Independent Study Project (ISP) Collection

SIT Study Abroad

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Maternal Healthcare Access and Obstetric Complications: A Cause and Effect Relationship?

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Acknowledgments

Abstract

Poverty-stricken migrant women, named 'Kayayei or Kayayo' because of the nature of their job in the informal sector, have high birth rates and are said to have many barriers affecting their access to maternal health resources. In this study, Kayayei in Madina Market were interviewed and both quantitative and qualitative data were gathered to determine whether a relationship exists between access to maternal health and the obstetric complications and outcomes experienced by Kayayei. A Chi-Squared Test of Independence and a Qualitative Content Analysis were both used to analyze the data. Due to a non-significant p-value, it was found that the Kayayei in Madina Market have access to both prenatal and antenatal care, however, the quality of this care varies. It was also found that a high percentage of Kayayei experienced pregnancy-induced Depression, Anxiety, Anemia, and High Blood Pressure. The results show that other factors must be examined to determine their relationship with obstetric complications among Kayayei.

Chapter I. Introduction & Preliminary Literature Review

I.   CONTEXT AND BACKGROUND INFORMATION

The movement of people to new towns, cities, and countries comes with the benefit of finding more economic and social opportunities. However, these benefits aren't all that await new migrants. Often times they are faced with harsh work environments, unpleasant living accommodations, and unreliable access to healthcare. These negative characteristics of migration exist for all migrants but are even more apparent among the most vulnerable members of a migrant group. According to a study conducted by Carballo et al. (1996), female migrants have more of these negatives to consider than male migrants. Female migrants have a more difficult time getting access to employment in the formal sector and many times will have to rely on the informal sector for wages. They are also at a higher risk of being victims of sexual violence resulting in the contraction of STDs, PTSD, and other reproductive and maternal health issues that require a medical intervention that they may not have access to.

These issues are prevalent in migration trends around the world, including in a growing community found in Southern Ghana referred to as the Kayayei - or Kayayo when singular. In search of economic opportunities, the Kayayei, comprised mostly of women and girls as young as 10 (Agarwal et al., 1997), are migrants from several poverty-stricken regions of Northern Ghana. With the hope of saving enough money to become hairdressers or dressmakers, they move to trade hubs in the South (Opare, 2003). These hubs, located in cities such as Accra and Kumasi, are home to large and vibrant markets where these women are then employed as porters. In the daytime, they work long hours in the market negotiating with consumers and then carrying merchandise in large metal pans placed on their heads (Agyei et al., 2016). After hours of working under the scorching sun, some Kayayei find themselves returning to the slums to sleep,

where they are crowded into wooden makeshift shelters with their colleagues. There, they are exposed to various diseases and don't have access to sanitary bathrooms or well-prepared foods (Nyarko et al., 2018). A study conducted by Shamsu-Deen (2013) found that other Kayayei don't have accommodations at all, pressuring them to rely on strangers with dangerous motives to provide them with a place to sleep. In both kinds of living accommodations, the Kayayei are frequent targets of sexual assault and rape resulting in unintended pregnancies that leave them as single mothers. In their study, Shamsu-Deen discovered that out of a 400 Kayayei pool, 26% already had children and an additional 6% were pregnant at the time of the interviews.

This study seeks to consider Kayayei who are either pregnant or have been pregnant and determine whether access to maternal health services affects trends in obstetric outcomes and complications experienced by Kayayei. Unlike other studies on maternal health and Kayayei, this study will examine specific health conditions experienced by the Kayeyi and compare the prevalence of those conditions with their access to maternal health care services.

With high birth rates and poor living conditions, access to maternal health is critical for ensuring safe pregnancies. However, the Kayayei are met with several barriers to their access to maternal health services. Many times Kayayei live in communities that don't have adequate health facilities, forcing them to commute far distances either on foot or with public transportation (a Tro tro). After arriving at the health facilities, they are faced with long wait times for care, which can be detrimental when the Kayayei are deprived of critical work hours. Even if the women are able to travel to the facilities and wait for treatment, they are then presented with high costs for the services (Yiran et al., 2015). The government in Ghana does offer health insurance but studies find that although 50% of Kayayei are insured, only 10.9% have the mandatory insurance card (Lattof, 2018). The government has also implemented free

maternal health services but those services can contain hidden fees that require additional payments, making them inaccessible for Kayayei (Yiran et al., 2015).

Although several studies have found similar barriers to maternal health care for Kayayei (Shamsu-Deen, 2013) (Yeboah, 2021), research is lacking and no information has been gathered on the pregnancy complications and outcomes Kayayei experience as an effect of these barriers and living conditions.

To fully understand the obstetric complications that a community experiences, one must also discuss the prevalence of maternal mortality within that community. Maternal mortality is any death that occurs during pregnancy or within 42 days of the end of the pregnancy (WHO, 2015). A Maternal Mortality Rate (MMR) is the number of those deaths per 100,000 live births. In 2017, Ghana had an MMR of 308/100,000 (The World Bank Group, 2019). The maternal mortality rate includes all of the obstetric complications and preexisting conditions that aggravate a pregnancy and inevitably lead to the death of a mother. The deaths that are directly caused by obstetric complications are also referred to as "Direct maternal deaths", while those preexisting conditions that aggravate a pregnancy are referred to as "Indirect maternal deaths" (WHO, 2010). In a study by Der et al. (2013), they considered 504 deaths in the Ashanti Region caused by direct obstetric complications. Of these complications, the most common were hemorrhage, abortion, hypertensive disorders, ectopic gestation, uterine rupture, and genital tract sepsis. 103 deaths were caused by indirect complications such as infections, anemia, sickle cell disease, pulmonary embolism, and disseminated intravascular coagulation. Between direct and indirect complications, the most common causes were hemorrhage, abortion, hypertensive disorders, infections, and ectopic gestation.

Although this data is only representative of mothers who perished from their complications, it is crucial to consider it because the same complications that lead to maternal deaths also produce near-miss survivors.

The maternal mortality rate of the Kayayei is unknown but is not the focus of this study. This is due to the fact that this study intends on shedding light on the cause-and-effect cycle of barriers to maternal health care and obstetric complications. By interviewing near-miss survivors and discussing their experiences, a clear connection can be made between gaps in healthcare and resulting life-threatening conditions.

II.   PROBLEM STATEMENT

Many of the deaths factored into the maternal mortality rate, especially those that occur in lower and middle-class communities, are preventable (WHO, 2015). Lowering the incidence of these deaths is of major concern to the public health sphere. The battle to lower maternal mortality rates requires a multi-pronged approach that aims to increase maternal healthcare access as well as create targeted plans for the care of common health complications. In order for this approach to be taken, there must first be an understanding of the relationship between healthcare access and health complications within a community. This research will address this relationship by determining if there exists a relationship between maternal healthcare accessibility and negative obstetric complications/outcomes among a community of Kayayei in Madina Market.

III.   STUDY OBJECTIVE

Considering the general objective, this study aims to determine if there is a relationship between a lack of access to maternal healthcare and obstetric complications among Kayayei. In doing so, it will also determine what obstetric complications the Kayayei are most affected by.

Further information will also be used to investigate the rate at which Kayayei receive prenatal healthcare. Finally, with a consideration of the Kayayei experience, this study seeks to determine how the Kayayei are treated by healthcare professionals and how they perceive the maternal healthcare system in Ghana.

IV.   RESEARCH QUESTIONS & HYPOTHESES

- *There is a significant relationship between access to maternal healthcare and obstetric complications among Kayayei.*
- *What obstetric complications are the Kayayei most affected by?*
- *Do Kayayei receive prenatal care?*
- *Do the Kayayei believe that healthcare professionals treat them well?*
- *Do Kayayei believe that maternal healthcare is accessible to them?*

V.   SIGNIFICANCE OF STUDY

The current literature on the Kayayei and maternal health paints a clear picture. The Kayayei are severely impoverished and lack the resources to access maternal health within a system that does not support them. What this picture is missing, however, is an investigation into the effects of these issues. An understanding of trends in obstetric health within this community will allow public health policymakers, as well as healthcare providers, to adjust their outreach methods based on the specific needs of the Kayayei. This study seeks to provide starting data that will allow them to create a targeted strategy that can create visible change in Kayayei pregnancy outcomes. An important part of this includes collecting information on Kayayei's impressions of the maternal healthcare system. This will allow providers to find ways of creating

positive connections between themselves and underresourced groups. Such changes will encourage positive trends in public health.

By focusing on specificity, this research can then be reliably recreated with other communities of Kayayei that have differing variables. In the end, this study will benefit the Kayayei community in Madina Market, and can also contribute to the betterment of other Kayayei around Ghana.

VI.   *JUSTIFICATION*

Every day, Ghanaians living in Accra walk into one of the city's busiest markets, Madina Market. There, a woman approaches them carrying a heavy metal pan on her head. She negotiates a price with them, anywhere from 3 to 10 cedis. This woman might be carrying a child in a baby carrier made of fabric wrapped around her back. She might also be pregnant, struggling with the unique physical challenges that come with being in the first, second, or third trimester of pregnancy. After paying for food, accommodations, and/or transportation, the woman is left with barely anything to place into her savings. Despite all of this, she returns to her job the next day, hoping to one day make enough money to live a different life. Women like her; the Kayayei, do not deserve to be left behind. Pregnant women require appropriate care and frequent observation when working in hard conditions. Without this, they are vulnerable to pregnancy complications that can be fatal. Research such as this will shed light on the complications that Kayayei experience and ensure that direct change can be made to improve the lives of pregnant Kayayei.

Due to its rapidly increasing population size and many markets, Accra is appealing to many Kayayei. Madina Market, in particular, houses many Kayayei because it is "very vibrant and [contains] brisk trading activities," (Yiran et al., 2015). Considering the large population of

Kayayei in this market, a large data sample can be collected and more information can be gathered on pregnancy complications among Kayayei.

VII.   SCOPE AND LIMITATIONS OF THE STUDY

The research for this study will be completed over a three (3) week period, with two to three (2-3) days a week being dedicated to data collection and interviews. The participants of this study will be selected from the Madina Market community exclusively. Data will be collected from a total of sixty (60) participants, using semi-structured interviews, utilizing a written list of questions for consistency between participants. A translator will be present and both the translator and interviewer will take written notes throughout the conversation. The questions asked during the interviews will only discuss maternal healthcare barriers, obstetric complications, and participant perception of healthcare accessibility.

VIII.   LIMITATIONS

Several limitations to this research exist. The first of these is the narrow window for data collection. With only 3 weeks of data collection, the sample size could not be made larger or closer to the population size. With the unavailability of public records on the number of Kayayei in Madina Market, an appropriate sample size could not be calculated. This could lead to skewed results post-analysis. The short collection window also led to the choice of one market, rather than multiple. In future iterations of this study, it would be suggested that data be collected over several months. This would allow information to be compared between multiple market spaces.

IX.   ETHICAL CONSIDERATIONS

Completion of this project is dependent on the voluntary participation of Kayayei in Madina Market. Prior to beginning interviews, participants will be briefed on the intentions of the research project and informed that participation is voluntary. Participants will be free to leave at any time during the interviews. Participant information will be handled solely by the lead researcher and no identifying information will be shared or copied.

X.   ORGANIZATION OF STUDY

The contents of this study are divided into chapters with each chapter assisting with actualizing the research objectives. The following chapters will begin with a literature review (recognizing the gaps in existing research). Then a chapter will be dedicated to discussing the methodology and research design. The final chapters will include a presentation of the results, which will then be analyzed and explained through a discussion section, before concluding the study with key findings and policy proposals.

Literature Review

To further understand the context of this study and the depth to which research on the maternal health of Kayayei is available, a review of the available literature was conducted. As is discussed in the remainder of this review, recent research on the Kayayei focuses primarily on identifying the existence of various barriers to healthcare access.

I.   *UNIQUE CHALLENGES FACED BY KAYAYEI*

In Shamsu-Deen's study from 2013, it was discussed that the health implications for Kayayei are exceedingly negative due to their lifestyle. Specifically, a focus is placed on the poor living and working conditions that Kayayei endure. This study concludes that in order to understand the unique health challenges faced by Kayayei, researchers and policymakers must take into consideration the needs of Kayayei as migrants driven by larger socio-economic factors. Kuyini et al. further address these challenges in a study published in 2020. In focus groups, Kayayei shared narratives regarding their experiences facing discrimination and public stigma. These experiences as well as issues with environmental toxins and the physical challenge of carrying heavy loads were highlighted as leading to health and well-being concerns.

II.   *BARRIERS TO MATERNAL HEALTH CARE*

As concluded by Yiran et al. (2015), the barriers most impacting Kayayei's access to health facilities are the "unavailability of health facilities in the slums where Kayayei live, low-income levels, high cost of maternal health care, long queues and waiting times at modern health facilities [...]". These barriers exist for Kayayei but are also prevalent in underdeveloped

communities of birthing people worldwide. The unavailability of such resources leads these communities to have negative trends in birthing outcomes and in the case of one underdeveloped city, over 500,000 maternal deaths a year (Nuamah et al., 2019).

Yiran et al. (2015) suggest bridging the gap in healthcare access by improving National Health Insurance. Doing so would help to curb the high costs of maternal healthcare and would allow disadvantaged women to pursue care. In a study by Lattof (2018), it was found that even if a person is insured, they are expected to pay a significant amount out of pocket due to hidden costs and expensive copays. With this in mind, only a small portion of the Kayayei studied by Lattof were found to have health insurance. Of those who did get an insurance plan, many were either unable to locate their health insurance card or had left it in the North. Another portion of the Kayayei didn't have health insurance. Rather, they had been unable to afford the fees required to get an insurance plan in the first place. Both insured and uninsured Kayayei groups were hesitant to pursue care because of the high and unpredictable copay rates.

Other barriers experienced by care-seeking pregnant women involve the attitudes of the healthcare providers. Mannava et al. (2015) found that in a detailed analysis of 81 studies, most of which took place in Africa (55), providers frequently expressed negative attitudes and prejudices toward women. Such attitudes led to a distrust in provider care and negative patient well-being.

III.   *RELATIONSHIP BETWEEN HEALTHCARE ACCESS AND COMPLICATIONS*

Laditka et al. (2008) conducted a thorough investigation of the relationship between potentially avoidable maternity complications and access to prenatal care. This study was conducted in the US using the National Maternal and Infant Health Survey. An analysis of the

data presented showed that access to appropriate antenatal care can significantly decrease the incidence of potentially avoidable maternity complications. This particular study found that the risk of these maternity complications could be reduced by 57%.

Further, a study conducted by Patridge et al. (2012) examined pregnancy outcomes and prenatal care by analyzing the CDC's (Center for Disease Control and Prevention) Birth-Infant Death and Fetal Death Data. This retrospective analysis examined eight (8) years worth of data. This data showed that as prenatal care use decreased, negative pregnancy outcomes increased linearly.

Finally, a study by Afulani (2016) analyzed the Ghana Maternal Health Survey to determine if a relationship existed between stillbirths and prenatal care. The results of this analysis found that receiving high-quality prenatal care can decrease the odds of stillbirth by close to half. This study also found that a part of improving prenatal care is "adequately educating women on pregnancy complications" (Afulani 2016).

Chapter II. Methodology

Following is a full overview of the methods of data collection and analysis used in this study. This includes descriptions of the research design, population, and population size, sample and sample size, sampling technique, source of data collection, data collection tools, Kayayei compensation, and data analysis.

I.   RESEARCH DESIGN

The collection of quantitative data allowed for a statistical analysis to be made regarding trends in the Kayayei community. The environment that a Kayayo lives in heavily impacts their health, making it possible that Kayayei living in similar conditions will experience similar obstetric complications and outcomes. Through quantitative data collection, this study sought to determine whether barriers to access to maternal healthcare are related to the obstetric complications experienced by Kayayei. Further, exploring this data provided insight into what obstetric complications the Kayayei are most commonly affected by. It also allowed for conclusions to be reached regarding how often Kayayei receive prenatal care.

These conclusions were then examined further using accounts of the Kayayei experience. For the purposes of this study, the qualitative data collected was used to add further context to any trends or insights made through the statistical analyses. Information was gathered in order to shed light on the specific lifestyle challenges that the Kayayei in the Madina Market community experience. This also allowed for crucial information to be gathered on how the Kayayei perceive the maternal healthcare system in Ghana. Discussions occurred to gather data on how

the Kayayei are treated by healthcare professionals and whether they felt that prenatal care is accessible to them. Conclusions reached from these data sets assisted with the creation of solutions to the Kayayei maternal health gaps.

II.   POPULATION AND POPULATION SIZE

This study's population was comprised of Kayayei within Madina Market that were either pregnant or had been pregnant in the past. Kayayei of varying ages and with varying gravidity were considered.

III.   SAMPLE AND SAMPLE SIZE

Sample size cannot be calculated due to the nomadic nature of the Kayayei. Many of the Kayayei leave and enter a given city every day and no information exists regarding the total population of the Kayayei (Ayei et al., 2016). With this in mind, a sample size of 60 was selected. This ensured that a significant number of Kayayei were interviewed while ensuring that the data collected from each Kayayo contained depth.

IV.   SAMPLING TECHNIQUE

Several methods were used to select participants for this research. The first of these was via snowball sampling. Snowball sampling is a nonprobability sampling style where participants are asked to help researchers find other participants. This was especially useful in this study as many of the Kayayei were hesitant to trust researchers. Contact was made with one of the more senior Kayayei in the community, and she was able to direct possible participants to researchers.

A simple random sampling style is a process of probability sampling where participants in a study are selected at random and by chance. Purposive sampling, however, is when participants are selected because they fulfill specific criteria. This study also made use of a combination of these methods. Simple random sampling was utilized to select all Kayayei that were spotted - not carrying a load - in a randomized area of Madina Market. Purposive sampling was then used to select Kayayei that were pregnant/had ever been pregnant. This will be done to make the data sample as representative of the population as possible.

A combination of both probability and nonprobability sampling styles allowed researchers to make contact with a wide variety of participants.

V.   SOURCE OF DATA COLLECTION

Data was collected via a primary collection method. This method includes direct discussions, in the form of interviews, with a source. No data was collected from secondary sources. This was done to assure that the data recorded is representative of the women currently working as Kayayei in Madina Market. The interviews were used to collect thorough and accurate responses.

VI.   DATA COLLECTION TOOLS

The entirety of the data was collected through in-depth and semi-structured, interviews held with a group of 4 or fewer Kayayei and an Asante Twi translator. The interviews were completed either in a corner of the market or in a private area of a nearby restaurant, depending on the comfort of the Kayayo. Using these carefully crafted interview questions, qualitative and quantitative data were collected simultaneously.

The presence of a translator was necessary for clear communication with the Kayayei and ensured that the interviews could be as thorough as possible.

Holding the interviews in small groups came with several benefits. Firstly, the Kayayei were emboldened by each other and felt safer communicating with the researchers when with at least one other Kayayo. At times they also acted as translators for each other. Many times they spoke similar (if not the same) languages and were able to assist each other in understanding Twi phrases.

VII.   COMPENSATION

Each Kayayo was compensated with 20 GHS after the interviews. This was necessary as the Kayayei lost critical time in the market to participate. Although the interviewer did not inform the Kayayei of compensation before the interviews, it is reasonable to believe that participants collected through the snowballing sampling technique communicated this information to others.

VIII.   DATA ANALYSIS

An analysis of this data was run using the Statistical Package for the Social Sciences (SPSS). SPSS will assist in the creation of graphs and charts to separate the data into visual media. Importantly, a Chi-Squared Test of Independence will be conducted to shed light on the relationship between the variables (barriers to maternal healthcare and obstetric complications and outcomes). The qualitative data points that are collected will be analyzed via content analysis and used to further explain this quantitative data.

Chapter III. Research Findings

This chapter will include a presentation of the results and an analysis of the quantitative and qualitative data collected during this study. The data for this study was collected using the methodology discussed in Chapter 3.

I. PURPOSE

The results of this study will shed light on whether a statistical correlation can be found between access to maternal healthcare and obstetric complications among Kayayei. This was done by collecting data on the obstetric complications experienced by Kayayei and the rate at which Kayayei can access maternal healthcare. Importantly, this study also collected data regarding Kayayei's perceptions of healthcare accessibility.

II. QUANTITATIVE DATA AND ANALYSIS

1. Participant Demographics

Participants were first asked questions regarding their age, gravidity, parity, and living conditions. Participant ages (found in Graph 1.1), were estimated by participants as many were unsure of their exact ages. Due to the lack of exact information, participant ages were split into ranges.

Graph 1.1
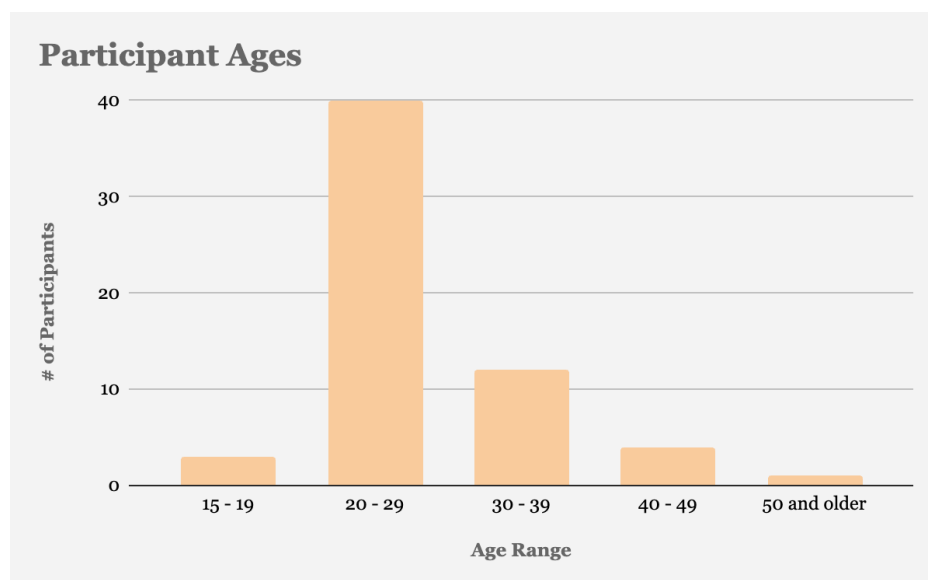
A majority of the participants, 66.7%, estimated themselves to be between 20 and 29 years old.

Gravidity refers to the number of times that a person has been pregnant. Graph 1.2 displays this data, with a majority of participants having been pregnant between one (1) and four (4) times.

Graph 1.2
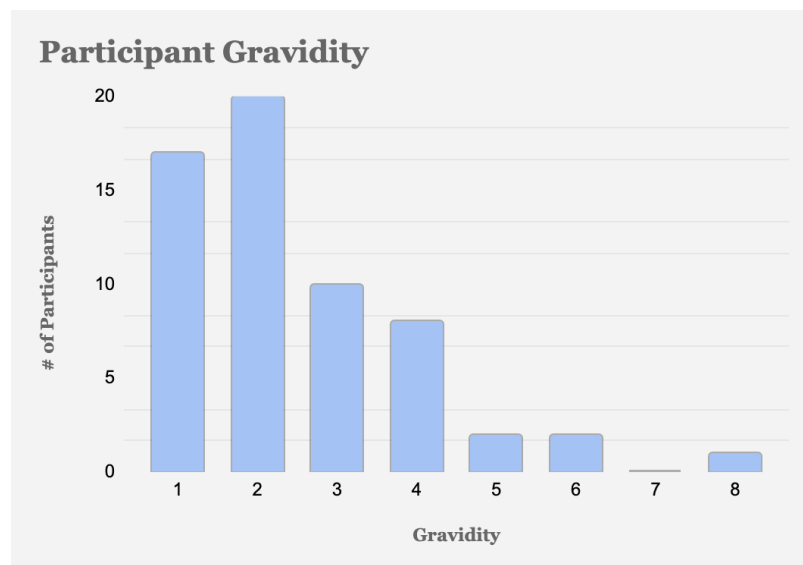
Of the pregnancies reported and factored into the total gravidity for participants, seven (7) of them were current pregnancies and one (1) was a first pregnancy.

Graph 1.3
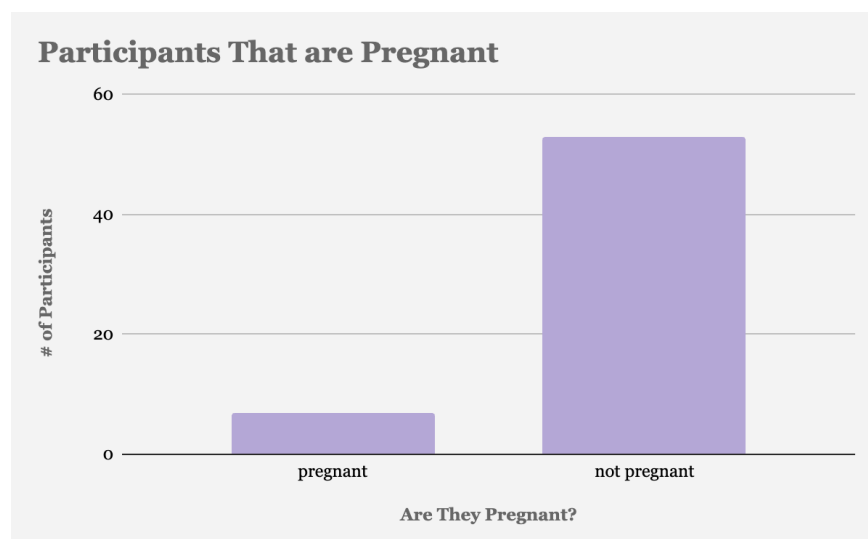
Parity refers to the number of times a person carries a pregnancy past 20 weeks and gives birth, including stillbirths. The data presented in Graph 1.4 shows that a majority of participants had a parity between one (1) and four (4).

Graph 1.4
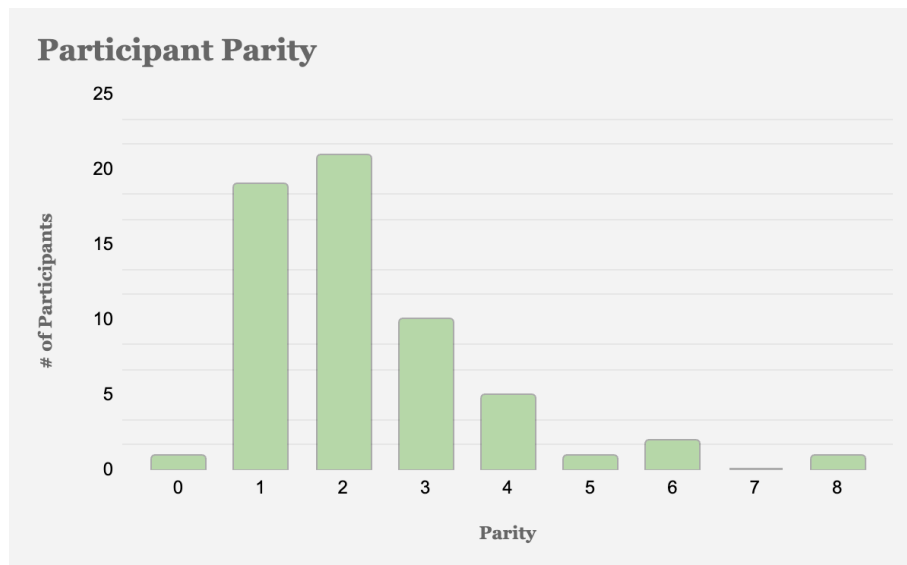
Participants reported living in La Nkwantanang, Chantan New Market, Madina Zongo, Atema, Near Melcom, Doku Clinic, and Madina Station. Of the seven (7) different locations, a majority of participants (55% as shown in Graph 1.5) lived in La Nkwantanang.

Graph 1.5
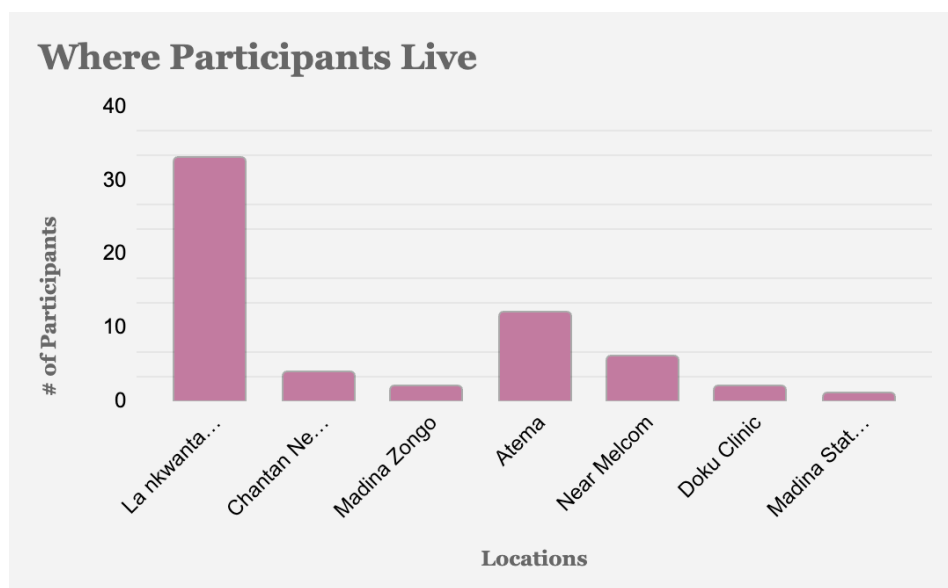
Participants also reported on the number of roommates that they live with. This was noted as contagious illnesses spread rapidly in congested living spaces. Represented in Graph 1.6, 50% of participants shared a room with six (6) to ten (10) roommates.

Graph 1.6

Number of Roommates Participants Have
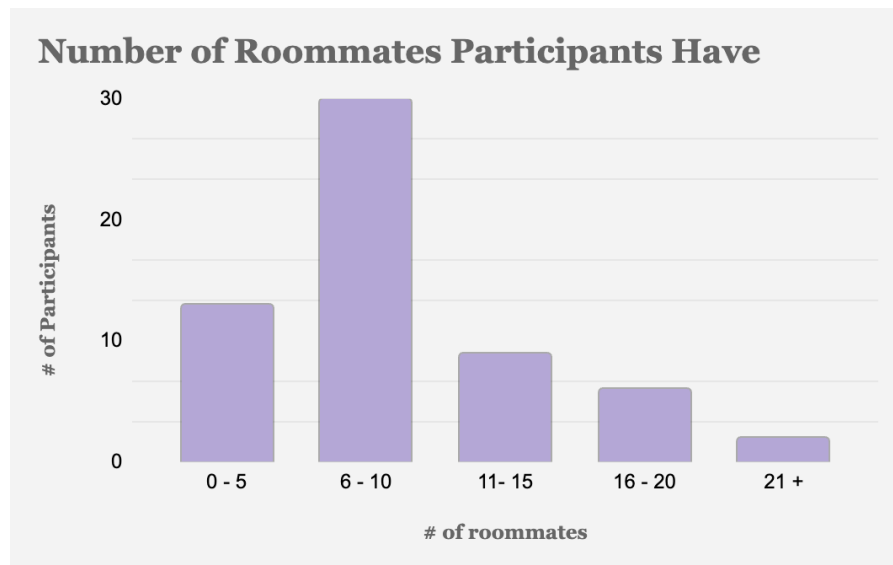
2. **Insurance Information**

To provide context about participant access to healthcare, Kayayei were asked if they had insurance and whether they still had their insurance card. Graph 2.1 shows that 48 out of the 60 participants reported that they had a health insurance plan. Graph 2.2 shows that 8 out of the 48 women with insurance had either lost their insurance card, or left it in the North.

Graph 2.1

# of Participants with Insurance

Graph 2.2

Do Insured Participants Have an Insurance Card?

Insurance Card?

yes

no

0   10   20   30   40
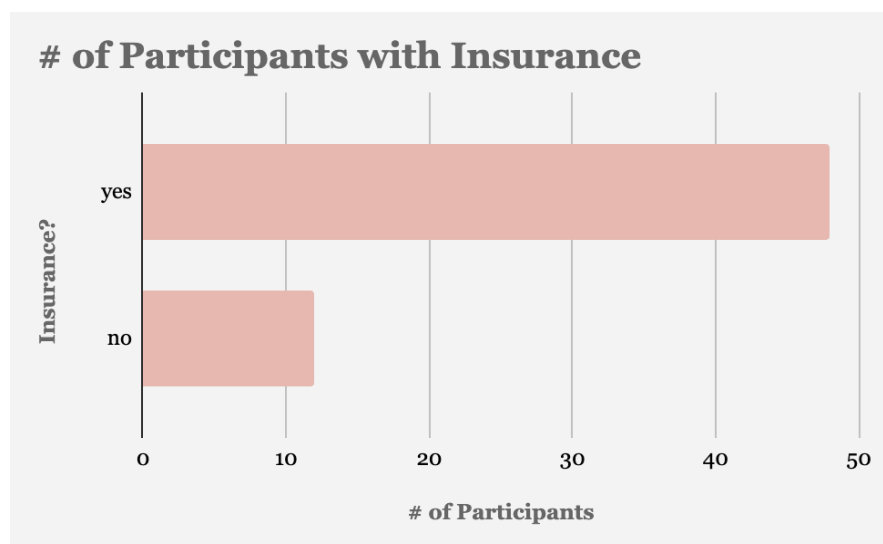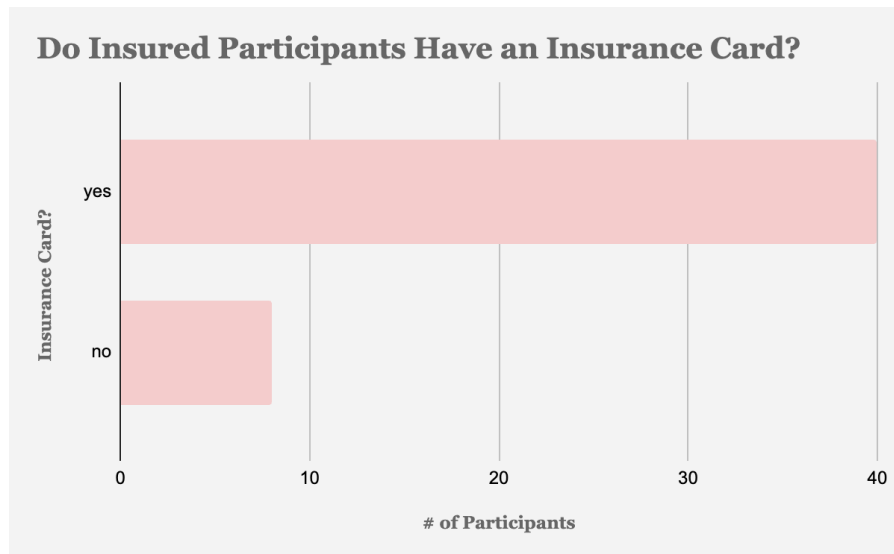
# of Participants

3. Seeking Medical Care

Participants were then asked about their tendencies to pursue healthcare. This was done by asking participants when/how often they went to the hospital for care during their pregnancies. 91.6% of participants reported that they had monthly or bimonthly appointments for checkups during their pregnancy, and 86.7% of those participants reported attending most of their appointments. 4 participants reported never attending the hospital for their pregnancies, and 1 participant only went to the hospital for labor.

Graph 3.1

Frequency of Hospital Visits During Pregnancy

# of Visits

Never

Only for labor

Frequently Missed
Prescheduled
Monthly or
Bi-Monthly Appoi…

Attended
Prescheduled
Monthly or
Bi-Monthly Appoi…

0   20   40   60
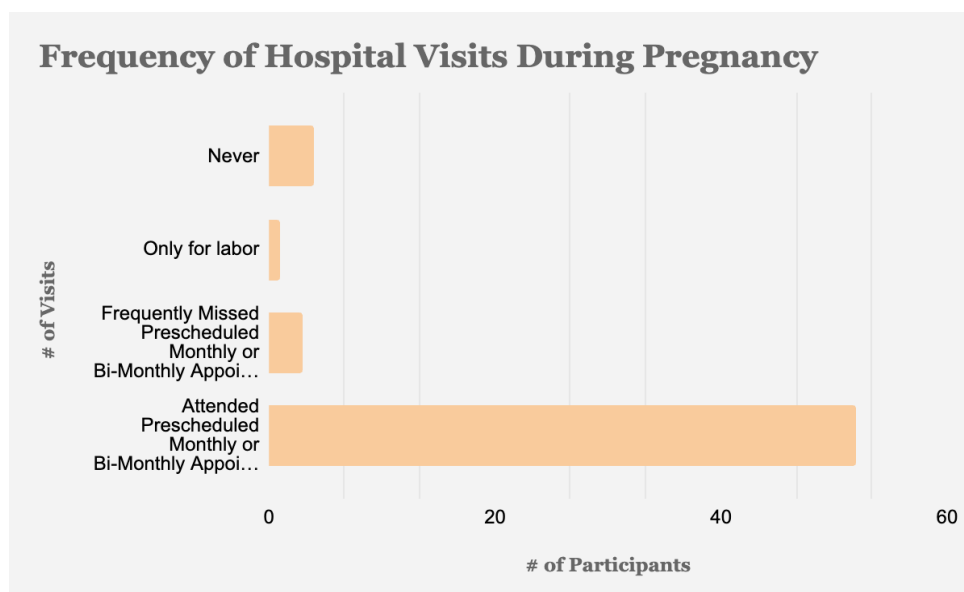
# of Participants

Participants reported pre-existing medical conditions such as non-pregnancy-related anemia, high blood pressure, peptic ulcers, heart conditions, and asthma. PUD was highly reported with 15% of participants having recurring ulcers.

Graph 3.2
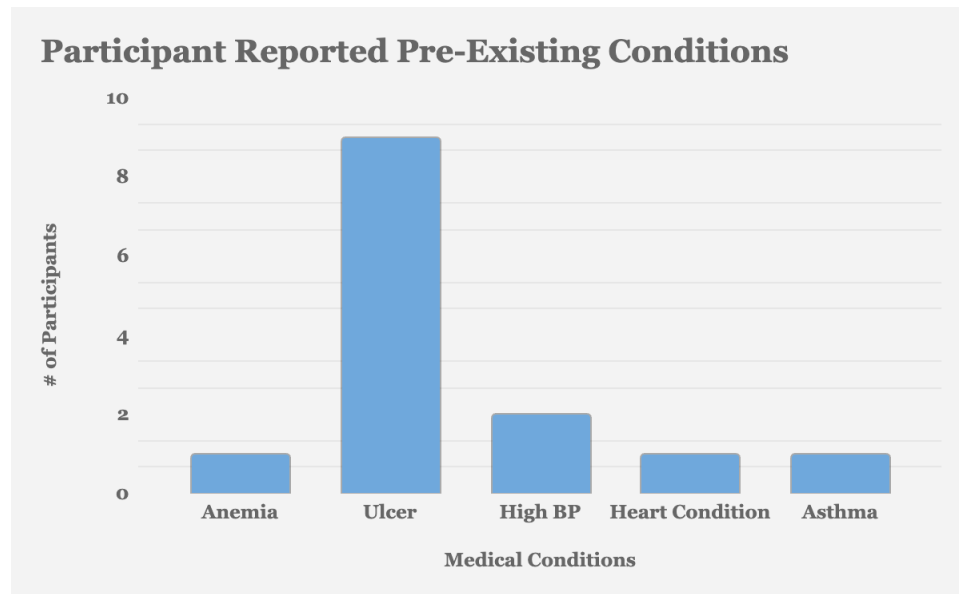
With these pre-existing conditions in mind, participants were then asked if they had experienced any pregnancy complications or negative outcomes. Participants were read a list of possible complications and asked to report if they had experienced any. The outcome options were high blood pressure, gestational diabetes, anemia, infections, preeclampsia, preterm labor, depression, anxiety, stillbirth, miscarriage, and abortion. Outside of these options, participants reported experiencing post-term labor, breech pregnancy, and high sodium. 68.3% of participants experienced high blood pressure, 1.67% gestational diabetes, 58.3% anemia, 3.33% infections, 5% preterm labor, 6.67% miscarriage, 8.33% post-term labor, 80% depression, 83.3% anxiety, 6.67% stillbirth, 1.67% breech, 1.67% high sodium. None of the participants had a clinical

diagnosis of depression or anxiety but were asked and confirmed symptoms that align with signs of depression and anxiety. Reference Graph 3.3.

Graph 3.3

Pregnancy Complications Experienced by Participants
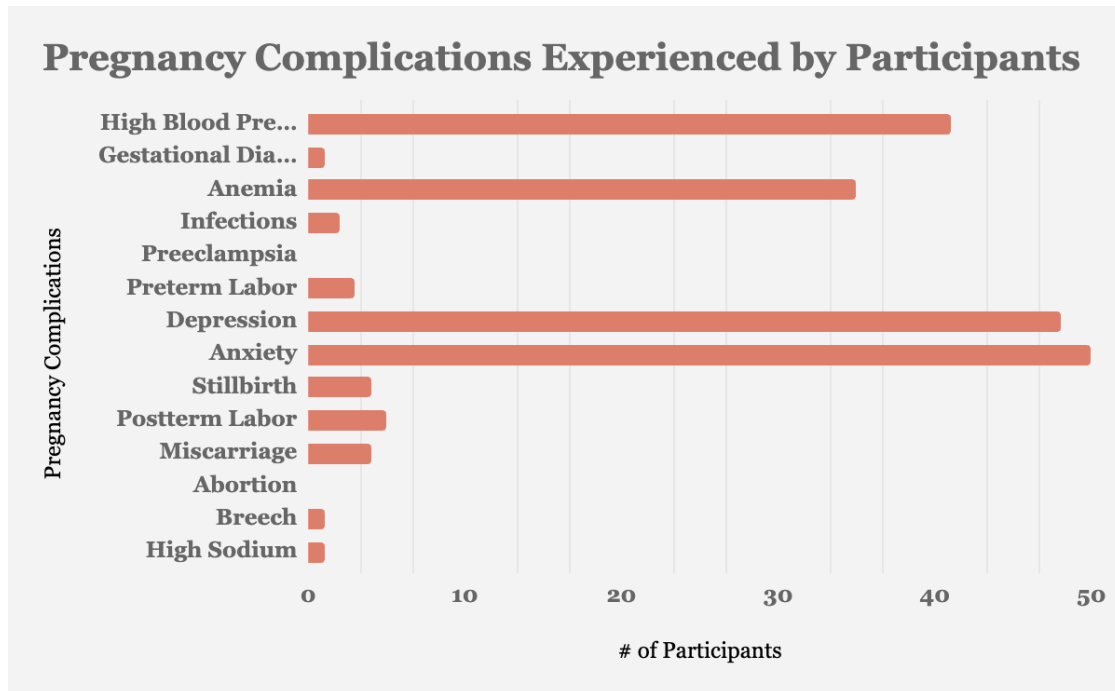
Participants were also asked to report if they ever got sick or injured during their pregnancies. It was noted that 30% of participants contracted Malaria during their pregnancies. Two (2) participants reported contracting skin infections, three (3) reported stomach infections, one (1) reported pneumonia, and one (1) reported chickenpox. Three (3) participants stated that they had been hospitalized at a time during their pregnancies but were unsure why. The remainder of the participants complained of vomiting, nausea, severe headaches, loss of appetite, fatigue, body aches/weakness, and dizziness/blackouts. Reference Graph 3.4.

Graph 3.4

Participant Reported Illnesses During Pregnancy
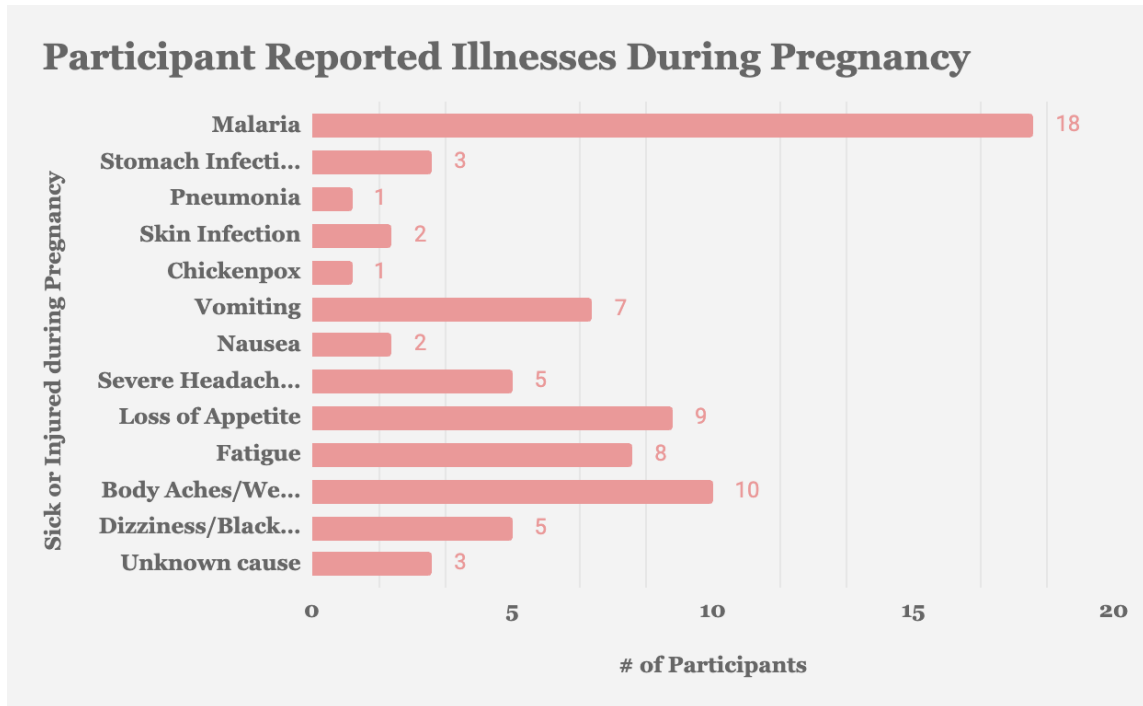
4. **Healthcare Accessibility**

Finally, when participants were asked if they believed maternal healthcare is accessible to them, 53.5% of participants said no, while 46.6% of participants said yes. Each participant provided reasoning as to why they said yes or no, this will be discussed thoroughly in the qualitative section of this chapter.

Graph 3.5

Is Maternal Healthcare Accessible to Participants
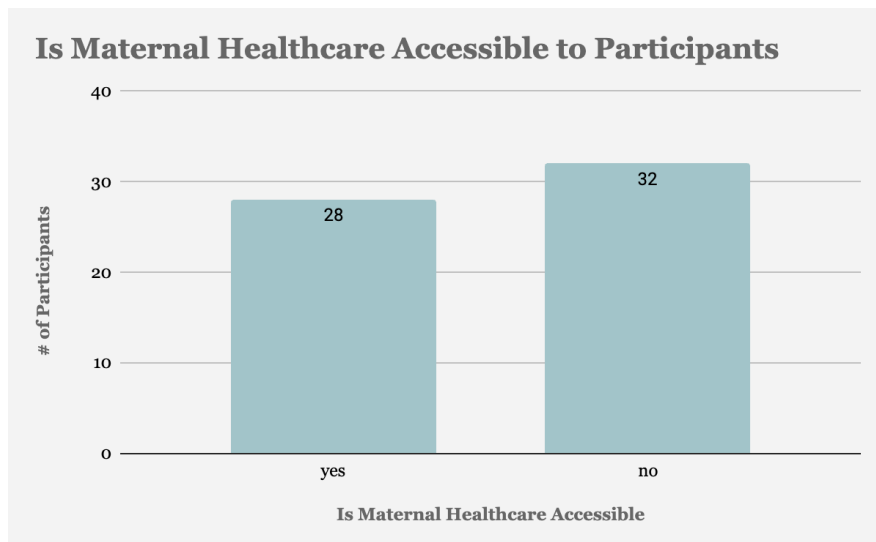
5. Correlation Analysis

To determine if maternal health access and negative pregnancy outcomes are correlated, the Chi-Squared Test of Independence was used. This particular test was chosen as all variables used in this data are nominal. First, the four most prevalent pregnancy complications were considered - High Blood Pressure, Anemia, Anxiety, and Depression. Then they were each independently tested against Insurance Status and Perceived Access to Healthcare.

Null Hypothesis: There is no relationship between the variables.

Alternate Hypothesis: There is a relationship between the variables.

Data in Tables 5.1-5.8 confirms the null hypothesis as the asymptotic significance (2-sided) for each chi-squared test was greater than 0.05.

Table 5.1

Percieved Access to Healthcare * Instances of Anemia

Crosstab

Count

| | | Instances of Anemia | | | Total |
		n/a	no	yes	
Percieved Access to Healthcare	no	1	14	17	32
	yes	0	10	18	28
Total		1	24	35	60

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.435[a]	2	.488
Likelihood Ratio	1.818	2	.403
N of Valid Cases	60		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .47.

Table 5.2

Percieved Access to Healthcare * High Blood Pressure

Crosstab

Count

		High Blood Pressure			Total
		n/a	no	yes	
Percieved Access to Healthcare	no	1	9	22	32
	yes	0	9	19	28
Total		1	18	41	60

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.957[a]	2	.620
Likelihood Ratio	1.339	2	.512
N of Valid Cases	60		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .47.

Table 5.3

Percieved Access to Healthcare * Instance of Anxiety

Crosstab

Count

		Instance of Anxiety			Total
		n/a	no	yes	
Percieved Access to Healthcare	no	1	4	27	32
	yes	0	6	22	28
Total		1	10	49	60

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.651[a]	2	.438
Likelihood Ratio	2.033	2	.362
N of Valid Cases	60		

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .47.

Table 5.4

Percieved Access to Healthcare * Instance of Depression

Crosstab

Count

		Instance of Depression			Total
		n/a	no	yes	
Percieved Access to Healthcare	no	1	7	24	32
	yes	0	4	24	28
Total		1	11	48	60

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.558[a]	2	.459
Likelihood Ratio	1.948	2	.378
N of Valid Cases	60		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .47.

Table 5.5

Insurance * Instances of Anemia

Crosstab

Count

		Instances of Anemia			Total
		n/a	no	yes	
Insurance	no	0	8	11	19
	yes	1	16	24	41
Total		1	24	35	60

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.495[a]	2	.781
Likelihood Ratio	.793	2	.673
N of Valid Cases	60		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .32.

Table 5.6

Insurance * High Blood Pressure

Crosstab

Count

		High Blood Pressure			
		n/a	no	yes	Total
Insurance	no	0	8	11	19
	yes	1	10	30	41
Total		1	18	41	60

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.265[a]	2	.322
Likelihood Ratio	2.502	2	.286
N of Valid Cases	60		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .32.

Table 5.7

Insurance * Instance of Depression

Crosstab

Count

		Instance of Depression			
		n/a	no	yes	Total
Insurance	no	0	3	16	19
	yes	1	8	32	41
Total		1	11	48	60

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	.623[a]	2	.732
Likelihood Ratio	.923	2	.630
N of Valid Cases	60		

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .32.

Table 5.8

Insurance * Instance of Anxiety

Crosstab

Count

		Instance of Anxiety			Total
		n/a	no	yes	
Insurance	no	0	5	14	19
	yes	1	5	35	41
Total		1	10	49	60

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.234[a]	2	.327
Likelihood Ratio	2.426	2	.297
N of Valid Cases	60		

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .32.

III. QUALITATIVE DATA AND ANALYSIS

1. Healthcare Accessibility

1.1 Costs

When asked to discuss whether they found healthcare accessible, participants provided answers that circled around one major theme; cost. Whether they found healthcare accessible or inaccessible, the participants were almost all in agreement about the cost of hospital care being difficult to afford. Because of this, many of the participants said that they would choose a visit to the pharmacy over the hospital. Many participants emphasized that even if they have the money to go to the hospital, they are told to pick up prescriptions that are also very expensive. Several

participants informed interviewers that it would get to a point where they could no longer go to the hospital because they didn't have enough money. One participant commented that *"sometimes we are afraid to go to the hospital because of the costs"*.

1.2 Distance

A majority of the participants stated that the hospital is not too far away and that they can get there easily. One participant, however, noted that she chooses to go to a hospital that's further away because it isn't as expensive.

1.3 Time

The threat of losing time at the market was a deterrent from the hospital for several of this study's participants. They emphasized that it's difficult for them to choose to leave the market because they won't make enough money.

2. **Interactions with Medical Providers**

Several of the participants in this study said that they felt that healthcare providers treated them differently. They confided that they felt unheard, and would just get told to get a medication without having their symptoms listened to. Others said that providers would treat them well as long as they had money to pay for the services. They said that *"the quality of the care depends on how much money you have"*. This theme was echoed by many participants, most saying that if they paid, the doctors were good and would take care of them.

3. **Improvements**

Participants were asked to share what changes they believed could be made to improve healthcare for Kayayei.

3.1 Costs and Insurance

Several of the participants stated that healthcare access would be improved if care was free or at a reduced cost. They also wished that they could have help getting registered for insurance and making sure that all Kayayei have good coverage. Some said that even if all healthcare isn't free, it would help if medications were.

3.2 New Hospital

Many stated that they hoped that a new hospital could be built near the market (or near La Nkwantanang) just for Kayayei. They shared that this would make it easier for them to get care without having to lose out on too much time at the market. They also hoped that the doctors at this hospital would be trained to regard them and treat them better. Others said that if not a new hospital, then at least have doctors that would travel to the market and care for them there.

Chapter IV. Discussion & Conclusion

This chapter will discuss the research questions, objectives, and hypotheses, previously laid out in Chapter 1.

Relationship Between Access to Maternal Healthcare and Obstetric Complications

The Chi-Squared Test of Association was used to determine if a relationship existed between access to maternal healthcare and each of the obstetric complications experienced by the Kayayei. All of these tests returned non-significant P-values. This led to the confirmation of the null hypothesis, meaning that no relationship exists between those variables. Data collected in this study, unlike many of the studies discussed in Chapter 2, found that the Kayayei in this community are often insured and attend monthly/bimonthly prenatal care appointments. Similar to Lattof (2018) however, whether insured or uninsured, the Kayayei were hesitant to visit the hospital due to the expensive co-pays. Many chose to attend the hospital despite these risks because the importance of hospital visits during pregnancy has been emphasized in the Kayayei community. Others among the women expressed feeling driven to attend their appointments because they were afraid that their pregnancies would be dangerous. Due to this, complications such as Anemia, HBP, and Gestational Diabetes were managed by clinicians and more severe complications (ie. preeclampsia) were not highly occurring. While many of the Kayayei insisted that they go to the hospital often for prenatal care, they also insinuated that the care may not be good quality. With this in mind, it's speculated that other factors influence the high rates of obstetric complications among Kayayei. Some of these factors could be living conditions,

lifestyle, working conditions, and quality of care. Further research into these possible factors is recommended.

Pregnancy Complications Most Often Experienced by Kayayei

The most highly occurring obstetric complications among the Kayayei were Anxiety (83.8%), Depression (80%), HBP (68.3%), and Anemia (58.3%). In the case of HBP and Anemia, participants were asked to confirm that they had an official diagnosis. However, due to the stigma surrounding mental health in Ghana, Kayayei were not asked to do the same for Depression and Anxiety. Rather, the symptoms of each were explained and the Kayayei were asked to either confirm or deny if they experienced them. This method returned alarmingly high rates of women complaining of pregnancy-induced depression and anxiety. A further investigation is recommended as pregnant Kayayei experience many significant challenges that make them more vulnerable to mental disorders.

The high rates of Anemia in Kayayei pregnancies could possibly be attributed to lifestyle factors such as Vitamin B-12 deficiencies, Iron deficiencies, or general malnourishment. It can also be attributed to environmental factors such as Malaria contraction.

A further investigation is also recommended to examine the rates of HBP in pregnant Kayayei as this study found that none of the 41 women with HBP confirmed being diagnosed with preeclampsia.

Kayayei and Prenatal Care

91.6% of the Kayayei participants reported attending appointments for prenatal care during their pregnancies, with 86.7% attending most, if not all, appointments. This high number can be attributed to the increased education of Kayayei on the importance of prenatal care. Many

of the Kayayei reported having physicians visit them in their homes (particularly at La Nkwantanang) and in the market to check on their pregnancies and encourage them to seek further care when necessary. When visiting the hospital, Kayayei also reported receiving a list of dates to return for continuing checkups. When outreach measures such as these are conducted by hospitals, a systematic change occurs where underprivileged people are able to access care that they wouldn't have had access to otherwise.

Kayayei Interactions with Healthcare Professionals

Positive relationships between healthcare providers and patients help to improve the general well-being of patients by ensuring that they trust the care being provided to them and communicate their concerns well. This is especially important for pregnant women as many complications require early intervention to prevent escalation. For Kayayei women, positive relationships aren't always guaranteed. Data collected during this study shows that generally, the Kayayei believe they will only be treated well at hospitals if they have enough money to pay for the services. Several of the Kayayei expressed feeling as if their symptoms were being disregarded. Considering this, an improved relationship between Kayayei and healthcare providers will lead to the improvement of Kayayei's maternal healthcare.

Kayayei Impressions of Maternal Healthcare Accessibility

When asked if they believed maternal healthcare was accessible to Kayayei, 28 participants answered '*yes*' while 32 answered '*no*'. Despite most of the Kayayei being insured and attending frequent prenatal and postnatal care appointments, 53% of participants said that maternal healthcare was still inaccessible. Most participants cited that this is due to high costs.

This ties directly into Kayayei's relationships with healthcare professionals. Despite being able to access care, the Kayayei shared that the cost of healthcare services not only stops them from getting necessary medications, but it changes the way they get treated by professionals. Although maternal healthcare at the surface level can be considered accessible, further analysis shows that the quality of this care can vary. This is especially a problem when Kayayei are given prescriptions for medications that they cannot afford to buy. Among the 28 participants that believed maternal healthcare was accessible, several continued on to say that although they can occasionally afford to pay these fees, the costs are still too high. For these Kayayei, surface-level "accessibility" isn't enough.

Conclusion

The remainder of this chapter will provide a summary of the study, a conclusion, and recommendations for policymakers and healthcare providers.

I. SUMMARY OF STUDY

This research study aimed to determine if a relationship existed between maternal healthcare access and obstetric complications among a community of Kayayei in Madina Market. A literature review was conducted to examine what past research has found about the maternal health of Kayayei. It was found that Kayayei had experienced various barriers to their access to healthcare. The research was then conducted over several weeks. During this time, semi-structured interviews were held where Kayayei were asked questions regarding the pregnancy complications they experienced and the extent of their access to healthcare. A mixed-method approach was used to collect both quantitative and qualitative data. Results of this research found that maternal healthcare access and obstetric complications did not have a significant relationship in this community. This was due to the fact that almost all of the Kayayei had access to healthcare resources. However, it was identified that a further concern can be found in the quality of these healthcare resources. The following is a summary of the results of the analysis:

1. No relationship exists between maternal healthcare access and obstetric complications/outcomes.

2. Though the Kayayei in this community have access to maternal healthcare, the quality of this care varies widely.

3. The Kayayei in this community have high percentages of Anemia, High Blood Pressure, Depression, and Anxiety.

4. Costs remain a large barrier for Kayayei to purchase appropriate medications.

5. Kayayei's relationships with maternal healthcare providers lack trust.

II.   *CONCLUSION AND RECOMMENDATIONS*

Understanding the relationships between healthcare complications and the factors that affect them can assist with creating targeted public health policy. The goals of this research project were to address the relationship, or lack thereof, between maternal healthcare access and negative obstetric complications in Kayayei. Addressing this relationship can then lead to structural change that will improve the health of Kayayei and decrease the Maternal Mortality Rate in Ghana. By identifying the non-significant relationship between maternal healthcare access and negative obstetric complications, this research highlights the importance of ensuring quality healthcare and decreasing the costs of medications.

This study recommends that policymakers consider the current structure of the national insurance plan and make changes to further support Kayayei. Possible changes include providing wider coverage for medications and pushing for free primary healthcare.

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