is located about thirty-eight miles to the south of Hinche. Thus, some pregnant women could opt to receive prenatal treatment or give birth in this well-funded hospital.) Since opening in February 2017, *Kay Manmito* which means "mothers' house" has welcomed 420 women with complicated pregnancies, along with mothers whose newborns were in the hospital's neonatal intensive care unit. They come from all over Haiti, traveling from Cap-Haitien in the north to Léogâne and Les Cayes in the south (Partners in Health 2018). To underscore the quality of this healthcare facility, the University Hospital in Mirebalais received accreditation from an international oversight group earlier in 2020 (Partners in Health 2020). The accreditation confirms that the hospital meets the highest global standards as a teaching institution. The University Hospital is the first hospital from a low-income country, and the first in the Western Hemisphere, to join internationally accredited facilities. There are other accredited hospitals in only seven other

countries (Partners in Health 2020). This is a major achievement that indicates that progress in healthcare, including prenatal healthcare, is being made in Haiti despite the obstacles of abject poverty and the Haitian government's inability to provide adequate funding for healthcare services.

Conclusion

The healthcare professionals I interviewed in Reading, Pennsylvania and Pignon, Haiti have substantiated the notion that prenatal care is an important preventive healthcare service throughout all phases of pregnancy. They also confirm what I have attempted to demonstrate in this study: there are barriers preventing access to high quality prenatal care and numerous efforts to overcome these barriers. While Hinche (and, by extension, the neighboring town of Pignon), Saint-Louis and Reading face some similar challenges in providing quality prenatal care (from economic, logistical, and staffing standpoints, for example), the degree to which these challenges manifest themselves can be very different. In Reading, for example, the recently opened Berks Community Health Center next to the Albright Campus fills a significant gap for pregnant women in northeast Reading or from the surrounding areas in terms of availability and accessibility of prenatal care. In Hinche and Saint-Louis, openings of new facilities of this caliber are probably much rarer. There are programs in place, however, that attempt to lessen to a certain extent some of these barriers in areas where resources are extremely scarce, as is the case in Hinche, with mobile clinics for prenatal care and training of midwives in intensive programs in Haiti. In Senegal, there are similar programs where midwifes travel to different communities to provide prenatal and perinatal care. As previously mentioned, it appears that these programs have been successful, given the high percentage of women accessing prenatal care in both

countries.

Nonetheless, more can be done to bridge the socioeconomic, geographical and educational gaps that affect access to prenatal care; more funds must be allocated to hospitals and clinics to ensure that every woman receives the best care possible. Better roads are needed so that women have an easier time accessing healthcare facilities. The training of more healthcare providers, including doctors, nurses, and midwives, is important to meet the demand of pregnant women seeking prenatal care. Education, as well, should be promoted, and women need to be made aware of all programs and services made available for prenatal care in their respective areas. Prenatal care is essential to ensure that a healthy baby is born. Therefore, all societies should make it a priority to provide the best prenatal care possible.

In future research, I would like to study community-based prenatal healthcare, which considers more thoroughly the connections between medical and social issues, including social deprivation and domestic violence. I also want to focus on the promotion of preconception health, not only because of its potential impact on prenatal and perinatal health, but because of its potential to improve one's health during childhood and adulthood. For places like Reading, Saint-Louis, and Hinche, the promotion of preconception healthcare could help educate women (and men) more holistically about services available for prenatal, perinatal and postnatal care to ensure that high quality care is always sought after.

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