SCHOOL OF PUBLIC HEALTH

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DETERMINANTS OF ANTENATAL CARE ATTENDANCE AMONG TEENAGE MOTHERS ATTENDING CHILD WELFARE CLINIC IN ASHAIMAN MUNICIPALITY

BY

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DECLARATION

I thereby declare that excluding precise references which have been duly acknowledged, the submission is my own work towards the MPH dissertation and, to my knowledge it contains no material which has been accepted for the award of any degree of this University or elsewhere.

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……December 26, 2018……

DATE

DEDICATION

This work is dedicated to all postnatal teenage mothers at Ashiaman municipality especially those teenager mothers who agreed to share their experiences and views about antenatal care services at Ashiaman municipality during their most recent pregnancy before the start of this study.

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ABSTRACT

Background: In Ghana, the major causes of maternal mortality among women of reproductive age are pregnancy and child birth . Despite strategies and interventions that prioritize maternal health, several women still do not receive the recommended maternal health care services, including antenatal care (ANC) services. Teenage mothers have particularly been noted to have lower rates of ANC attendance in many places in Ghana. At the same time, few studies have been done in places like Ashiaman municipality to determine the factors influencing ANC attendance among teenage mothers at Ashiaman municipality**.**Main reason for conducting the study is to determine factors influencing ANC attendance among teenage mothers at child welfare clinic at Ashaiman municipality.

Methods. Across-sectional population-based study was carried out at Ashaiman with 271 randomly selected teenage mothers at child welfare clinic who have children age 0-12months. Data was collected using structured questionnaire. Participants characteristic were described with the use of Descriptive statistics such as frequency and percentage distribution. Factors influencing ANC attendance among teenage mothers attending child welfare clinic were also examined by using statistical like chi-square and logistic regression. A level of 95% confidence was observe and a P-value of < 0.05 was also used to test for the statistically significant. The data was analyzed using STATA Version 15.

Results: 82.7% of the participants attended ANC for four times during their last pregnancy before this study which indicate that ANC attendance was relatively high: ANC attendance was more prevalent among Christians and also increased with age. After adjusting for theoretically relevant potential confounders, factors that independently predicted ANC attendance were birth order, family type, and respondents' perception about punctuality of health staff to work.

Conclusion: The study suggests that unless the above factors are addressed, the benefits of Ghana's free healthcare services may not be realized and maternal mortality may be difficult to address especially among teenage mothers. Therefore, efforts should be directed at educating teenagers about the importance of ANC and supporting some to access and use ANC services provided by skilled providers in health facilities.

ABBREVIATIONS

ABBREVIATION	MEANING
ANC	Antenatal Care
CWC	Child Welfare Clinic
CHPS	Community-based Health Planning and services
EMONC	Emergency Maternal, Obstetric and Neonatal Care
DHIMS	District Health Information Management Systems
GDHS	Ghana Demographic Health Survey
MDGs	Millennium Development Goals
SSA	Sub-Saharan Africa
UNICEF	United Nations Children's Emergency Fund
UNFPA	United Nations Population Fund
WHO	World Health Organization

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CHAPTER ONE

INTRODUCTION

1.0 Background of the study

Global estimates suggest that every minute, at least one woman dies from complications related to pregnancy or child birth, which means 529,000 women die from child birth (WHO, 2010). About 20 more suffer from injuries, infections or disease which translates into approximately 10 million women each year (WHO & UNICEF, 2010). Sub-Saharan Africa still has the highest maternal mortality ratio (MMR) in the world despite strategies and interventions that prioritize maternal health (Kinney et al., 2010).

In countries such as Nigeria, Kenya and Ghana, complications of pregnancy and child birth are the leading causes of deaths among women of reproductive age due to lack of skilled delivery (UNICEF, 2008).

A number of factors contribute to high maternal mortality in Africa. One of such factors is lack of access to antenatal care (ANC) (Ghulmiyyah & Sibai, 2012).

ANC is a preventive healthcare service provided specifically to pregnant women, with the aim of detecting, preventing and alleviating possible health complications that may affect mothers and babies during pregnancy (Suglo & Siakwa, 2016). Antenatal care also means the care, supervision, and attention given to an expectant mother and the fetus during pregnancy up to delivery (Baffour-Awuah, Mwini-Nyaledzigbor & Richter, 2015). It provides an opportunity for pregnant women to communicate with midwives and other health care providers. Also, women are more likely to give birth with a skilled birth attendant if they have had at least one ANC visit (Baffour-Awuah, Mwini-Nyaledzigbor, & Richter, 2015).

Appropriate use of ANC also significantly improves early identification and mitigation of risk factors in pregnancy (Gross, Alba, Glass, Schellenberg, & Obrist, 2012). In contrast, failure to attend ANC or inadequate ANC attendance could led to complications, exacerbate pre-existing conditions or worsen the consequence of unhealthy lifestyle during pregnancy (Gross et al., 2012).

In spite of these benefits of ANC, most women especially teenage mothers still do not attend ANC at all or the recommended minimum four (4) visits (Baffour-Awuah et al., 2015). This suggests a need for continuous research to look at the determinants of ANC attendance especially among teenage mothers. This study hopes to assess the determinants of ANC service utilization among teenage mothers in the Ashaiman municipality of the Greater Accra region of Ghana.

1.1 Problem Statement

ANC is a key strategy to improve maternal and infant health. However, survey data from Sub-Sahara Africa indicate that women often initiate ANC after the first trimester hence are not able to achieve the recommended number of ANC visits (Pell et al., 2013). Consequently, across sub-Saharan Africa, there is wide discrepancy in ANC attendance: although 71% of women attend ANC at least once, only 44% attend ANC four or more times (Kinney et al., 2010). In Ghana for example, ANC coverage decreased from 98.2% in 2011 to 92.2% in 2012 and further decreased to 90% in 2013 (Asiedu, 2017). Data further suggest that not only is ANC attendance among teenage mothers the lowest but also attendance rate has been declining, from 12.9% in 2011, and 12.7% in 2012 to 12% in 2013 (Asiedu, 2017). In the specific case of the Ashiaman Municipality, data from the District Health Information Management Systems (DHIMS) show that teenage pregnancies among girls between the ages of 15-19 years were 710 in 2013; this increased to 836 in 2014. At the Ashaiman Polyclinic in particular, 359 cases of teenage

pregnancies were recorded among girls between the ages of 10-19 years in 2015, out of which only 155 came for ANC at least once.

Several studies have been carried out on the factors that influence utilization of ANC among prenatal women in Africa some of these studies are (Simkhada, Teijlingen,& Porter, 2008). However, few studies have looked at utilization of ANC among teenage mothers attending child welfare clinic and associated factors. For instance, Beck, Davis, & Freeman, (2015) examined client's satisfaction with quality of antenatal care at Korle-Bu teaching hospital in Accra, Ghana. The study adopted a cross-sectional survey design and involved 156 women aged 15- 44 years who reported to the antenatal clinic at Korle-Bu teaching hospital. While the study provided some useful insights into issues of quality of ANC, it did not address the issue of ANC services utilization among teenage mothers' attending child welfare clinic. This knowledge gap could inhibit efforts to improve maternal health in Ghana. The current study therefore aims to determine ANC attendance and associated factors among teenage mothers attending child welfare clinic at Ashaiman municipality.

1.2 Research Questions

The study aims at answering the following questions:

i. What is the prevalence of antenatal clinic attendance among teenage mothers attending child welfare clinic in Ashaiman Municipality?

ii. What is the proportion of teenage mothers who made all the recommended at least four (4) ANC visits during their last pregnancy?

iii. What are the factors that influence ANC attendance among teenage mothers attending child welfare clinic?

1.3 Objective of the Study

1.3.1 General Objective

The general objective of the study is to determine the factors influencing antenatal care attendance among teenage mothers attending child welfare clinic in Ashaiman municipality.

1.3.2 Specific Objective

The specific objectives of the study are to:

i. Establish the prevalence of antenatal care attendance among teenage mothers attending child welfare clinic.

ii. Estimate the proportion of teenage mothers who attended the recommended at least four (4) ANC visits during their last pregnancy.

iii. Discover the factors influencing ANC attendance among teenage mothers attending child welfare clinic.

1.4 Justification of the Study

The outcome of this study could inform the Ministry of Health, health professionals and other health organizations in Ghana and elsewhere on the prevalence of antenatal clinic attendance among teenage mothers attending child welfare clinic. The study outcome could also inform the stakeholders mentioned above on the factors that influence antenatal clinic attendance among teenage mothers attending child welfare clinic. Moreover, the stakeholders could be informed about the barriers to ANC attendance among teenage mothers. All this information could then be used to design and implement interventions to further enhance ANC attendance among teenage mothers at Ashaiman municipality. Thus, the outcome of the study could serve as basiss for health professionals and stakeholders in the maternal health sector to adopt new strategies that would help reduce pregnancy related maternal mortality and morbidity at Ashaiman municipality, Ghana and the world at large. Finally, evidence from this study would add to

existing literature on the topic, and may thus serve as reference material to health professionals, researchers as well as students who may research into antenatal clinic attendance among postnatal teenage mothers and it associated factors in the future.

1.5 Organization of the dissertation

This dissertation will be organized into six chapters. Chapter one presents the introduction to the research, which consists of the background of the study, statement of the problem, research questions and research objectives and justification of the study. Chapter two deals with a review of the literature related to this study. Chapter three presents the methods: it encompasses the population, study design, sample and sampling techniques, instruments, data collection methods and the data analysis techniques. Chapter four presents the results, while chapter five discusses the results. Lastly, chapter six presents the summary of the study, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter will cover a review of existing literature in relation to determinants of antenatal care attendance among teenage mothers. The review will also focus on prevalence and proportion of teenage mothers who make four ANC visits, and the factors influencing ANC attendance. The chapter will also discuss the conceptual frame work of the study.

2.1 Concept and importance of ANC

s ANC can also be explained as the time that gives the opportunity for health workers to present to pregnant women a number of interventions that may be relevant to their health and wellbeing and that of their unborn child (Hofmeyr et al., 2009).

Good care during pregnancy helps reduce the risk for problems during pregnancy and promote fetal health and development. This care also links the woman and her family with the formal health system, increases the chance of using a skilled attendant at birth, and finally contributes to good health through the life cycle(WHO, 2012)care during this period breaks the critical link in the continuum of care and has effects on both mothers and the baby (WHO, 2012). Bhutta et al., (2014) have also indicated in their study that the uptake of maternal services, which include antenatal care, have significant effect for both the safe transition of the mother through pregnancy, labour and survival and health of the baby during early infancy.

2.2 Trends in ANC attendance among prenatal mothers

ANC coverage is an indicator of access and utilization of care during pregnancy within a given year. The WHO recommends a minimum of four (4) antenatal care visits. However, global

estimates indicate that only about half of all pregnant women receive the recommended amount of ANC care (WHO, 2015)

Globally, 71% of pregnant women receive ANC However, only 64% of expectant mothers receive antenatal care four or more times throughout their pregnancy (Stevens et al., 2013). Worldwide, whiles 85% of pregnant women access antenatal care with skilled health personnel at least once, only six in ten, i.e. 58% receives four (4) antenatal care. In regions with higher rate of maternal mortality such as sub-Sahara Africa and South Asia, even fewer women receive four (4) antenatal visits (Dagne, 2010). For instance, a study done using 54 countries show that 77.9% of pregnant women received ANC from skilled providers; in 37 countries, 49.5% of mothers received ANC greater than 4 visits; while 53.6% of all mothers in 54 countries received skilled birth attendant (F. C. Barros et al., 2010).

In sub-Sahara Africa, 69% of pregnant women have been reported to make at least one ANC visit and 44% had four ANC visits (Olincetto et al., 2006). The trend however indicates slower progression in sub-Sahara Africa than in other regions with an increase in coverage of only four (4) percent during the past decade (F. C. Barros et al., 2010).

According to the 2014 Ghana Demographic Health Survey report, 97% of women who gave birth in the 5years preceding the survey received ANC from skilled providers at least once, and 9 in 10 women have 4 or more visits (A. J. D. Barros et al., 2012). Urban women are slightly likely than rural women to have received ANC from skilled providers i.e. 99% and 96% respectively, and more likely to have 4 or more ANC visits (93% and 82% respectively). The percentage of women receiving antenatal care from skilled providers have increased steadily over the past 2½ decades from 82% in 1988 to 97% in 2014 (A. J. D. Barros et al., 2012). ANC attendance among adolescents aged 15-19 years in Ghana from a three (3) year trend from Ghana Health

Service annual report indicated 2.9% in 2011, 12.7% in 2012 and 12% in 2013 (Ayanore & Aryee, 2015).

2.3 Factors Influencing ANC Attendance among Teenage Mothers

A number of factors are known to affect the individual tendency to seek health care (Aseweh Abor, Abekah-Nkrumah, Sakyi, Adjasi, & Abor, 2011). These factors include socio-demographic, community and health facility level factors. These factors are reviewed below in detail.

2.3.1 Socio-demographic Factors

2.3.1.1 Marital Status

Marital status could influence antenatal care seeking behaviour. For instance, unmarried pregnant adolescents are less likely to seek ANC care due to lack of financial and social supports from parents, guardians or spouses (Makii, 2015). Married pregnant adolescents may also lack social independence and decision – making powers to seek ANC. There may be pressure or oppression from the spouse of influential members of extended family forcing pregnant adolescents to accept the decisions made on their behalf (Makii, 2015) .

2.3.1.2 Educational Level

The level of education could also influence pregnant adolescent's utilization of the health facilities as well as the understanding of the importance of seeking health care properly. Low educational status has been identified as a major barrier to the utilization of health care services especially ANC (C N Chaibva, Roos, & Ehlers, 2009). Knowledge of ANC is critical in determining pregnant women's use of antenatal services (C N Chaibva et al., 2009). Moreover, studies have shown that adequate knowledge on benefits of ANC has positive and statistically significant effects (Bhutta et al., 2013). Studies by Aseweh Abor et al., (2011) and Arthur (2012)

are among some studies that have found a positive and significant association between education and maternal health care use.

Overbosch et al. (2004) concluded in Ghana that women's attitude to antenatal care is influenced by their educational level. Since more years of education of a pregnant woman is associated with a choice for sufficient antenatal care. The 2008 Ghana Demographic Health Survey (GDHS 2008) report indicates that the higher the educational level of a woman the more the chance of receiving ANC from a health professional. The statistics range from 96% to 98% for those with no education to 100% for those with at least secondary education receives ANC care.

2.3.1.3 Maternal Age

A study by Owoo and Lambon-Quayefio (2013) found that the number of pre-natal care visit decreased with increase maternal age. Owoo and Lambon-Quayefio(2013) findings were in line with that of Dikenoo (2015) that the prim gravidae woman are more likely to seek ANC than the pluriparous. This finding is laudatory because as the prim gravidae becoming pregnant for the first time may out of fear of complications due to lack of well-developed biological system resort to seeking ANC earlier than women of higher parities (Arthur, 2012).

According to Mudokwenyu-Rawdon and Chaibva (2010), a woman's age can influence her decision to initiate ANC late or not to attend ANC at all. He said pregnant adolescent might tend to hide their pregnancies because they might be unmarried, attending school, afraid of been prejudicial against their health or they might be simply too young and ignorant to appreciate the value of ANC (Mudokwenyu-Rawdon & Chaibva, 2010).Similarly, he also added pregnant adolescent also might shun ANC services for fear of being labelled promiscuous. On other hand older adolescents who have peaceful pregnancies and deliveries with previous pregnancies might see no reason to attend ANC (Mudokwenyu-Rawdon & Chaibva, 2010).

2.3.1.4 Ethnicity

Antenatal Care utilization varies based on maternal ethnic group (Victora et al., 2010). A study by Shah et al., (2015) showed disadvantaged groups such as Janajatis and Magar were less likely to receive ANC services than the upper caste group such as Brahmin and Chetri. This upper caste was also more likely to complete the recommended four (ANC) check-up compared to the lower caste group expectant mothers (Shah et al., 2015).

The timing of the first visit varied between ethnic groups in Kenya. Kurdish women were less likely to use ANC services in Turkey (Victora et al., 2010) in addition to the above,(Shah et al., (2015) indicate more marginalize ethnic group were less likely to use ANC.

2.3.1.5 Religion

Religion is noted to have great influence on ANC attendance among expectant mothers. Christian were more likely to go for ANC visit than the Hindus and Buddhist according to a study conducted in India by (Shah et al., 2015) . A study conducted in central region of Ghana by Dikenoo (2015) also revealed certain religious denomination resort to some beliefs and practices which mitigate the overall number of ANC received thereby contributing to incomplete ANC utilization. In addition to above Dikenoo also said in Ghana, some religious groups and Spiritual churches tend to focus their ANC periods around prayers and fasting while traditionalist tend to focus theirs around herbs, charms, beliefs and other practices (Dikenoo, 2015).

2.3.1.6 Financial Status

ANC attendance is lower among women who needed it most like the destitute, illiterate or those women with lower education and women in rural areas. A significant challenge is that they lack the financial ability to pay for ANC or the treatment given during ANC (Målqvist, Lincetto, Du,

Burgess, & Hoa, 2013). Women who are financially sound have higher probability of attending more ANC visits than women who are poor (Målqvist et al., 2013). Generally, it can be concluded that financial status of a woman is still a major contributing factor when it comes to utilization of maternal health services in Ghana (Målqvist et al., 2013).

Even though these services are provided free in Ghana, pregnant women are still not able to make the required antenatal care visit as recommended by W.H.O for four ANC visit during pregnancy to help prevent health effects of child birth and reduce the rate of maternal and child morbidity through delivery (Arthur, 2012). Kyabayinze et al (2010) found out that in Western Uganda the ability of a woman to afford antenatal care (ANC) service has a significant association to the number of ANC visits she is likely to make.

2.3.1.7 Place of Residence

The place of residence, either rural or urban, and the geographical location (region) also affect ANC service utilization by an expectant mother. According to Macha et al., (2012), urban expectant dwellers are relatively closer to health care facility than their colleagues in rural areas in developing countries, and are thus more likely to utilize ANC services. Ebu,(2014) reported that more than a third of rural women have to travel more than 5km to modern providers of ANC in Ghana, thus accessibility to health care service may be much easier for urban dwellers than rural dwellers thereby increasing chances of pregnant women in urban centers using ANC compared to their rural counterparts. It was then concluded that differential access to health care facility between the rural and urban centers reduces utilization of maternal health care service for the rural dwellers (Ebu, 2014).

2.3.1.8 Knowledge about ANC

Studies have shown that adequate knowledge of ANC has a positive and statistically significant effect (Simkhada et al., 2008). In a related study conducted in Nigeria by Adekanle and Isawumi (2008), the findings indicated that health care providers and pregnant women's ignorance about ANC was one of the factors affecting ANC attendance. Adolescents were more likely to delay or not attend ANC. Knowledge of ANC is critical in determining pregnant women's use of antenatal care service (Adekanle & Isawumi, 2008) . Moreover, studies have shown that adequate knowledge on benefits of ANC has a position and statistically significant effect (Ebu, 2014).

2.3.2 Community Level Factors

The community in which a pregnant woman lives has influence on her level of ANC utilization. Some of these community level factors include; Stigma, Spousal and family support, autonomy of a woman in decision making, beliefs and taboos, and availability of transport (Najafi-Sharjabad, Yahya, Hejar Abdul Rahman, & Manaf, 2013).

2.3.2.1 Stigma

According to Matua (2004) as cited in Chaibva (2009), pregnant adolescents might shun ANC services for fear of being labelled promiscuous. In 19 out of 26 developing countries, women who were 19 years or younger were reportedly less likely than older women to seek ANC from health professional(Cynthia Nombulelo Chaibva, 2009). Pregnancy disclosure influences timing of ANC. Results from a quantitative study conducted in sub-Sahara Africa show that adolescent and unmarried younger women hide their pregnancies and delay ANC to avoid the potential social implication of pregnancy disclosure such as the exclusion from the school, expulsion from

their (natal) home, partner abandonment, stigma and gossip. In contrast, older women do not make active effort to hide their pregnancy hence turn to report early for ANC (Pell et al., 2013).

2.3.2.2 Spousal and Family Support

A study conducted in Nepal found that mother-in-law's negativity influence attendance of ANC of their daughters-in-law (Finlayson & Downe, 2013). Singh, Rai, & Singh, (2012) in their study also found that both mothers-in-law and spouses heavily influence decision about where and whether a teenage mother should go for antenatal care.

Encouraging men's participation in ANC is a critical component due to their low participation in ANC activities(Byamugisha et al., 2011). Social support has been reported to affect attitudes and behaviour, including satisfaction with ANC services, thus exposing pregnant adolescents who have high stress and low social support network to have more neonatal and obstetric problems than those who have low stress and high social support network. Attending antenatal clinic easily will assist in the identification of stress and depression resulting in appropriate management of the identified problem (Byamugisha et al., 2011).

2.3.2.3 Autonomy of a woman in decision making

Women's autonomy was positively related to ANC utilization in rural north India (Singh et al., 2012). Women from male headed households were significantly less likely to use ANC service in Nepal. A similar study in Nigeria also found husband's refusal was one of the major reasons for non-utilization of ANC services in Nigeria (Byamugisha et al., 2011).

2.3.2.4 Religious beliefs and taboos

Religious beliefs in certain societies may pose threats to accessing ANC services because some religious groups believe in prayer hence prefer home deliveries with no ANC from skilled health

personnel (Cynthia Nombulelo Chaibva, 2009). A study conducted in Malawi by (Chiwaula, 2011) also indicated cultural beliefs have negative influence on utilization of ANC.

Muslims women were much more likely to seek routine ANC in India (Pallikadavath, Foss, & Stones, 2004) than other religious. In Hausa culture God's will was the strongest factor in non-utilization of ANC in Nigeria (Adamu & Salihu, 2002). Women who follow Muslim, orthodox and Protestant religions were more likely to use ANC in Ethiopia. and (Overbosch, Nsowah-Nuamah, Van den Boom, & Damnyag, 2004), also indicated Cultural beliefs and ideas about pregnant have influence in women use of ANC.

2.3.2.5 Availability of Transport

Limited transportation facilities tend to mask the provision of appropriate quality of maternal health care (Pell et al., 2013). The consequences of this have been high rate of maternal death and insecurity for the expectant mothers. A study by Overbosch et al. (2004) also indicated absence of comfortable transportation and the pregnant woman's physical inability to travel long distance as the reason why most women do not use antenatal care services. Moreover, many qualitative studies have also found that uncomfortable transport was a barrier to ANC utilization (Mumtaz & Salway, 2009).

2.3.3 Health Facility Level Factors

Some of the facility factors influencing ANC attendance include distance to ANC clinic, cost of services, Transport, Staff attitude, availability of logistics and services (Kyei, Campbell, & Gabrysch, 2012).

2.3.3.1 Distance to ANC Clinic

Several qualitative studies have shown that the distance to ANC service was a barrier to ANC service utilization (Kyei et al., 2012). Distance and cost were also identified as some of the factors for inadequate utilization of ANC services. Moreover, many qualitative studies have also found poor road condition and difficulties in crossing big rivers as barriers to ANC utilization (Kyei et al., 2012).

2.3.3.2 Accessibility

Accessibility is the degree to which individuals are facilitated in their ability to gain entry to and receive care from the health care system (Kiwanuka et al., 2008). Factors influencing this may include geographic, financial, social and organizational considerations, and are related to both the provider of healthcare and the receiver (Kiwanuka et al., 2008). The distance from the health facility was one of the most important factors leading to low turn-out of mothers for facility deliveries and is closely linked to rural residence and poverty (Babalola & Fatusi, 2009). And as such fewer women in rural areas were reported to attend antenatal clinic. Inequity in access to health services is said to have increased important health indicators such as infant mortality rate (IMR) and maternal mortality rate (MMR) have stagnated and even worsened for the poor (Babalola & Fatusi, 2009).

2.3.3.3 Cost of ANC Service

Financial constraint is one of the major important factor in non-use of ANC service. The cost of service, including transportation and necessary laboratory tests were major factors inhibiting service utilization (Simkhada et al., 2008). Qualitative studies by Solway, Estes, Goldberg, and Berry, (2010) also support this finding. Women who perceived ANC from private hospital to be superior were prevented from using this service because of the high cost. Free or subsidized

service improved uptake of ANC among urban slum dwelling women (Solway, Estes, Goldberg, & Berry, 2010).

Solway et al., (2010) found that the introduction of NHIS increased access to health care by taking away the out of pocket cost. Again, there is enough evidence from a study that suggest that members of upper caste group were more likely to utilized health care. Navaneetham and Dharmalingam, (2002) also reported that access to health insurance is significantly associated with access to prescription medicine among adult women through lowering out of pocket cost.

2.3.3.4 Staff Attitude

Poor quality of care and negative attitudes of service providers were barriers to ANC utilization in Zimbabwe. It was highlighted that poor relationships between patients and health care providers, rude and unfriendly attitude of nurses were major reasons women preferred not to be referred to some hospitals (Mannava, Durrant, Fisher, Chersich, & Luchters, 2015).

Not providing respectful care from providers such as doctors and midwives may lead to dissatisfaction with the health system, diminishing the likelihood of seeking antenatal care (ANC), delivery and postnatal services (Mannava et al., 2015). Moreover; negative attitudes and behaviours could undermine the quality care and the effectiveness of maternal and infant health promotion efforts. In addition, compromising women's essential right to dignified and respectful maternal healthcare.

Taken together, the attitudes and behaviour of maternal health care providers are important determinant of maternal and infasnt health outcomes (Mannava et al., 2015).

2.3.3.5 Personnel Expertise

Inadequate number of skilled birth attendants and medical resources mask the provision of appropriate quality maternal health care. This results in lack of access to quality health care,

which is seen as a complicated problem especially in developing world (A. Atinga & A. Baku, 2013).

A similar study argued that while health care workers perceived focused antenatal care as beneficial to both the pregnant mother and the unborn child, shortage of human and material resources impeded the successful implementation of focus antenatal care (Renfrew et al., 2014). ANC service utilization is also influenced by the quality of health care service, which is dependent on woman's confidence in health care providers and their mutual respect for her (Renfrew et al., 2014).

2.3.3.6 Referral System

A weak health referral system to support case management of complications of pregnancy inevitably reduces the overall impact of ANC(Lincetto, Mothebesoane-Anoh, Gomez, & Munjanja, 2006). To improve on quality of ANC, interventions such as improving on staffing, referral system and transportation is important. In addition, adequate referral and reliable transportation to a hospital or other health facilities in the event of an emergency also have impact on ANC utilization (Lincetto et al., 2006).

According to Macintyre and Hotchkiss (1999), Health workers at the community level are unable to enforce referral during emergency due to financial implication associated with transport and related matters. In an effective and efficient health system, referral can reduce stillbirth by 27%, neonatal deaths by 18% and maternal death by 50% (Ten Hoope-Bender et al., 2014).

2.3.3.7 Availability of Logistics and Equipment

The quality of antenatal care is reliant on a number of supply-side factors which include supplies and logistics (drugs and non-drugs), medical, equipment, appropriate technology and ability to handle maternity cases (Kparu, 2016).

A study conducted by Yengo (2009) on nurse's perception of FANC service in a district health facility in Dar Es Salam and shortage of human resources was cited as a Major obstacle to the successful implementation of FANC. Kparu (2016)noted that the Ghana Health Service (GHS) had human resources constraints and high attrition rate of a limited number of trained staff was a contributing factor to poor maternal health delivery. Staff training on-job during outreach to ensure client compliance, infrastructure strengthening to ensure availability of space, more equipment and supplies for providing service are requirement for sustainable provision of FANC (Birungi et al., 2008).

2.7 Conceptual Framework

The conceptual framework for this study was adopted from Anderson Health Utilization Model (1973). The model explains factors that influence individual's use of a health service and helps to predict level of utilization. Further, the model explains three factors such as predisposing, enabling and need factors. These individually or synergistically contribute to influence utilization. The predisposing factors include demographic factors such as age, marital status, education, religion, occupation and and others. Enabling factors include income, cost of health service, means of transport, staff attitude and attitude of community members towards teenage pregnancy while the need include perceived symptoms and general state of well being including personel expertise. In applying these to the study, the demographic, enabling and need factors have effect on the utilization of antenatal care among adolescents.

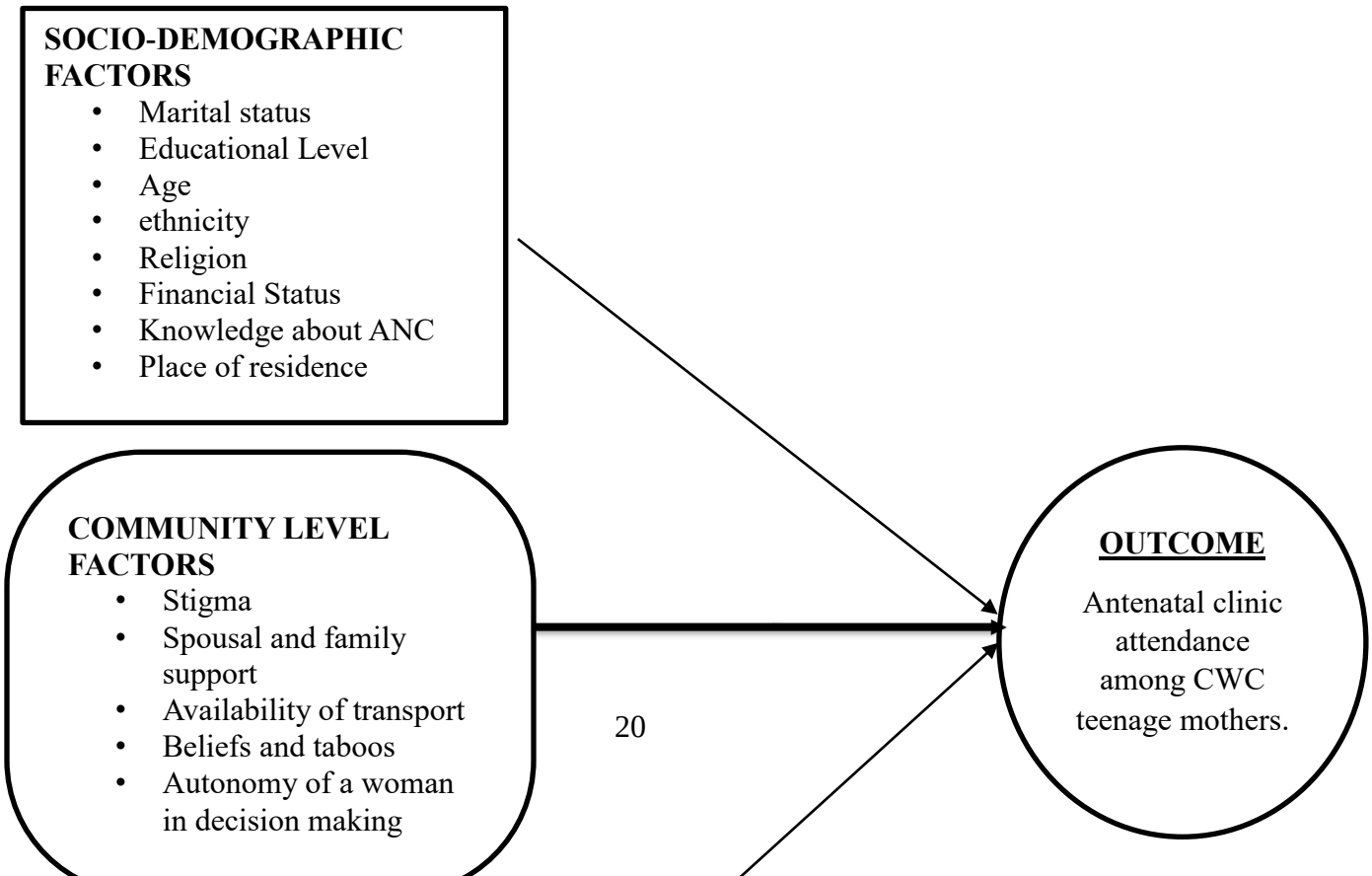
Figure 1 presents the conceptual framework for the study. The framework presents several factors that could influence ANC attendance among teenage mothers. The outcome variable is antenatal clinic attendance. The decision to attend antenatal clinic could be influenced either directly or indirectly by individual socio-demographic factors, community level factors, and facility factors.

One of the most critical set of factors that could influence ANC attendance is the socio-demographic factors of an individual such as maternal age, educational level, financial status, marital status.

Age is a factor that suggests one's physical and mental ability to understand issues relating to pregnancy and antenatal care. In addition, community level factors that can also influence ANC attendance are stigma and women's position in the household and society. in addition, educational level of adolescents could influence antenatal care attendance. Women with higher education have a higher likelihood of attending antenatal clinics. Furthermore, women working are more likely to attend antenatal clinics than those not working.

Facility level factors that could also influence ANC attendance include distance, attitude of staff, cost of service, accessibility of ANC service, reliable transport to other hospital in case of emergency, and quality of care rendered at ANC clinic. Quality of care related variables include number of trained health personnel, availability of logistic sand equipment, adequate referral system. All the above factors directly or indirectly, could influence the teenage mother's use of health facility during pregnancy. When these factors hinder the utilization of ANC service and any pregnancy risk are not detected and managed properly it could lead to infant mortality and maternal morbidity and maternal disability in later life.

Figure 1: Conceptual framework showing potential factors influencing ANC Attendance among teenage mothers



FACILITY FACTORS

- Distance to ANC clinic
- Accessibility
- cost of ANC
- Staffs attitude
- Personnel expertise
- Referral system
- Availability of logistics equipment.

Source: Adapted from (Andersen & Newman 1973)

Andersen, R., & Newman, J. F. (1973). Societal and individual determinants of medical care utilization in the United States. *The Milbank Memorial Fund Quarterly. Health and Society*, 95-124.

2.8 Chapter Summary

From the literature, it is clear that there are several factors influencing ANC utilization among prenatal mothers' especially teenage mothers. There is also substantial evidence indicating the impact of prenatal care on pregnancy outcomes. This influence is more highlighted in developing countries and underserved populations. Despite improvements in prenatal care, which can help obtain better prenatal outcomes, various pregnancy, child birth and neonatal complications still arise. Various studies have shown that problems related to prenatal care including delayed care and treatment, inadequate care and medical advice and poor adherence to medical suggestions could lead to the persistence of such adverse outcomes. In order to improve on maternal and neonatal health available interventions regarding maternal and neonatal care need to be enhancing by identifying factors influencing ANC utilization and providing solutions to help

address them. Even though there are several studies, none have actually looked at ANC utilization among teenage mothers attending child welfare clinic in Ghana. No literature is found on the subject pertaining to Ashaiman municipality. This therefore justifies why this study seeks to assess the determinants of antenatal care attendance among teenage mothers in Ashaiman municipality. Thus this study is designed to fill the current gap in literature by assessing the determinant of ANC attendance among teenage mothers.

CHAPTER THREE

METHODS

3.0 Introduction

This chapter outlines the methods used in the study in term of design of the study, target populations, study area, sample size estimation and procedure for sampling, techniques for data collection and analysis and also discussion of ethical issues here.

3.1 Study Design

The design of a research is seen as various plans or techniques used by the researcher to answer the research questions (Saunders et al., 2007). A cross-sectional retrospective quantitative survey design was adopted to investigate the factors influencing ANC attendance, teenage mothers making four ANC visit and prevalence of ANC attendance among postnatal teenage mothers. The design is chosen for the study because it is easy, cheap, and can be done within the short time period allocated for this MPH dissertation research. A retrospective design is also

appropriate because this study aims to reconstruct events (i.e. ANC) that have occurred in the past.

3.2 Study Area

The study was carried-out at Ashaiman municipality. Ashaiman is known to be one of the municipalities in greater Accra region that shares boundaries with Tama Metropolitan Assembly to south and west and bounded to the north and east by Kpone Katamanso district. The municipality is made up of seven sub-districts with an estimated population of 298841(GSS, 2010). Female adolescents between the ages of 13 -19 years are estimated to be 15169 (5.1%) of the total population.

Ashaiman is a cosmopolitan city that has one polyclinic, two (2) health centers and eighteen private hospitals that support the public health facilities in providing the needed health services to the inhabitants within the city. Some of the common diseases usually reported are anemia in pregnancy, malaria, diarrhea, RTI, sexual transmitted infection, Tuberculosis, high incidence of teenage pregnancy, and drug abuse. The municipality recorded a total ANC attendance of 40169 in 2014, 49370 in 2015, and 48364 in 2016. The registrants for 2014, 2015 and 2016 were 11286, 12684, and10,362 respectively. Delivery recorded within the same period in the municipality was 5964 in 2014, 6617 in 2015, and 7404 in 2016, with this number teenagers between the ages of 13-19 who came for ANC were 359 and only 155 attended at least four ANC visit before delivery according to the district health information management system.The study area was choosen because Ashiaman is one of the municipality challenge with high incidence of teenage pregnancy due to it been highly densily populated in nature especially at the slum areas.Various indicators on reproductive and child health report and it data reveals that the municipality is challenge with teenage pregnancies and it related complications.Since most of

teenage pregnancies are unplanned and teenagers lack knowledge on caring for their pregnany before labour hence the need to know the determinants of poor antenatal care attendance.

3.3 Study Population

The population of the study comprises of teenage mothers between the ages of 13-19 years who are attending the child welfare clinic in Ashaiman municipality.

3.3.1 Inclusion Criteria

All teenage mothers between the ages of 13-19years who are attending child welfare clinic at Ashaiman municipality with children between the ages of 0-12 months and have shown interest to participate in the study were recruited to participate in the research.

3.3.1 Exclusion Criteria

All teenage mothers between the ages of 13-19years who are attending child welfare clinic at Ashaiman municipality with children between the ages of 0-12 months and have shown no interest to participate in the study and not residence of Ashaiman were excluded from participating in the study.

3.4. Sampling Size determination

The study sample size was derive by the use of Cochran formula, which is:

Formula $N = \frac{t^2 x p\ (1-p)}{m^2}$

Where N = sample size, t= confidence level of 95% (standard value of 1.96), m = margin of error = 0.05 and p = prevalence of antenatal attendance = 80% (0.8) (proportion of antenatal attendance in Ashaiman municipality from the district health information management system)

$N = \frac{t^2 x p\ (1-p)}{m^2}$

$$N = \frac{(1.96)^2\ (80\%)\ (1-p)}{0.05^2}$$

$$N = \frac{3.8416 \times 0.8\ (1-0.8)}{0.05^2}$$

$$N = \frac{3.8416 \times 0.8\ (0.2)}{0.0025}$$

$$N = \frac{3.07328\ (0.2)}{0.0025}$$

$$N = \frac{0.614656}{0.0025}$$

$$N = 245.8624$$

$$N = 246$$

To make-up for non-response, 25 participants or 10% ($\frac{10}{100}$x245.8624) will be added. This will add-up to a total of 271 participants.

3.5 Sampling Techniques

The sample for the study was selected from accessible population of teenage mothers attending child welfare clinics at selected health facilities in the Ashaiman municipality. To select a representative sample, a multi stage sampling technique was followed.

First, Ashaiman municipality has seven (7) sub-districts. Three was purposively selected e.g. one Sub-district from a slum area, one from a well-planned settlement area and the other one from a Muslim dominated community. Within these three sub-districts namely Amuidjor, Tsinaiagber and Maamomo sub districts, there are four health facilities which serve as site for the provision of child welfare clinic (CWC) services. Three child welfare clinic sites were selected out of the four CWC sites from these three sub-districts. This was conducted by giving a number to each clinic site, and asking a blind folded person to pick the required number from the three

bowls containing piece of folded paper, which have numbers written on them. The moment the selection procedure was done and total sample size of 271 was distributed equally among the three clinic sites of child welfare clinics . This resulted in an average of 91 participants for each child welfare clinic site.

Second, a simpsle random sampling procedure was used to recruite individual teenage mothers who have children aged between 0-12 months who are seeking for child welfare clinic services. All registers at child welfare clinics contain the names and ages of mothers who attend the clinic for CWC services. These registers for each clinic wias obtained and all teenage mothers with children 0-12 months listed and given number such as (C1, C2 …… Cn). Based on this information, an electronic or computer-based number generator was used to randomly select the required respondents needed (i.e. each clinic site had 91).

Thirdly the researcher then went forward to interview the selected teenage mothers individually at the various child welfare clinic sites they were selected either before they were seen or immediately after they received the health care services they needed at the child welfare clinic.

Finally, the selection process was repeated for replacement, when a mother who is selected randomly selected refuses to participate in the study.

3.6 Methods For Data Collection and Tools

The data was collected through a face-to-face survey with a structured questionnaire. The questionnaires included items concerning social and demographic characteristics such as age, marital status, religion, educational level, NHIS status, ethnicity, ANC attendance during previous pregnancies and teenage mothers making recommend four (4) ANC visits.

In addition, there were items on community level factors, and facility level, such as autonomy, proximity to facility, cost of service, staff attitude, accessibility, availability of referral system,

and quality of care. This questionnaire was developed in English language, but the interviews was conducted in English, *Ga* and *Twi* depending on which of these languages a respondent speaks.

3.7 Pre-Testing

The questionnaire was pretested at Kpone Health Centre, one of the facilities outside the catchment area of Ashaiman municipality. The place however has similar demographic characteristics as Ashaiman municipality. This helped to detect flaws and the necessary changes made before the instrument was finalized for use.

3.8 Quality Control

Regular verification and validation of data to ensure all questionnaires are completed, filled appropriately and all information were accurately collected and was done by the principal investigator. All data were securely handled by using password protector on the computer. Data collected on each respondent was cross-checked and all inconsistencies resolved, and entry double made. After that the data is entered and stored in an electronic device or computer-based system , the hard copy of the questionnaires was then kept inside the locker and lock for safe keeping.

3.9 Variables

3.9.1 Dependent Variable

The dependent variable is antenatal care attendance during the most recent pregnancy. This was measured both in terms of whether any visit was made at all (dichotomous outcome) and the number of ANC visit (e.g 1, 2, 3, 4, 5+).

3.9.2 Independent Variable

Community level factors include Stigma, Spousal and family support, Availability of transport, Beliefs and taboo, and Autonomy of a woman in decision making

Socio-demographic factors will include Age, Religion, Ethnicity, Educational level, Financial status, Marital status, Knowledge about ANC and Place of residence

Health facility factors which include Distance to ANC clinic, Accessibility, Cost of ANC, Staffs attitude, Personnel expertise, Referral system, Availability of emergency obstetric care, and availability of logistics and equipment

3.1 Analysis of Data

Participants characteristics were described using descriptive statistics such as frequency and percentage distribution . Factor influencing ANC attendance were analysed by the use of Inferential statistical analyses such as chi-square, bivariate and logistic regression. A 95% confidence level was used, and a P value < 0.05 was also agreed to be statically significant. All the data analysed using STATA 15 software.

3.11 Ethical Issues

Approval was sought from the Ethical Review Committee of the Ghana Health Service (GHS) through the School of Public Health, University of Ghana before commencement of the study. Permission was also asked from the district health director and personnel in charge of the

selected facilities. Informed consent of study participants was sought before including them in the study.

3. 11.1 Potential benefits and risks

There was no evidence of potential risk since no drugs or chemicals was administered. There was no direct benefit to the study participants. However, respondants may indirectly benefit from the study as findings may inform interventions to improve antenatal care attendance.

3.11.2 Privacy and Confidentiality

Privacy and confidentiality were maintained during and after data was collected from the participants by making sure Information collected from the participants are kept for the study alone, without any effect on their care seeking at the facility, the interview was conducted in a conducive environment free of a third party to ensure privacy, the data was coded with ID numbers to reduce the possibility of tracing the information gathered back to respondent to ensure confidentiality, coded question was locked in a shelf with only the researcher having access to it, entered data were saved with a password known to only the researcher. The participants identity was also be kept secret.

3.11.3 Compensation

The researcher gave a handkerchief to every respondent for her time.

3.11.4 Consent

Respondants were informed through a written informed consent process that their participation is voluntary and they have the option to withdraw from the study at any point of time without consequences.

3.12 Chapter Summary

In conclusion, chapter three is basically an action plan showing how the research is going to be carried out in terms of the study design, study area, sample size and how it is determined, data collection tool and procedure to be used, sampling procedure, and how ethical clearance will be obtained. The rest of the dissertation has presented and discuss the results of the research.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the results of the study. The chapter is divided into two sections. The first section describes the background characteristics of respondents, prevalence of antenatal care (ANC) attendance among teenage mothers, places ANC was attended and proportion of teenage mothers who attended the recommended 4 ANC visits. The second section presents findings from the bivariate and logistic regression analyses showing the determinants of ANC attendance among teenagers.

4.1 Socio-Demographic Characteristics of Participants

Table 4.1 presents the respondents background characteristics. In all, 271 teenagers attending child welfare clinic were interviewed for the study. The age distribution of the respondents showed that 17.7% were within the age group 16-17 while 82.3% were within the age group 18-19 years. The mean age was 18.28years (SD = $\pm$ 0.87). Slightly more than one- third (35.8%) of the respondents were cohabiting; 34.7% were married; and 29.5% were single. A higher proportion (30.6%) of the teenagers had secondary education; 19.2% had tertiary education, 18.8% had primary education and 31.4% had other forms of education. Majority (76.8%) of respondents had a parity of one. With regard to birth order, 76.0% of births were first order while 24.0% were second order. About 75.6% of the respondents lived in nuclear families.

Table 4 1: Socio-demographic characteristics of respondents (n = 271)

Variables	Frequency	Percent
Age		
(Min, Max)	(16,19)	
Mean (SD)	18.28±0.87	
16-17	48	17.7
18-19	223	82.3
Marital status		
Married	94	34.7
Cohabiting	97	35.8
Single	80	29.5
Education		
Basic (Primary and Junior High School)	51	18.8
Secondary	83	30.6
Vocational Training	85	31.4
Tertiary	52	19.2
Religion		
Christian	192	70.8
Muslim	66	24.4
Other religious groups	13	4.8
Occupation		
Unemployed	78	28.8
Apprentice/ maid Servant	47	17.5
Trading	77	28.4
Unemployed	69	25.5
Ethnicity		
Akans	99	36.5
Ewe	67	24.7
Hausa	55	20.3
Other ethnic groups	50	18.5

Number of children		
One	208	76.8
Two	55	20.3
Three	8	3.0
Provided money for ANC		
Husband	188	69.4
Parents	49	18.1
Other persons who support	34	12.5
Birth Order		
First	206	76.0
Second	65	24.0
Family type		
Nuclear	205	75.6
Extended	66	23.4
Total	**271**	**100.0**

4.2 Prevalence of Antenatal Care Attendance

The study sought to estimate the prevalence of ANC attendance among teenage mothers attending child welfare clinic at Ashaiman Municipality. The results are shown in Figure 4.1. Some 82.7% of the participants attended ANC at least once during their most recent pregnancy before this study while 17.3% did not attend antenatal care at all. Figure 4.2 also shows the places where antenatal care was received. About 46% received antenatal care from the polyclinic; 28.1% at the hospital; 21% at health centre; and 4.9% at the maternity home.

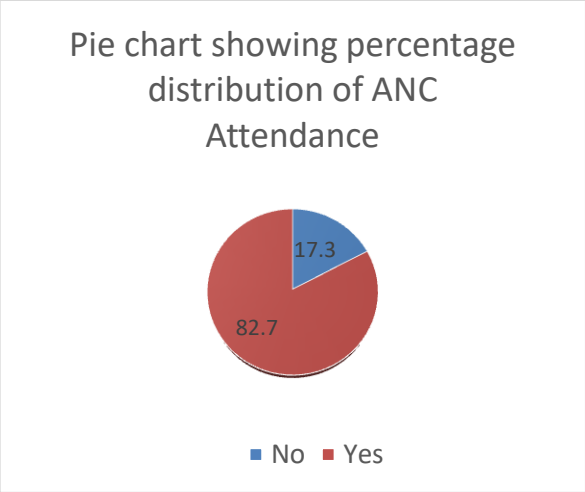


Figure 4 .1: Prevalence of ANC attendance

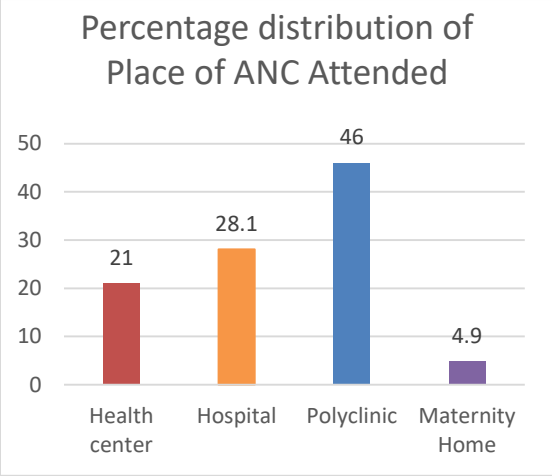


Figure 4. 2: Place of ANC attendance

In addition to estimating overall prevalence of ANC attendance, one of the objectives of this study was to estimate proportion of teenage mothers who made the recommended 4 ANC visits. Figure 4.3 shows the results. None of the 82.7% respondents who reported attending ANC at least once attended less than 4 times. However, 31.73% attended for 4 times, 21.40% visited 5 times, and 29.87% attended ANC for 6 times.

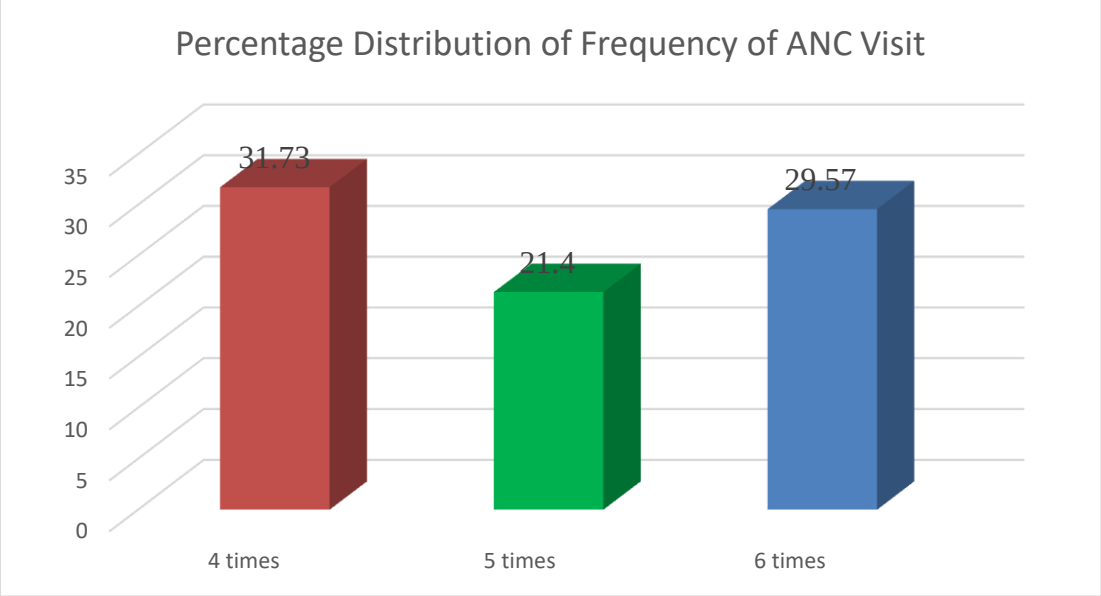


Figure 4 3: Frequency of antenatal care visit

Table 4.2 also shows timing of antenatal care initiation. Some 72.3% initiated antenatal care in the first trimester, 20.7% in the second trimester and 7.0% in the third trimester.

Table 4 2: Percentage Distribution of Timing of Antenatal Care Initiation

Timing of ANC Initiation	Frequency	Percent
First trimester	196	72.3
Second trimester	56	20.7
Third trimester	19	7.0
Total	**271**	**100**

4.3 Factors associated with ANC Attendance

4.3.1 Socio-demographic factors

Table 4.3 presents results on socio-demographic factors that are related to ANC attendance. Chi square test was used to test for associations between the dependent and independent variables. However, for cases less than 5 cell counts, fisher's exact test was used to test for the association

Table 4 3: Socio-demographic factors associated with ANC Attendance (Bivariate analysis)

Variable	Attended ANC		Chi-square *P*-value	Fisher's Exact Test
	No	Yes		
Age				
16-17	4(8.3%)	44(91.7%)		0.091
18-19	43(19.3%)	180(80.7%)		
Marital Status				
Married	27(28.7%)	67(71.3%)	0.001*	
Cohabiting	12(12.4%)	85(87.6%)		
Single	8(10.0%)	72(90.0%)		
Educational level				
Basic (Primary and JHS)	4(7.8%)	47(92.2%)		0.000*
Secondary	15(18.1%)	68(81.9%)		
Vocational	7(8.2%)	78(91.8%)		
Tertiary	21(40.4%)	31(59.6%)		
Religion				
Christian	35(18.2%)	157(81.8%)		0.533
Muslim	9(13.6%)	57(86.4%)		
Other	3(23.1%)	10(76.9%)		
Occupation				
Formally employed	3(3.8%)	75(96.2%)		0.000*
Apprentice/maid servant	13(27.7%)	34(72.3%)		
Trader	8(10.4%)	69(89.6%)		
Unemployed	23(33.3%)	46(66.7%)		
Ethnicity				
Akan	23(23.2%)	76(76.8%)		0.000*
Ewe	18(26.9%)	49(73.1%)		
Hausa	2(3.6%)	53(96.4%)		
Other	4(8.0%)	46(92.0%)		
Number of Children				
One	30(14.4%)	178(85.6%)		0.051
Two	15(27.3%)	40(72.7%)		
Three	2(25.05)	6(75.0%		
Birth order				
First	24(11.7%)	182(88.3%)	0.000*	
Second	23(35.4%)	42(64.6%)		
Family type				
Nuclear family	24(11.7%)	181(88.3%)	0.000*	
Extended family	23(34.8%)	43(65.1%)		

*p value 0.05

The results show that marital status (p=0.001), educational level of participants (p=0.000), occupation of respondents (p=0.000), ethnicity (p=0.001), birth order (p=0.000), and family type of respondent (p=0.000) were significantly associated with ANC attendance. However, age (p=0.091), religion (p=0.533), and number of children (p=0.051) were not significantly associated with ANC attendance.

4.3.2 Community level factors

Table 4.4 also shows the relationships between community level factors and ANC attendance. **Others** means of transport (p=0.000) to attend ANC was statistically associated with ANC attendance.

Table 4 4: Community level factors associated with antenatal care Attendance (Bivariate Analysis)

Variable	Attended ANC		Chi-square P-value
	No	Yes	
Means of Transport to ANC			0.000*
Walking	12(10.0%)	108(90.0%)	
Public bus	20(15.3%)	111(84.7%)	
Other means of transport	15(75.0%)	5(25.0%)	
Household Head			
Spouse	9(12.0%)	66(88.0%)	0.195
Parents	24(22.0%)	85(78.0%)	
Self	14(16.1%)	73(83.9%)	
Attitude of community members towards teenage pregnancy			
Friendly	14(16.3%)	72(83.7%)	0.943
Acceptable	20(17.5%)	94(82.5%)	
Hostile	13(18.3%)	58(81.7%)	

*p<0.05

4.3.3 Facility level factors

Table 4.5 also shows the relationship between facility level factors and ANC attendance. Respondents' perception in relation to the affordability of services (p=0.000), easy accessibility of health facility (p=0.000), attitude of staff (p=0.000), personnel expertise (p=0.000), punctuality of staff to work (p=0.000) and availability of logistics (p=0.011) were associated with ANC attendance.

Table 4 5. Health Facility Level Factors Associated with ANC Attendance (Bivariate Analysis)

Variable	Attended ANC		Chi-square P-value	Fisher's Exact Test
	No	Yes		
Affordability of ANC service				
Yes	22(11.4%)	171(88.6%)	0.000*	
No	25(32.1%)	53(67.9%)		
Availability of referral system in the health facility				
Yes	21(21.6%)	76(78.4%)	0.162	
No	26(14.9%)	148(85.1%)		
Health facility is easily Accessible				
Yes	19(10.7%)	159(89.3%)	0.000*	
No	28(30.1%)	65(69.9%)		
Staff attitude				
Poor	16(26.7%)	44(73.3%)		0.000*
Fair	12(34.3%)	23(65.7%)		
Good	15(9.4%)	144(90.6%)		
Excellent	4(23.5%)	13(76.5%)		
Personnel expertise				
Excellent	15(9.5%)	143(90.5%)	0.000*	
Very good	16(32.0%)	34(68.0%)		
Good	16(25.4%)	47(74.6%)		
Punctuality of Staff				
Always on time	19(9.4%)	183(90.6%)	0.000*	
Sometimes late	15(34.1%)	29(65.9%)		
Always late	13(52.0%)	12(48.0%)		
Availability of logistics and equipment for service delivery				
Average	12(35.3%)	22(64.7%)	0.011*	
Good	11(16.9%)	54(83.1%)		
Excellent	24(14.0%	148(86.0%)		

*p<0.05

4.4 Predictors of ANC attendance

The bivariate analysis revealed that a total of 13 out of 19 factors were associated with antenatal care attendance. Binary and multiple logistic regression analyses were therefore employed to further examine the relationships between these 13 factors and ANC attendance. Odds ratios were then estimated. The results are shown in table 4.6.

After adjusting for theoretically relevant potential confounders, three (3) variables significantly independently predicted ANC attendance. These variables are birth order, family type, and respondents' perception about punctuality of health staff to work. Specifically, being a second order child reduced the odds of ANC attendance compared to being a first order child (cOR=0.241; 95%CI=0.124-0.467; p=0.000). After adjusting for potential confounding factors, the odds of ANC attendance were still significantly less for second order births compared to first order births (aOR=0.272; 95%CI=0.0796-0.928; p=0.038). Also, respondents who lived in extended family settings were less likely to attend ANC compared to those who lived in nuclear family settings (cOR=0.248; 95%CI=0.128-0.480; p=0.000). This relationship was still statistically significant after potential covariates were accounted for (cOR=0.172; 95%CI=0.049-0.603; p=0.006). Similarly, when compared to respondents who perceived that health staff were always on time to their work, the odds of ANC attendance were significantly lower for respondents who perceived that health staff were sometimes late (cOR=0.201; 95%CI=0.092-0.439; p=0.000) and always late (cOR=0.096; 95%CI=0.038-0.240; p=0.000). After adjusting for possible confounders, the odds of ANC attendance were still significantly lower for respondents who perceived that health staff were sometimes late or always late compared to those who thought that health staff were always on time to their work.

Table 4 6: Logistic Regression of factors that influence Antenatal attendance

Factors	Crude		Adjusted	
	OR (95% CI)	P-value	[95% Conf.	P-value
Marital Status				
Married (*Ref*)				
Cohabiting	2.855(1.346-6.053)	0.006*	2.526(0.617-10.338)	0.197
Single	3.627(1.540-8.539)	0.003*	0.994(0.245-4.035)	0.993
Educational level.				
Tertiary (*Ref*)				
Secondary	3.071(1.398-6.747)	0.005*	0.306(0.059-1.590)	0.159
Basic	7.960(2.492-25.427)	0.000*	1.302(0.157-10.786)	0.807
Vocational	7.548(2.916-19.542)	0.000*	0.366 (0.053-2.551)	0.310
Occupation				
Unemployed (*Ref*)				
Apprentice/maid	0.104(0.028-0.391)	0.001*	0.198(0.030-1.327)	0.055
Trader	0.345(0.088-1.353)	0.127	0.154(0.025-1.952)	0.440
Student	0.080(0.227-0.281)	0.000*	0.085(0.013-1.547)	0.090
Ethnicity				
Akan (*Ref*)				
Ewe	0.105(0.028-0.391)	0.001*	0.090(0.008-1.971)	0.470
Akan	0.345(0.088-1.353)	0.127	0.114(0.011-1.195)	0.070
Other	0.080(0.023-0.281)	0.000*	0.172(0.014-2.129)	0.170
Birth Order				
First (*Ref*)				
Second	0.241(0.124-0.467)	0.000*	0.272(0.079-0.928)	0.038*
Family type				
Nuclear (*Ref*)				
Extended family	0.248(0.128-0.480)	0.000*	0.172(0.049-0.603)	0.006*
Means of transport to health facility.				
Walking (*Ref*)				
Public bus	0.617(0.287-1.323)	0.214	0.506(0.174-1.473)	0.212
Others	0.037(0.011-1.120)	0.342	0.081(0.017-1.381)	0.100
Affordability of ANC service				
Yes (*Ref*)				
No	0.272(0.142-0.522)	0.000*	0.363(0.109-1.214)	0.100
Health facility is easily accessible				

Yes (*Ref*)				
No	0.277(0.144-0.531)	0.000*	0.687(0.427-6.662)	0.455
Staffs attitude				
Poor (*Ref*)				
Fair	0.697(0.282-1.719)	0.433	5.421(0.972-30.238)	0.054
Good	3.491(1.598-7.624)	0.002*	6.587(0.696-25.583)	0.060
Excellent	1.182(0.335-4.159)	0.795	1.692(0.141-20.373)	0.679
Personnel expertise				
Excellent (*Ref*)				
Very good	0.222(0.100-0.495)	0.000*	0.518(0.120-2.237)	0.378
Good	0.308(0.142-0.671)	0.003*	0.177(0.048-1.652)	0.090
Punctuality of health staff to work				
Always on time (*Ref*)				
Sometimes late	0.201(0.092-0.439)	0.000*	0.219(0.056-0.853)	0.029*
Always late	0.096(0.038-0.240)	0.000*	0.266(1.245-1.563)	0.014*
Availability of logistics ANC service delivery.				
Average (*Ref*)				
Good	2.678(1.028-6.970)	0.044	1.418(0.291-6.909)	0.666
Excellent	3.363(1.474-7.676)	0.004*	1.124(0.279-4.527)	0.869

OR=odds ratio; CI=confidence interval; *ref*=reference category; *p<0.05.

4.5 Chapter summary

This chapter described the results of the study. The results showed that a number of socio-demographic, community and health facility level factors are associated with antenatal care attendance among teenage mothers in Ashaiman. The next chapter discusses these finding.

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter discusses the results of the study. The discussion comprises a summary of the study's findings, consistency of findings with previous research, explanation of the findings and their implications as well as the strength and limitations of the study. Lastly a conclusion is drawn.

5.1 Summary of findings

This study was undertaken in order to estimate the prevalence of antenatal care (ANC) attendance among teenage mothers attending child welfare clinic, and determine factors influencing ANC attendance in the Ashiaman Municipality. Questionnaires were used to collect data from a total of 271 randomly selected teenage postnatal mothers. Descriptive, bivariate, binary and multivariable logistic regression analysis techniques were used to analyze the data. Results showed that ANC attendance was relatively high: 82.7% of the respondents attended ANC at least four times during their most recent pregnancy before this study. ANC attendance was more prevalent among Christians and also increased with increase with age. After adjusting for theoretically relevant potential confounders, factors that independently predicted ANC attendance were birth order, family type and respondents' perception about punctuality of health staff to work.

5.2 Consistency of findings with previous research

A number of findings from this study bear similarities as well as important differences to previous studies. These are considered below.

5.2.1 Prevalence of ANC attendance

Results from this study revealed that 82.7% of the respondents visited antenatal clinic at least four times during their most recent pregnancy. This result is however lower than the 87.3% reported in the GDHS 2014 for the general women population (Kporku, 2015). The prevalence of ANC attendance is however higher than (Owoo and Lambon-Quayefio, (2013) findings where utilization of ANC service among adolescent mothers in urban India stood at only 22.9%. The prevalence of ANC utilization is also much better than the 43% recorded by (Awusi, Anyanwu, and Okeleke,(2009). However the 17.3% ANC non-utilization rate recorded in this study is on the high when compared to less than the 5% reported for industrialized countries- (Sharma, 2018) and 2% non-users of antenatal services by (A. Atinga & A. Baku (2013) in the Yendi municipality of Ghana.

Results from this study also showed that ANC attendance increased with age. This is however in contrast with results from the GDHS 2014 as cited by Ayanore and Aryee (2015), where attendance appears to decrease with increase in age.

5.2.2 Predictors of ANC attendance

Results from the logistic regression analysis suggested that birth order, family type and respondents' perception about punctuality of health staff to work were statistically associated with ANC attendance. In terms of birth order previous studies have found that a child's birth order is not strongly related with the use of antenatal care by women in Kenya(Makii, 2015) in contrast to this study. However, the 2014 GDHS showed that 99% of first birth order mothers

attended ANC as compared to 76% of first order births attending ANC in this study (Banchani & Tenkorang, 2014)

Also, type of family was associated with ANC attendance. This result is consistent with studies carried out by (Esmael and Egata,2015)in Hadiya, Ethiopia, where family type was a strong determinant of ANC service utilization with extended families and larger household size limiting the use of ANC services. Studies done by (Mannava et al., 2015) suggests there is a significant difference between the type of family and ANC attendance as nearly 55% of women living in nuclear families received antenatal as compared with 40.4% of women in extended families which supports findings from this study. This study is also consistent with Ali et al., 2018 which states that having a family which is not supportive is associated with initiating ANC late for both teenage and adult women as women who had no support from their family utilized ANC services almost three weeks later than those who had support.

Again respondents' perception in relation to punctuality of staff to work significantly predicted ANC attendance. This result is consistent with a study done by (Kparu ,2016) which showed that the attitude of health staff, of which punctuality is factor, negatively affected mothers' ANC attendance in the Bosomtwe District of the Ashanti region. Punctuality shows a sense of seriousness and professionalism by health staffs. Studies done by Mthombeni, Maputle, and Khoza (2018) suggested that opening hours for some health centers were not favorable to teenagers as they had to wait for health staff to report to work late.

5.3 Explanation of findings and implications

Teenage mothers have particularly been noted to have lower rates of ANC attendance in many places in Ghana. At the same time, few studies have been done in places like the Ashaiman municipality to determine the factors influencing ANC attendance among teenage mothers at Ashiaman municipality. The World Health Organization in November, 2016, issued a new series

of recommendations to improve the quality of antenatal care to reduce the risk of stillbirths and pregnancy complications and give woman a positive pregnancy experience (WHO, 2016). These new guidelines seek to ensure not only a healthy pregnancy for mother and baby, but also an effective transition to positive labour and childbirth and ultimately to a positive experience of motherhood (WHO, 2016). The new guideline increased the number of contacts a pregnant woman should have with health providers throughout her pregnancy from four to eight (WHO, 2016). 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 (WHO, 2016). This is because of the increased opportunities to detect and manage potential complications.

In this study, findings showed that 82.7% of the adolescents made at least four ANC visits. While this is encouraging, it is noteworthy that this prevalence is still lower than the 87% reported for the general population of childbearing women in Ghana (Boateng, 2016). A number of reasons may explain why the proportion of adolescents who attended ANC during their most recent pregnancy in this study is lower than the general population. This relatively low patronage of ANC by teenage mothers could be attributed to some perceptions of pregnant teenagers with regard to the antenatal care clinic environment. Some pregnant teenagers feel that the ANC clinic environment is alienating to them (Hoerl & Kelly, 2010). A therapeutic milieu aims to provide patients with a stable environment that assists with the facilitation and implementation of individualized plans and providing a structure that entails proper organization of the service that involves set patient-nursing activities (Finlayson & Downe, 2013). The environment should also assist with the validation of each individual patient being recognized by staff, thus increasing the patient's self-esteem and making them feel better (Finlayson & Downe, 2013). In relation to the importance of a trusting patient-nurse relationship, the positive value of caring is seen as an

element of that relationship, which helps to break down the already shy demeanor of pregnant teenagers. In some ANC centers the environment may not promote a positive relationship between the teenagers and the health staffs. This can be attributed to limited one-on-one contact or because of limited privacy provided (Hoerl & Kelly, 2010) . Also teenagers are aware of the fact that society frowns on young people participating in unsafe-sex, resulting in teenage pregnancies . For this reason, teenagers may become uncomfortable in the presence of adults, who they think will not understand. Some teenagers may also feel that coming to ANC is a waste of time as shown in other studies (Hoerl &Kelly,2010).

Also, the results revealed three factors that significantly predicted ANC attendance. First, birth order. In this study, second birth order had lower odds of ANC attendance as compared to first order birth. This may be because some teenage mothers may feel they are much safer after successfully delivering their first child, and as such do not see need to go for ANC since they experienced no complications in their first pregnancies. Some teenagers too may not get time to go for ANC care as they may be attending to their young ones at the time or attending to other busy schedules at homes. Those who may not have family members to support take care of the elder child or children may have difficulty finding somebody to take care of the child while they attend ANC. Some also may not attend because of their weak financial status to pay for the services.

Second, family type was also associated with ANC attendance as respondents from the nuclear family setting attended more antenatal as compared to the extended family. The effect of family structure (nuclear) on utilization of ANC illustrates that the family plays an important social role in influencing and encouraging women to make positive decisions regarding their health and that of their infants (Simkhada, Porter, & Van Teijlingen, 2010). For example parents may be able to advise and supervise their ANC attendance due to their close proximity. A study conducted by

(Thapa and Niehof, 2013) in Nepal found that mothers-in-law negatively influence the attendance of ANC of their daughters-in-law. (Simkhada et al,2010) in their study also found that mothers-in-law heavily negatively influenced the decision of whether a teenage mother should go for antenatal care or not. Ethnographic studies from Mozambique and Southern Tanzania illustrated for example that teenagers in an early stage of pregnancy delayed ANC initiation and at times skipped it completely per the advice of their grandmothers purposely in order to protect the unborn child from witchcraft and sorcery attacks of jealous neighbors and kin (Overbosch et al., 2004).Third, respondents' perception in relation to punctuality of health workers to work also significantly affected ANC attendance. The duration of ANC visits could be full day's investment (SreytouchVong and Newlands,2015) as many teenage mothers may still be schooling or engaged in some form of trade. As such they may often have to report to ANC clinics early in anticipation that they will receive care early so they can go back to the normal roles. However, when these teenagers wait for the health staff to report and thus waste their time for the whole day in order to get the needed ANC service, they may be deterred from attending ANC subsequently.

5.4 Strengths and Limitations

This study has helped to discover new findings related to the factors influencing ANC attendance among adolescent mothers in the Ashiaman municipality, which have implication for interventions aimed at promoting ANC attendance among adolescents. However, the study has limitations. First, structured questionnaires alone were used to elicit response from respondents. This may have limited respondents' ability to explicitly express their true response concerning on ANC services utilization. Therefore, further qualitative study might be required to supplement this preliminary quantitative work. Some of the questions asked concerning the background

characteristics of the respondents were base on their present state which might not be the same as their formal state when they were pregnant..

Second, the study was conducted on only 271 adolescents.. Finally, recall bias may have set in as respondents were asked to recall things that may have happened at least some nine months back.

5.5 Chapter summary

In this chapter, the results of the study were discussed in relation to the study objectives. The discussion showed that a number of individual, family and health factors affect ANC attendance among adolescents. This suggests a need for appropriate interventions to address barriers to ANC attendance among adolescents as well as to promote greater use of skilled ANC services. In this regard, specific conclusions and recommendations are made in the next section.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusions

This study was conducted to determine the factors influencing antenatal care attendance among teenage mothers attending child welfare clinic in Ashaiman Municipality of Ghana. In trying to achieve the main aim of the reseacch, the study sought to determine the prevalence of antenatal care attendance among teenage mothers attending child welfare clinic, estimate the proportion of teenage mothers who made all the recommended four (4) ANC visits during their last pregnancy and determine factors influencing ANC attendance among teenage mothers attending child welfare clinic. The study adopted a cross-sectional design to obtain data from 271 teenage mothers. The data was collected using questionnaire to collect data on socio-demographic details and behavioral conducts of respondents.

Results from this study revealed 82.7 % of participants' attended ANC for at least four times. Factors that's significantly independently predicted ANC attendance birth order, family type and respondents' perception about punctuality of health staff to work.

In conclusion, this study has shown that although ANC services may be free in Ghana, several socio-demographic, family and health system factors still prevent teenage mothers from utilizing such services. The study suggests that unless these factors are addressed, the benefits of Ghana's free healthcare services may not be realized, especially among teenage mothers. Based on these results, specific recommendations are made below.

6.2 Recommendations

Based on the finding and the discussions of the previous chapters, the following recommendations are made.

1. Also, considering the finding that teenage mothers experiencing second birth order are less likely to attend ANC, teenagers who visit healthcare facilities for ANC for the first time should be encouraged to do so for all subsequent births by doctors, midwives, nurses, community health officers etc. Educational pamphlets can be given out to educate, counsel and also encourage their ANC attendance as studies done by Gordon and Jill (2001) suggests that second birth order of teenage are associated with almost threefold risk of preterm delivery and still birth.
2. Looking at the attitude of health staff, adequate supervision and monitoring of health staff by District Health Managers to ensure punctuality is advised. The DHMT can enforce sign in and sign out times for health staff. Punishment can be enforced when health staff fail to report to work on time without reason.
3. With regards to family type being a determinant of ANC attendance, DHMT membets together with midwives, public health nurse,community health nurses and all stakeholders in health at all level of health service delivery should educate both the nuclear and extended family members about their duties and responsibilities towards pregnant adolescents in their families and community as a whole in relation to ANC attendance. Also there should be active community involvement in carrying out all reproductive health campaigns especially adolescent health programmes.

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APPENDICES

APPENDIX I

ETHICAL APPROVAL LETTER

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

In case of reply the number and date of this Letter should be quoted.

Research & Development Division
Ghana Health Service
P. O. Box MB 190
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Tel: +233-302-681109
Fax + 233-302-685424
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28th May, 2018

MyRef. GHS/RDD/ERC/Admin/App/18/288
Your Ref. No.

Augustina Ntakbe Pambim
University of Ghana
School of Public Health
Legon, Accra

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	**GHS-ERC057/01/18**
Project Title	Determinants of Antenatal Care Attendance among Teenage Mothers Attending Child Welfare Clinic in Ashaiman Municipality
Approval Date	28th May,2018
Expiry Date	27th May, 2019
GHS-ERC Decision	**Approved**

This approval requires the following from the Principal Investigator

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report **after completion** of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....
DR. CYNTHIA BANNERMAN
(GHS-ERC CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra