UNIVERSITY OF CAPE COAST

# WOMEN'S AUTONOMY, MATERNAL CHILD HEALTHCARE PRACTICES AND CHILD MORTALITY IN THE UPPER EAST REGION OF GHANA

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BY

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Thesis submitted to the Department of Population and Health, Faculty of Social Sciences, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy in Population and Health

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# DECLARATION

## Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature: …….. Date: ……..

Name: Fabian Sebastian Achana

## Supervisor's Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast

Principal Supervisor's Signature: …….. Date: …….

Name: Prof. Augustine Tanle

Co-Supervisor's signature: …….. Date: …….

Name: Prof. David Teye Doku

## ABSTRACT

Eight years to the deadline for the 2030 SDGs, child survival remains high and a major health challenge in Ghana and much of the sub-Saharan region. Child's survival is greatly dependent on household circumstances and the mother's healthcare choices before, during, and after birth. In Ghana, several policies and programmes have been implemented to facilitate women's empowerment in all aspects of life. However, there is a paucity of literature on how this translates to improved child health in impoverished and male-dominated settings. Guided by a critical realist's paradigm, the study used mixed research methods to examine the effects and context of women's autonomy on maternal child healthcare practices and child mortality in the Upper East Region of Ghana. It found that women's autonomy was not a strong predictor of antenatal care attendance and facility delivery. However, women's autonomy was positively associated with the initiation of breastfeeding but negatively associated with exclusive breastfeeding and age-appropriate vaccination. Also, women's autonomy was not protective of child mortality. Narratives by mothers and mother/father-in-laws revealed that women's autonomy is a fluid concept and needs to be interpreted in context, because of the socially embedded context of family life and the role of significant others in child health in the study setting. The study concludes that the relationship between women's autonomy and maternal healthcare practices and child mortality is inconsistent. It recommends the empowerment of women through formal education and small-scale livelihood enterprises alongside efforts to increase utilization of essential early childhood interventions towards the attainment of SGD 3& 5 in the Upper East region of Ghana and similar settings.

**KEY WORDS:**

Child Health

Maternal Healthcare Practices

Sustainable Development Goals

Sub-Saharan Africa

Upper East Region, Ghana

Women's Autonomy

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## DEDICATION

To the loving memory of my late father, Mr. Patrick Mumuni, stepmother Mrs. Comfort Mumuni, brother, Victor Mumuni, father-in-law, Stanislaus Nabare and Rev. Father Augustine Kazaresam.

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| | |
|---|---|
| AIDS | Acquired Immune Disease Syndrome |
| ANC | Antenatal Care |
| BCG | Bacille Calmette-Guerin |
| CHPS | Community Health Planning Services |
| CR | Critical Realism |
| DPT | Diphtheria-Pertussis-Tetanus vaccine |
| EAs | Enumeration Areas |
| EBF | Exclusive Breastfeeding |
| EIBF | Early Initiation of Breastfeeding |
| EPI | Expanded Programme on Immunization |
| FGDs | Focus Group Discussions |
| GDHS | Ghana Demographic and Health Survey |
| GEHIP | Ghana Essential Health Interventions Project |
| GSS | Ghana Statistical Service |
| HIV | Human Immune Virus |
| IDIs | In-depth Interviews |
| ILWEI | Individual Level Women Empowerment Index |
| IMIC | Integrated Management of Childhood Illness |
| IPV | Intimate Partner Violence |
| ITNs | Insecticide Treated Nets |
| IYCF | Infant and Young Child Feeding |
| JHS | Junior High School |
| KATH | Konfo-Anokye Teaching Hospital |
| KMO | Keiser-Meyer-Olkin test |

| | |
|---|---|
| LMICs | Low- and Middle-Income Countries |
| MDGs | Millennium Development Goals |
| NGO | None-Governmental Organizations |
| NHIS | National Health Insurance |
| NHRCIRB | Navrongo Health Research Centre Institutional Review Board |
| ODK | Open-Data-Kit |
| OPV | Polio Vaccine |
| OPV | Polio Vaccine |
| PCA | Principal Component Analysis |
| SBA | Skilled Birth Assistant |
| SGDs | Sustainable Development Goals |
| SSA | Sub-Saharan Africa |
| STDs | Sexually Transmitted Diseases |
| TBAs | Traditional Birth Attendants |
| TIBF | Timely Initiation of Breastfeeding |
| UHC | Universal Health Coverage |
| UNCRC | United Nations Convention on the Rights of the Child |
| UNICEF | United Nations Children Fund |
| WHO | World Health Organisation |
| WHZ | Weight for Height Score |

# CHAPTER ONE

# INTRODUCTION

## Background to the Study

Globally, child mortality improved substantially to 41 deaths per 1, 000 live births by the end of 2016 compared to 93 deaths per 1000 live births in 1990 (IGME 2017; Sumankuuro et al., 2019; WHO/UNICEF, 2019). This notwithstanding, child survival remains a major health challenge, especially in sub-Saharan Africa. It is estimated that in 2019, 5.2 million children died before age five and 46 percent of the deaths occurred in the first month of life. Sub-Saharan Africa accounts for 38% of all newborn deaths (Alkema et al. 2016; IGME, 2017; WHO/UNICEF, 2019). In Africa, 1 out of every 13 children dies before their fifth birthday compared to 1 in 189 in high-income countries. All six countries with the highest under-five mortality; (above 100 deaths per 1,000 live births) in the world are in Sub-Saharan Africa (Ekholuenetale et al., 2020; Hsia et al., 2012; IGME, 2017; Kirigia & Barry, 2008).

High child mortality in Africa reflects individual-level factors as well as poor access to health services, unavailability of essential medicines and medical commodities, weak health infrastructure and referral systems, inadequate skilled health personnel, unhealthy cultural norms and practices and wide gender iniquities which disproportionally affect women; who are primary caregivers of children (Ekholuenetale et al., 2020; Hsia et al., 2012; Kirigia & Barry, 2008). Within the continent, infant mortality ranges from 64 deaths per 1,000 live births in West Africa to 24 deaths per 1,000 live births in North Africa (Liu et al., 2012; Liu et al., 2015; Paulson et al., 2021).

Achieving reductions in child mortality in the sub-region requires the utilization of innovative strategies that focuses on aspects of health domains that rarely attract premium attention (Acheampong, Ejiofor, Salinas-Miranda, Wall, & Yu, 2019). For instance, the nature, context, and extent to which maternal autonomy translate to child health benefits have not been sufficiently interrogated. The quality of care that children receive is greatly depended on their household circumstances. As primary caregivers, mothers play a critical role in making decisions that directly or indirectly affects the health of children (Berger & Font, 2015). This includes decisions on the timing and frequency of antenatal care attendance, utilization of skilled birth delivery, timing and adequacy of breastfeeding, and uptake of timely and complete vaccinations. Moreover, the health of mothers before, during, and after birth affects child health, particularly in the early stages of life (Noonan, Corman, Schwartz-Soicher & Reichman, 2013).

Policies and interventions that empower women and enhance their decision-making are thus crucial in attaining improved maternal and child health. Over the years, considerable political will and investments have been made towards women's socioeconomic, cultural, and political empowerment. This has bridged the hitherto wide gender inequities, especially in patriarchal and male-dominated settings such as those in Sub-Saharan Africa (World Economic Forum, 2017). Yet, significant gender gaps remain in Africa which negatively impedes maternal and child health (Bergen et al. 2020; Dickson, Ameyaw & Darteh, 2021; Doku, Bhutta & Neupane, 2020; Oduenyi et al., 2021; Tenkorang, 2019). Inequality in power relations at personal, family, societal and public levels continue to restrain women's autonomy in varied

dimensions critical to maternal and child health (Dickson, Adde & Ameyaw, 2021; Doku, Bhutta & Neupane, 2020; Mavisakalyan & Rammohan, 2021; Tenkorang, 2019). This includes autonomy to decide when to initiate breastfeeding, practice exclusive breastfeeding, purchase or use household resources, decide when to have sex and seek healthcare for children including vaccinations.

In Ghana, substantial efforts have been made to address poverty among women, and increase their access to education and healthcare services (GSS, 2015; MGCSP, 2015). Article 17(1) and (2) of the 1992 Constitution of Ghana provides for nondiscrimination, gender equity, and social justice. Ghana is also a signatory to several international conventions and treaties on human rights, and women and children's rights, and has committed herself to the attainment of international goals such as the SDGs. A plethora of non-Governmental and religious Organizations (NGOs) are also into various aspects of women's empowerment, especially in education, health, and livelihood skills training. These efforts are essential to the attainment of SDGs 3 and 5.

Among other targets, SDG 5 aims at ending discrimination against all women and girls everywhere and to eliminate harmful practices such as child, forced marriage and female genital mutilation. In addition, it seeks to ensure women's effective participation and equal opportunities for leadership at all levels and to give women equal rights to economic resources, access to and control over land and other forms of property in accordance with national laws to promote gender equality and empowerment of all women and girls at all levels by the year 2030 (WHO/UNICEF, 2019). On the other hand, SDG 3 target 3.2, seeks to end preventable deaths of newborns and children under

five years of age; with all countries reducing neonatal mortality to at least 12 deaths per 1,000 live births and under-five mortality to at least 25 deaths per 1,000 live births by the year 2030 (WHO/UNICEF, 2019).

However, it is not clear the extent to which these, gender-designed programmes and policies have empowered women to make decisions and take action regarding their health and that of their children. Thus, investigating the relationship between women's autonomy and maternal child healthcare practices and child mortality, and how community norms, perceptions and practices shape women's autonomy and affect child health will contribute to knowledge and adoption of policies and strategies which enhances maternal child healthcare practices, reduce child mortality, and facilitate the attainment of the SDG3 target 3.2 in the Upper East region and Ghana as a whole.

In this study, women's autonomy is defined as the ability of women to take decisions independent of, or with little consultation from their male partners or significant relations. Autonomy is conceptualized as a composite variable based on six domains of household decision-making on how money earned by women is spent, decision-making on major household purchases, purchases of daily needs, seeking personal healthcare or care for children at a health facility, visits to friends and family members and decision-making to refuse to have sex without any severe consequences (see page 106 for details).

**Statement of the Problem**

The Government of Ghana has implemented several policies and child health interventions aimed at reducing child mortality. These include the Health Sector Medium-Term Development Plan 2010-2013, the Ministry of Health (2007) under-five child health policy, the Integrated Management of

Childhood Illness (IMCI), the National Health Insurance Policy, the free maternal delivery services (Ghana Statistical Service (GSS) 2015) and the Community-Based Health Planning and Services (CHPS) Policy (Dalinjong, Wang & Homer 2018; Nyonator et al. 2005; Welaga et al. 2013). These efforts have resulted in improvements in antenatal and postnatal care, immunizations, and other preventive interventions against childhood diseases. Cumulatively, these policies, programs and interventions have contributed to improvements in child survival in Ghana (GSS, 2015).

This notwithstanding, the level of child mortality in Ghana remains considerably very high. Compared to high-income countries (like Australia) where neonatal, infant and under-five mortality rates are between 2 and 5 deaths per 1,000 live births, Ghana's neonatal, infant, and under-five mortality rates stood at 23, 29 and 44 deaths per 1,000 live births respectively by the end of 2021 (UNICEF, 2023). Earlier studies showed that 68 per cent of under-five deaths in Ghana take place before the first year of life, and 48 percent occur during the first month of life (GSS, 2015; Welaga et al., 2013). Available data also show wide regional variations in child mortality in Ghana, ranging from 47 deaths per 1,000 live births in the Greater Accra region to 111 deaths per 1,000 live births in the Northern region of Ghana.

The Upper East region has the fourth highest Under-5 mortality (72 deaths per 1000 live births) behind Upper West [92 deaths per 1,000 live births], and Ashanti region [80 deaths per 1,000 live births]) (GSS, 2015). Identifying the causes of deaths and especially the role of women's autonomy in promoting good maternal child healthcare practices in these regions with

high child mortality rates is key to achieving substantial overall reductions in child mortality in Ghana.

As in many other sub-Saharan African countries, the major disease-specific causes of child deaths in Ghana include malaria, pneumonia, diarrhoea, and malnutrition (GSS, 2015; WHO/UNICEF, 2019). Other significant contributing factors to child deaths are unsafe water, sanitation, and poor hygiene. In addition, preterm birth complications, acute respiratory infections and congenital anomalies contribute to under-five mortality (WHO, 2019). Data from the GDHS for the period 1988-2014, shows that maternal characteristics, access to skill delivery services, and the timing and duration of breastfeeding are significant predictors of under-five mortality (Ameyaw et al., 2016). In Northern Ghana, major causes of neonatal mortality include birth injury and asphyxia and prematurity, while infections accounted for 59% of late neonatal deaths (Welaga et al., 2013). Thus, a high proportion of under-five deaths are due to diseases that are preventable and treatable with proven cost-effective interventions such as vaccinations, effective antenatal and postnatal care, skilled delivery care, timely and adequate balance diet including exclusive breastfeeding and a responsive health service delivery (Ghana Statistical Service [GSS] 2015; WHO, 2019).

However, in some parts of Ghana, progress in child survival has been slow due to low coverage of interventions and weak health delivery systems, poverty, weak referral systems, inefficient financing schemes, and socio-cultural barriers (Alkema et al., 2016; WHO/UNICEF, 2019; Welaga et al., 2013). In particular, innovative research is needed to better understand how household power dynamics and maternal autonomy drive high child mortality

(Welaga et al., 2013). This is key because child mortality is to a large extent a consequence of the immediate environment of the child. This study contributes to filling this gap by interrogating how women's autonomy enhances child health. A clear understanding of this will enhance the effective planning and implementation of health promotion programmes and socially desirable interventions that improve women's autonomy and child survival.

In Ghana and much of Africa, household power dynamics and gender inequalities are rooted in the broader socio-cultural context of family life, gender roles and expectations (Kabeer, 1999). The continent is characterized by male dominance and rigid cultural norms (Ackermann & Klerk, 2002; Kabeer, 1999; UNDP, 2016). Consequently, women tend to have low access to education and economic resources and are less empowered and vulnerable and may have diminished autonomy in taking critical and lifesaving decisions regarding their life and that of their children. As such, children born to women who are not autonomous may have lower survival chances than their counterparts who are autonomous (Doku, Bhutta & Neupane, 2020; GSS, 2015; WHO/UNICEF, 2019). Women with diminished autonomy may also have poor health outcomes, which in turn may lead to lower infant birth weight, poor childcare, malnutrition, and poor healthcare utilization (Ameyaw et al., 2016; WHO/UNICEF, 2019). In Ghana, under-five mortality among women who do not participate in decisions making was 83 deaths per 1,000 live births) compared with 69 deaths per 1,000 live births for women who participate in decision making (GSS, 2015).

Much of the literature on the effects of women's autonomy on health comes from settings outside Sub-Saharan Africa. Studies in Africa tend to

focus on the relationship between women's autonomy and reproductive behaviour such as unprotected and non-consensual sex, contraceptive use and its consequences on unintended and unwanted pregnancies, abortions and risk of HIV infections (Ameyaw et al. 2016; Atiglo & Codjoe 2019; Bawah et al., 2013; Ganle, 2015; Loll et al., 2019; White et al., 2013). Other studies have examined women's autonomy and intimate partner violence (IPV) (Ahinkorah, Dickson & Seidu, 2018; Tenkorang, 2019).

There is thus a paucity of literature on this important topic in Ghana. Moreover, much of what is known of the phenomenon is from quantitative oriented studies which limit contextual explanations to speculations. In a recent literature review in developing countries (South Asia, Central Asia and Africa), Osamor and Grady (2016) observed that only one study (Thapa & Niehof, 2013) utilized mixed research methods in their data collection and analysis (Osamor & Grady. 2016). Osamor and Grady, (2016) identified a lack of qualitative studies that provide context-specific explanations of healthcare decision-making such as the role of social support, gender roles, and cultural norms concerning women's autonomy as a critical knowledge gap in developing countries. This study addresses this shortfall by adopting a complementary mixed methods approach to its data analysis. However, the quantitative component of the study utilized secondary data analysis from a health system study (GEHIP) implemented in the Upper East region (Aoonor-Williams et al., 2013). The analysis is therefore limited to variables that were captured in the data.

**Research Questions**

This study addressed the following critical questions:

1. Compared to women with lower autonomy status, are those with higher autonomy status in the Upper East region of Ghana, significantly more likely to attend antenatal care within the first trimester of pregnancy, attend a minimum of four antenatal care services before birth, and to deliver in a health facility than those with lower autonomy status?
2. Are children of women with higher autonomy status significantly more likely to be breastfed within the first hour of birth and to be exclusively breastfed compared to those born to women with lower autonomy status?
3. Are children born to women with higher autonomy status significantly more likely to receive age-appropriate vaccinations than those born to women with lower or weaker autonomy status?
4. Does higher maternal autonomy status confer significant neonatal, child and under-five survival benefits?
5. How do community norms, perceptions and practices structure women's autonomy and affect child maternal child healthcare practices and child survival in the Upper East region of Ghana?

**Objectives of the Study**

The objective of this study is to assess women's autonomy and child health in the Upper East Region of Ghana. The specific objectives of the study include:

1. To investigate the association between women's autonomy, antenatal care attendance and health facility delivery.

2. Examine the link between women's autonomy and breastfeeding practices among women in the Upper East Region
3. To investigate the relationship between women's autonomy and child's age-appropriate vaccination
4. Examine the relationship between women's autonomy and neonatal, infant and under-five mortality among women of reproductive age in the Upper East Region of Ghana
5. Explore community norms, perceptions and practices that structure women's autonomy and how it affects maternal child healthcare practices and child survival.

**Significance of the Study**

The Sustainable Development Goals (SDGs) are the global standards for measuring the development progress of nations and the well-being of citizens. All United Nations Member states including Ghana have thus committed and adopted the Agenda for Sustainable Development as a strategy to attain the SDGs by 2030 (WHO/UNICEF, 2019). Goal 5 & 3 of the SDGs which concerns women's empowerment and child health are two important and interrelated goals. Given Ghana's estimated under-five mortality of 60 deaths per 1000 live births, the country risk not achieving SDG3 if greater efforts are not made to address constraints to child health holistically. As primary caregivers, women's discretion in decision-making regarding their health and the health of children is critical in saving the lives of children, especially in emergency situations. The role of maternal autonomy in child health is thus imperative in attaining the SDGs in Ghana and sub-Saharan Africa as a whole.

This study contributes to a better understanding of the context and relationship between women's autonomy and child health in Ghana. This study will contribute to a better understanding of the context and correlation between women's autonomy and child health. Such evidence is needed to formulate health promotion strategies, programs and policies that will spur reductions in child mortality. The complementary mixed methods research employed in this study addresses the inherent weaknesses in earlier studies and contributes to the contextual appreciation of household power dynamics and child health in poor rural settings of Ghana. The findings of the study could also trigger appropriate policy responses that enhance women's autonomy as an equitable health and development goal. The findings would serve as useful academic and health promotion reference material through feedback and community engagements.

# CHAPTER TWO

# LITERATURE REVIEW AND THEORETICAL PERSPECTIVES

## Introduction

Women's autonomy has gained considerable research and policy attention globally because of its human rights importance as well as its role in the health of women and children. This chapter addresses the theoretical, conceptual as well as empirical context in which the study objectives and research questions will be addressed. It also reviews key thematic areas relevant to the study such as the Millennium Development Goals and Sustainable Development Goals, and the Convention on the Right of the Child in relation to women's autonomy and child mortality. The review focuses on studies conducted in less developed countries, Sub-Saharan Africa, Ghana, and Northern Ghana.

## Empirical Review

This section focuses on available empirical evidence of the relationship, context, and effects of women's autonomy on maternal and child health and healthcare-seeking behaviour. The review begins with an examination of the varied conceptions, measurements, and application of women's autonomy as a construct in scientific investigations. This is followed by a review of the levels, trends and determinants of women's autonomy, and concludes with an examination of the effects of women's autonomy on healthcare decision-making and utilization, the impact of women's autonomy on infant, child, and under-five mortality and concludes with a review of the Millenium Development Goals 3 & 4 and the Sustainable Development Goal 4 and the Convention on the Rights of the Child.

**Conceptions and Measurement of Women's Autonomy**

A key challenge in the literature concerns different conceptions, measurements, analyses, and operationalization of what constitutes and adequately represents women's autonomy by various authors. This has implications for consistency, the validity of comparable research and generalizations of findings within and across various studies (Carlson, Kordas & Murray-Kolb, 2015). Ghuman and colleagues (2006), noted difficulties in finding words that sufficiently convey the cognitive and linguistic meaning of autonomy in some settings (Acharya et al., 2010; Ghuman, Lee & Smith, 2006; Sharon, 2017).

In terms of measurements, women may have greater autonomy in some aspects of life but are constrained in other aspects. In Kenya, a study noted that women had more autonomy in the treatment of childhood malaria but not the same for convulsions (Molyneux, 2002). In Nepal, the various measures of women's autonomy varied across regions. For instance, in Western Nepal, women had high autonomy in decisions regarding their healthcare but were less autonomous concerning daily household purchases (Acharya et al., 2010). In Northern Ghana, it is believed that women have a 'weaker spirit" which elevates the risk of death if they handle convulsive children (Adongo, Kirkwood & Kendall, 2005). Compared to women, it is believed that men possess a much "stronger spirit" and so, capable of handling such fragile cases and making critical decisions in such emergencies. In these situations, women's autonomy is constrained by community norms of healthcare and so, women may defer decisions and actions in emergencies to their spouses and other male members of the household or community. This underscores the importance of contextual

factors and the multi-dimensional nature of autonomy (Agarwala & Lynch 2006; Huis et al., 2017) which sociological research needs to pay attention to in their investigations.

In an attempt to measure women's autonomy, some researchers have used proxies such as educational attainment, occupational status, and age differences between spouses etc to estimate women's relative position in their households (Al Riyami, Afifi & Mabry, 2004; Gabrysch et al., 2016). Admittedly, women who have attained higher education may easily access, effectively process, understand, and use information and services better than their counterparts who have not had formal education. However, some evidence suggests that the attainment of formal education by women does not automatically lead to higher levels of autonomy (Bawah et al., 2013). In South Asia, Jeffery and Basu questioned the notion that higher educational attainment raises women's autonomy and found that in many contexts, schooling had very little and in some cases negative effects on women's autonomy (Jeffery & Basu, 1996).

On the other hand, while formal employment and engagement in income-earning activities may enhance women's access to resources and elevates their social standing, socio-cultural norms, rules and expectations, especially in patriarchal societies play an important role in women's agency and decision-making capacity (Bawah et al., 2013). Thus, the use of women's educational attainment and occupational status and other proxies are distal and do not adequately measure women's autonomy (Samari & Pebley, 2018); and risk producing misleading research findings and conclusions.

In recent years, researchers and academicians have resorted to the use of direct questions in eliciting responses on various dimensions of women's autonomy: financial, healthcare, social mobility, relationships, sexual assertiveness and freedom from violence etc (Ahinkorah, Dickson & Seidu 2018; Ameyaw et al., 2016; Chol et al., 2019; Gabrysch et al., 2016; Memiah et al., 2019; Tiruneh, Chuang & Chuang, 2017). Typically, autonomy variables are derived from questions that elicit information from women on who in their household makes decisions regarding minor and major household purchases, use of household resources including money, utilization of healthcare, and freedom of movement. Women are also asked about their views and stand on wife-beating, sexual rights, and experiences of violence. In some studies, additional information on spousal age differences, age at first marriage and age at first birth is also captured. These explicit questions on autonomy have been incorporated into routine demographic and health surveys implemented in many countries across the globe which permits national as well as multi-country level studies and comparisons.

Some researchers approach the multi-dimensions of autonomy as standalone explanatory variables (Ameyaw et al., 2016; Chol et al., 2019; Ghose et al., 2017; Memiah et al., 2019) and others combine them into composite measures (Adhikari, 2016; Ahinkorah, Dickson & Seidu, 2018; Rominski et al., 2014). The weakness of composite index measures of autonomy is that it risks masking differential contributions of the various dimensions of autonomy. Ameyaw and colleagues argue that aggregating individual dimensions of autonomy variables risks deflating/conflating the unique effects of each variable on health behaviours and practices (Ameyaw et al., 2016). On the other hand,

using single dimensions of women's autonomy at best provides evidence only for the impact of each of the dimensions. Each approach thus has pros and cons which need to be considered in the interpretation and conclusions drawn from studies.

Globally, researchers agree that women's autonomy is multi-dimensional and this should be taken into consideration in scientific investigations (Agarwala & Lynch, 2006; Doku, Bhutta & Neupane, 2020; Huis et al., 2017; Mumtaz & Salway, 2009; Shroff et al., 2011). It is erroneous to assume that the correlations between individual dimensions of autonomy are zero because this weakens the strength of conclusions drawn by investigators regarding the net effect of autonomy on health outcomes. On the other hand, analysis that merely sums different dimensions of dichotomous, observable items into a composite measure without accounting for differences in weights of the various dimensions, fail to address potential correlations between the various items and dimensions to provide evidence of a more unified construct (Agarwala & Lynch, 2006 cited in (Ewerling et al., 2017).

Some scholars argue that conceptions of autonomy as a single independent construct, fit Western lenses and this runs counter to the socially embedded lifestyle, harmony and connectedness of the extended family system in Africa (Gabrysch et al., 2016). To Markus, autonomy is context-dependent and may vary or mean different things in different settings. In interdependent settings, individual stances, inclinations, and behaviours are shaped and regulated by the interest and reactions of others. Conceiving and measuring women's autonomy with Western lenses may not be appropriate in many African settings (Gabrysch et al., 2016; Mumtaz & Salway, 2009).

Therefore, studies on women's autonomy should account for concepts of personhood embedded in social relationships (Mumtaz & Salway, 2009). Researchers need to also pay attention to how broader hierarchies create and reinforce inequities at various levels of society (individual, interpersonal, community) and ultimately shape public health discourse (Mumtaz & Salway 2009). This is in line with Cornell's (1977), conception of the theory of gender and power which reorganises the role and importance of the social environment on agents. To account for the interdependent effect, Gabrysch et al., (2016) incorporated a cluster-level autonomy variable into their analysis and found that autonomy was a strong predictor of facility delivery at the cluster level but not at the individual level.

Research must pay attention to the nuances embedded in the conceptions and measurements of women's autonomy. In this study, Principal Component Analysis (see page 107) was used to construct a composite index of women's autonomy akin to works by (Bawah et al., 2013; Doku, Bhutta & Neupane, 2020; Ewerling et al., 2017; Fotso, Ezeh & Essendi, 2009). This approach accounts for shortfalls identified in earlier techniques as discussed above and produces a more unified autonomy index.

**Levels and Determinants of Women's Autonomy**

An appreciation of the levels and determinants of women's autonomy is essential when formulating, implementing, and evaluating interventions that seek to improve the health of women and children. Several individual levels, family, community, cultural, economic and other macropolitical factors affect women's autonomy (Agarwala & Lynch, 2006; Samari & Pebley 2018). Across the globe, results on the prevalence and determinants of women's autonomy

have been varied and inconsistent. A large chunk of existing literature examined individual-level determinants of women's autonomy (Acharya et al. 2010; Atiglo & Codjoe 2019; Osamor & Grady, 2016); other researchers examined community and household-level factors (Agarwala & Lynch, 2006; Ebot, 2014; Nigatu et al., 2014) and a few combined individual, household or community level factors (Assaad, Nazier & Ramadan, 2015; Rammohan & Johar, 2009; Samari & Pebley, 2018).

Generally, evidence suggests that women in developed countries tend to report higher levels of autonomy than those in the least developed countries, especially in sub-Saharan Africa. The latest evidence comes from Doku, Bhutta and Neupane (2020) who analyzed the most recent publicly available population-based cross-sectional surveys from 59 Least and Middle-Income Countries (LMICs). The investigators found that 61.6 percent and 19.9 percent of women in the pooled data independently made decisions on healthcare and household-related matters, while 56.0 percent of the participants did not approve of domestic violence against women. Based on their constructed Individual Level Women Empower Index (ILWEI) measured using women's healthcare decision-making, and attitudes towards domestic violence against women and three indicators of social independence, the researchers found that Ukraine (1.64), Armenia (1.51) and Moldova (1.51) had the highest empowerment scores, and Guinea (−1.19), Mali (−0.90) and Burkina Faso (−0.89) had the lowest scores (Doku, Bhutta & Neupane, 2020).

Data from Asia shows that generally, women tend to have weak decision-making autonomy. Only 13.4 percent of ever-married women aged 15-45 years old in Nepal, about 18 percent in Bangladesh, and 28.1 percent of

women in India indicated that they solely make decisions about their health (Senarath & Gunawardena, 2009). In the majority of the instances, other people made decisions on healthcare without the involvement of women. For instance, 72.7 percent and 54.3 percent of women in Nepal and Bangladesh and nearly half (48 percent) respectively indicated that decisions about their healthcare were made without their input. In the Democratic Socialist Republic of Sri Lanka; decisions on contraceptives are largely viewed as a collective responsibility (79.7%), and so not limited to individual women (Senarath & Gunawardena 2009). These findings align with other country-level studies. Acharya et al., (2010), reported that in Nepal, 47.1 percent and 56.6 percent of women reported being involved in decisions about their health and visits to family or relatives.

Recently in Bangladesh, only about 12 percent of women in rural and urban areas made decisions alone about their health. In about 36 and 40 percent of women in rural and urban areas, decisions about their health were made by spouses/husbands. A much smaller proportion of women solely made decisions about large household purchases and visits to family and relatives (Ghose et al. 2017). Comparatively, more women (14.2% and 15.2%) in urban and rural areas respectively made decisions about the health of their children alone. In India, researchers noted that women's control over assets and income depends to some extent on kinship relations; with women married to close relatives having greater control than those married to men with a low degree of consanguinity (Goli & Pou, 2014; Nigatu et al., 2014; Swaminathan, Lahoti & Suchitra, 2012).

Evidence from sub-Saharan Africa also shows that generally, the proportion of women who makes sole decisions is low. This has been attributed

to the existence of rigid social structures that define gender roles often embedded in social norms and traditions that suppresses women's empowerment, agency and decision-making capacity (Soman, 2009). A study conducted in Southern Ethiopia found that 74.7 percent of women did not take part in decisions on the use of money earned by them. The participants also reported that decisions on minor and major household purchases and visits to their relatives are mainly done by their spouses (64.9%, 79.2 % and 81.3% respectively). Only 14.7 percent of the participants indicated that they were involved in decisions regarding their own income. Ironically, decisions on contraceptive use and child spacing were mainly done by male spouses (Regassa & Regassa, 2016). Before the 2016 study, Nigatu and colleagues in a study found that out of about 65.2 percent of women who had access to money, only 8.1 percent could spend the money on their health without seeking permission from their spouses (Nigatu et al., 2014). In Ghana, Ameyaw et al., (2016) found that about 78 percent of women reported that they do not exercise health decision-making autonomy alone.

Duah and Adisah-Attah, (2017) found similar results where 22 percent of the sampled women had healthcare decision-making autonomy while 53 percent made such decisions jointly with their partners. A quarter of the women (24.8%) indicated that decisions about their healthcare were made solely by their partners. Compared to Ghana, the proportion of women who reported having healthcare decision-making autonomy in Nigeria was much smaller; (6.2% alone and 32.7% jointly with partners). More than half of the women (61.1%) reported that healthcare decisions were solely made by their partners (Osamor & Grady, 2016).

An empirical review of published literature in developing countries including countries in Asia and Africa suggests that the most frequently cited determinants of women's healthcare decision-making include age, education, and wealth (Osamor & Grady, 2016). The authors observed a high correlation between factors and this exerts an influence on women's autonomy. For instance, older age and being formally employed tend to be associated with higher levels of decision-making autonomy. Similarly, educated women are often more knowledgeable, and forceful; and are more likely to be employed and have access to resources than their counterparts with little or no education (Osamor & Grady, 2016). These findings are consistent with evidence from individual-level country studies in Asia and sub-Saharan Africa ( Acharya et al., 2010; Atiglo & Codjoe, 2019; Osamor & Grady, 2016; Senarath & Gunawardena, 2009).

In Ghana, women who attained primary, secondary, and higher than secondary education were 52%, 46% and 20% respectively more inclined to make their own healthcare decisions than those with no education (Peprah et al. 2017). Women whose partners had at least primary education were 50 percent more likely to make their own decisions than those whose husbands had no formal education (Peprah et al., 2017). In Nigeria, compared to women who had no education, attaining secondary education was associated with a twofold likelihood of making one's own decisions. Having higher and primary education was associated with a 57% and 70% more likelihood of making personal decisions respectively (Osamo & Grady, 2017).

Similar findings were made in Asian countries such as Nepal, India and Bangladesh (Acharya et al., 2010; Senarath & Gunawardena, 2009). In Asia,

higher levels of education, age, occupation, and the number of children significantly enhanced women's independent decision-making. Compared to women with no education, those with secondary or higher education were 60 percent, 67 percent and 71 percent more likely to participate in decision-making in Nepal, India and Bangladesh respectively (Senarath & Gunawardena, 2009).

Existing literature shows significant interaction between women's autonomy and maternal age, education wealth and education (Acharya et al., 2010; Jatrana & Pasupuleti, 2013; Senarath & Gunawardena, 2009), implying that the influence of autonomy on health outcomes may depend on these variables. A recent study in Nigeria which found a strong positive association between women's autonomy and ANC services also reported that the use of ANC services increased as age, education and wealth levels rises (Obasohan et al., 2019). Other predictors of women's independent decision-making in Nigerian include the place of residence, religion, wealth status and husband's occupation (Obasohan et al., 2019).

In Ghana, women who attained primary and secondary education were twofold more inclined to make their own decisions than those who had no formal education (Peprah et al., 2017). Those who had higher than secondary education were fourfold more inclined to make their own decisions than those without formal education. In addition to education, women being able to make decisions on their earnings was associated with a more than twofold likelihood of healthcare decision-making autonomy. Compared to women who do not control the use of their earnings, those who decide what to do with their earnings were two-and-a-half-fold more likely to make their own healthcare decisions (Peprah et al., 2017).

In Asia, women's age, employment status, number of children alive and region of residence were significant predictors of women's autonomy (Acharya et al., 2010; Senarath & Gunawardena, 2009). Proportionally, the Nepalese study found that women's participation in their own healthcare decisions increased from 17 percent among 15–19-year-olds to 60.3 percent among those 45-49 years old. Similarly, participation in decisions on daily household purchases increased from 18.0 percent to 74.6 percent and that of visits to family and friends from 20.1 percent to 77.0 percent among 15–19-year-olds and 45–49-year-olds, respectively. While women's educational status was positively associated with autonomy in healthcare decision-making, more years of schooling was not significantly associated with their own healthcare decision-making (Acharya et al., 2010). In addition to the importance of individual-level factors, the Nepali study highlighted the role and impact of social structure and general socio-economic development on women's autonomy.

The age and educational attainment of a woman may affect her autonomy in the household through various mechanisms. Early marriage denies women opportunities for formal education, livelihood skills training, employment, and other empowerment opportunities. In much of Africa, younger and newly married women often live under the guidance and supervision of their mothers-in-law who are primary decision-makers in a typical household (Naab et al., 2019; Bawah et al., 2013). Fear of spousal violence may also suppress women especially younger brides of their freedom of mobility, association, and right to refuse sex and when to decide on pregnancy and childbearing (Sripad et al., 2019; Guatam & Jeong 2019; Ahinkora et al., 2018; Tenkorang, 2018; Wu et al., 2010).

A study in Ghana which analyzed nationally representative data found a significant association between inadequate antenatal care and exposure to physical abuse in the past year. Abused women were nearly six times more likely to have inadequate antenatal care compared to those who were not abused. The impact was greatest among women who have not had formal education (Sipsma et al., 2014). There are several ways through which education affects women's autonomy. Education equips women with knowledge and skills, improves their assertiveness and communication skills, and exposes them to wider ideas and world views (Murphy-Graham, 2010). Also, education delays age at marriage and older women tends to have a better chance of choosing their partners (Crandall et al., 2016), have greater levels of social mobility and increased control over household resources (Acharya et al., 2010).

The evidence of the relationship between women's autonomy and individual-level factors is inconsistent. Younger women in Egypt were found to have a greater say in household decision-making and more control over their mobility. However, older age at first marriage was associated with higher household decision-making autonomy but not, mobility, and financial autonomy (Samari & Pebley, 2017). Samari and Pebley argued that their results are consistent with the findings of an earlier study in Egypt by Crandall et al., (2016), and so suggested that age at marriage is not a strong predictor of post-marital women's autonomy. In Ethiopia, wealth index, age, occupation, and the level of partner's education were not significant predictors of women's autonomy. Rather, literacy status, partner's alcohol use and household size were the greatest predictors of women's autonomy in Ethiopia (Regassa & Regassa, 2016). An earlier study found that lower monthly household income, partner

occupational status, being in a nuclear family, monogamous marriage, and being knowledgeable were predictors of women's autonomy (Nigatu et al., 2014).

Other studies have also shown that greater wealth does not necessarily confer higher autonomy status to women (Acharya et al., 2010; Bawah et al., 2013). In Nepal, wealthier women had lower autonomy in health decision-making (Acharya et al., 2010). Similarly, in a longitudinal study in Egypt, women in wealthier households were less inclined to make household decisions, exercise discretion on the use of money or be able to move around than those in the poorest households. Those in the Upper Egypt region were also less likely to be autonomous than those in Cairo but also noted that autonomy status changes with time; with large variations by place of residence and wealth (Samari & Pebley, 2018). The authors posit that women's autonomy is influenced by an individual as community-level factors.

Some studies point to the importance of family, household, community and wider socio-cultural determinants of women's autonomy (Samari & Pebley, 2018). For instance, in Bangladesh and Nepal, fertility was found to be positively correlated with women's autonomy status. Women who had 3 to 4 living children in Nepal were fourfold more likely to be autonomous than women who had fewer or no children. In Bangladesh, women with 3 to 4 children had a 63 percent increased likelihood of being autonomous than their counterparts with no children (Senarath & Gunawardena, 2009). In terms of marriage, women who marry into communities with strong extended family bonds tend, to have weaker autonomy in their affinal homes than those who marry into nuclear and more liberal families (Rammohan & Johar, 2009).

In India, Bloom, Wypij, & Gupta (2001) examined the determinants of women's decision-making on control over finances, and freedom of movement and found that women's closer ties to natal kin were a strong predictor of autonomy. Not living with a mother-in-law was associated with an 88 percent increased likelihood of being autonomous. All three dimensions of autonomy examined revealed that women who had closer natal kin relations had greater interpersonal control than their colleagues who had infrequent contact with close relatives. Women who frequently contacted their natal kin were nearly threefold and more than threefold more likely to exercise discretion over finances and to have freedom of movement than their counterparts who had infrequent contact with their natal kin. Similarly, women who had regular contact with their natal kin had a 79 percent increased likelihood and were nearly fivefold more likely to have control over finances and freedom of movement respectively. Indeed, 48 percent of the women reported that they could not go to their natal families without the permission of their partners/other family members (Bloom, Wypij & Gupta, 2001).

Household and community-level determinants include household wealth, household structure, rural-urban divide, cultural norms and even state laws. Similarly, women who live in more developed areas are more probable of being autonomous than those in less developed communities. Women in urban settings tend to be more educated, have access to information, are more likely to be employed, and have greater physical mobility and this cumulatively enhances women's agency. In settings where women think that their spouses and other family members hold positive views of a choice of action (facility delivery, immunization), they are more likely to be autonomous than those who

think contrarily (Samari & Pebley, 2018). An appreciation of the influence of wider social norms, rules and expectations on women's ability to make their own decisions is important because such norms either facilitate or constrain initiatives and measures being taken to enhance women's free will to make decisions.

In summary, evidence of the determinants of women's autonomy shows that individual level, as well as household, community and environmental factors, are important. While there are few exceptions and contextual differences, the most consistent individual-level determinants of women's decision-making are education, age and differences in spousal age, occupation, and income. Household variables such as household wealth, place of residence, family structure, and socio-cultural norms, rules and regulations all exert great influence on women's autonomy. Therefore, where data permits, scientific investigations of the independent effects of women's autonomy on health and other outcomes need to account for the mediatory role of the individual, household, and community-level factors.

The review also revealed that women with higher levels of autonomy tend to utilize healthcare services more than those with weaker autonomy. Studies in India and Ghana also found that women's autonomy affects women's reproductive healthcare as well as other general healthcare (Rominski et al., 2014; Senarath & Gunawardena, 2009). Rominski and colleagues observed that higher levels of women's autonomy were significantly associated with abortion care in Ghana. Studies in rural India found that women with lower levels of decision-making autonomy were less probable of using pregnancy care services, especially prenatal and postnatal checkups (Mistry et al., 2009; Rahman,

Mostofa & Hoque, 2014; Regassa & Regassa, 2016). In contrast, women with greater financial autonomy tended to use delivery and postnatal care more than those with weaker control over the use of funds. Studies also documented a significant association between women's autonomy and contraceptive use in Ethiopia and Bangladesh (Rahman, Mostofa & Hoque, 2014; Regassa & Regassa, 2016). These findings are consistent with studies in Pakistan (Al-Riyami, Afifi & Mabry, 2004) which found significant associations between women's autonomy and contraceptive use.

**Women's Autonomy and Uptake of Child Healthcare Services**

The available empirical literature suggests that women's autonomy is linked to women's use of healthcare services (Adedini, Akinyemi & Wandera, 2001; Pratley, 2016; Woldemicael & Tenkorang, 2010), infant and child feeding practices (Abate & Belachew, 2017; Carlson, Kordas & Murray-Kolb, 2015; Na et al., 2015; Shroff et al., 2011), and child's health and mortality (Adedini, Akinyemi & Wandera, 2001; Ahmed et al., 2010; Doku, Bhutta & Neupane, 2020; Ewerling et al., 2017; Memiah et al., 2019). Women's ability to make decisions about antenatal care, postnatal care, child immunization, feeding, refusing sex or use contraceptives, space births, seeking abortion etc affects not only their own health but that of their children and unborn babies. Yet, evidence suggests that in many settings in Africa including Ghana, decisions to access and use healthcare services are often made by male partners and other family members and not primarily by the individual women concerned (Ganle, 2015; Gupta et al., 2015; Moyer et al., 2014). Also, much of what we know is dominated by studies in Asia and these studies tend to focus on maternal and reproductive health.

Generally, the review reveals that women enhanced autonomy is associated with greater positive healthcare decision-making, better healthcare utilization and maternal and child health outcomes (Ameyaw et al., 2016; Doku, Bhutta & Neupane, 2020; Memiah et al., 2019; Speizer, Story & Singh, 2014; Tiruneh, Chuang & Chuang, 2017; Woldemicael & Tenkorang, 2010). A systematic review of literature on the effects of women's empowerment and dimensions of autonomy on access to healthcare in developing countries found that although results of the various papers differed in magnitude and direction, 52 and 45 percent of articles that considered "decision-making on major household purchases" and "decision-making on women's own health" found a strong and positive relationship between women's autonomy and health outcomes such as antenatal care, facility delivery, contraceptive use, and nutritional status (Pratley, 2016). These findings align with other studies in Asia.

In rural India for instance, Mistry et al., (2009) found that lower levels of women's decision-making autonomy adversely affect the likelihood of receiving prenatal and postnatal checkups. Women who could make their own decisions on the use of money are more inclined to use delivery and postnatal care. In Bangladesh, a study that analysed nationally representative data found that compared to women who made their own decisions, those who made joint decisions with their partners had 20 percent higher odds of attending ANC4+ (Ghose et al., 2017). These findings underscore the fact that in some settings, spousal cooperation may lead to better uptake of women's healthcare services. In terms of postnatal care, women in urban and rural areas who jointly with their partners made healthcare decisions had 43 percent and 28 percent increased

likelihood of receiving postnatal check-ups. In contrast, having autonomy in children's healthcare had no positive effects on attending ANC services. Women who could take decisions on their children's healthcare had 22 percent and 31 percent reduced likelihood of receiving ANC4+ services and postnatal care respectively (Ghose et al., 2017).

The Bangladeshi findings align with a similar study in Nepal where women's higher autonomy index constructed out of three dimensions of autonomy concerning health, household purchases and freedom to visit relatives was associated with a 40 percent increased probability of ANC4+ attendance compared to their colleagues with low levels of autonomy (Adhikari, 2016). Unlike the Nepalese study, Bloom et al., (2001) centred their analysis on three separate indexes (control over finances, freedom of movement and decision-making power), and found that besides freedom of movement, the other dimensions of autonomy were not positively associated with uptake of ANC services. In their adjusted regression model, a one-point increase in a freedom of movement index resulted in an almost five percentage point increase in antenatal care utilization. Similarly, the odds of women with higher levels of freedom of movement utilizing skill delivery were threefold higher than those with low freedom of movement (Bloom, Wypij & Gupta, 2001).

As in Asia, much of the evidence in Africa also points to a positive association between higher levels of women's autonomy and antenatal, postnatal and other aspects of general healthcare (Ameyaw et al., 2016; Rominski et al., 2014; Speizer, Story & Singh, 2014; Tiruneh, Chuang & Chuang, 2017). Rominski et al., (2014), observed that higher levels of women's autonomy were significantly associated with abortion care in Ghana. In their

study, every positive answer on their autonomy scale resulted in a 14 percent increased likelihood of a reported abortion. Studies also reported a statistically significant association between women's autonomy and contraceptive use in Ethiopia and the Democratic Republic of Congo (Regassa & Regassa, 2016; Sano et al., 2018). In the Democratic Republic of Congo, for instance, women who made their own decisions had a 16 percent increased likelihood of using modern contraceptives (Sano et al., 2018). These findings align with some studies on contraceptive uptake in Pakistan (Al-Riyami, Afifi & Mabry, 2004).

In Nigeria, women who could make their own decisions were 24 percent more inclined to utilize ANC4+ services than their counterparts who could not such decisions (Obasohan et al., 2019). These findings are consistent with an earlier study in Nigeria by Umar (2017) who found that women with higher levels of autonomy were more likely to use prenatal care services. Although Umar found that higher levels of autonomy were associated with a more than twofold and nearly fourfold prenatal and delivery care respectfully, his analysis failed to adjust for confounding by socio-demographic and other known co-variates such as media exposure, and quality of healthcare services (Obasohan et al., 2019). Similarly, researchers in Ghana (Ameyaw et al., 2016; Speizer, Story & Singh, 2014), and Ethiopia (Tiruneh, Chuang & Chuang, 2017) found that women who have higher levels of autonomy were more likely to utilize ANC, facility delivery and postnatal care. Ameyaw and colleagues found that health decision-making autonomy was associated with a 27 percent increased likelihood of facility delivery (Ameyaw et al., 2016).

Some investigators in Ghana realised that women's autonomy is more critical in settings where key household and community members hold

unfavourable perceptions about facility deliveries (Speizer, Story, & Singh, 2014). These investigators noted that there is strong statistical interaction between autonomy and community-level perceptions of men and mothers-in-law about facility delivery to the extent that, the effect of autonomy was key in communities with low support for facility delivery. Living in communities where men are perceived to have positive attitudes was associated with a more than threefold propensity of delivering in a health facility (Speizer, Story & Singh, 2014). These findings are consistent with findings in Ethiopia where women who live in communities that oppose wife beating were more likely to use ANC4+ visits, health facility delivery, and postnatal care; (aORs = 1.21, 1.23, and 1.18) respectively (Tiruneh, Chuang & Chuang, 2017).

In a qualitative study in six communities in Ghana, Ganle and colleagues (2015) reported that women's views of the values and opinions of significant others such as mothers-in-law, traditional birth attendants and male partners influenced their decisions on the use of skilled birth delivery care (Ganle et al., 2015). The findings of these studies lend support to the critical role household settings play in mediating women's autonomy (Bawah et al., 2013; Gabrysch et al., 2016).

In contrast to the above findings, data from 31 SSA countries analysed found a weak association between some indicators of women's autonomy and utilization of maternal healthcare services (Chol et al., 2019). Overall, women with higher autonomy scores on domestic violence, major household income, major household purchases, and those who oppose sexual violence, had marginally elevated odds of ANC+4 and skilled birth attendance ((aORs ranged from 1.07 to 1.15). The study however revealed significant variations across the

sub-regions of Africa and among individual countries. For instance, in Southern Africa, women with higher household decision-making autonomy on income were 44 percent more likely to have attended a minimum of four antenatal care and used skilled birth attendant services compared to 15 percent in West Africa and much lesser in the other sub-regions (Chol et al., 2019).

Country-level analysis revealed counterintuitive results between women's autonomy and maternal healthcare services in Chad, Mali and Senegal. For instance, women who oppose domestic violence were 15 percent and 17 percent less likely to use ANC4+ in Chad and Mali respectively. Similarly, women who had higher levels of autonomy on household income were 18 percent less likely to use skilled birth attendants (SBA) in Mali. Also in Senegal, women who solely made decisions on household purchases were 26 percent less inclined to use skilled birth services (Chol et al., 2019).

These counterintuitive findings are consistent with Ameyaw et al., (2016) study in Ghana where women who reported having a final say on larger household purchases and those with higher social mobility were 29 percent and 14 percent respectively less likely to deliver in a facility than those with weaker autonomy (Ameyaw et al., 2016). Similar results of a weak association between women's overall autonomy, freedom of movement, and use of obstetric care services among residents of informal settlements in Nairobi, Kenya have also been documented (Fotso, Ezeh & Essendi, 2009). Unlike Chol et al. findings concerning domestic violence, a study in Ghana observed that women who justified wife beating reported higher unmet needs for contraception but lower odds of actual usage (Blackstone, 2017). Atiglo and Codjoe found that women's ability to make decisions at the household level was not significantly associated

with actual use but with intentions to use contraceptives in Ghana (Atiglo & Codjoe, 2019).

Compared to women who take health decisions alone, those who are not involved in such decisions-makings (decisions made by husbands alone) had less than a 1% likelihood of using contraceptives. However, joint decision-making by partners was associated with a 23% more likelihood of contraceptive use compared to women who made sole decisions (Ahinkorah, Dickson, & Seidu, 2018; Musa et al., 2019; Pratley, 2016). The findings suggest that partner communication and cooperation play a significant role in contraceptive use among couples in Ghana and highlight the need for male participation in family planning services in Ghana and similar settings in Africa.

Available literature also points to links between women's autonomy, intimate partner violence (IPV) and health consequences (Ahinkorah, Dickson & Seidu, 2018; Musa et al., 2019; Pratley, 2016). Intimate partner violence may cause direct injury to spouses and children or may affect women's access to the utilization of household resources and healthcare services. A systematic review of indicators of women empowerment, access to healthcare and healthcare status of women and children showed that IPV including psychological violence in less developed countries is associated with low use of healthcare services and poorer health outcomes (Pratley, 2016). In sub-Saharan Africa, women with decision-making autonomy had a 35 percent increased likelihood of experiencing IPV (Ahinkorah, Dickson & Seidu, 2018). A recent systematic review of IPV and maternal healthcare service utilization showed that women who experienced IPV were 25 percent less likely to attain adequate ANC compared to their counterparts who were not exposed to such violence. The

review also found that IPV was associated with a 20 percent reduced likelihood of using skilled delivery compared to those who did not experience violence (Musa et al., 2019).

In terms of individual country level, a recent study in Nepal found that IPV adversely affects adequate ANC utilization. Proportionally, 78 percent of women who did not experience IPV attained ANC4+ compared to 58 percent among those who experienced IPV. In their study victims of IPV were significantly less inclined to have had ANC4+ (Gautam & Jeong, 2019). In Ghana, women who experienced physical abuse in the past year were more than fivefold likely to have inadequate antenatal care compared to those who did not experience physical abuse. The effects of physical abuse were more evident among women who have not had formal schooling (Sipsma et al., 2014). In the Ghanaian study, further analysis showed that 82 percent of physically abused were those whose partners demanded to always know their whereabouts all the time.

**Effects of Women's Autonomy and Child Health**

As primary caregivers, women play a crucial role in child health. Women's ability to make crucial decisions concerning the timing and spacing of births, utilization of antenatal care and skill delivery, timely initiation and exclusive breastfeeding, appropriate complementary infant and child feeding practices, immunization as well as women's ability to seek healthcare for children is key in ensuring good child health. This section of the review focuses on the effects of women's autonomy on child feeding practices and nutrition status (Abate & Belachew, 2017; Brunson, Shell-Duncan, & Steele, 2009),

immunization, and child mortality (Adedini, Akinyemi, & Wandera, 2001; Heaton et al., 2017; Memiah et al., 2019).

Studies have shown that women's autonomy is crucial in child-feeding practices and nutritional status (Carlson, Kordas, & Murray-Kolb, 2015). Women's autonomy affects access to and use of household food resources, timing, quantity, and quality of child feeding practices. A systematic review of literature on women's empowerment, access to healthcare and the health status of mothers and children in developing countries noted a positive correlation between women's autonomy and child nutritional outcomes (Carlson, Kordas, & Murray-Kolb, 2015). Studies in sub-Saharan Africa also show a generally positive relationship between women's autonomy and Infant and Young Child Feeding practices (IYCF) (Na et al., 2015).

In their study of eleven African countries, Muzi Na and colleagues used three explanatory variables (economic, political and socio-familial) to investigate the association between women empowerment and IYCF practices and found mixed results. Generally, higher levels of women's economic empowerment were positively associated with all three indicators (minimum dietary diversity, meal frequency and acceptable diet respectively). Higher levels of women's empowerment were positively associated with IYCF practices in Mali, Rwanda and Sierra Leone but negatively associated with practices in Benin and Niger. On the other hand, the legal dimension of empowerment did not show any clear pattern, while the "socio-familial' dimension which represents women's freedom of mobility, control over their own health, and interpersonal or family decision-making, showed a positive relationship with all the three outcome indicators (Na et al., 2015).

In Asia, studies found that women's financial autonomy is consistently linked to better IYCF practices and nutritional status (Shroff et al., 2011). In their earlier study in India, Shroff and colleagues found that children of women with high financial autonomy and freedom of mobility were 27 percent and 41 percent less likely to be stunted (Shroff et al., 2011). However, other autonomy dimensions such as decision-making on what to cook, seeking own healthcare, major household purchases, visiting relatives and attitude towards domestic violence were not statistically associated with child stunting. Two years later, the authors examined the influence of women's autonomy on infant feeding practices and infant growth and reported that financially autonomous women were more likely to practice exclusive breastfeeding than women who were not financially autonomous. Infants of women who had higher household decision-making autonomy were also less likely to be underweight and less wasted compared to women who lacked household autonomy (Shroff et al., 2011).

In their study in Kenya, Brunson and colleagues noted that women's autonomy had no effect on the nutritional status of younger children (0-35 months) measured by weight for height (WHZ) scores. For these children, every 1-point increase in a mother's autonomy score resulted in a 0.11 decrease in weight for height score. However, among older children aged 3–10 years, every 1-point increase in a mother's autonomy score led to a corresponding increase of 23 percent weight for height score (Brunson et al., 2009). These findings align with those of Ziaei and colleagues' study in Nicaragua where women with the lowest autonomy tertile had a 24 percent decreased likelihood of not practising exclusive breastfeeding compared to those in the highest autonomy tertile (Abate & Belachew, 2017; Ziaei et al., 2015).

In Ethiopia, a study assessed the effects of women's autonomy on child-feeding practices and anthropometric indices. It found that among other autonomy indicators used, only autonomy on major household purchases was significantly associated with child anthropometrics. The weight for height scores of children of mothers who had decision-making autonomy on major household purchases was 42 percent higher compared to children whose mothers had no autonomy. The study also found that the involvement of male parents in childcare resulted in higher height-for-age scores (Abate & Belachew, 2017).

Recently, qualitative studies in Nigeria and South Africa on exclusive breastfeeding revealed that family members including mothers-in-law and traditional birth attendance play an important role in decision-making regarding infant feeding (Jama et al., 2018; Joseph & Earland, 2019). In Jama et al., (2018) study, older mothers in the family were primarily responsible for infant feeding decision-making. They noted that financial dependency and the relatively younger ages of teenage mothers suppress their autonomy and ability to influence child-feeding practices or to challenge incorrect advice given at home (Jama et al., 2018).

In Ghana, there is not much literature on the effects of women's autonomy and child-feeding practices. Amugsi and colleagues investigated how women's decision-making affects higher dietary diversity; an indicator of micronutrient adequacy of the diet of women (Amugsi et al., 2016). The study found that women who had a say in household purchases were 74 percent more inclined to achieve higher levels of dietary diversity than their counterparts who did not have a say in household purchases. However, other dimensions of

women's decision-making autonomy such as spending money, opinion on wife-beating, and refusing a partner sex on justifiable grounds were not significantly associated with higher dietary diversity of women (Amugsi et al., 2016). Although Amugsi and colleagues' study in Ghana did not focus directly on child nutrition, it is well known that poor maternal nutrition especially during pregnancy and the lactation period has dare consequences on the health of unborn children as well as infants (Carlson, Kordas, & Murray-Kolb, 2015).

Studies in Ethiopia and Nigeria assessed the influences of demographic factors and women's autonomy on complete childhood vaccination among 12-24 months old children (Singh, Haney, & Olorunsaiye, 2013; Wado, Afework, & Hindin, 2001). In Wado and colleagues' study, it was found that the main factors of women's autonomy are; the number of under-five children in the household, and proximity to a health facility were the major determinants of full vaccination status (Wado, Afework, & Hindin, 2001). The study recommended the implementation of initiatives that enhances women's autonomy within the household and those that promote effective family planning. Existing literature (Thysen et al., 2019; WHO, 2019) suggest that timely, appropriate, and full immunizations against childhood diseases significantly impact child mortality. In the Nigerian study, high household decision-making autonomy and disapproval of wife beating were 64 percent and 47 percent respectively associated with complete childhood immunization (Singh, Haney, & Olorunsaiye, 2013).

The literature reviewed also showed that low levels of women's autonomy are linked to infant, child, and under-five mortality. The most recent evidence comes from the analysis of pooled population-based cross-sectional

surveys in 59 Low and Middle-Income Countries (LMICs) conducted between 2000 and 2015 (Doku, Bhutta, & Neupane, 2020) and two other multi-country level studies in sub-Saharan Africa (Adedini, Akinyemi, & Wandera, 2001; Memiah et al., 2019). Although Doku and colleagues' study focused broadly on women's empowerment, their novel “Individual Level Empowerment Index’ (ILWEI) involved three measures of women’s autonomy and social independence and found that women with lower ILWEI had higher neonatal, infant and under-five mortality.

IPD meta-analysis of the pooled data showed that neonates born to women with low ILWEI were 18 percent more likely to die than those born to women with high ILWEI. Similarly, infants and under-five children of women with low ILWEI were 12 percent more likely to die than those born to women with higher ILWEI (Doku, Bhutta, & Neupane, 2020). However, the study revealed significant variations across sub-regions. For instance, empowerment was significantly associated with neonatal, infant and under-five mortality in the Dominican Republic. The odds of neonates and under-five deaths of women with low ILWEI were more than threefold higher than those born to women with higher ILWEI. That of infant deaths among women with lower empowerment was nearly threefold. In contrast, low ILWEI in some countries was associated with a lower risk of child mortality whereas in other cases, the association was not statistically significant. Compared to neonates of women with high ILWEI, neonates of women with low ILWEI in Garbon and Kenya are 33 and 31 percent respectively less likely to die. Infants and under-fives of women with low ILWEI in Cote D’Ivoire were 39 and 56 percent respectively less likely to die compared to those born to women with higher ILWEI.

The findings of the pooled data by Doku and colleagues study are consistent with earlier studies in sub-Saharan Africa (Adedini, Akinyemi, & Wandera, 2001; Memiah et al., 2019). The former investigators used data from 18 countries in sub-Saharan Africa to assess the influence of women's household position on neonatal mortality. In this study, women's household position was generated as a composite index based on six dimensions of women's involvement in decision-making concerning; household purchases, visits to family and friends, spending of own earnings, partner's earnings, food to be cooked and decisions about her own health. The authors found that a low position of a woman in a marital union is significantly associated with high neonatal mortality. Neonates of women with higher household positions were 15 percent less likely to die compared to those born by women with low household positions (Adedini, Akinyemi, & Wandera, 2001). These findings align with those of Memiah and colleagues' study in five East African countries (Burundi, Kenya, Rwanda, Tanzania, and Uganda), which found that women who exercised sexual autonomy, experienced significantly lower rates of neonatal, child and under-five mortality.

Compared to children of women who have low sexual autonomy, neonatal, child and under-five deaths among women with higher sexual autonomy was 20, 18 and 16 percent lower respectively (Memiah et al., 2019). Memiah and colleagues created an index of sexual autonomy based on responses to three sets of questions (ability to refuse sex, ask a partner to use a condom, and justification of asking a partner to use a condom). It is however not clear whether other dimensions of women's autonomy such as (health

autonomy, income, social mobility and use of household resources) will have similar, lower, or higher effects on child mortality.

In summary, the evidence assembled generally suggests that an enhanced level of women's autonomy is associated with better healthcare utilization and maternal and child health outcomes. This notwithstanding, counterintuitive findings have been documented in several studies (Brunson, Shell-Duncan, & Steele, 2009; Doku, Bhutta, & Neupane, 2020; Ziaei et al., 2015). Further investigations using mixed research methods are recommended to explore the contextual factors that may underpin such findings. A key gap identified in the literature concerns the depth of qualitative methods of investigation which has limited contextual explanations for conjectures.

Most of the studies reviewed used nationally representative cross-sectional survey data (mainly Demographic and Health Surveillance data). While these datasets permit multi-country level studies, comparison of findings, generalizations and projections, national-level results may obscure significant geographical differences. In most countries, wide gaps exist in the levels of socio-economic development between major regional capitals and rural-urban dichotomies. The literature reviewed reveals that community-level as well as individual women-level factors such as education, employment, household wealth, exposure to print and electronic media, availability and accessibility of health services, and family systems (Acharya et al., 2010; Atiglo & Codjoe, 2019; Ebot, 2014; Nigatu et al., 2014; Osamor & Grady, 2016), etc exerts great influences on women agency, self-efficacy, assertiveness and self-determination. Women who live in less developed areas may thus have lower levels of autonomy and disproportionately suffer its consequences compared to

those who live in better-developed areas. The present study addresses the apparent lack of research focus on sub-populations within countries by focusing on one of the most impoverished regions of Ghana (Upper East Region).

Another important weakness identified in the literature reviewed concerns the lack of longitudinally designed studies that permit attributions of causal relations between women's autonomy and study outcomes. Cross-sectional studies are unsuitable for determining whether outcomes of research interest preceded or occurred before women gained their autonomy status. Moreover, multi-country level studies are bedevilled with the challenge of missing data and differences in contextual factors etc.

Compared to other domains, very few studies have examined women's autonomy and infant, child and under-five feeding practices and nutritional status as well as mortality outcomes. In fact, in this review, no study was found that focused on women's autonomy and breastfeeding in Ghana. Thus, this present study will contribute to a better understanding of the effects of women's autonomy on antenatal care attendance, facility delivery, breastfeeding practices, child vaccination, neonatal as well as infant, and under-five mortality in Ghana.

**The Millennium Development Goals (3 & 4) and the Sustainable Development Goal 3 in Ghana**

The Sustainable Development Goals (SDGs) constitute the global yardstick for assessing a country's level of progress towards attaining prosperity, good health, and justice for all citizens. The Goals are a call to action for nations to work towards transforming the world through sustainable development, ending poverty and inequality, and protecting the planet (United

Nations SDG Report, 2022). The uniqueness of the SDGs is that they are global rather than limited to "developing" countries as was the case with the Millennium Development Goals (MDGs). The SDGs are based on values such as equity, respect for human rights, and sustainable financing, involve intersectoral action by multiple stakeholders, and aims to strengthen the health system towards the attainment of universal health coverage (Akanle et al., 2022). The 17 SDGs and 167 targets were heralded by eight Millennium Development Goals (MDGs) which constituted the blueprint for action by developing countries to address a range of development challenges including poverty and hunger, maternal and child mortality, high prevalence of HIV/AIDs, poor access and inadequate education gender inequality and environmental degradation (Dorukifa et al., 2018).

The MDGs were adopted by world leaders at the end of the Millennium Summit of the United Nations in 2000. Ghana committed itself to the MDGs in September 2001 and adopted 17 targets and 36 indicators out of the global 21 targets and 60 indicators adopted by world leaders at the UN Millennium summit. Subsequently, Ghana mainstreamed the 17 targets and 36 indicators into its development agenda (Ghana MDGs Report, 2015). By the end of 2015, Ghana made significant progress towards the attainment of the MDGs and achieved its target of reducing extreme poverty by half, increasing the proportion of people with access to safe drinking water by half, attaining universal primary education and closing the gender gap in primary school enrollment. Other major achievements included a reduction in HIV prevalence and an improvement in access to ICT (Ghana MDGs Report, 2015). However, progress on MDG 3, 4 and 5 has been less pronounced. MDG 3 aimed at gender

equality and empowerment of women and MDG 4 & 5 aimed to reduce child mortality and improve maternal health. This review focuses on MDGs 3 & 4 and SDG 3 and the progress made towards women's autonomy, maternal child healthcare practices and child mortality in Ghana.

The MDG 3 sought to attain gender equality and employment for women. The MDGs are interconnected and recognize that women's rights and gender inequalities are critical in achieving holistic and sustainable socio-economic development. Yet women remain disadvantaged in nearly all spheres of life, education, health, access to resources, employment, media and in political representation (Appiah-Kubi et al., 2020; Akotia & Anum, 2015; Senadza, 2012). Thus, MDG 3 targeted to eliminate gender disparity in primary and secondary education by 2005 and in all levels of education not later than 2015. At the end of 2015, Ghana achieved success in bridging gender parity in school enrollments, particularly at lower levels of education.

The 2022 Ghana SDGs report shows that between 2013/2014, there was nearly no difference in gender enrolments at the primary level with an index of 0.99. Enrolment of girls relative to boys at the JHS level also improved from parity of 0.92 in 2008 to 0.95 in 2013/14. However, success at the SHS level was much lower ranging between 0.84 and in 2008 to 0.91 in 2013/14 (Ghana's SDG Report, 2022). In terms of productive employment, the report indicated that not much was achieved in bridging the gender gap. For instance, in 2013, only 3 out of every 10 wage employees in non-agricultural sectors in Ghana were women: like the situation in 1991/92 (Ghana's SDG Report, 2022). Available literature shows that women's higher levels of education and

employment are critical in enhancing their autonomy at all levels and especially at the householder, family, and community levels (Acharya et al., 2010).

Although efforts were made to increase women's representation in Ghana's Parliament, by the end of 2015, women's participation in decision making especially in governance remained very low. Similarly, fewer women got appointed as Ministers of State, or Municipal and District Chief Executives. The same can be said for the judiciary, security service and civil service. By the end of 2014, less than a quarter of deputy ministerial appointments were women (Ghana MDGs Report, 2015). Gender inequalities in decision-making at the highest level, therefore, remain a challenge and would require greater efforts and deliberate actions by the state, political parties, communities, and families to bridge the gap.

Key challenges that affected the attainment of gender equality during the MDGs period were low female enrolment at secondary and tertiary levels, sociocultural practices, and norms that discourage women from engaging in male-dominated occupations such as commercial driving, welding, and auto mechanics. Other challenges include socio-cultural barriers inimical to the promotion of gender equality, the persistence of early marriages, customary fostering, puberty rites, inadequate funds for gender work at all levels and limited knowledge and analytical capacity for gender work (Ghana MDGs Report, 2015). To close the gender parity gap, the Government of Ghana need to prioritize these challenges and implement pragmatic interventions with adequate funding.

Millennium development goal 4, aimed to reduce by two-thirds the under-five mortality rate between 1990 and 2015. By the end of 2014, under-

five mortality in Ghana declined significantly from about 155 deaths per 1000 live births to about 60 deaths per 1000 live births. However, the country failed to reach the set target of 40 deaths per 1000 live births in 2015. It was, however, able to achieve its MDG target for child mortality (GSS, 2015). Data shows that neonatal mortality accounts for nearly half (48%) of under-five mortality in Ghana (GSS, 2015). The major causes of neonatal deaths in Ghana are preterm birth complications, asphyxia, birth injury and infections (Abdul-Mumin et al., 2021; Engmann et al., 2012). Recent evidence shows that the risk of dying during the neonatal period is highest in the first week of life (Doku, 2022; Abdul-Mumin et al., 2021). Therefore, to achieve Sustainable Development Goal 3, target 3.2 in Ghana, Government must address all causes of neonatal deaths, especially during the first week of life to reduce neonatal mortality to at least as low as 12 per 1,000 live births by 2030.

To achieve SDG 3, the Government of Ghana must prioritize child immunizations by sustaining the Expanded Programme on Immunization (EPI), increasing the use of insecticide-treated mosquito nets (ITNs), improving malaria case management at facilities, decoupling children from their parents for NHIS coverage, scale up the Integrated Management of Childhood Illnesses (IMCI) and improve access to Community Health Planning Service (CHPS) compounds. There is also the need to motivate and improve the knowledge and skills of the cadre of health staff in the various CHPS through refresher training (Ghana MDGs Report, 2015). Due to the strong interconnectivity approach to the SDGs, these interventions should be implemented along pragmatic programmes that enhance women's empowerment and closes the gap on gender inequality in all spheres of life.

**Convention on the Rights of the Child**

The Government of Ghana made history by being the first country to ratify the United Nations Convention on the Rights of the Child (UNCRC) on 5th February 1990. By this act, the Government of Ghana committed itself to incorporate the treaty into its national laws (Manful & Manful, 2014) Ghana affirmed political commitment by enacting the Children's Act 1998, Act 560 in compliance with the principles of the UNCRC. This act also referred to as the "Children's Act" seeks to protect the fundamental rights of children (Manful, 2010). Several provisions in the parent Act have been amended to make it more encompassing (CHILDREN'S AMENDMENT) ACT, 2016 Act 937). Examples of children's rights stipulated in the Act include the right to name and nationality, well-being, safety and protection from harm and degrading treatment, right to grow up with parents and entitlement to parental property, non-exploitation in the form of child labour and child marriages, and the right to education and to have an opinion (Children's Act 1998, Act 560).

The core principles that anchor the Children's Act include the recognition of the family as the primary caregiver and the responsibility of the "State" when a child needs to be removed from his/her natural parents. The Act also recognizes the role of traditional systems in conflict resolution and conciliation within the community. The fourth principle caters for the changing needs of children as they grow and transition into adulthood. Ghana has implemented several policies and child-rights-based programmes and interventions towards achieving the core objectives of the Children's Act. These include the Child Welfare Policy, National Justice for Children Policy, Child Trafficking Act, Juvenile Justice Act (56), the Adolescent Health Service

Policy, the Free, Compulsory Basic Education policy and more recently the pro-poor free Senior High School policy (Abdul-Rahman et al., 2018), the National Health Insurance policy (NHIS), the school feeding programme, the education capitation grant, and expanded child immunization programme (Iddrisu et al., 2022).

Ghana has made significant progress in achieving reductions in the prevalence of child marriages and betrothals, improvements in child survival, and significant increases in gender parity school enrolments and retention (Mantey, 2019). These successes notwithstanding, children in Ghana are still confronted with serious challenges. Available data shows that child mortality in Ghana is still very high. It is estimated that neonatal, infant and under-five mortality is 23, 33 and 44 deaths per 1000 live births respectively (UNICEF, 2023). Reports of child labour and trafficking, physical abuse and sexual violence are common in Ghana (United Nations Children Fund, 2014).

In conclusion, Ghana demonstrated commitment to the protection, safety, and welfare of children which has yielded commendable success. However, there is the need to sustain the gains made and continue to impact the knowledge and skills and create opportunities that enable children to realize their full potential to impact positively on society.

**Theoretical and Conceptual Review**

Generally, autonomy is viewed by feminists and in moral psychology as "self-government or self-direction"; meaning acting, not on conditions externally imposed on an individual but on one's motives, desires, reasons and values (Ryan & Deci, 2006; Stoljar, 2018). Stolger explains that autonomy means being involved in decisions and actions in family, social groups,

economic life, and in the political arena. Since its emergence in the 17th Century, the concept has evolved to assumed importance in contemporary moral and political philosophy (Christman, 2013; Christmas, 2018; Ryan & Deci, 2006). However, there remain major contentions among philosophers regarding the detailed conditions and context of autonomy. Understanding the conditions and context of autonomy is critical in formulating policies and programmes to address the social conditions that victimize women (Held, Kittay, & Meyers 1987; Connell, 1987). This is at the heart of this study as it seeks to examine the association and context of women autonomy and child health.

The theoretical review begins with a summarized critique of early conceptualizations of women's autonomy followed by a discussion of the theory of power as espoused by Anthony Giddens; embedded in his sociological conception of structuration cited in (Karp, 1986.) Connell's theory of gender and power (Connell, 2013). The concept of "power" is key to understanding the context and nature of women's autonomy and child health (Maharaj, 1995). Thus, the theoretical and conceptual discussion underpinning this study is based on their suitability in explaining the gendered underpinnings of women's autonomy, how such conceptions enhance or undermine women's autonomy and their impacts on child health. The chapter concludes with a presentation of a conceptual framework that demonstrates the interrelationship between the explanatory variable (autonomy), intermediate variables and the outcome variable(s) (child health).

**Early versus Contemporary Perspectives of Autonomy**

The conceptualization of autonomy may be traced to eminent Philosophers such as August Kant, John Stuarts and John Rawls. The concept is central to Kant's notion of moral philosophy and in John Stuart Mill's utilitarian liberalism (Dove et al., 2017). Kant is well-known and associated with the maxim "Autonomy of the will, is the property the will has of being a law unto itself" exhibited when rational agents "will" the "moral law" (Kant, 1785 cited in (Stoljar, 2018). Kant argues that rational beings make "the moral law" for themselves and so are the authors of the law. Kant's conception of the moral law as a categorical and not a hypothetical imperative failed to account for the effects of social influence, events, individual emotions and values or circumstances in a given situation (Gauthier, 1997).

John Rawls also fails to account for the effects of social influence arguing that humans are rational agents formulating principles of justice from behind the "veil of ignorance'; and ignorant of their abilities and even sense of what is good (Rawls, 1999). These early conceptions of autonomy as "atomistic", or "self-sufficient" and unaffected by social relationships, realities and personal attributes have been rejected by revisionist (Dove et al., 2017; Stoljar, 2018) who argue that such a conception ignores the importance of the social and environmental context of agents.

Revisionist posits that clarifying the conditions of autonomous choice is key to understanding gender oppression, its manifestations and consequences (Dove et al., 2017; Seymour & Peterman, 2017; Shih et al., 2018; Walter & Ross, 2014). Revisionists believe that conceptions of agents as being 'atomistic', denies women the social and political advantages associated with

being autonomous (Stoljar, 2018). The concept of "relational autonomy" emerged to address the apparent weakness embedded in the early conceptualization of agents as being "atomistic" (Mackenzie, 2008). According to Shih et al., (2018), relational autonomy refers to the dynamic interaction of social conditions that shapes a person's self-identity and capacity for decision-making. Therefore, it rejects the requirements of self-sufficiency notion of autonomous personhood and argues that autonomy is compatible with recognizing the value of significant others such as family members and social relationships (Mackenzie, 2008; Walter & Ross, 2014). Relational theorists of autonomy acknowledge that internalized oppression and oppressive social conditions undermine agents' autonomy (Stoljar, 2018).

Contemporary feminists and moral philosophers have commonly cited three "hard cases" to contextualize their prepositions on the relational theory of autonomy. These are self-abnegation typified in the example of Coventry Patmore's poem "Angel in the House and Thomas Hill's "Deferential Wife", adaptive preference formation and practices of gender oppression such as "veiling, proof of fidelity, forced marital sex, genital mutilation, betrothal, force marriages etc (Erulkar, 2013; Westlund, 2003; Wilunda et al., 2016). Reference is often made to these cases because of disagreements among commentators as to if the cases constitute adequate representations of diminished autonomy.

In excessive difference, the interest of others such as a husband in the case of marriage rather than a woman's interest is the driving force of her preference formation (Stoljar, 2018; Westlund, 2003) argues that since the woman willingly values her opinion and interest as less important to that of her husband's, she has illustrated autonomy. Critics reject this claim on the grounds

that the woman's preference for subservience is gendered and an outcome of systemic oppressive servile roles that make women willingly endorse and adopt such preferences. The preference, values and choices of such women are driven by habitual servility (Johnston, 2017; Mackenzie, 2008).

Elster argues that adaptive preference is the unconscious altering of preferences in a situation of limited options (Elster, 1986). Elster believes such preferences subvert an agent's rationality and compromise her autonomy. While agreeing with Elster, Colburn explains further that adaptive preferences are characterized by covert influences which undermine autonomy because of the restricted options available to the agent (Colburn, 2011). Features of adaptive preferences include changes in self-perception, judgement based on incorrect standards, and pursuit of self-destructive (Mitchell, 2018). It is different from preference change in that the former is a life-long habituation (Khader, 2012). In Nussbaum's account, such preferences are often formed in a deprived context and so conflict with goods with intrinsic value. She uses the example of women who remain in abusive marriages because they think it is part of women's lot in life; since traditionally women marry and move into their husband's homes and are provided for by men (Nussbaum, 2001). Taylor described this kind of preference as paradigmatically non-autonomous (Taylor, 2009).

Westlund (2009), disagrees with Taylor and argues that adapting to abusive marriage is compatible with the critical reflection required for autonomy since women may have rejected competing options such as divorce or separation. Westlund thinks women could freely authentically be committed to norms that subordinate them (Westlund, 2009). This argument, however, fails to reflect the constraining effects of the social environment on women's choices

and decision-making. The literature on adaptive preferences is thus inconclusive and ongoing (Stoljar, 2018; Terlazzo, 2016).

Some commentators on relational autonomy contend that agents could be considered autonomous if certain minimal conditions are satisfied. For instance, "healthy human beings" who are not suffering from "pathological affliction" [intense pain, fear, anxiety, depression, or obsession] (Buss, 2005). Proponents of "minimal conditions" claim that women should be deemed autonomous so long as they do not exhibit serious cognitive or emotional impairments and are not subject to coercion (Malhotra, Schuler, & Boender, 2002). However, this kind of conception focuses narrowly on individual characteristics and fails to incorporate social reality and the important role of family, friends, and communities in the conception of autonomy (Grignoli, Di-Bernardo, & Malacrida, 2018). It does not account for the interplay and effects of gender norms and oppressive social conditions (Bierria, 2014; Johnston 2017; Liebow, 2016); which diminishes the agent's capacities and agency. This has been described as the diminished de facto power of agents over choices significant to the direction of their lives (Oshana, 2016). Studies in Ghana have shown that intimate partner violence (Tenkorang, 2019), payments of bridewealth and community norms (Horne, Dodoo, & Dodoo, 2013) and perceptions (Ganle, 2015), constrain women's ability to exercise their reproductive and sexual rights.

Procedural theories claim that autonomy is achieved when an agent has the capacity of reflecting and revising her beliefs, values, and preferences (Christman, 2009). The process is deemed content-neutral because its outcomes are considered autonomous irrespective of form or value. Choices of

relationships of dependency as in marriage are considered autonomous because of the existence of options to embrace or repudiate the cultural and religious norms of a marital partner (Christman, 2009). In contrast, substantive notions of autonomy claim that the content of preferences that agents can act on autonomously are subject to direct normative constraints (Benson, 2005). A woman who exhibits a preference for subservience is considered not autonomous under substantive notions of autonomy (Friedman, 2003).

This study draws on the insights of the various perspective for a better understanding of how women's autonomy relates to child health in the study setting. It is however important to emphasise that the Upper East region is a typical patriarchal society where masculine normative norms structure marriage, fertility and other aspects of family life. An appreciation of the intricate subtle and not-so-subtle ways in which gender norms and socio-historical relationships influence women's autonomy in the study setting is essential in explaining women's autonomy and child health.

**Theory of Structuration by Anthony Giddens (1984)**

A better appreciation of Giddens's theory of power is situated in his broad conception of structuration. Giddens developed the theory of structuration in response to dualism (subject centred and object-centred or as Giddens prefers it objectivist and subjectivist perspectives) which exists in social theory (Joas, 1987). He criticized sociological theory for its unfounded belief in positivism and functionalism (Turner, 1986). Proponents of functionalism such as Durkheim tend to emphasize the macro level of social structure to the neglect of the micro level of daily life and the negative implications of social order. Functionalism does not encourage individual effort and agency in social change,

nor does it account for novelty but rather supports the status quo and the processes of cultural hegemony that sustains it (Smith, 2010). These and other shortcomings of earlier social theories motivated Giddens's writings.

Giddens conceived social structure as rules and resources used by actors in an interaction. Rules are procedures that reflexive agents possess in their implicit stocks of knowledge employed as means for action in social systems. Characteristics of rules of structure include being tacitly known; informal, widely sanctioned, frequently invoked and used in conversations, interactions and daily routines (Joas, 1987). The structure also involves the use of resources by actors to get things done. Rules and resources are used to mediate social relations. In an interaction, rules specify rights and obligations and provide meaning for effective communication. Thus, rules and resources constitute power communicated during social interactions and in the process, "mediate" social relations (Joas, 1987; Turner, 1986).

Building on his concept of social order being a recursive patterning of time-space, Giddens suggested that social structures are the basic unit of social order which exists at three levels: the binding of time-space, as rules, and as resources. Social structures are continually created through active recursive processes of daily life. Social order is thus embedded in the actions of the individuals who create them in their routine behaviour. The individuals who create these patterns are purposive agents achieving projects reflectively thought out and developed within a specific context (Joas, 1987).

According to Giddens, power is an important component of social structure. It is created and exercised by human agents; it influences and limits them. Giddens perceives power as generated by the social system and used in

whatever way that actors wish so. Power is generated by structural reproduction. It is the means to an end and therefore represents the transformative capacity of agents to change the social world. People make use of what exists to know what to say, do, and how to act in situations in their lives. Giddens argues about an implied constraint on structures as power resources. The enabling facet constitutes power resources and the constraining aspects ensure their systematic reproduction. Power resources are thus integral to the process of domination often brought to bear by actors in the exercise of conflictual power (Joas, 1987).

Giddens uses the term asymmetries to imply that such domination presupposes mutual autonomy and dependence. As a dialectic of control, people in vulnerable or weaker positions, do have some influence on the behaviour and conduct of those in safer and assertive positions. Giddens does not see power as a stock of capital, but as the capacity to achieve outcomes manifested in actions. Thus, while women are often largely characterized as powerless, they do have effective power. However, they may be constrained by the high cost associated with mobilizing such resources. Hence, ability and access to resources are key to understanding the power that people exercise. The investigation of power involves exposing these dialectics of dependence and autonomy in specific contextual situations (Lusk, 2008).

The choice of Giddens structuration theory for this study is rooted in its recognition of individuals (women in the context of this study) as agents within a social order, and the existence of inequality in access to resources which are power vehicles. More so, Giddens explained that when agents interact, they, consciously and or unconsciously communicate meanings (referred to as sanctions). Interactions, therefore, shape social norms which are evaluated

against the moral rules of the structure. These features of the theory guided the interpretation and meanings of narratives of women and mother/fathers-in-law concerning women's autonomy and how it affects child health in the Upper East Region of Northern Ghana; a largely patriarchal society (Bawah et al., 2013; Bowan, 2013; Takyi & Dodoo, 2005).

In addition to the theory of structuration by Anthony Giddens, this study also draws inspiration from the gender and power theory by Robert Connell (1987) and that of Huis et al., (2017); a revision of earlier works by (Pratto et al., 2011; Pratto & Walker, 2004). According to the gender model, power is gendered, defined and structured as social realities including relationships, capabilities and vulnerabilities (Huis et al., 2017). Gender connotes the social constructions, norms, rules, and expectations that structure the lives of men and women. Gender norms, rules and expectations are often inculcated early in life and structure individuals' identity and behaviours (Burns & Kinder, 2012). An appraisal of gender thus helps in understanding how men and women act and interact differently within different systems. Gender affects how power is processed, reinforced, or undermined (Mendelberg & Karpowitz, 2016). Huis et al., (2017) argue that compared to women, men have greater access and control over resources and are more advantageous concerning cultural ideologies. This produces gender inequalities which makes women more vulnerable and dependent on men and a male ordered social system (UNDP, 2016).

Consequently, tailored social policies and programmes are often implemented by various Governments and development partners to challenge the gendered structured social order and to bridge the inequalities between men

and women. to challenge the gendered structured social order and to bridge the inequalities between men and women. However, interventions that stress individual capacities and exercise of personal choice tend to neglect collective behaviour and the adherence to cultural norms (Budgeon, 2015; Kurti et al., 2016) and so, may not necessarily stimulate individual capacity and agency if the cultural dimensions of the setting are not taken into consideration. Huis et al., (2017) recommend that interventions on women's empowerment should be viewed from three ways: (1) Personal level (resources, agency, and achievement), (2) in relation to significant others (spouse, family, and community), and (3) the larger society. At the personal level, resources refer to material, human and social expectations. Agency refers to the ability or sense of ability to define one's goals, and act upon them to attain strategic life outcomes. Achievements include improved well-being, education and skills development, ownership and use of resources, good health, participation in household decision-making, and community and political leadership (Huis et al., 2017). The underlying assumption is that women are able independently to take decisions, use resources and act in ways that enable them to achieve their goals and destiny (Kabeer, 1999; Jamil & Khan, 2016)

The personal dimension of empowerment stresses women's individual capacities and free exercise of personal choice. It is important however to note that the exercise of personal choice does not necessarily always produce positive outcomes for women (Budgeon, 2015). To Budgeon, women's individual choices are historically and structurally conditioned. As such, an investigation of women's autonomy needs to be historically and structurally situated to appreciate outcomes in varied contexts. This study adopts this approach to

examine individual women's autonomy and capacity for action and self-determination (Cheston & Kuhn, 2001; Malhotra, Schuler, & Boender, 2002) concerning maternal child healthcare practices and neonatal, child and under-five mortality. Integrating elements of the theory structuration and, the theory of gender and power into the present study offers new insights and stimulates an in-depth appreciation of the context of women's autonomy and maternal child healthcare practices and child mortality in the Upper East Region of Ghana.

**The Theory of Gender and Power (Cornell, 1987)**

This study is also guided by the theory of gender and power (Connell, 1987). Robert Connell posits that normative social structures embedded in socio-cultural norms, beliefs and practices in society produce gendered power inequities between men and women (Connell, 1987). To him, social structure means more than just a pattern but refers to the uncontrollable nature of the social world. It is suggestive of the experience of being up against something, of limits on freedom expressed through an interplay of powers in a range of social institutions. An attempt to understand social structure must therefore start with an analysis of social institutions (Maharaj, 1995). The conception of social structure, as "the pattern of constraint on practice inherent in a set of social relations" has been referred to differently as 'hegemonic or 'discursive structures' in discourse theory (Jewkes et al., 2015; Morrell, Jewkes, & Lindegger, 2012).

Three major interdependent social structures "sexual division of labour, power and cathexis characterize and explain gender relations in a given society. Although these social structures work at both institutional and societal levels,

their effect is more pronounced at the societal level (Connell, 1987). Since gender norms and values prescribe and prohibit how men and women relate and access resources, transforming the hegemonic masculinity as identified by Cornell requires a change in ideals shared at a societal level. This can be achieved by identifying and addressing norms, values, attitudes, practices, and behaviours that perpetuate gender inequality especially male domination over women. The three social structures of labour, power and cathexis are described below.

**Gender Division of Labour**

This concerns the existence of varied social structures which inform relations between men and women in different but significant ways and produce patterns of a gendered division of production, consumption, and exchange in various societies. Connell identified the organization and division of household work, childcare, paid and unpaid work, discriminations of training opportunities, formal employment, conditions of work and work rewards; as significant gendered social structures that explain women's vulnerabilities relative to men (Connell, 1987). In Ghana, men are perceived with a masculine lens, expected to be breadwinners and so do more paid jobs, are better educated and earn more in some instances even if engaged in doing the same work as women (Koomson & Danquah, 2021). Women, on the other hand, are socialized and engaged more in feminine activities such as domestic work, childcare and have less education and skills training. Although there are no scientific or biological bases for this discrimination, gender inequalities remain a big challenge in many settings in Africa (Chu, 2011). Gendered inequalities breed unbalance power relations.

**Gender Division of Power**

Connell explained that power concerns gender-differential social structures of authority, control, and coercion. Examples of such social structures are the hierarchies of the state that practically exclude women, institutional and interpersonal violence against women, sexual suppression as well as domestic authority and the contestation of such authority. Connell, (1987) labelled these related structures 'gendered division of power'.

**Cathexis**

Cathexis refers to the social construction of sexuality driven by society's configuration of social structures. To Cornell, the bodily dimension of sexuality does not exist before, or outside social practices but rather enacted (Connell, 1987). Maharaj agrees with Connell and explains that as structures reflect and reinforce dominant interests, 'everything above and beyond the physical body is a marking on the body made by power relations (Connell, 1987). Connell believes that the construction of sexuality follows a social logic and is unaccountable in terms of structures of the division of labour and power. Although the divisions of social structure are conceptually different, in practice, they are inextricably interwoven.

According to Connell, the embedded structures of labour, power and cathexis are resilient to change and individuals serve as vessels diffusing discursive power (Connell, 1987). Discursive power is premised on the grounds that the way people think and talk about power influences and reflect the way they act concerning power (Karlberg, 2020). Huis and colleagues in an extended version of Connell's theory argued that men relative to women have greater access to and control of resources and have more advantageous cultural

ideologies because of the social system gendered (Huis et al., 2017). For instance, when men are given higher, and women are offered lower skills training, such training may limit women to lower remunerated jobs which in turn may limit their social spaces in significant ways. Thus, gender inequalities in education, economic, cultural and political spheres of life make women more vulnerable and dependent on men (Huis et al., 2017; UNDP, 2016).

Connell explained further that at the institutional level, the interplay of normative structures (norms, rules, expectations) at the level of social institutions (family, schools, workplace, religious institutions, media and even in interpersonal relationships etc) produces patterns of imbalances in gender relationships which affects a person's wellbeing (Connell, 1987). Typical effects of gender imbalances at the level of social institutions in Ghana include discrimination against women in formal education, employment, governance, entitlement to family resources including land, and gender stereotyping in the media and social space (Bawah & Sanyare, 2013; Gadezekpo, 2009; Kwaku Ohemeng & Adusah-Karikari, 2015). The wide gender imbalances diminish women's capacities and generate risk exposures that adversely impact their health.

**Application of the Theory of Gender and Power**

The theory of gender and power has been applied in varied fields of human endeavours, especially in sexuality, family life, reproductive health and in the study of sexually transmitted diseases (DePadilla et al., 2011; Hahm et al., 2012; Rosenbaum et al., 2016). For instance, the theory has been deployed in studies on the effects of the sex of leaders and managerial practices on inequalities in earnings (Abendroth et al., 2017) reproductive health and fertility

regulation (Ameyaw et al., 2016; Bawah et al., 1999; Fotso, Ezeh, & Essendi, 2009). Other researchers applied it to the study of the role and effects of gender and power relations on sexual behaviour and STDs/HIV/AIDS (DePadilla et al., 2011; Pullum & Staveteig, 2013; Rosenbaum et al., 2016), and intimate partner violence (Ahinkorah, Dickson, & Seidu, 2018; Panchanadeswaran et al., 2007; Tenkorang, 2019). The findings of some of these studies have improved feminist discourse and led to the formulation of transformative policies and programmes on women's empowerment and development (Abendroth et al., 2017; Kabeer, 1999; Wingood & DiClemente, 2000).

DePadilla and colleagues, for instance, used data from a randomized controlled HIV prevention trial to construct pathways and associations between social constructions of gender and power and sexual behaviour. Their findings showed strong associations between the structural model and study outcomes across initial and cross-validation samples (DePadilla et al., 2011). Earlier studies tended to address the impact of gender and power relations on the health, social, economic, and emotional well-being of women. Most of these studies looked at what happens to women in their relatively weaker position compared to men.

In contrast, Abendroth et al., (2017) applied the theory of gender and power to examine what happens to gender inequality when women obtain senior and more influential positions in organizations. They explored if and how human resource practices and differences in workers' qualification affects earnings and found significant gender differences in earnings. They found that when women occupy leadership and managerial positions, their colleagues women in jobs with lower qualifications earned less but this did not affect

women with higher qualifications. Unlike women, men's earnings were higher when supervised by a male supervisor. The authors concluded that women's managerial and supervisory role does not necessarily reduce gender inequalities (Abendroth et al., 2017).

The theory of gender and power was adopted to guide this study because, in Ghana, gender differences and inequalities are highly pronounced due to strong patriarchal norms and values systems (Bawah et al., 2013; Bawah et al., 1999; Takyi & Dodoo, 2005). The situation of the Upper East Region of Ghana is worsened by widespread poverty and underdevelopment compared to the more urbanized regions of Ghana (Ghana Statistical Service [GSS] 2015). In Ghana, women's roles and responsibilities are largely restricted to domestic and household chores, reproduction, and family care while men are socialized to be more empowered in all spheres of life (economically, politically, and socio-culturally) (Bawa & Sanyare, 2013; Gadzekpo, 2009; Kwaku Ohemeng & Adusah-Karikari, 2015). Compared to men, fewer women have attained higher levels of formal education, are less employed in the formal sector, owe less property and productive resources, and exercise limited power in the political, social and traditional leadership space (Bawa & Sanyare, 2013; Government of Ghana, 2003; Kwaku Ohemeng & Adusah-Karikari, 2015).

In patriarchal societies in Ghana, men are socialized to have a sense of entitlement and exercise control over women. The relative superior power of men is reinforced by institutions of lineage, marriage customs, dowry systems and norms on childbearing and family obligations (Adongo et al., 1997). Among the Kassena-Nankana people of Northern Ghana, for instance, the payments of dowry confer to men sexual and reproductive rights over their wives (Adongo

et al., 1997; Bawah et al., 1999). More so, hegemonic sexual norms are not uncommon. Polygyny is culturally condoned, but polyandry is deemed deviant behaviour and unacceptable (Ickowitz & Mohanty, 2015). This is described as masculine hegemony which prioritizes the interest of men and patriarchal values and norms (Connell & Messerschmidt, 2005; Jewkes et al., 2015). These gendered inequalities create power imbalances, restrict women's agency and heighten their vulnerabilities. Connell's prepositions of how gender divisions of labour and power underpin the root causes of women relative vulnerabilities is so appropriately adopted to guide this study in assessing women's autonomy and child health in the Upper East region of Ghana.

Elsewhere in Ghana and other African countries, available literature suggests that gendered norms and patterns adversely affect the health and well-being of women (Achana et al., 2010; Ahinkorah, Dickson & Seidu, 2018; Ameyaw et al., 2016; Bawah et al., 2013; Pullum & Staveteig, 2013; Tenkorang 2019). It has also been established that intimate partner violence (Ahinkorah, Dickson & Seidu, 2018; Tenkorang, 2019), covert contraceptive use (Baiden et al., 2016; Loll et al., 2019) maternal health decision-making (Ameyaw et al., 2016), and increased risk of STDs/HIV infections (Achana et al., 2010; Pullum & Staveteig, 2013) etc are strongly correlated with women's weak autonomy. Bawah et al., (2013) in a study of seven African countries including Ghana, found that women's relative higher contribution to household expenditure is not sufficient in explaining contraceptive use among women who desire to space or limit childbearing. The authors argued that in Africa, social norms and institutions are more important in defining conjugal roles than couple's relative contribution to household expenditure (Bawah et al., 2013). These findings lend

more credence to the argument that the immediate environment, socio-cultural norms, and role of the family in (Amugsi et al., 2014) examine women's autonomy and child health.

**Conceptual Framework**

The theoretical and empirical literature reviewed in this study reveals that gender inequalities in society are embedded in normative social structures and reinforced by gender roles, norms and practices (Pullum & Staveteig, 2013; Wingood & DiClemente, 2000). The interdependent interaction among these normative social structures produces gendered disparities and inequalities which exacerbate the vulnerabilities of women in all aspects of life (Connell, 1987). Guided by the theoretical and related literature reviewed, I tease out key components of the gender division of labour, power and cathexis that relate to women's autonomy, to construct a conceptual framework (Figure.1) to guide this study. The framework shows how the various components affect women's autonomy and its linkages with child health.

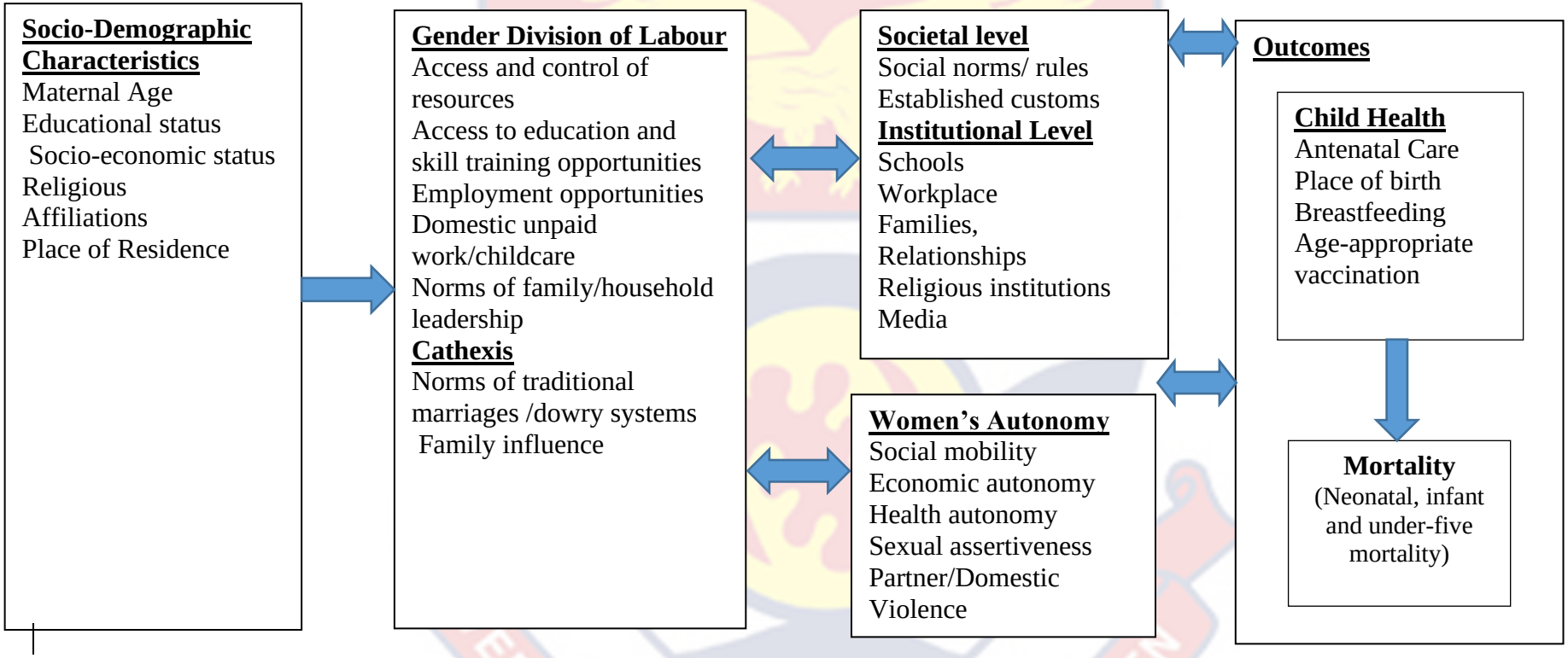


*Figure 1*: Conceptual framework

Source: Achana, 2021

As argued by Connell, social structure or reality operates mainly at two levels: societal and institutional (Connell, 1987). At, the institutional level, the family constitute an important institution through which gender norms, roles and expectations begin to have a hold on individuals in society. In Ghana, gender divisions in all spheres of life are well established and pervasive with men more socialized in "outdoor and masculine" income-earning work while women are trained more in household tasks, childcare and family responsibilities which is mainly unpaid work (Achana et al., 2010; Bawah et al., 2013; Bawah et al., 1999; Kutsoati & Morck, 2016; Sikweyiya et al., 2020). Thus, more men in Ghana tend to be educated and control political, cultural and religious power than women (Akita, 2010; Bawah et al., 1999; Bowan, 2013; Takyi & Dodoo, 2005). As explained by Connell (1987), these conditions create resources and power inequalities, limits women's ability to exercise control over their life and this negatively affects their health and social well-being.

As men are comparatively advantaged, they tend to act in ways that perpetrate their strong patriarchal hold at the institutional and general societal levels. For instance, compared to women, men tend to marry at older ages, have more access to productive resources and are more educated. In addition, customarily, men are expected to be heads of households and families, and they tend to also occupy traditional and political leadership positions. Men then, tend to exploit their privileged social positions to strengthen their dominance over women. For instance, in Ghana men tend to use their skewed political leadership advantage in all three arms of Government, civil and public employment including the security services etc to reinforce their dominance over women. The failure of the male-dominated political leadership in Ghana to implement

the law on affirmative action to give women a fairer representation in national affairs is a clear example of how normative structures as espoused by Anthony Giddens affect women's empowerment and suppress their autonomy.

The elements of the gendered division of labour identified in the study setting with high potential to negatively affect women's autonomy include women's low access to and control of economic resources, education, skill training, non-availability of or low employment opportunities, domestic unpaid work/childcare and women's economic dependence on men. On the other hand, the major features of gender division of power identified in the literature include wide spousal age differentials, unsupportive norms of family and household leadership, and unfavourable norms and policies on inheritance to family property. Similarly, the elements of cathexis identified include norms of traditional marriages and dowry systems, women's weak control of fertility and sexual rights, polygyny, and gatekeeping roles of key family members, especially mothers-in-law.

As well established in social research, the socio-demographic characteristics of participants often mediate the true relationship between explanatory variables and study outcomes (Ciolino et al., 2013; Kahan & Morris, 2012). In this study, respondents' age, educational status, employment status, religious affiliation, and place of residence are conceptualized to work through gender divisions of power, labour and cathexis to influence women's autonomy and normative structures at the institutional and societal level. The background characteristics of women are not conceptualized to directly affect the study outcomes such as timing and duration of breastfeeding, attendance of first ANC, attainment of a minimum of four ANCs, age-appropriate vaccination

and health facility delivery and child mortality. To be able to estimate the net effect of women's autonomy on the study outcome variables, the multi-variate logistics regression analysis will adjust for these covariates.

As demonstrated in Figure 1, there is an inverse relationship between diminished women's autonomy (the explanatory variable) and maternal child healthcare practices and child mortality outcomes. Women with diminished autonomy are likely not to initiate breastfeeding within one hour of birth or practice exclusive breastfeeding. Neither are they likely to give birth in a health facility nor ensure that their children receive age-appropriate vaccinations. Conversely, women with higher autonomy status will be assertive, defy inimical cultural norms and practices and maintain healthy maternal child healthcare practices. However, I argue in this study that the painful experiences of the death of a child can empower women to make child health-related decisions without recourse to their male partners or other family members. In line with Connell's (1987) prepositions, lack of or weak women's autonomy is caused by gender and power imbalances and inequalities occasioned by prevailing gender norms, roles, and division of labour at the societal and institutional level in the study setting.

Diminished women's autonomy work through intermediate variables such as (timing and spacing of births, parity, timing and duration of breastfeeding, appropriate complementary feeding, health decision making and attitudes including the timing and frequency of antenatal care, age-appropriate immunization, choice of place of delivery and post-natal care), to adversely affect child's health. The analysis will account for documented socio-

demographic profiles of women and children that affects child health outcomes (Gupta et al., 2015; Novignon et al., 2015).

# CHAPTER THREE

# RESEARCH METHODOLOGY AND STUDY SITE

## Introduction

This chapter explains the philosophical paradigm that guided the conduct, especially the research methods employed in this study. This is followed by a description of the study context, the context of the study data, study design, sampling, description of study variables, data analysis, and achieving trustworthiness. The chapter concludes with a description of covid19 protocols and ethics procedures that were observed.

## Philosophical Underpinnings of the Study

Philosophy primarily concerns itself with the fundamental nature of existence and how humans relate to nature. Over the centuries, what constitutes knowledge, and the ways by which such knowledge is acquired have been a subject of intense debate dominated by three philosophical paradigms: Positivism, Interpretivism and Realism (Archer et al., 2013; Bhaskar et al., 1998; Tweedale, 1988). Positivism and Interpretivism offer parallel ontological and epistemological perspectives of the nature and structure of reality. Al-Shaade explained that this concerns how we make sense of the world and the legitimacy and scope of such knowledge (Al-Saadi, 2014). In contrast, Realism credited to Aristotle as the founder borrows elements of the two extreme paradigms in its ontology and epistemology.

Positivism emerged in the early part of the 19th century and views social reality objectively. Credited to Auguste Comte, its epistemological strength is anchored on the collection and analysis of empirical data deductively, to explain, predict or discover reality (Ryan, 2019; Zachariadis, Scott, & Barrett

2013). Positivists believed that truth is static, objective, and can be acquired independently detached from the influence of the investigators and the research processes if the investigation or research is professionally done. Thus, the process of acquiring or discovering knowledge should be value-free, replicable and the outcome or results generalizable to a greater degree of certainty. This includes careful observation and deductive reasoning (Ormston et al., 2014). Therefore, positivism in sociological discourse is derived from the principles and norms of natural science in methods of data collection, analysis, interpretation and testing of theories and hypotheses.

Epistemologically, positivism posits that beliefs, perceptions, experiences, feelings and motivations are subjective and not elements of scientific investigations (Ryan, 2019). However, it is often criticized for limiting its conception of reality to what can be known through empirical investigations. Its critics argue that human knowledge is limited and reflects only a fraction of a deeper and far-reaching reality (Fletcher, 2017). In fact, even post-positivists in their attempt to address the weakness of their contemporaries admit that reality can only be approximated (Al-Saadi, 2014).

In contrast to positivism, interpretivism epistemologically assigns more importance to people's subjective understanding ad interpretations of social phenomena and their own actions' (Afulani et al., 2017; Al-Saadi, 2014; Fletcher, 2017). To interpretivist, objective reality cannot be determined definitively but rather social phenomena and the meanings that people make of it comes from the interactions between and among social actors. This implies that the meaning depends on the context and may change with time. Therefore, Jnakowicz quoted in (Al-Saadi, 2014) explains that the essence of sociological

inquiry should be about clarifying how human beings understand their actions. Unlike positivism which focuses on discovering truths or reality, ontologically, interpretivism believes in exploring and understanding the social world through the meaning and interpretations assigned to social phenomena by those being studied while maintaining trustworthiness reflexively. In contrast to the view that the process of acquiring knowledge should be objective and value-free, the interpretivist tradition opines that social research is value-laden because the research process, meanings and interpretation of findings cannot be completely separated from the researchers own values and perspectives.

As a philosophy, interpretivism is rooted in hermeneutics and disputes the sufficiency of objectivism since it does not account for the socio-cultural context of social phenomena (Al-Saadi, 2014). The strength of interpretivism lies in the collection of rich and detailed qualitative data which permits a better understanding and interpretation of the meaning, views, opinions, and experiences of social actors. This positions researchers to appreciate things from the perspective of those being studied (Saunders, 2012). The research approach is often 'inductive' and researchers collect, process, analyze and draw meaning from qualitative data based on which theories and hypotheses are generated and tested.

Realism emerged in response to the pitfalls of positivism and interpretivism. It borrows elements of the two extreme paradigms in its ontology and epistemology. Considered the father of realism, Aristotle opined that reality exists in different forms, physical, as ideas or perceptions. Aristotle believes that ideas can exist without matter but not the reverse (Szűcs, 2018). To substantiate this, Tweedale (1988) explained for instance that knowledge

acquired through our senses is real and the true entity of the world. However, the matter is factual and can be determined through empirical investigation whereas personal feelings, perceptions and meanings are subjective (Tweedale, 1988); a blend of positivism and interpretivism. This study is anchored on the tenets of critical realism (CR); an offshoot of realism which has gained prominence in sociological discourse in the past decades (Mingers, 2015).

Inspired by Marxism, critical realism offers a general framework for research which overcomes the contentions and shortfalls of positivism and interpretivism. The choice of critical realism in this study is because it incorporates the core features of positivism and interpretivism in its ontological and epistemological propositions (Al-Amoudi & Willmott 2011; Newton, Deetz & Reed, 2011). It also provides a generic methodological framework which is appropriate for social research that combines quantitative and qualitative strategies in its investigation of social phenomena.

Critical realism emerged in the 1970s and is credited to foundation works by Ram Roy Bhaskar an English Philosopher. Its proponents posit that social reality is open-ended and produced by complex interactions of causal mechanisms or events and occurrences reinforcing each other. This makes it incompatible with an experimental approach to investigating reality. For instance, social structures may be unobserved directly but exist due to their causal efficacy. However, reality is relative and socially and historically constructed (Al-Saadi, 2014; Bhaskar et al., 1998; Ruslin, 2019). Critical Realism sees knowledge as subject-dependent and that objects or material things have an intransitive domain. Termed generative mechanisms, observable or unobservable structures with casual properties interact to produce actual

events or things that do not happen but can be investigated and explained (Al-Shaade, 2014).

Critical realism assumes a three-layered stratified ontology: the 'actual', 'real' and 'empirical' (Al-Saadi, 2014; Bhaskar et al., 1998). The 'actual' refers to events or objects which occur irrespective of human experiences and or interpretation. This suggests that 'real' occurrences may be different from what is observed 'empirically'. The empirical refers to human experiences of events. Here, reality can be studied empirically and explained using scientific methods of investigation devoid of emotions. However, the process of scientific investigation is mediated by human experiences and the meaning people make of them. It is at this level that social ideas, meanings, decisions, and actions occur. The 'real' refers to the 'structures, mechanisms, powers and tendencies which govern events taking place in the actual. CR seeks to explain social events through these causal mechanisms and their effects on reality (Al-Saadi, 2014; Belfrage & Hauf, 2017; Hastings, 2021).

A key feature of the ontology of CR is that reality is not limited to human knowledge of it. In other words, the nature of reality is not in the words of Bhaskar, 'reducible' to epistemology (our knowledge of reality). Reality is infinite and human knowledge of it constitutes only a fraction. Critics faults positivism for promoting what he termed as an "epistemological fallacy" since human limited knowledge of reality does not suggest such reality exists (Bhaskar et al., 1998; Patomäki & Wight, 2000). For instance, the view of possible life in outer space does not constitute evidence of such reality (Øgland, 2017) as it simply means that we do not know. Similarly, constructivists are accused of limiting their view of reality to human knowledge and experiences.

Critical realism deviates from these stands and sees the social world as theory-laden and not theory determined. Some knowledge of reality may be closer to the truth than others.

CR is also committed to methodological pluralism based on its pluralist ontology (Fletcher, 2017). It supports the use of a variety of research methods in investigating social phenomena. It uses the concept of 'reproductive' movement to explain how researchers move from the position of describing social phenomena based on cognitive material or pre-existing theories to explain the conditions that make its existence possible (Belfrage & Hauf, 2017). The process is continually interactive to obtain a deeper knowledge of complex reality utilizing qualitative and quantitative data based on the appropriateness and adequacy of either approach or both for addressing research objectives or questions (Fletcher, 2017).

Thus, the tenet of critical realism aligns well with the mixed methods research strategy adopted in this study. The approach permits critical analysis based on feminist ideologies of how prevailing inequities and normative social structures impact women's autonomy and affect the utilization of maternal healthcare practices and child mortality. The survey data permits investigation of the direction and strength of the association between women's autonomy and maternal healthcare practices and child mortality, while the narratives from mothers and important gatekeepers such as mother-in-laws permit a richer meaning, understanding and interpretation of the complex realities that structure women's autonomy and its implications for child health.

This study also seeks to investigate how social and normative structures such as community norms and values, gender dynamics and household power

differentials influence women's autonomy and affects maternal healthcare. The embedded qualitative component of the study will help to explore the context of these dynamic relationships and the meanings and interpretations of why and how women's autonomy affects maternal healthcare practices and child mortality.

In this study, women's autonomy is conceived not as a static phenomenon but depends on social and cultural factors such as culture, religion, media, education, and access to productive resources etc. This means that appropriate policies and interventions can be targeted at structures that impact women's autonomy to produce more desirable child health outcomes. Conducting this study with a critical realist's mindset helped in navigating, understanding, drawing meanings, and interpreting the complex realities that structure maternal autonomy and child health in the study setting.

**Description of the Study Context**

The study was done in the Upper East Region of Ghana which lies between longitude 0° and 1° west, and latitudes 10° 30′N and 11°N. The region is in the extreme northeastern part of Ghana sharing borders with Togo to the east and Burkina Faso to the north and the Upper West region of Ghana to the west. At the time of the study, the Upper East Region had nine political administrative districts with Bolgatanga as its capital. The remaining districts were Bongo district, Talensi-Garu-Tempane district, Nabdam district, Kassena-Nankana East, Bawku West district, Bawku Municipality, Kassena-Nakana west and Builsa districts (Awoonor-Williams et al., 2013; Ghana Statistical Service (GSS) 2015). Since then, six more districts (Binduri, Nabdam, Garu, Pusiga, Talensi, Builsa South), have been created making a total of fifteen districts (Figure 2).

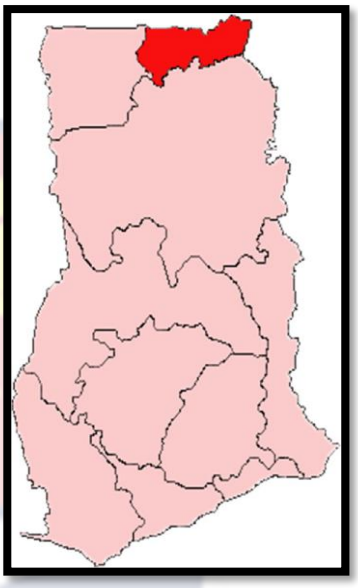

*Figure 2:* Map of Ghana showing Upper East Region in red

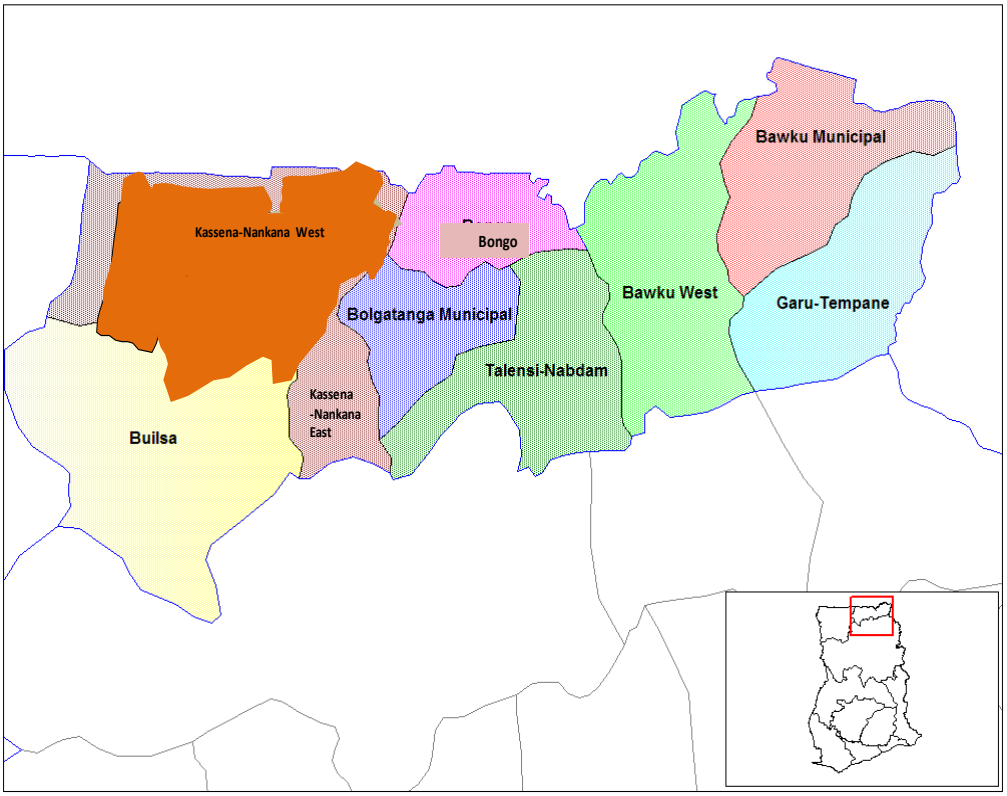


*Figure 3*: Map of districts in the Upper East Region at the time of the study

Source: GEHIP, 2015.

According to the latest Ghana Population and Housing Census, about 1,301,221 million people live in the Upper East Region. Females form 51.2% of the region's population (Ghana Statistical Service [GSS] 2022). The region is considered one of the three topmost poorest in Ghana. Its dominant economic activity is subsistence agriculture in the form of animal rearing and cultivation of cereals such as rice, millet and sorghum (Achana et al., 2015; Bawah et al., 2019; GSS, 2015). The healthcare system in some districts of the region has been described as fragile with incomplete referral care service (Bawah et al., 2019).

Each district has a district hospital however, a number of these hospitals were recently converted from health centres following the creation of new political and administrative districts and thus lack the full complement of essential infrastructure for effective healthcare delivery services. Although progress has been made in the implementation of primary healthcare services anchored on Community-Based Health Planning and Services (CHPS), the regional hospital lacks the necessary skilled staff, logistics and medicines to provide effective tertiary-level healthcare delivery services.

Typical of patriarchal societies, male dominance, restrictive female cultural norms and practices, early marriage and childbearing among women is common in the region (Achana et al., 2015; Bawah et al., 1999). Thus, gender inequalities are highly prevalent and skewed disproportionately against women. Only 50.1% of women aged 15 years and above in the region have ever attended school compared to 69.5% of males (Ghana Statistical Service [GSS] 2019). Generally, mortality indices in the region have improved over the past decades but remain very high. The region has an under-five mortality of 78 deaths per 1,000 live births compared to a national average of 80 deaths per 1000 live births (GSS, 2015). According to the 2010 Population and Housing Census, the highest rural death rate and overall male and female mortality rates were recorded in the Upper East, Upper West, Volta, and Eastern regions. It is in this intriguing context that this study examines the association and context of women's autonomy and child health.

**Context of the Study Data**

This study used secondary data collected by the Ghana Essential Health Intervention Programme [GEHIP] (Awoonor-Williams et al., 2013). GEHIP was implemented to address bottlenecks in Ghana's flagship primary healthcare programme known as the Community-based Health Planning and Services (CHPS). As a policy, CHPS is designed to provide a wide range of essential preventive and curative services towards achieving Universal Health Coverage (UHC). This includes integrated management of childhood illness, immunization services, and basic safe motherhood care. GEHIP was a response to lower coverage of CHPS and other implementation challenges that adversely affected its impact (Awoonor-Williams et al., 2013; Nyonator et al., 2005). GEHIP was a package of interrelated health systems interventions designed to strengthen the WHO's six pillars of health system development (Awoonor-Williams et al., 2013). The goal of the project was to fast-track the attainment of the Millennium Development Goal (MDG) four and five in the study setting.

GEHIP was implemented in three of the then nine political administrative districts of the region (Builsa, Bongo and Garu-Tempane districts). Details of the GEHIP programme are available in (Achana et al., 2015; Awoonor-Williams et al., 2013; Bawah et al., 2019; Kanmiki et al., 2014). The Kassena-Nankana East and the Kaseena-Nankana West districts were excluded because of potential contamination resulting from several research interventions that have taken place in the two districts. Mortality in these two districts is known to have declined precipitously (Binka et al., 2007). The data for this study which comes from the endline survey of GEHIP was conducted in the remaining seven districts of the region (Figure 1).

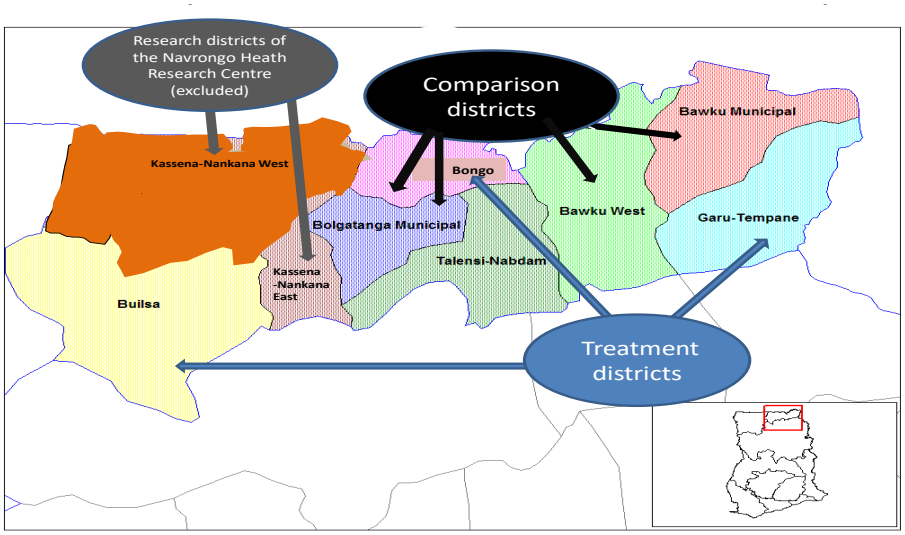


*Figure 4*: Map showing samples clusters in the survey

Source: Achana et al., (2015)

Given the high prevalence of poverty and weak socio-economic profile of women, (Achana et al., 2015; Awoonor-Williams et al., 2013), weak health infrastructure and high child mortality (Welaga et al., 2013), the Upper East region presents an appropriate context for an investigation of the possible effects of women's autonomy on maternal child healthcare practices and child mortality.

**Study Design**

This study is an analytical cross-sectional study that used mixed methods research strategies in its investigations. By use of complementary data, it builds a more holistic picture of the nature and context of women's autonomy and maternal child healthcare practices and child mortality in the Upper East region of Ghana. Beyond enhancing knowledge, the findings of this study will enhance the adoption of pragmatic health promotion strategies, programmes and policies that enhance women's autonomy and impact positively maternal child

healthcare practices and child mortality. However, it suffers from the defects of temporality and is unable to demonstrate the sequence of events nor establish direct cause-and-effect relationships (Kesmodel, 2018). This study is unable to establish at what point in time the sampled women gained or lost their autonomy status nor tell if the women lost their children before or after they gained their autonomy status and vice versa.

**Sampling**

A cross-sectional randomized cluster household survey was conducted among women of the reproductive age group 15-49 years old. In the absence of well-developed vital registration systems, the use of randomized cluster household surveys for evaluating the impacts of population-based interventions have become very common (Barros & Victora, 2013; Hibben et al., 2019; Kesmodel, 2018; Mengue et al., 2016). Randomized cluster household surveys are a multistage probabilistic sampling methodology where 'clusters' and households are selected from geographic-based sampling frames that cover the entire country or study area of interest (Barros & Victora, 2013; Mengue et al., 2016). Typically, clusters or census Enumeration Areas (EAs) are selected proportional to population size in the first stage. Households are then selected through simple random sampling in the second stage (Corsi et al., 2012). Such a design permits naturally occurring population hierarchies which makes it possible to examine the effects of population-level and individual-level factors that may influence health outcomes (Hibben et al., 2019).

In this study, the Ghana Statistical Service (GSS), randomly sampled 66 Enumeration Areas (EAs) proportional to population size using projections based on the 2010 population and housing census (Ghana Statistical Service

2012; 2014). Using the sampling frame, the physical boundaries of each EAs were identified and household listings were done for all households in the EAs, including a listing of members of each household. Households with women of reproductive age group 15-49 years old in the sampled EAs were then randomly selected proportional to the enumeration area size. All eligible women in the sampled households who voluntarily agreed to participate were interviewed. The survey achieved a successful response rate of 76% (5, 914) out of a target of 7588 participants. Data was collected over the period 2nd October 2014 to 31st December 2015. The paperless "Open Data Kit" (ODK) software was used in collecting the data. This technique allows data entry, editing and corrections to be done concurrently (Anokwa et al., 2009).

Information on several health indicators including detailed reproductive profiles of each woman was obtained. These include the number of biological sons and daughters living with them or elsewhere at the time of the survey, the sex of the child, date of birth, place of birth, and whether the birth was single or multiple. For all children who died, information on the age at death was obtained. This detailed information permits the calculation of several mortality indices including neonatal, child and under-five mortality rates. Information on health-seeking behaviour and household interactions including decision-making concerning resources, utilization of health services, sexual coercion and social mobility was also obtained from the study participants.

Participants were asked to indicate who usually makes decisions about major household purchases; who decides how the money they earn is spent; who makes decisions about purchases for daily needs. Participants were also asked if they can visit families and friends without seeking permission; whether they

can refuse to have sex with their partner without any severe consequences and lastly whether they needed permission to seek care at a health facility. These sets of questions permit the construction of women's autonomy as an explanatory variable for child health.

**Description of the Study Variables**

**Outcome Variables**

There are two sets of outcome variables in this study. The first sets of outcome variables are proxy measures of child health; mainly maternal healthcare practices that directly or indirectly impact child health. These include antenatal attendance, health facility delivery, initiation of breastfeeding, exclusive breastfeeding, and age-appropriate vaccination. The second sets of outcome variables are neonatal, infant and under-five mortality. The study variables are conceptualized and defined in line with existing literature (Akmatov & Mikolajczyk, 2012; Anokye et al., 2018; Boulton et al., 2019; Budu et al., 2021; Fagbamigbe, Olaseinde & Fagbamigbe, 2021; Laryea, Abbeyquaye Parbie & Frimpong, 2014; Manyeh, et al., 2020; Mitiku, 2021; World Health Organization, 2019).

**Antenatal Care Attendance**

Antenatal attendance in this study was categorized into two; first ANC within the first three months (13 weeks) of pregnancy and attendance of any four or more ANC.

**Health Facility Delivery**

Health facility delivery refers to any delivery that took place in a Ghana Health Service-recognized and endorsed health facility.

**Initiation of Breastfeeding**

Initiation of breastfeeding refers to putting a newly born baby in the breast within the first hour after delivery. The essence of this indicator is to find out if newly born infants were given cholesterol, which is very rich in nutrients and provides immunity to newborn babies.

**Exclusive Breastfeeding**

Exclusive breastfeeding refers to giving only breast milk to children for the first six months of life. According to WHO guidelines, this excludes oral rehydration solutions, vitamins, mineral supplements, and medicines (WHO, 2017, 2018).

**Age-appropriate Vaccination**

Vaccination status in this study refers to children 12-24 months old with an observed vaccination card who received scheduled vaccinations in line with the WHO guidelines and or receiving the vaccine not later than one month after the initial scheduled date for vaccination. Per the guidelines, all children are to receive Bacillus Calmette-Guerin (BCG) vaccine against tuberculosis and oral polio vaccine as soon as possible after birth (<24 hours); three doses each of polio and pentavalent (diphtheria-tetanus-pertussis-hepatitis B (Hep), Haemophilus influenza type B (Hib)) vaccines at 6, 10 and 14 weeks old; and vaccination against measles at 9 months old; and a booster dose of DTP and OPV at 18 months old. Child health records books/cards of surveyed children were assessed, and their vaccination status was confirmed. To minimize recall bias, the analyses were limited to child vaccination information obtained from the records.

**Neonatal Mortality**

Refers to deaths of newborn children within the first 28 days of life. This excludes fetal or stillbirths but includes all children born alive before dying. In line with standard protocols (WHO, 2019), live births were obtained by asking women if, at the time of birth, the baby cried, breathed or showed any other sign of life such as the beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles.

**Infant and Under-five Mortality**

Infant mortality refers to all deaths between birth and the first one-year of life while under-five mortality refers to all deaths between birth and a child's fifth birthday.

**Independent Variable**

**Women's Autonomy**

The independent variable, women's autonomy, was generated as an index based on Principal Component Analysis as a composite proxy measure of different dimensions of women's household decision-making concerning the use of household resources, utilization of health services, sexual coercion, and social mobility. Guided by theoretical insights from reviewed literature, this study takes inspiration from Mason's view of women's autonomy as the ability to make and carry out independent decisions concerning personal life or matters of importance to her family (Mason, 1986). In this study, women's autonomy is defined as "the ability of women to make household decisions independent of, or with little consultation, from their male partners or other family members". The study used six different dimensions of women's involvement in household decision-making regarding (1) major household purchases; (2) who decides

how money earned by women is spent; (3) purchases for daily needs; (4) seeking care at a health facility; (5) visits to families and friends and (6) sexual refusal without severe consequences.

Covariates selected based on evidence from previous studies in Ghana (Ameyaw et al., 2016; Anokye et al., 2018; Asare et al., 2018; Budu et al., 2020; Donfouet, Agesa & Mutua, 2019; Moran et al., 2020) included in this study were maternal age, level of education attained, religious affiliation, socio-economic status and place of residence. Maternal age was grouped into three age groups (15-24, 25-34, 35-49), level of education attained was categorized as (None, Primary/Middle/JHS, Secondary or above), religious affiliation was categorized as (Christians, Traditional, Islam and No religion), socio-economic status was classified into quintiles (poorest, very poor, poor, less poor and the least poor), place of residence was grouped into three as (Urban, Peri-urban, and Rural). Marital status classified as (married, separated, never married, cohabiting/living together) and district of residence were included in the descriptive statics but excluded in the regression models because nearly all the participants were married (98.1%) and place of residence was highly correlated with the district of residence (<0.001).

**Quantitative Data Analysis**

The quantitative component of the data was analyzed using Stata 13. Because of our interest in child health, the analyses were restricted to women who had ever given birth at the time of the survey. Appropriate sample weights were applied to account for the cluster sampling design effects. The study used both descriptive and inferential statistics. Guided by Cornell's proposition that the mechanisms through which social structure heightens women's

vulnerabilities are interwoven (Connell, 1987; Connell & Messerschmidt, 2005), and drawing lessons from recent works (Bawah et al., 2013; Doku, Bhutta & Neupane, 2020; Ewerling et al., 2017), a Principal Component Analysis (PCA) approach was used to construct an index from the set of questions on the various dimensions of women's autonomy. The index generated classified women into least, moderate, and high levels of autonomy.

**Principal Components Analysis (PCA)**

Principal Component Analysis provides an opportunity to reduce the various components of women's autonomy solicited through the various questions that were asked into a single variable while retaining the components with the largest contribution (Bawah et al., 2013; Doku, Bhutta, & Neupane, 2020; Ewerling et al., 2017). Table 1 below describes the variables used for generating the autonomy index.

**Table 1: Description of variables used for the construction of autonomy index using PCA**

| Variable | Name | Type | Code | Unit | Number | Mean | SD |
|---|---|---|---|---|---|---|---|
| Who usually makes decisions about making major household purchases? | hhpurch | byte | Yes, No | 1,0 | 7693 | 0.43 | 0.49 |
| Who decides how money you earn is spent? | spenddecider | byte | Yes, No | 1,0 | 4755 | 0.91 | 0.29 |
| Who makes decisions about purchases for daily needs? | dailypurch | byte | Yes, No | 1,0 | 4755 | 0.88 | 0.32 |

Table 1 continued

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Can you visit families and friends without seeking permission? | freetovisit | byte | Yes, No | 1,0 | 4755 | 0.34 | 0.47 |
| Can you refuse to have sex with your partner without any severe consequences? | refusesex | byte | Yes, No | 1,0 | 4755 | 0.68 | 0.47 |
| Do you need your husband's permission to go to a health facility when your child is sick? | hpermit | byte | Yes, No | 1,0 | 7693 | 0.54 | 0.5 |

Source: Field survey (2021)

The variables described in Table 1 were used in the construction of an autonomy index for women using PCA. All six variables are binary, with 7693 responding to who makes decisions relating to major household purchases and the need for the husband's permission to take a sick child to the hospital. The rest of the variables were responded to by 4755 study participants. The mean of the responses ranged from 0.34 to 0.91, with a corresponding standard deviation of 0.29 to 0.5

**Table 2 Correlation matrix of variables for autonomy index**

| **Variable** | Major Household Purchases | Spending Decider | Decider of daily purchases | Free to visit family/friends | Can refuse sex | Permission to go to health facility |
|---|---|---|---|---|---|---|
| Major Household Purchases | 1 | | | | | |
| Spending Decider | 0.1628 | 1 | | | | |
| Decider of daily purchases | 0.158 | 0.2939 | 1 | | | |
| Free to visit family/friends | 0.0959 | 0.0754 | 0.0716 | 1 | | |

Table 2 cont'd

| | | | | | | |
|---|---|---|---|---|---|---|
| Can refuse sex | 0.0452 | 0.057 | -0.0093 | 0.1081 | 1 | |
| Permission to go to health facility | -0.064 | -0.0843 | 0.0095 | -0.0929 | -0.1028 | 1 |

Source: Field survey (2021)

The pair of variables with the highest correlation were "spending decider" and "decider of daily purchases" (0.2939) and the least positive correlation was observed between "major household purchases" and "can refuse sex" (0.0452). However, "can refuse sex" and "decider of daily purchases", "permission to go to health facility" were also observed to be negatively correlated (-0.0093) and (-0.0929) respectively. It was also observed that "major household Purchases" versus "permission to go to health facility" and "permission to go to health facility" versus "spending decider" were negatively correlated by -0.064 and -0.0843 respectively, Table 2.

The principal components, eigenvalues and the proportion of the variance explained in the PCA analyses using all six variables are shown in Table 3. All six components explain 100% of the variation in the data and the first two components, which have eigenvalues above 1 explain 44% of the variation in the data. Since the variables were not many, all six components were included in the generation of the autonomy index.

**Table 3: Principal components, eigenvalues, and proportion of variance explained**

| No | Component | Eigenvalue | Difference | Proportion of variance explained | Cumulative proportion of variance explained |
|---|---|---|---|---|---|
| 1 | Comp1 | 1.50376 | 0.360175 | 0.2506 | 0.2506 |
| 2 | Comp2 | 1.14359 | 0.230568 | 0.1906 | 0.4412 |
| 3 | Comp3 | 0.91302 | 0.0225655 | 0.1522 | 0.5934 |
| 4 | Comp4 | 0.890454 | 0.0287628 | 0.1484 | 0.7418 |
| 5 | Comp5 | 0.861691 | 0.174206 | 0.1436 | 0.8854 |
| 6 | Comp6 | 0.687485 | . | 0.1146 | 1 |

Source: Field survey (2021)

Table 4 shows the component loadings. These are correlations between the components generated from PCA analysis and the original variables. It also shows the amount of unexplained variation by each variable.

**Table 4 Component loadings representing the correlation between the components and the original variable**

| No | Variable | Comp1 | Comp2 | Comp3 | Comp4 | Comp5 | Comp6 |
|---|---|---|---|---|---|---|---|
| 1 | Household Purchases | 0.4551 | 0.0711 | 0.0424 | -0.3661 | 0.8072 | 0.0192 |
| 2 | Spending Decider | 0.5599 | 0.2327 | -0.2072 | 0.2574 | -0.2249 | 0.6875 |
| 3 | Decider of daily purchases | 0.5083 | 0.4345 | 0.0465 | 0.158 | -0.2393 | -0.6845 |
| 4 | Free to visit family/friends | 0.3351 | -0.3846 | 0.629 | -0.4334 | -0.3867 | 0.0826 |
| 5 | Can refuse sex | 0.2173 | -0.5762 | 0.1904 | 0.7154 | 0.2453 | -0.1121 |
| 6 | Permission to go to health facility | -0.248 | 0.5217 | 0.7219 | 0.2741 | 0.1756 | 0.1979 |

Source: Field survey (2021)

A measure of the sampling adequacy for each variable used for the PCA analysis is also captured in Table 5. The Kaiser-Meyer-Olkin (KMO) test value (>= 0.5) indicates that all variables were significantly adequately sampled in the analysis generating women's autonomy.

**Table 5 Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy Test for PCA**

| No | Variable | KMO test value |
|---|---|---|
| 1 | hhpurch | 0.6607 |
| 2 | spenddecider | 0.5677 |
| 3 | dailypurchases | 0.5511 |
| 4 | freetovisit | 0.6292 |
| 5 | refusesex | 0.5713 |
| 6 | hpermit | 0.5682 |
| 7 | Overall | 0.5819 |

Source: Field survey (2021)

Below, in Table 6 the classification of women into three classes of autonomy. The proportion of women with the least or moderate levels of autonomy (36.2% and 38.0% respectively) were more than those with high levels of autonomy (25.8%).

**Table 6. Autonomy Index Classification**

| No | Index | Number | Proportion |
|---|---|---|---|
| 1 | Least autonomy | 1,720 | 36.2 |
| 2 | Moderate autonomy | 1,807 | 38.0 |
| 3 | High autonomy | 1,228 | 25.8 |

Source: Field survey (2021)

The index so obtained was used as the dependent variable for the analysis in this study. Whilst the outcome variables include the timing and number of antenatal attendances, facility delivery, timing of initiation and exclusive breastfeeding, age-appropriate child immunization, and neonatal, infant and under-five mortality. All categorical variables were presented as proportions and continuous variables were summarized appropriately as means

and their accompanying standard deviations. As a first step, associations between categorical variables were tested with a null hypothesis of no association using a Chi-squared test. The associations with each of the covariates (place of delivery, ANC attendance, immunizations, breastfeeding, and neonatal, child and under-five mortality) were first considered in univariate logistic regression models. To develop a multivariate model for an index of women's autonomy, covariates from the univariate models which were significantly associated with women's autonomy at the 5% level of significance were retained including all other variables a priori from the literature.

While some variables in the final multivariate logistic regression model, were retained a prior based on literature (such as educational status, age, religion, and wealth status), all other potential covariates were selected into the model based on the level of significance of their association independently with each covariate. A multivariate logistic regression model was used to assess the association between the various child health and mortality outcomes and women's autonomy, which is an ordinal categorical variable (least autonomy, moderate autonomy, and high autonomy). All tests were deemed to be statistically significant at a 5% level statistical significance and a full suite of diagnostic analyses of the models fitted were performed to assess their appropriateness.

**Qualitative Data**

The qualitative component of the study uses in-depth interviews (IDIs) with mothers and focus group discussions (FGDs) with mothers-in-law and fathers-in-law to explore the context of women's autonomy and how it relates to maternal child healthcare practices and child mortality.

**In-depth Interviews (IDIs)**

Women who lost a child in the past three years preceding this study were purposefully selected for participation in the IDIs. Purposefully, targeting these women achieved minimal recall bias and generated detailed narratives of the circumstances surrounding the death of their children including the role of autonomy if any leading to the death of the children. The IDIs also explored the role of women's autonomy in the utilization of maternal child healthcare practices (ANC attendance, facility delivery, breastfeeding practices, and child age-appropriate vaccinations). Other topics explored include the role of women's autonomy in the use of household resources, women's social mobility, and sexual assertiveness. The use of IDIs was appropriate and important because it enabled the women to share their experiences and opinions freely and reflectively as subscribed by (Etikan, 2016).

A total of 20 IDIs were conducted (10 in the Bolgatanga Municipality and 10 in the Garu-Tempane district). These districts represent the districts with the highest and lowest prevalence of women's autonomy respectively, were selected and the interviews were conducted in the sampled districts. This was to ensure that the data capture the existence of district-level socio-cultural differences that structure women's autonomy and affect maternal child healthcare practices and child mortality. Community key informants such as Community Health Nurses (CHOs), Health Volunteers and Assemblemen/women were approached to assist the data collection team with women who lost a child in the past three years. The key informants first contacted the women and explained the study design, objectives and procedures explained to them. Women who agreed to participate in the study were then

invited by the study team and written consent was administered to them before participation in the study. Relevant community entry protocols were observed. After the initial list of potential participants was obtained from the community key informants, the snowball technique was used to recruit participants into the study until saturation was attained.

**Focus Group Discussions (FGDs)**

Focus Group Discussions (FGDs) were conducted with fathers-in-law and mothers-in-law to explore community norms, perceptions and practices that structure women's autonomy concerning maternal child healthcare practices and child healthcare. Four FGDs in each district (two with mother-in-laws and two with father-in-laws) make a total of 8 FGDs for the two districts.

Sample selection in FGDs is often a complex process and is associated with some challenges. Morgan (1988) advocates that given the small number of participants in FGDs and its unrepresentativeness of the larger population, researchers should focus on selecting "theoretical sub-groups of the population expected to provide the richest of information" (Freitas et al., 1998). For this reason, key informants such as father-in-laws and mother-in-laws" were constituted into separate panels for the FGDs. Culturally, men and mothers-in-law tend to wield substantial power and are prime enforcers of ethical behaviour and family norms and practices (Bawah et al., 1999; Dempsey et al., 2020; Ezejiofor, 2012; Kumi-Kyereme, Awusabo-Asare & Darteh, 2014). Efforts were made to maximize the diversity of these categories of key informants in the recruitment of participants while retaining homogeneity within each group to enhance open and frank discussions and the attainment of divergent and convergent views as much as possible (Freitas et al., 1998; Klassen et al., 2012).

Community key informants such as Assemblymen and Health Volunteers were approached to help identify suitable potential study participants for the FGDS.

Experienced and trained Research Assistants who are familiar with the terrain, customs, norms, and beliefs of the study setting moderated the IDIs and FGDs. Using semi-structured interview guidelines, the moderators stimulated the thematic discussion among the participants starting with general issues and slowly flowing into more specific ones as advocated by (Klassen et al., 2012). The interview guide was pre-tested at the Bongo and Bawku West districts and thoroughly reviewed to ensure that it captured a holistic representation of the phenomenon under study. The interview moderators raised issues and allowed participants to talk more and only probed for more in-depth information or to clarify statements by participants.

A three-member team; a moderator, a note taker and a third person handling the tape recorder conducted the FGDs. Participants were constituted into panels of 8 to 10 members with interview moderators ensuring that all panel members participated in the discussion and avoided a situation where one or a few members dominated the discussion. The note taker observed and documented convergences, disagreements, consensus as well as contextual and nonverbal cues such as murmurings, facial expressions, nodding or shaking of heads, and other gestures as the discussions proceeded (Klassen et al., 2012). At all times, the team kept the purpose of the study as a driving force, establishing an environment conducive to interactions and promoting free and unhindered discussion among the participants. After the discussion, the complete recorded discussions were transcribed alongside notes that were compiled which served as the basic data for analysis.

**Qualitative Data Analysis**

The QSR NVIVO qualitative software version 11, was used to process and organize the qualitative data for thematic analyses; involving the coding and categorization of pre-determined themes and recurrent themes and sub-themes that emerged from the data. By comparing the individual accounts of different informants, a logical and holistic picture of the underlying contextual issues that structure women's autonomy, and how it affects maternal healthcare practices and child mortality was established. Attention was paid to views that differed from the dominant patterns observed in the data. Texts and themes extracted were compared between and within cases and the findings were compared with existing literature. This ensured structural coherence and increased credibility.

**Achieving Trustworthiness**

Pragmatic steps were taken to ensure the rigor and trustworthiness of the qualitative component of the study. There are four core elements of trustworthiness: credibility, dependability, transferability and confirmability (Carcary, 2009; Elo et al., 2014; Krefting, 1991). Other researchers have also recommended the application of authenticity in attaining trustworthiness (Amin et al., 2020; Johnson & Rasulova, 2017; Jones, 2013). Trustworthiness can be achieved through using appropriate methods of data collection, analysis and presentation of the findings. To improve the rigour of this component of the study, sufficient efforts were made to incorporate the elements of trustworthiness right from its conceptualization through to the dissemination of results.

Credibility concerns the extent to which researchers trust the findings from the informants in a given context (Cutcliffe & McKenna, 1999; Noble & Smith, 2015; Patton, 1999). In qualitative research, credibility is usually obtained when study participants authentically share their lived and perceived experiences regarding a phenomenon. Thus, results are presented as accurate descriptions or interpretations of human experiences such that people who share that experience easily recognize and associate with the descriptions (Cutcliffe & McKenna, 1999; Noble & Smith, 2015). Credibility was achieved especially in the focus group discussions by encouraging all participants to state their views or experiences reflecting converging opinions as well as paying attention to divergent views regarding how women's autonomy affects child health and survival. Although the moderators tried to establish consensus in the discussions, individual participants were encouraged to express their independent opinions even if their views were not shared by other study participants.

To enhance the credibility of qualitative studies, (Noble & Smith, 2015) suggest that researchers should identify patterns, themes, and values that emerge in the data. To achieve this, the investigator recruited interview moderators who were very familiar with the customs, traditions and norms of the study setting which made it possible to identify and verify recurrent patterns. The interviews began with general issues to establish sufficient rapport and graduated tactically to cover personal and sensitive issues to ensure that informants volunteered detailed views of their experiences and opinions on maternal autonomy and child health. Establishing a good rapport with informants also minimized socially desirable responses as recommended by Klassen et al., (2012). The use

of the QSR Nvivo qualitative software enhanced the credibility of the data analysis.

Reflexivity refers to the influence of the investigator's interest, background and perceptions throughout the qualitative research process (Dodgson, 2019; Palaganas et al., 2017; Symon & Cassell, 2012). To minimize the researcher's bias in this study, data collection involved native "Research Assistants" who were very familiar with the cultural dynamics, values and norms of the study setting. The interview guides were pre-tested in settings similar to that of the study districts. Interview moderators used field notebooks to record daily schedules, experiences, feelings and ideas as they interacted with the informants. This enabled the investigator to take steps to address biases and preconceived assumptions to enhance the credibility of the research.

Steps were taken to address the potential benefits of the study to the study participants. As explained by Jones (2013), authenticity focuses on the contextual purpose of the research, identifying the intended value of the research. To address this, the results of the study will be appropriately and widely disseminated in a language comprehensible to all stakeholders such as the study participants, chiefs and elders of the study communities, leadership and staff of Ghana Health Service.

**Ethical Procedures**

The GEHIP project was reviewed and approved by the Navrongo Health Research Centre Institutional Review Board (NHRCIRB) and the Ghana Health Service Ethical Review Board. Heads of households and individual participants provided informed consent before study participants enrolled in the study. Participation in the survey was entirely voluntary and study participants could

withdraw from the study at any time they so wished. The privacy, anonymity and confidentiality of participants were ensured throughout the survey. This notwithstanding, ethical approval for this study was obtained from the University of Cape Coast (Ghana), Review Board. Informed consent was obtained from participants in the in-depth interviews and Focus Group Discussions. The consenting process outlines the aims and objectives of the study, the rights and obligations of participants, potential risk and benefits. Measures were also taken to ensure the anonymity and confidentiality of information volunteered by participants. All personal information in the data was excluded from the data processing, analysis, and publications of the findings.

# CHAPTER FOUR

# BACKGROUND CHARACTERISTICS OF PARTICIPANTS

## Introduction

The background characteristics of study participants are important because it gives contextual meaning to the findings of the investigations. Such variables may mediate or confound the relationship between explanatory variables and study outcomes and so, need to be accounted for in the analysis. This chapter describes the background characteristics of participants and child health characteristics by women's autonomy index.

## Socio-demographic Characteristics of Participants

Out of a total number of 5,914 women aged 15-49 years who participated in the survey, the analysis was restricted to 3,243 participants who reported ever having given birth to a live child at the time of the survey (Table 7). The background characteristics of the participants include age group, highest level of education attained, religious affiliation, socio-economic status, marital status, and place of residence. All these were highly significantly associated with women's autonomy status. (P-value = <0.001). In terms of age, most of the participants (48.8%) fell into the age group of 25-34 years old and the least (20.6%) was those aged 15-24 years old.

**Table 7. Background characteristics of study participants by autonomy status**

| Variable | | | Autonomy status | | | P-value |
|---|---|---|---|---|---|---|
| | | | Least | Moderate | High | |
| | Number (N) | Percentage (%) | Percentage (%) | Percentage (%) | Percentage (%) | |
| **Age Group** | | | | | | **<0.001** |
| 15 – 24 | 757 | 23.3 | 28.1 | 20.9 | 20.6 | |
| 25 – 34 | 1509 | 46.5 | 42.5 | 48.7 | 48.8 | |
| 35 – 49 | 977 | 30.1 | 29.5 | 30.4 | 30.6 | |
| **Level of education** | | | | | | |
| None | 2294 | 70.7 | 74.1 | 72.7 | 64.8 | **<0.001** |
| Primary/JHS/Middle | 781 | 24.1 | 22.0 | 23.8 | 26.8 | |
| SHS | 117 | 3.6 | 2.7 | 2.5 | 5.9 | |
| Tertiary | 46 | 1.4 | 1.1 | 1.0 | 2.3 | |
| Other | 5 | 0.2 | 0.1 | 0.1 | 0.2 | |
| **Religion** | | | | | | |
| Christianity | 1733 | 53.4 | 51.9 | 49.0 | 60.1 | **<0.001** |
| Traditional | 354 | 10.9 | 13.3 | 9.9 | 9.4 | |
| Islam | 1089 | 33.6 | 32.1 | 39.5 | 28.7 | |
| No religion | 67 | 2.1 | 2.7 | 1.6 | 1.8 | |
| **Socio-economic Status** | | | | | | |
| Poorest | 590 | 18.2 | 19.3 | 17.5 | 17.8 | **<0.001** |
| very poor | 630 | 19.4 | 20.9 | 22.1 | 14.8 | |
| Poor | 647 | 20.0 | 20.4 | 20.9 | 18.5 | |
| Less poor | 669 | 20.6 | 19.3 | 21.2 | 21.6 | |
| Least poor | 706 | 21.8 | 20.1 | 18.3 | 27.5 | |
| **Marital status** | | | | | | |
| Married | 3182 | 98.1 | 99.2 | 98.7 | 96.2 | |
| Separated | 37 | 1.1 | 0.5 | 0.9 | 2.1 | |
| Cohabiting / Living together | 24 | 0.7 | 0.3 | 0.4 | 1.7 | |

Table 7 Cont'd

| | | | | | | |
|---|---|---|---|---|---|---|
| **District of Residence** | | | | | | **<0.001** |
| Bolgatanga | 249 | 7.7 | 6.9 | 5.6 | 10.9 | |
| Bongo | 305 | 9.4 | 10.7 | 6.9 | 10.8 | |
| Builsa | 500 | 15.4 | 15.7 | 17.3 | 13.2 | |
| Garu-Tempane | 852 | 26.3 | 21.0 | 27.9 | 30.6 | |
| Bawku West | 361 | 11.2 | 14.3 | 11.4 | 7.4 | |
| Talensi Nabdam | 489 | 15.0 | 14.5 | 11.1 | 20.0 | |
| Bawku East | 484 | 15.0 | 17.0 | 20.0 | 7.2 | |
| **Place of residence** | | | | | | |
| Urban | 215 | 6.7 | 22,3 | 35.1 | 36.2 | |
| Peri-urban | 504 | 15.5 | 26.5 | 46.0 | 32.3 | **<0.001** |
| Rural | 2,523 | 77.8 | 51.2 | 18.9 | 31.5 | |

Source: Field survey (2021)

The distribution of age group and autonomy status followed a similar pattern. Most of the participants with least (42.5%) moderate (48.7%) and high (48.8%) autonomy status were those aged 25-34 years old. Younger participants (15–24-year-olds) had the least autonomy status, ranging from about 20.1% among those with moderate and high autonomy status to 28.1% among those with the least autonomy status. As high as 70.7% of the participants had no formal education and nearly a quarter (24.1%) attained Primary/Junior High School or Middle school education. Only 3.6% of the participants had secondary education. The high proportion of participants with low educational attainment was reflected in the distribution by autonomy status.

More than half of the participants (53.4%) were Christians followed by Moslems (33.6%) and Traditional worshipers (10.9%). The highest proportion of women with least, moderate, and high autonomy status (51.9%, 49.0%, and 60.1%) were Christians, followed by Moslems (32.1%, 39.5% and 28.7%)

respectively. Traditional worshippers were fairly distributed across the autonomy scale. Participants were fairly distributed in terms of socio-economic status ranging from 18.2% among the poorest to 21.8% among the least poor. Participants with the least and moderate autonomy status were fairly distributed in terms of their socioeconomic status. However, among those with high autonomy status, the distribution ranged from 14.5% among the very poor to 27.5% among the least poor. Nearly all participants (98.1%) were married and so, this was reflected in the distribution by autonomy status. The majority of the participants (89.8%) did not answer the question on wife rank. Only 332 participants answered the question out of which 26.5% indicated that they were in a monogamous relationship; the rest were in a polygamous union.

In terms of the district of residence, the majority of the participants (77.8%) lived in rural areas and only 6.6% dwelled in urban areas. A little over a quarter of the participants (26.3%) were from the Garu-Tempane district. Nearly the same proportion of participants (15.0%) was from the Builsa, Talensi-Nabdam and Bawku East districts. The lowest proportion of the participants (7.7%) was from Bolgatanga Municipality. Women with the least autonomy status (21.0%), moderate autonomy status (27.9%) and high autonomy status (30.6%) were from the Garu-Tempane district. With exception of women with high autonomy status, the next highest proportion of women with least and moderate autonomy were from the Bawku East Municipality (17.0% and 19.9%) respectively.

The majority of the participants (77.8%) live in rural communities while 15.5% live in Peri-urban settlements, and only 6.7% live in urban settlements. Among urban dwellers, the highest proportion (36.2%) had high autonomy,

followed by those with moderate autonomy (35.1%). However, among peri-urban dwellers, the highest proportion were those with moderate autonomy (46.0%) followed by those with high autonomy (32.3%). In contrast, a little over half of rural dwellers were those with the least autonomy (51.2%) followed by those with high autonomy (31.5%) and moderate autonomy (18.9%).

# CHAPTER FIVE

# EFFECTS OF WOMEN'S AUTONOMY ON ANTENATAL CARE ATTENDANCE AND FACILITY DELIVERY

## Introduction

This section presents results on maternal autonomy, socio-demographic characteristics, and maternal healthcare practices (ANC within the first trimester of pregnancy, attendance of four or more ANC, and health facility delivery). The benefits of early and adequate antenatal care on maternal and child health care have been well documented (Burton & WHO, 2016; Fekadu et al., 2018; Tekelab et al., 2019). The WHO recommends that pregnant women should attend antenatal care within the first three months of pregnancy and continue to attend antenatal care for a minimum of four times under the supervision of skilled health personnel before birth, which has recently been extended to a minimum of eight contacts (Burton & WHO, 2016; Islam & Masud, 2018).

However, evidence suggests that due to several reasons including women's lack of autonomy (Ameyaw, Dickson, & Adde, 2021; Boah et al., 2020; Chol et al., 2019; Dickson, Adde, & Ameyaw, 2021), many women in Ghana are not able to attend antenatal care as recommended and this negatively affects Ghana's efforts towards attaining the SDG 3.1. Based on the concurrent analytical approaches adopted, the results of the qualitative component of the study have been integrated into the discussion and contrasted with empirical and theoretical literature.

**Women's Autonomy, Antenatal Care Attendance and Facility Delivery**

Table 8 shows crossed tabulations of women's autonomy and first ANC, attendance of ANC4+ and health facility delivery. Out of a total of 3,065 participants, 68.5% attended their first ANC within the first trimester of pregnancy; and this was fairly distributed by autonomy status. However, the prevalence of ANC4+ was much higher (93.3%), suggesting that a quarter of these women did not report early for ANC services as recommended by the WHO (Burton & WHO, 2016). Nearly the same proportion of respondents with least and moderate autonomy status had their first ANC in the first trimester of pregnancy and attained a minimum of four ANCs. Nearly eight out of ten women (79.7%) delivered in a health facility. The prevalence of ANC4+ and facility delivery in this study is comparable with the findings of the 2014 Ghana Demographic and health survey, which reported a national average of 87% ANC4+ attendance and 73% facility delivery respectively (GSS, 2015).

Similar to earlier studies in Ghana (Boah et al., 2018, Ganle et al., 2018) and elsewhere in sub-Saharan Africa (Chukwuma, 2017; Woldegiorgis et al., 2019), the results showed discordance in women's uptake of ANC services and health facility delivery. Boah et al., (2018) in their study in rural Ghana, found that 98.8% of the participants had at least one ANC during their recent pregnancy, but a lower proportion (61.9%) were delivered by a skilled birth attendant (SBA). Data across Africa suggest that on average, nearly two in ten women (78%) receive ANC services but only about 50% are delivered by skilled personnel (UNICEF, 2016). A recent analysis of DHS data from 34 countries (2005-2015), found that while ANC uptake was generally high, only 53% of women received skilled birth delivery (Woldegiorgis et al., 2019).

Several reasons such as poor quality of healthcare services, poor road network and referral systems, and restrictive cultural and traditional beliefs may have accounted for the discordance in ANC uptake and health facility delivery in this setting. Narratives of women, health professionals and community stakeholders in rural Ghana revealed that perceived poor quality of care by traditional birth attendants (TBAs), stigmatization of unplanned pregnancies and cultural beliefs associated with late disclosure labour discourages utilization of skilled care delivery and obstetric complications services among women (Sumankuuro et al., 2019). It has also been documented that unexpected commencement of birth labour, poor attitudes of healthcare workers, weak referral systems, proximity to health facility and lack of women's autonomy restricts the uptake of health facility delivery (Okedo-Alex et al., 2019).

**Table 8. Distribution of Antenatal Care Attendance and Facility Delivery by Women's Autonomy Status**

| Variable | Total | Percentage (%) | Autonomy Status | | | P-value |
|---|---|---|---|---|---|---|
| | | | Least Percentage (%) | Moderate Percentage (%) | High Percentage (%) | |
| **Maternal Healthcare Practices** | | | | | | |
| Antenatal Care Attendance | | | | | | |
| *Timing of 1st ANC | 2,100 | 68.5 | 67.3 | 68.7 | 69.7 | 0.520 |
| **ANC4+ attendance | 2,739 | 93.3 | 93.0 | 93.5 | 93.6 | 0.864 |
| ***Facility delivery | 2,584 | 79.7 | 79.8 | 78.2 | 81.3 | 0.208 |

Source: GEHIP, 2015

*Timing of 1st ANC= Attendance of first ANC in the first trimester of pregnancy coded as (1), compared with the rest coded as (0), **ANC4+= attendance of a minimum of four ANCs before delivery coded as (1) compared with those who did not attend ANC at all and those who attended less than four ANCs coded as (0). ***Facility Deliver= Delivering in a health facility coded as (1) compared with deliveries at home and elsewhere coded as (0).

**Women's Autonomy and Timing of First Antenatal Care**

Maternal autonomy has been identified as important in the utilization of ANC and health facility delivery. Timely and adequate ANC is critical in identifying, treating and managing early danger signs in pregnancy, providing skilled counselling on maternal and childcare, nutrition, breastfeeding, birth preparation and encouraging pregnant women to deliver in health facilities (Adjiwanou & Legrand, 2013; Afulani, 2016; Burton & World Health

Organization, 2016; Okedo-Alex et al., 2019; Tekelab, Yadecha & Melka, 2015; WHO 2006). The bivariate and multivariate regression analysis showed that higher women's autonomy in this study was associated with a slightly higher likelihood of first ANC (Table 9).

In the bivariate regression model, women with high autonomy status were 12% more likely to attend their first ANC in the first trimester of pregnancy than those with the least autonomy status but this was not statistically significant. In the adjusted model, the likelihood of first ANC among women with higher autonomy compared to those with the least autonomy was reduced to 8%. Also, women with moderate autonomy were 6 % more likely to attend their first ANC in the first trimester of pregnancy than those with the least autonomy. In the adjusted model, the likelihood reduced to only one percent difference. However, the results show that women's autonomy was not statistically significantly associated with first ANC attendance. I could not find literature on women's autonomy and timing of ANC in Ghana, but the results are inconsistent with those of Asweto et al., (2014) who found that among 403 randomly sampled women, higher maternal autonomy was associated with more than twice the likelihood of attendance of ANC in the first trimester of pregnancy (Asweto et al., 2014).

Accounts of study participants in the qualitative study point to a community-wide acceptance and patronage of ANC services. Women attributed low utilization of ANC services in the past to a poor understanding of the benefits of ANC. In their view, timely and adequate ANC is critical for monitoring the growth of the foetus. These views align with the aim of ANC which is to help early detection, management and prevention of problems that

occur during pregnancy (Burton & World Health Organization, 2016; Fagbamigbe, Olaseinde & Fagbamigbe, 2021). Participants explained further that ANC provides an opportunity for clients to be educated on breastfeeding, nutrition, and on the importance of health facility delivery. These opinions by women were amply echoed by mother-in-laws as indicated in this excerpt.

> *…we know that when women are pregnant and it is up to one or two months, she is supposed to go to the hospital to collect medicine and for them to see how her baby is lying and growing. The doctors will tell her what to do and the month she will give birth. She will be told not to give birth in the house but in the hospitals and after that she will continue to send the child for weighing. If the child's weight is reducing the doctors will tell the woman what to do to make the child increase in weight.* ***- A mother-in-law in an FGD at Sumbrungo in the Bolgatanga Municipality***

However, a few women especially mothers-in-law, expressed disapproval of women taking independent decisions to seek ANC services. Women who act autonomously in seeking these services are perceived as being immature, disrespectful, dangerous, and difficult to handle. Autonomous women are also perceived as attempting to usurp customarily conferred male leadership in a household. This attracts a huge social cost such as gossip, insults, and curses. Misfortunes that befall such women are ascribed as punishment by ancestors for their deviant behaviours. These views by women and corroborated by fathers-in-law were common in both districts as reflected in these excerpts.

> *… If you take health-related decisions without seeking permission from your husband or family members, people will say you are disrespectful.*

***- An IDI with a 36-year-old artisan at Zuarango in the Bolgatanga Municipality***

*In this community, if you take decisions without involving your husband or family, people will say you are a bad woman or immature. Sometimes you will be walking with a lot of fingers pointing at you. So, if something bad happens to the pregnancy, it will be seen as a punishment or a curse and you will bear it alone. An* ***IDI with a 40-year-old peasant farmer at Bugnatenga in the Garu-Tempane district***

*…to me, such a woman does not respect, she wants to rule her house and such women are dangerous. They are not easy to handle and people in the community will call her names and even curse her.* ***A father-in-law in an FGD at Bugnatenga in the Garu-Tempane district.***

Consistent with earlier findings in Ghana (Kotoh & Boah, 2019), cultural beliefs associated with early disclosure of pregnancies and myths and superstitions and community stigmatization contribute to delays in early attendance of ANC. There was a convergence of gender views and opinions regarding the effects of cultural beliefs in delaying early ANC attendance. Mothers-in-law and father-in-laws explained that in the early period of conception, it is unsafe for women to move about because encounters with wicked and demonic community members could trigger pregnancy loss. In their view, to minimize the risk of losing a pregnancy, women are encouraged to reduce their interactions with people which includes attendance of public functions such as funerals, community meetings, going to the markets, attending ANC etc. Therefore, women are encouraged to spend more time at home. Some

mothers corroborated these perceptions but were more concerned about pregnancy-related community stigma as stated in the following narratives.

> *In this community, there are some people especially elderly men and old ladies who may be possessed or have some bad spirits. So, when a lady is pregnant and she likes going to public places like markets, funerals and even the clinic and she happens to meet and exchange greetings or interact with such people, she can easily lose the pregnancy…* - a ***father-in-law in an FGD at Bugnatinga in the Garu-Tempane district***

Also, the findings of this study are consistent with those of Kotoh and Boah (2019) who noted that women's desire to avoid the embarrassment associated with unplanned pregnancies and the need to observe traditional rites affects early uptake of ANC (Kotoh & Boah, 2019). Also, Sumankuuro (2019), explored the reason for the delayed utilization of facility delivery and obstetric care in Ghana and found that the stigma associated with unplanned pregnancies and cultural beliefs that encouraged late disclosure of childbirth labour accounted for delayed initiation of breastfeeding among women in the Nadowli-Kaleo and Daffiama-Bussie-Issa districts in the Upper West Region of Ghana (Sumankuuro et al., 2019). Women interviewed in this study shared similar views as indicated below.

> *As for my last pregnancy, I did not go to the clinic early. My husband encouraged me to go to the clinic for the nurses to check if everything is okay. But I did not go early because I was feeling shy. In this community, people talk a lot. Someone will see you and say, eeeiii you again? These things sometimes, make you feel embarrassed.* ***IDI with a 36-year-old Seamstress at Bugnatinga in the Garu-Tempane district***

None of the co-variates (maternal age, level of education attained, religious affiliation, socio-economic status, and place of residence) was significantly associated with the timing of the first ANC. However, the level of education attained, and socioeconomic status was positively associated with early ANC attendance. For instance, even after adjusting for confounding, women who attained secondary or more were 27.0% more likely to attend their first ANC in the first trimester of pregnancy than those who had no formal education. Similarly, in the adjusted regression model, compared to the poorest, women in the least socio-economic status were 19% more likely to attend their first ANC in the first trimester of pregnancy (Table 9).

In contrast to the findings of this study, a recent study in Northern Ghana (Kotoh & Boah, 2019) found that the level of education attained, employment status and the number of living children a woman has were strong predictors of early ANC (Kotoh & Boah, 2019). Studies in other settings in Africa also reported that maternal age, being able to recognise pregnancy by a missed period, unplanned pregnancies, receiving counselling on ANC and the levels of education attained were significantly associated with early ANC (Wachata, Lingenda & Kazonga, 2021; Weldearegawi et al., 2019; Woldegiorgis et al., 2019).

**Table 9. Associations between women's autonomy, socio-demographic characteristics and first antenatal attendance**

| | Bivariate regression analysis | | | Multivariate regression analysis | | |
|---|---|---|---|---|---|---|
| | *Timing of 1st ANC | | | *Timing of 1st ANC | | |
| Variable | **ORs | ****95%CI | P-value | ***aORs | ****95%CI | P-value |
| **Autonomy** | | | | | | |
| Least | 1 | | | 1 | | |
| Moderate | 1.06 | 0.85- 1.33 | 0.584 | 1.07 | 0.86-1.34 | 0.520 |
| High | 1.12 | 0.87-1.44 | 0.372 | 1.08 | 0.85-1.37 | 0.539 |
| **Socio-demographic characteristics** | | | | | | |
| **Highest level of education attained** | | | | | | |
| None | 1 | | | 1 | | |
| Pri/JHS/Middle | 0.96 | 0.77-1.20 | 0.742 | 0.99 | 0.77-1.28 | 0.962 |
| SHS + | 1.50 | 0.95- 2.35 | 0.079 | 1.27 | 0.78-2.05 | 0.331 |
| **Age group** | | | | | | |
| 15-24 | 1 | | | 1 | | |
| 25-34 | 1.16 | 0.93- 1.46 | 0.186 | 1.12 | 0.90-1.40 | 0.308 |
| 35-49 | 1.09 | 0.88- 1.35 | 0.405 | 1.07 | 0.85-1.33 | 0.575 |
| **Religion** | | | | | | |
| Christianity | 1 | | | 1 | | |
| Traditional | 0.95 | 0.70- 1.28 | 0.734 | 0.91 | 0.66-1.25 | 0.553 |
| Islam | 0.88 | 0.70- 1.11 | 0.274 | 0.85 | 0.68-1.06 | 0.145 |
| No religion | 0.67 | 0.38- 1.19 | 0.171 | 0.63 | 0.34-1.17 | 0.143 |
| **Socio-economic status** | | | | | | |
| Poorest | 1 | | | 1 | | |
| Very poor | 1.03 | 0.77- 1.38 | 0.845 | 1.09 | 0.81-1.47 | 0.576 |
| Poor | 0.94 | 0.72- 1.24 | 0.677 | 1.01 | 0.76-1.34 | 0.929 |
| Less poor | 1.03 | 0.77- 1.39 | 0.831 | 1.03 | 0.76-1.39 | 0.854 |
| Least poor | 1.12 | 0.80- 1.55 | 0.505 | 1.19 | 0.84-1.70 | 0.320 |
| **Place of Residence** | | | | | | |
| Urban | 1 | | | 1 | | |
| Peri-urban | 0.86 | 0.54-1.39 | 0.544 | 0.98 | 0.63-1.50 | 0.910 |
| Rural | 1.01 | 0.71-1.44 | 0.953 | 1.16 | 0.84-1.59 | 0.347 |

***Timing of 1st ANC = attendance of first ANC in the first trimester of pregnancy, **ORs = unadjusted odd ratios, ***aORs= adjusted odd ratios, ****95% CI= 95% confidence intervals**

Source: Field survey, 2021

**Women's Autonomy and Attendance of Four or More Antenatal Care**

In Table 10, higher levels of autonomy were slightly associated with higher odds of four or more ANC attendance but the difference was not statistically significant. In the bivariate regression analysis, women with high levels of autonomy were 9.0% more likely to attend four or more ANCs compared to those with the least autonomy. Although the probability increased slightly in the adjusted regression model to 13.0 %, the difference was not statistically significant. Generally, available literature shows an ambivalent relationship between women's autonomy and attendance of ANC4+ in Africa and Less Developed Countries. Studies in Nigeria (Obasohan et al., 2019) and Ethiopia (Tiruneh, Chuang & Chuang, 2017) found that higher maternal decision-making autonomy was significantly associated with ANC4+ attendance. However, in the Ethiopian study, the authors explained that community-level variables mediated and weakened the effects of individual-level autonomy on ANC4+ attendance (Tiruneh, Chuang & Chuang, 2017).

Similarly, pooled analysis of data from 31 showed a weak statistically significant association between measures of women's autonomy and use of ANC4+ and skilled birth service (Chol et al., 2019). The authors reported that country-level analysis of the data showed a counter-intuitive relationship between women's autonomy and ANC4+ attendance in three countries namely Chad, Mali and Senegal (Chol et al., 2019). In Bangladesh, Ghose (2017), found that compared to women who made independent decisions, urban dwellers who made joint decisions had 20% higher odds of ANC4+ attendance but their counterpart rural dwellers had 35% lower odds of ANC4+ attendance suggesting a lack of male support for ANC uptake among rural Bangladeshi

women (Ghose et al., 2017). In contrast, Mondal (2020) found that women's autonomy was significantly associated with ANC4+ but not significantly associated with facility delivery in India (Mondal, Karmakar & Banerjee 2020).

Conceptually, these studies differ from the present study on how women's autonomy was measured. While this present study used an autonomy index, the latter used individual components of autonomy as standalone explanatory variables which are not appropriate for studies in African settings (Gabrysch et al., 2016). It is thus unlikely that the unexpected findings in this study are due to measurement errors and the choice of analytical approach.

Among the selected co-variates, maternal age and level of education attained were not significantly associated with the attendance of four or more ANCs. On the other hand, socioeconomic status, place of residence, and religious affiliation were highly significantly associated with attendance ANC4+. For instance, compared to women in the poorest socio-economic status, those in higher status were 52% more likely to attain four or more ANCs (OR=1.52, 95% CI= 0.87-2.65) this was however, not statistically significant at the bivariate level. However, in the adjusted model, the odds increased slightly (aOR= 1. 65, 95% CI= 1.00-3.02) and were statistically significant. These findings are consistent with the results of some earlier studies (Dickson, Adde & Ameyaw, 2021; Manyeh et al., 2020; Obasohan et al., 2019; Okedo-Alex et al., 2019; Rizkianti et al., 2020) that also found a positive and statistically significant association between socio-economic status and attendance of ANC4+.

Consistent with existing literature (Ganle, 2015; Okedo-Alex et al., 2019; Solanke et al., 2015), the study found that religious affiliation was not

significantly associated with the timing of first ANC and ANC4+ attendance but was significantly associated with health facility delivery. In the bivariate regression model, compared to Christians, Muslim women were marginally significantly less likely to attain four or more ANCs (OR=0.72, 95% CI=0.51-1.02). After adjusting for confounding, the likelihood of Moslem women not attaining ANC+ compared to Christians increased (aOR=0.61, 95% CI=0.41-1.04) and this was statistically significant. Although traditional worshipers compared to Christians were about 20% more likely to attain four or more ANCs in both the unadjusted and adjusted model, the difference was not statistically significant.

In an extensive literature review of the determinants of ANC utilization in sub-Saharan Africa, Ekedo-Alex et al., (2019), found that Christianity was associated with a higher likelihood of health facility delivery (Okedo-Alex et al., 2019). In their qualitative study, Ganle et al., (2015), revealed that Moslem women were less likely to receive ANC and to deliver at health facilities because of religious obligations to maintain bodily sanctity, and healthcare provider's naivety and insensitivity to Islamic religion (Ganle, 2015).

**Table 10, Women's autonomy, socio-demographic characteristics and attendance of four or more antenatal care**

| | Bivariate regression analysis | | | Multivariate regression analysis | | |
|---|---|---|---|---|---|---|
| | *ANC4+ Attendance | | | ANC4+ Attendance | | |
| **Variable** | ***ORs | **95%CI | **P-value** | ****aORs | **95% CI | **P-value** |
| **Autonomy** | | | | | | |
| Least | 1 | | | 1 | | |
| Moderate | 1.08 | 0.72-1.61 | 0.715 | 1.08 | 0.71-1.63 | 0.728 |
| High | 1.09 | 0.75-1.60 | 0.637 | 1.13 | 0.78-1.63 | 0.506 |
| **Socio-demographic characteristics** | | | | | | |
| **Level of education attained** | | | | | | |
| None | 1 | | | 1 | | |
| Pri/JHS/Middle | 0.92 | 0.66-1.28 | 0.615 | 0.94 | 0.64-1.37 | 0.744 |
| SHS + | 1.73 | 0.72-4.14 | 0.215 | 1.37 | 0.53-3.53 | 0.512 |
| **Age group** | | | | | | |
| 15-24 | 1 | | | 1 | | |
| 25-34 | 1.19 | 0.87-1.62 | 0.279 | 1.22 | 0.87-1.72 | 0.250 |
| 35-49 | 0.90 | 0.63-1.28 | 0.548 | 0.95 | 0.63-1.41 | 0.786 |
| **Religion** | | | | | | |
| Christianity | 1 | | | 1 | | |
| Traditional | 1.20 | 0.74-1.95 | 0.450 | 1.19 | 0.66-1.78 | 0.497 |
| Islam | 0.72 | 0.51-1.02 | **0.066** | 0.61 | 0.41-1.04 | **0.012** |
| No religion | 0.84 | 0.22-3.19 | 0.793 | 0.89 | 0.16-4.41 | 0.889 |
| **Socio-economic status** | | | | | | |
| Poorest | 1 | | | 1 | | |
| Very poor | 1.30 | 0.82-2.07 | 0.260 | 1.32 | 0.86-2.27 | 0.272 |
| Poor | 1.38 | 0.88-2.18 | 0.159 | 1.35 | 0.85-2.23 | 0.209 |
| Less poor | 1.39 | 0.83-2.35 | 0.208 | 1.37 | 0.78-2.45 | 0.270 |
| Least poor | 1.52 | 0.87-2.65 | 0.139 | 1.65 | 1.00-3.02 | **0.049** |
| **Place of Residence** | | | | | | |
| Urban | 1 | | | | | |
| Per-urban | 2.33 | 1.19-4.57 | **0.015** | 3.40 | 1.36-8.51 | **0.010** |
| Rural | 1.04 | 0.60-1.81 | 0.887 | 1.26 | 0.62-2.56 | 0.516 |

***ANC4+=a minimum of four ANC attendance, **95% CI= 95 % confidence intervals, ***ORs = unadjusted odd ratios, ****aORs= adjusted odds ratios**

Source: GEHIP: 2015

Similarly, women who live in semi-urban communities were significantly more likely to attain four or more ANC services (OR=2.33, 95% CI= 1.19-5.57) compared to those who live in urban areas. After controlling for confounding, semi-urban women were more than threefold likely to attain four or more ANCs compared with women who live in urban areas (aOR=3.40 95% CI= 1.36-8.51). There was virtually no difference between women who live in urban areas and those who live in rural areas in the unadjusted model (OR=1.04, 95% CI= 0.60-1.81). In the adjusted regression model, rural women were 26% more likely to attain four or more ANCs compared to urban settlers, but this was not statistically significant.

Perhaps the relatively higher inclination of rural and semi-urban dwellers to utilize ANC services and health facility delivery is because the study setting is largely rural (Table 1). Also, access to maternal healthcare services in the Upper East Region has improved remarkably due to the implementation of the CHPS. Moreover, views expressed by women and father-in-laws showed high community acceptability and utilization of ANC and facility delivery services enabled by active community involvement in healthcare delivery through a volunteer system (Awoonor-Williams, Phillips & Bawah, 2016; Phillips et al., 2019). These factors may have accounted for the higher utilization of ANC4+ maternal healthcare services by rural dwellers in this study setting.

**Women's Autonomy and Health Facility Delivery**

Health facility delivery is important because, it facilitates skilled birth care, manages postpartum complications such as haemorrhage, hypertension, sepsis, and obstructed labour and ensures early and safe referrals which are key drivers of maternal and child mortality (Doctor, Nkhana-Salimu, &

Abdulsalam-Anibilowo, 2018). It is expected that women who are not constrained in healthcare decision-making will do so timely to benefit from the advantages associated with delivering in a health facility. Paradoxically, the results revealed that in this setting, women's autonomy was negatively related to health facility delivery. Women with higher autonomy status were less probable of delivering in a health facility (Table 11). For instance, in the unadjusted regression model, women with higher autonomy status were 10% less likely to deliver in a health facility compared to those with the least autonomy. The difference, however, reduced to 2.0 percent in the adjusted model.

The results align with the findings of a study that involved data from 31 Sub-Saharan African countries. Chol et al., (2019) examined women's autonomy and maternal healthcare services and found that higher women's autonomy in Chad, Senegal and Mali was negatively associated with maternal healthcare services. In Senegal, women who solely or jointly with their partners made decisions on household purchases were 26 percent less likely to utilize skilled birth services (Chol et al., 2019).

These counterintuitive results contrast with the theory and tenets of women's empowerment and earlier empirical studies in Ghana (Ameyaw et al. 2016; Dickson, Adde & Ameyaw, 2021; Speizer, Story & Singh, 2014) and elsewhere (Adhikari, 2016; Lamichhane, 2018; Obasohan et al., 2019; Tiruneh, Chuang & Chuang, 2017). For instance, Ameyaw et al., (2016) analysed data from the 2014 Ghana Demographic and Health Survey (GDHS) and found that women with health decision-making autonomy were significantly more likely to deliver in a health facility than those who are not autonomous. However,

autonomy on household purchases and visits to relations was associated with a lower likelihood of facility delivery (Ameyaw et al., 2016). Similarly, in their study, women whose husbands solely made healthcare decisions were significantly less likely to deliver in a health facility (Speizer, Story & Singh 2014). The later study explained that the effect of autonomy was mediated by community-level perceptions of health facility delivery by men and mothers-in-law.

Given the strong patriarchal context of this study (Achana et al., 2015; Adongo, Phillips & Binka, 1998; Moyer et al., 2014; Sumankuuro et al., 2019), it was theorized that normative structures especially at the community and family level constrict women's autonomy leading to debilitating maternal and child health outcomes. But narratives by women interviewed point to dwindling male gatekeeping roles over women. Prevailing economic hardships, unemployment, and poor agricultural yields have exacerbated men's inability to provide for the needs of their households, and this affects their control over women. In some cases, male partners were described as irresponsible and therefore lack moral authority to control or question decisions by their wives as can be deduced from lamentations shared in men's group discussions which were confirmed by women interviewed.

> *To me, poverty makes it difficult for us to control our wives. Nowadays, if you farm, you will not get anything, and you cannot even buy fertilizer for the farm. You know women, once she knows you do not have anything she will start doing whatever she wants, and you cannot do anything about it. ...- a* ***father-in-law in an FGD at Sirigu in Bolgatanga Municipality***

*Some of the men do not care about what you and the children eat and when a child is sick and you want money, he will say he does not have money because he is not working and there is nothing to send to the market and sell. Sometimes, you the woman will have to borrow to solve your problem. So, how can he look you in the eyes and say you cannot do this or that? If the woman sends the child to the hospital, the man will be happy but will not even ask to know where you got the money from.* ***IDI with a 25-year-old JHS graduate from Gbanterago in_Garu-Tempane district***

Other factors that contribute to men's weakened control over women include marital instability, and men's frequent absence at home. Also, men's spiritual oversight over their households appears to have been eroded by formal education and Islamic/Christian teachings and value systems. In contrast, women are increasingly engaged in income-generating activities and contributing substantially to household incomes. These in addition to women being immediate child caregivers, elevate their household bargaining power in maternal and child healthcare decision-making. These dominant views expressed by women were shared by mother-in-laws.

*On my side, my child was sick, and I informed my husband about it. For three days, he did not tell me anything and so, I took the child to the hospital for treatment. I still owe the hospital and because of that am weaving day and night so that I can sell the baskets and get money to pay the hospital bill* ***IDI with 38 years old farmer and Artisan in Zuarungo, Bolgatanga Municipality***

> *… now, the men only know how to impregnate women but not how to take care of them to deliver or to check on the child's conditions. My child was once seriously sick, but my husband didn't take any action. I used the savings I made from selling firewood to buy medicine for the child. So, if a man cannot even take care of his sick child, how can he control his wife? A* ***mother-in-law in an FGD with mother-in-laws at Gbanterago in the Garu-Tempane district***

The availability of quality and accessible healthcare services also affects women's healthcare decision-making. Study participants intimated that Community Health Volunteers play a critical role in their health decision-making. Volunteers keep basic records of pregnant women in their communities, mobilize their communities for health education, provide counselling, assist in referrals and encourage women to deliver in health facilities. Community involvement in Ghana's CHPS programme creates community acceptability and enhances women's autonomy in health decision-making. The volunteer system and proximity to health centres create an enabling environment which makes pregnant women utilize ANC and facility delivery care without necessarily having to obtain permission from or involve their spouses and other family members. Thus, sustaining and improving CHPS will impact gender inequality health decision-making and lead to a significant increase in ANC uptake, and health facility delivery. These views were expressed by mother-in-laws and corroborated by women interviewed as indicated below.

*… every community has volunteers and the nurses normally teach them some of the work for them to also teach the community members. There are some days they meet the community at the CHPS compound or under a tree to discuss health issues. Through these discussions, everybody now knows that a pregnant woman is supposed to be visiting the clinics for weighing, checking her health status and when she is about to deliver, go to the hospital or clinic. So, the women know what to do. They don't need anyone's permission.* ***- a mother-in-law in an FGD with mother-in-laws at Sumbrungo in Bolgatanga Municipality***

*When I was in labour, the volunteer took me to the regional hospital to give birth, but I could not give birth on my own, so the doctor operated on me. If I were to give birth in the house, the people here would not know what to do.* ***- IDI with 34 years old, SHS graduate, Bolgatanga***

**Table11. Associations between women's autonomy, socio-demographic characteristics, and health facility delivery**

| | **Bivariate regression analysis** | | | **Multivariate regression analysis** | | |
|---|---|---|---|---|---|---|
| | ***Facility Delivery** | | | ***Facility Delivery** | | |
| **Variable** | ****OR** | *****95% CI** | **P-value** | ******aORs** | *****95% CI** | **P-value** |
| **Autonomy** | | | | | | |
| Least | 1 | | | 1 | | |
| Moderate | 0.91 | 0.74-1.11 | 0.347 | 0.90 | 0.72-1.12 | 0.351 |
| High | 1.10 | 0.79-1.52 | 0.572 | 1.02 | 0.73-1.42 | 0.907 |
| **Socio-demographic characteristics** | | | | | | |
| **Level of education attained** | | | | | | |
| None | 1 | | | 1 | | |
| Pri/JHS/Middle | 1.57 | 1.15-2.15 | **0.005** | 1.19 | 0.88-1.60 | 0.247 |
| SHS + | 5.12 | 2.43-10.79 | **<0.001** | 2.79 | 1.42-5.47 | **0.003** |

Table 11 Cont'd

| | | | | | | |
|---|---|---|---|---|---|---|
| **Age group** | | | | | | |
| 15-24 | 1 | | | 1 | | |
| 25-34 | 0.63 | 0.49-0.81 | **0.001** | 0.68 | 0.51-0.88 | **0.004** |
| 35-49 | 0.37 | 0.27-0.50 | **<0.001** | 0.46 | 0.34-0.63 | **<0.001** |
| **Religion** | | | | | | |
| Christianity | 1 | | | 1 | | |
| Traditional | 0.55 | 0.38-0.77 | **0.001** | 0.67 | 0.41-0.81 | **0.030** |
| Islam | 0.94 | 0.62-1.43 | 0.758 | 0.99 | 0.93-1.81 | 0.949 |
| No religion | 0.32 | 0.17-0.59 | **<0.001** | 0.30 | 0.14-0.53 | **<0.001** |
| **Socio-economic status** | | | | | | |
| Poorest | 1 | | | 1 | | |
| Very poor | 0.90 | 0.66-1.22 | 0.488 | 0.87 | 0.63-1.20 | 0.400 |
| Poor | 1.06 | 0.75-1.49 | 0.739 | 1.00 | 0.68-1.47 | 0.990 |
| Less poor | 1.29 | 0.91-1.82 | 0.151 | 1.21 | 0.83-1.74 | 0.312 |
| Least poor | 2.00 | 1.33-3.01 | **0.001** | 1.65 | 1.11-2.46 | **0.015** |
| **Place of birth** | | | | | | |
| Urban | 1 | | | | | |
| Peri-urban | 0.88 | 0.39-1.99 | 0.750 | 1.26 | 0.56-2.87 | 0.570 |
| Rural | 0.82 | 0.43-1.59 | 0.556 | 1.22 | 0.74-2.02 | 0.435 |

*Facility delivery= women who delivered their last-born baby in a health facility prior to the survey, **OR= unadjusted odds ratios ***95% CI= 95 % confidence intervals, ****aORs= adjusted odds ratios

Source: Field survey, 2021

The results show a strong association between maternal educational attainment and facility delivery. In the unadjusted regression model, women who attained primary/JHS/Middle school education were 57% more likely to deliver in a health facility compared to those who had no education (OR=1.57, 95% CI=1.15-2.15) and this was statistically very significant. In the adjusted model, the likelihood of women with high primary/JHS/Middle school education delivering in a health facility reduced remarkably (aOR=1.19, 95% CI = 0.88-1.60), and was no longer statistically significant. The strength of the association between educational attainment and facility delivery was more pronounced among women who had at least secondary education. Compared to

women who had no education, those who attained at least secondary education were more than five times more likely to deliver in a health facility (OR=5.12, 95% CI=2.43-10.79) and this was highly statistically significant. In the adjusted regression model, the odds decreased but remained statistically significant (aOR=1.37, 95% CI= 0.52-3.53).

These findings are consistent with evidence from some previous studies (Ameyaw et al., 2016; Boah, Mahama, & Ayamga, 2018; Dickson, Adde & Amu, 2016). Educational attainment was positively associated with facility delivery. This means that women who attained higher levels of education tend to deliver in health facilities where quality and timely care is likely to be available (Gabrysch et al., 2019). Thus, interventions that promote female education will impact positively health facility delivery and contribute to reducing maternal and child mortality in the Upper East region. Given that the impact of the level of education attained on facility delivery was more pronounced at the secondary or higher level, sustaining the current Free Senior High School programme in Ghana will enhance the country's efforts at attaining SDG3 & 4 and other health and socio-economic developments.

Maternal age was negatively and significantly associated with health facility delivery. In the unadjusted regression model, compared to women aged 15-24 years, those aged 25-34 years old were 37% less likely to deliver in a health facility (OR=0.63, 95% CI=0.49-0.81). In the adjusted model, the likelihood of not delivering in a health facility reduced marginally (aOR=0.67, 95%CI= 0.51-0.88) but remained statistically significant. Also, compared to women aged 15-24 years old, those aged 35-49 years old were significantly less likely to deliver in a health facility (OR=0.37, 95% CI=0.27- 0.50). The

likelihood of not delivering in a health facility reduced in the adjusted regression model [OR= 0.46, 95CI= 0.34-0.63] but remained statistically significant.

Existing literature suggests that younger and physiologically immature women are more vulnerable to pregnancy complications and negative birth outcomes (Chandra-Mouli, Camacho, & Michaud, 2013; WHO, 2014). Perhaps, younger women patronized facility delivery because of fear of birth complications and trust that complications will be better and competently managed at the health facility. Older women may prefer home delivery due to negative experiences in their previous births including verbal and physical abuse, neglect and discrimination by healthcare providers (Bradley et al., 2016; Maya et al., 2018; Moyer et al., 2014; Sumankuuro et al., 2019); or they may feel more confident in their ability to deliver at home supported by family members or traditional birth attendants perceived to provide better care (Adatara, Strumpher & Ricks, 2020; Allou, 2018).

Paradoxically, older reproductive age among poorer women is associated with maternal depletion syndrome and adverse child outcomes (Nenko & Jasienska, 2009; Schimmel et al., 2015). Similarly, older women tend to have higher parity and poor maternal and child health outcomes (Bekele et al., 2019; Fall et al., 2015; Kozuki, Sonneveldt & Walker, 2013). Given that the study setting is considered largely poor compared to other regions of Ghana (GSS, 2014), older women's decision to deliver at home may not confer better maternal and child health benefits to them compared to their younger compatriots who deliver in health facilities.

The results also showed a statistically significant relationship between religious affiliation and health facility delivery. Women who practice traditional

religion were significantly less likely to deliver in a health facility compared to Christians (OR=0.55, 95% CI= 0.38-0.77); a relationship which remained statistically significant after adjusting for possible confounding factors (OR=0.67, 95%CI= 0.46-0.96). Similarly, in the bivariate analysis, women who had no religion were 68.0% less likely to deliver in a health facility compared to Christian women (OR=0.32, 95% CI =0.17-0.59); a relationship that remained unchanged in the adjusted regression model (aOR=0.30, 95% CI=0.15-0.57) and this remained statistically significant. These results are consistent with the findings of some previous studies (Ganle et al., 2019; Okedo-Alex et al., 2019; Solanke et al., 2015). In Nigeria, a study found no difference between Muslims and Christians in the utilization of facility care (Al-Mujtaba et al., 2016). This study found that compared to Christians, Moslems were 30% more likely to deliver in a health facility. Therefore, it is important that issues of religious sensitivities are factored into the design and provision of pregnancy and delivery care services in Ghana to minimize the effects of religious barriers in the utilization of maternal and child healthcare practices.

The study also found that consistent with previous studies (Dickson, Adde & Ameyaw, 2021; Manyeh, Amu, Williams et al., 2020; Obasohan et al., 2019; Okedo-Alex et al., 2019; Rizkianti et al., 2020) socio-economic status was positively and statistically significantly associated with health facility delivery. Compared to women with the poorest socio-economic status, those in the least poor status were twice more likely to deliver in a health facility (OR=2.00, 95% CI= 1.33-3.01). The likelihood of facility delivery decreased in the adjusted regression model (aOR=1.65, 95%CI= 1.11-2.46) but remained statistically significant. There was no statistically significant difference between

women in the poorest socio-economic index and those in the very poor, poor and less poor socio-economic index in terms of facility delivery.

Commonly cited reasons, why women deliver at home include their inability to afford the cost of transportation and items needed for delivery and immediate child and maternal care delivery kits also known as Mama's kit (Boah et al., 2020; Maya et al., 2018). In this study, women identified poverty as a barrier to their autonomy and access to healthcare services. They explained that their inability to afford the cost of medical care compels them to seek the approval of their spouses before seeking care in health facilities. Some men exploit women's financial vulnerabilities as a control mechanism to reinforce their dominance in household decision-making as reflected in these lived experiences shared below.

> *Because there is no money, you cannot decide what to do when the child is sick. I must inform my husband and his sisters. Some time ago my child was sick, and I carried him on my back to the hospital. The doctor gave me a paper and said I should go quickly and buy some drugs, but I did not have money. I rushed back home but my husband was annoyed because I did not tell him before going to the hospital and so, I should do whatever I want to do. So, that is the problem.* ***IDI with a 28-year-old Artisan at Sumbrungo in the Bolgatanga Municipality***

> *…it is because of financial problems that is why we always inform our husbands before we go to the hospital. If the child is sick and admitted to the hospital or the doctor prescribes drugs for you to buy, you may not be able to afford them. So, if the man is not happy that his wife went to the hospital without telling him, it means the woman will suffer unless*

*someone comes to help her*. ***A mother-in-law in an FGD at Seirigu, Bolgatanga Municipality***

The Upper East region is one of the regions with the highest prevalence of multi-dimensional poverty and women are particularly disadvantaged (Kumi-Boateng, Mireku-Gyimah & Stemn, 2015). Although access to basic and primary healthcare in the region has improved partly due to CHPS (Awoonor-Williams, Phillips & Bawah, 2016; Sakeah et al., 2021), many women are not able to afford insurance premiums and the basic cost of healthcare. Given the strong association between socio-economic status and facility delivery and the high prevalence of poverty in the study context, investments and programmes that expand women's access to income, formal education and economic assets will improve maternal and child healthcare in the region.

**Chapter Summary**

The proportion of women who attended ANC4+ (93.3%) was much higher than those who attended their first ANC in the first three months of pregnancy (68.5%). This suggests that a quarter of these women did not report early for ANC services as recommended by WHO (Burton & WHO, 2016). Also, consistent with earlier studies in Ghana (Boah, Mahama & Ayamga, 2018) and elsewhere in sub-Saharan Africa (Chukwuma, 2017; Woldegiorgis et al., 2019), the results showed discordance in women's uptake of ANC services and health facility delivery. Boah et al., (2018) in their study in rural Ghana, found that 98.8% of the study participants had at least one ANC during their recent pregnancy, but a lower proportion (61.9%) were delivered by a skilled birth attendant (SBA). A recent analysis of DHS data from 34 countries (2005-2015), found that while ANC uptake was very high, only 53% of women

received skilled birth delivery (Woldegiorgis et al., 2019). The prevalence of ANC attendance and facility delivery in this study are comparable to those of the 2014 Ghana Demographic and health survey (GSS, 2015).

Several reasons such as poor quality of healthcare services, poor road network and referral systems, and restrictive cultural and traditional beliefs may have accounted for the discordance in ANC uptake and health facility delivery in this setting. Narratives of women, health professionals and community stakeholders in rural Ghana revealed that perceived poor quality of care by traditional birth attendants (TBAs), stigmatization of unplanned pregnancies and cultural beliefs associated with disclosure of labour discourage uptake of skilled delivery and care for obstetric complications among women (Sumankuuro et al., 2019). It has also been documented that unexpected commencement of birth labour, poor attitudes of healthcare workers, weak referral systems, proximity to health facility and lack of women's autonomy restricts the utilization of health facility delivery (Okedo-Alex et al., 2019).

Women's autonomy was not a strong predictor of ANC and facility delivery in this study. Wealth was positively significantly associated with ANC4+ and maternal age, level of education attained, socio-economic status and religious affiliation were strong predictors of health facility delivery. However, narratives by a cross-section of women and father-in-laws revealed a complex contextual understanding, meanings, and interpretations of household decision-making and its effects on maternal child health practices and child mortality. Women's autonomy is a fluid concept and needs to be understood and interpreted in context. In fact, women are active agents and not powerless and passive in decision-making as often portrayed.

Women seeking their partner's approval of health and related household decisions may reflect shared family and community values (respect, humility). If not understood and interpreted in the embedded context of social relations and the extended family system, especially concerning child health, such politeness and courtesies risk being misconstrued as powerlessness or lacking autonomy. On the contrary, there appears to be a gradual shift of household power dynamics in favour of women resulting from increasing male inability to provide for their families. This notwithstanding, gender inequalities at the community and family level continue to constrain women's access to money and productive resources and diminish their decision-making capacity. Therefore, investment in women's economic empowerment and improving access to primary healthcare will spur the utilization of ANC services and health facility delivery in this and similar settings in Ghana and sub-Saharan Africa.

# CHAPTER SIX

# WOMEN'S AUTONOMY AND CHILD BREASTFEEDING PRACTICES

## Introduction

Appropriate breastfeeding practices are critical for the healthy growth and development of children. Breast milk is sufficient food rich in relevant macronutrients, antibodies, hormones, enzymes etc needed for the healthy growth and development of newly born babies (Bhutta et al., 2014; Brahm & Valdés, 2017; Samuel et al., 2020; Walker, 2010). Breastfeeding enhances the nutrition, cognitive and immune development of children and protects against infectious and cardiovascular diseases and ultimately decreases the risk of infant mortality (Brahm & Valdés, 2017). It is recommended that newly born babies should be breastfed as soon as possible within the first hour of birth and subsequently exclusively breastfed for the first six months of birth (Duodu et al., 2021; Ezeh et al., 2019; Manyeh et al., 2020; Maya et al., 2018).

Yet, in Ghana and many other countries in Sub-Saharan Africa, appropriate breastfeeding remains suboptimal. Several factors including diminished women's autonomy have been cited as one of the causes of poor breastfeeding practices in Africa. This chapter examines the association between women's autonomy and breastfeeding practices. The results are discussed in line with relevant literature and theoretical perspectives. Findings from the qualitative component are incorporated into the discussion to highlight contextual normative structures, meanings and interpretations that influence women's decision-making on breastfeeding practices.

Table 12 presents crossed tabulations of maternal breastfeeding practices by women's autonomy. The results of this study showed that slightly more than half of the sampled women (51.5%) initiated breastfeeding within the first hour of birth (Table 12). This is comparable with findings of recent studies in Ghana and sub-Saharan Africa (Duodu et al., 2021; Ezeh et al., 2019; Manyeh et al., 2020; Seidu et al., 2020). A much lower proportion (11.2%) practised exclusive breastfeeding; a figure much lower than the 90% prevalence set by the WHO/UNICEF as well as the 50% target set by the World Health Assembly for the year 2025. The prevalence of EBF found in this study is also much lower than the national average of 52% reported in the 2014 Ghana Health and Demographic Survey, a recent cohort study in Southern Ghana (71.0%) and a hospital-based study in Tema, Ghana (66.0%) respectfully (Asare et al., 2018; Manyeh et al., 2020).

The prevalence of EIBF in this study is comparable to what generally pertains to Ghana and Sub-Saharan Africa. The 2014 GDHS reported a national average of EIBF to be 56% (GSS, 2015). Also, pooled data from 35 countries estimated the prevalence of EIBF to be 58.3%. Chad reported the lowest prevalence (24%) and the highest (86%) in Burundi (Teshale & Tesema, 2021). The prevalence of EIBF is higher than the prevalence of 43% reported from pooled data that involved 13 Economic Community of West Africa States (ECOWAS) (Ezeh et al., 2019). The delayed initiation of breastfeeding and low prevalence of EBF in this setting may be due to restrictive socio-cultural beliefs and traditional practices (Aborigo et al., 2012; Ayodeji, 2019; Duran et al., 2021; Joseph & Earland, 2019; Moyer et al., 2014). Studies in Ghana have

documented myths and misconceptions that affect effective child breastfeeding practices (Aborigo et al., 2012; Nsiah-Asamoah, Doku & Agblorti, 2020).

**Table 12. Maternal healthcare practices by women's autonomy status**

| | | | Autonomy Status | | | |
|---|---|---|---|---|---|---|
| | | | Least | Moderate | High | |
| **Variable** | **Total** | **Percentage (%)** | **Percentage (%)** | **Percentage (%)** | **Percentage (%)** | **P-value** |
| **Child Healthcare Practices** | | | | | | |
| Initiation of BF | 1,669 | 51.5 | 49.3 | 53.4 | 51.7 | 0.154 |
| Exclusive breastfeeding | 362 | 11.2 | 12.5 | 10.6 | 10.3 | 0.205 |

***Initiation of breastfeeding with the first hour of birth, **feeding baby with only breastmilk for the first six months after birth,**
Source: Field survey (2021)

**Women's autonomy and initiation of breastfeeding**

Table 13 presents the results of the association between women's autonomy, socio-demographic characteristics, and initiation of child breastfeeding. The results showed that women's autonomy was positively associated with the initiation of breastfeeding. In the bivariate analysis, compared to women with the least autonomy, those who had moderate autonomy were 18% more likely to initiate breastfeeding within one hour after birth but this was not statistically significant. After controlling for possible confounding, the odds increased and this was statistically significant (aOR= 1.26, 95% CI = 0.96-1.65). Since women with higher autonomy are more likely to deliver in health facilities, timely initiation of breastfeeding may have been triggered by lactation counselling from skilled birth attendants (Apanga et al., 2014).

Women with the least autonomy may be less inclined to initiate timely breastfeeding because they lack family or spousal support, or may feel obliged to perform breastmilk purification rites (Aborigo et al., 2012; Adda, Opoku-Mensah & Dako-Gyeke, 2020; Joseph & Earland, 2019; Nsiah-Asamoah, Doku & Agblorti, 2020); or they may have delivered at home and missed out on skilled counselling on breastfeeding (Duran et al., 2021); or lacked knowledge of the benefits of colostrum (Brahm & Valdés, 2017; Mogre, Dery & Gaa, 2016; Nukpezah, Nuvor & Ninnoni, 2018). Autonomous decision-making on breastfeeding may also have been constricted by older family and community members especially mothers-in-law, TBAs and herbalists (Adda, Opoku-Mensah & Dako-Gyeke, 2020). Lack of family and community support for early initiation of breastfeeding is often due to prevailing myths and misconceptions

about breastfeeding. These include the belief that colostrum from some women is toxic for infants (Aborigo et al., 2012; Nsiah-Asamoah, Doku & Agblorti, 2020). Mothers-in-law in this study explained why breastfeeding is often delayed especially among first-time mothers.

> *...when women give birth for the first time, they may not have breastmilk for the first two to three days. If she puts the child to the breast, the breastmilk will not flow. It takes some time before the breast milk comes. Within those days, the baby will breastfeed from another woman who is already breastfeeding until the mother's breast milk comes.* ***A mother-in-law in an FGD at Sirigu; a community in Bolgatanga Municipality***

> *....when you give birth for the first time, they don't allow you to feed the child. Normally, they will take some of the breast milk and put it in a bowl and get some ants and drop them in the breast milk. When the ants die that means the breast milk is not good for the child but when the ants survive then the baby can start to breastfeed from the mother.* ***A mother-in-law in an FGD at Gbanterago a community in the Garu-Tempane District***

Among the covariates, the level of education attained was significantly associated with early initiation of breastfeeding. Compared to women who had no education, those who had secondary or more education were 95% more likely to initiate breastfeeding within the first hour of birth (OR= 1.95, 95% CI= 1.33-2.86) and this was statistically significant. Although the likelihood attenuated in the adjusted regression model, (aOR= 1.50, 95% CI= 0.98-2.29) the

association remained statistically significant. These findings are consistent with the results of earlier studies in Ghana that also found a positive and statistically significant relationship between the level of education attained and initiation of breastfeeding (Apanga et al., 2014; Teshale & Tesema, 2021).

A recent study in Ghana did not find any statistically significant relationship between education and timely initiation of breastfeeding (TIBF) but noted that mothers who read newspapers at least once a week were significantly more likely to practice TIBF than their counterparts who never read newspapers (Seidu et al., 2020). As in other parts of Ghana and much of Sub-Saharan Africa (Ayodeji, 2019; Nukpezah, Nuvor & Ninnoni, 2018), favourable attitudes by women with higher education towards breastfeeding may probably be due to their knowledge of the benefits of appropriate breastfeeding (Boakye-Yiadom et al., 2021; Brahm & Valdés, 2017; Mogre, Dery, & Gaa, 2016; Nukpezah, Nuvor & Ninnoni, 2018).

In terms of religion, Moslem women compared to Christians were 47.0% less likely to practice timely breastfeeding (OR=0.53; 95% 0.39-0.71). In the adjusted model, the odds of TIBF decreased slightly (aOR=0.56, 95% CI= 0.42-0.75) and remained statistically significant. Although not statistically significant, women who practised traditional religion were more likely, while those with no religion were less likely to initiate timely breastfeeding than Christians. These findings contrast with recent studies in Ghana, where women who practice traditional religion were significantly less likely to practice EIBF (Seidu et al., 2020). Also, in their qualitative exploratory study into family and religious beliefs that affect breastfeeding in Sagu; a community in the Upper West Region of Ghana, rituals performed to initiate firstborn mothers into

motherhood, including separating the mother and child and feeding the infant with concoctions believed to cleanse dirt in the infant's stomach and to make the baby strong (Afaya et al., 2017).

Consistent with a recent study in Ghana (Boakye-Yiadom et al., 2021), this study found that maternal age was negatively related to TIBF. Apart from women in the least socio-economic index, higher socioeconomic status was generally associated with a less likelihood of timely initiation of breastfeeding. Compared to women in the poorest socio-economic group, those in the very poor category were 26% less likely to initiate timely breastfeeding (OR= 0.74; 95% CI= 0.58-0.94). The difference was even much higher and statistically significant in the adjusted regression model (aOR= 0.67; 95% CI= 0.53-0.83). However, there was no statistical difference between women in the poorest socio-economic group and those in the less poor, and least poor socio-economic status concerning TIBF.

Boakye-Yiadom et al., (2021) in a study among postnatal care attendants at Konfo Anokye Teaching Hospital (KATH) in Kumasi, found that older maternal age was associated with delayed EIBF (Boakye-Yiadom et al., 2021). However, two other recent studies found that older maternal age enhances EIBF and EBF (Asare et al., 2018; Kyei-Arthur et al., 2021; Manyeh, Amu, Williams, et al., 2020). Unlike Asare et al., (2018) and Boakye-Yiadom et al., (2021) whose studies were conducted among clinic attendants, Kye-Arthur et al., (2021) study examined the association between paternal characteristics and breastfeeding using data from the 2014 GDHS and therefore more representative of breastfeeding practices among women in Ghana. That

notwithstanding, more research is needed to clarify the nature of the relationship between maternal age and breastfeeding in Ghana.

The results also showed that place of residence was statistically significantly associated with the timely initiation of breastfeeding. In the unadjusted regression model, women who live in peri-urban settlements were 61% less likely to initiate breastfeeding within an hour after birth (OR= 0.39, 95% CI= 0.25-0.60) compared to those in urban settings; and this was statistically significant. After adjusting for confounding factors, the likelihood decreased slightly (aOR= 0.46, 95% CI= 0.30-0.70) and remained statistically significant. Similarly, women who live in rural settings were 55% less likely to initiate breastfeeding within an hour of birth (OR= 0.45, 95% CI= 0.32-0.63). The difference remained statistically significant even after adjusting for confounding factors (aOR= 0.52, 95% CI= 0.37-0.74). These findings are consistent with the findings of earlier studies (Ayodeji, 2019; Duodu et al., 2021; Teshale & Tesema, 2021).

Women who lived in urban areas in this setting were more likely to be better educated; p-value = <0.001 (see appendix table..) and may therefore be more assertive, and read newspapers and watch television more frequently (Seidu et al., 2020; Teshale & Tesema, 2021) than rural dwellers and thereby more likely to be knowledgeable about the benefits of EIBF (Nukpezah, Nuvor, & Ninnoni, 2018). Urban dwellers are also more likely to have access to health facilities and to receive lactation counselling from skilled birth attendants than rural dwellers (Dun-Dery & Laar, 2016; Teshale & Tesema, 2021). In contrast, rural women are likely to be pressured by older relations especially male spouses and mothers-in-law to observe breastmilk purification rites before

initiating breastfeeding and this affects EIBF (Aborigo et al., 2012; Joseph & Earland, 2019; Tawiah-Agyemang et al., 2008).

**Table 13. Women's autonomy, socio-demographic characteristics, and initiation of breastfeeding**

| | Bivariate regression analysis | | | Multivariate regression analysis | | |
|---|---|---|---|---|---|---|
| | *Initiation of Breastfeeding | | | Initiation of Breastfeeding | | |
| **Variable** | **OR | 95% CI | P-value | ***aOR | 95% CI | P-value |
| **Autonomy** | | | | | | |
| Least | 1 | | | 1 | | |
| Moderate | 1.18 | 0.90-1.54 | 0.234 | 1.26 | 0.96-1.65 | **0.056** |
| High | 1.10 | 0.83-1.45 | 0.504 | 1.09 | 0.75-1.31 | 0.929 |
| **Level of education attained** | | | | | | |
| None | 1 | | | 1 | | |
| Pri/JHS/Middle | 1.23 | 0.97-1.55 | 0.093 | 1.11 | 0.86-1.44 | 0.397 |
| SHS + | 1.95 | 1.33-2.86 | **0.001** | 1.50 | 0.98-2.29 | **0.054** |
| **Age group** | | | | | | |
| 15-24 | 1 | | | 1 | | |
| 25-34 | 0.95 | 0.78-1.16 | 0.615 | 0.96 | 0.78-1.20 | 0.745 |
| 35-49 | 0.89 | 0.71-1.13 | 0.336 | 0.94 | 0.74-1.20 | 0.615 |
| **Religion** | | | | | | |
| Christianity | 1 | | | 1 | | |
| Traditional | 1.15 | 0.86-1.54 | 0.344 | 1.29 | 0.96-1.72 | 0.088 |
| Islam | 0.53 | 0.39-0.71 | **<0.001** | 0.56 | 0.42-0.75 | **0.<0.001** |
| No religion | 0.67 | 0.39-1.15 | 0.147 | 0.69 | 0.37-1.29 | 0.240 |
| **Socio-economic status** | | | | | | |
| Poorest | 1 | | | 1 | | |
| Very poor | 0.74 | 0.58-0.94 | **0.016** | 0.72 | 0.57-0.92 | **0.008** |
| Poor | 0.89 | 0.70-1.12 | 0.316 | 0.88 | 0.68-1.12 | 0.289 |
| Less poor | 0.97 | 0.77-1.22 | 0.799 | 1.01 | 0.79-1.29 | 0.929 |
| Least poor | 1.12 | 0.82-1.53 | 0.473 | 1.07 | 0.78-1.47 | 0.654 |
| **Place of residence** | | | | | | |
| Urban | 1 | | | | | |
| Peri-urban | 0.39 | 0.25-0.60 | **<0,001** | 0.46 | 0.30-0.70 | **<0.001** |
| Rural | 0.45 | 0.32-0.63 | **<0.001** | 0.52 | 0.37-0.74 | **<0.001** |

***Initiation of breastfeeding within the first hour of birth, **unadjusted odd ratios, ***adjusted odds ratios, ****95% confidence interval**
**Source: GEHIP, 2015**

**Women's Autonomy and Exclusive Breastfeeding**

Table 14 presents the results of the association between women's autonomy, socio-demographic characteristics, and exclusive breastfeeding practices. The results showed a counterintuitive relationship between women's autonomy and exclusive breastfeeding (EBF). In the adjusted regression model, women with moderate and high autonomy were 14.0% and 22.0% respectively less likely to practice EBF compared to those with the least autonomy. There is scant literature on women's autonomy and exclusive breastfeeding in Ghana. Generally, research in Ghana and much of Africa, research on EBF tend to focus on other maternal characteristics and sociocultural determinants, dietary diversity, and anthropometric measures (Abate & Belachew, 2017; Jones et al., 2019; Na et al., 2015; Saaka, 2020).

However, a study by Ziaei et al., (2015) found that in Nicaragua higher maternal autonomy was significantly associated with a lower probability of EBF (Ziaei et al., 2015). Narratives by father-in-laws and mother-in-laws in this study point to wide disapproval of EBF because it discourages the performance of cultural rites on early child feeding. Some mothers interviewed shared their child-feeding experiences with their father-in-laws which were echoed by their mother-in-laws.

*Hmmm you know whenever we go for antenatal the nurses tell us not to give our children water but when I gave birth my husband's father (father-in-law) mixed some herbs with water and gave it to my child to drink. I was not happy about it but if I were not to allow him to do it and later something happens to the child, everybody will blame me for it.*

***IDI with a 28_year old mother at Kugrango in_Garu-Tempane district.***

*I don't allow my daughter-in-law to practice exclusive breastfeeding. This is because if the child does not take water, how will I give the child my herbs? It is important to give herbs to the child because it makes the child healthy and strong.* - ***A father-in-law in an FGD at Wedkambo in the Garu-Tempane district***

Autonomous women may be career women whose employers or workplace rules and regulations regarding maternity leave, reporting and closing time, etc do not permit breastfeeding while at work (Abekah-Nkrumah et al., 2020; Aborigo et al., 2012; Diji et al., 2016; Dun-Dery & Laar, 2016). It could also be because such mothers fear their breasts will become flaccid (Aborigo et al., 2012; Apanga et al., 2014). Diji et al. (2016) in their study at a child welfare clinic in Kumasi found that self-employed women were significantly more likely to practice EBF than those formally employed. In a group discussion, mother-in-laws explained the motivations for serving infants water or light meals. Their views were echoed by a career mother who occasionally leaves their children in the care of her mother-in-law or other family members.

*…we know we are not supposed to give water to the children but sometimes it's not our fault. We were harvesting our rice and my daughter-in-law had to leave the baby behind to help in the harvesting. After some time, the baby woke up and was crying. I tried to play with her to stop crying to no avail. Here, the sun is also too hot, and the*

*mother cannot take that little child along to the farm. I had to give water to the child to cool her throat and she stopped crying.* ***A mother-in-law in an FGD at Gbanterago in the Garu-Tempane district.***

*As for me, I agree with exclusive breastfeeding, but the child is not for me alone. You may go to work or the market and by the time you return, your mother-in-law or someone would have given water or zoomkom (flour water) to the child. What can you do? If you complain too much, it can cause a problem and the next time no one will accept to take care of the child. -* ***IDI with a 26-year-old Pupil Teacher and petty trader at Sumbrungo in the Bolgatanga Municipality***

Maternal educational attainment was not statistically significantly associated with exclusive breastfeeding and this is inconsistent with the findings of earlier studies (Apanga et al., 2014; Asare et al., 2018; Teshale & Tesema 2021). Teshale and Tesema (2021), analyzed Demographic and Health Survey data from 35 sub-Saharan countries and found that having primary education and exposure to mass media were associated with higher odds of exclusive breastfeeding. Similarly, a review of barriers and facilitators of exclusive breastfeeding in West Africa, found that knowledge of the benefits of breastfeeding and higher educational status of mothers was positively and significantly associated with exclusive breastfeeding (Apanga et al., 2014). In contrast, Asare and colleagues in their health facility-based study at Tema, Ghana, found that women with tertiary education were less likely to practice exclusive breastfeeding (Asare et al., 2018).

Since higher educational attainment is positively correlated with formal employment, this may negatively affect exclusive breastfeeding practices.

Abekah-Nkrumah' and colleagues explored working mothers' experiences with exclusive breastfeeding and found out that workplace policies such as duration of maternity leave, reporting and closing time and inadequate institutional support gravely affect working mothers' ability to practice exclusive breastfeeding. In some situations working mothers rely on family members to care for and feed their babies with expressed breast milk while they are at work (Abekah-Nkrumah et al., 2020); a situation where exclusive breastfeeding cannot be guaranteed. However, evidence from other studies suggests that being employed is significantly associated with exclusive breastfeeding (Immurana & U 2018; Tamirat & Sisay, 2019). The inconsistent findings of these studies imply that the effect of maternal employment on EBF is inconclusive.

Peri-urban and rural dwellers were less probable of practicing exclusive breastfeeding compared to urban dwellers. This is not surprising because rural women are also more likely to be pressured to introduce herbal water and complementary feeding to infants before they attain six months old than urban dwellers (Aborigo et al., 2012; Diji et al., 2016; Duodu et al., 2021; Jama et al., 2018; Nsiah-Asamoah, Doku & Agblorti, 2020; Tampah-Naah, Kumi-Kyereme, & Amo-Adjei, 2019).

Maternal age was negatively related to exclusive breastfeeding. This means that older women were less inclined to practice exclusive breastfeeding. The unadjusted results show that compared to women aged 15-24 years, those aged 25-34 years were significantly less likely to practice exclusive breastfeeding (OR=0.69, 95% CI= 0.52-0.93). The relationship remained statistically significant in the adjusted regression model (aOR = 0.68, 95 % CI= 0.49-0.91). Similarly, in the bivariate model, women aged 35-49 years were

55% less likely to practice exclusive breastfeeding (OR=0.45, 95% CI= 0.33-0.61); a relationship that remained unchanged in the adjusted regression model (aOR=0.45, 95% CI= 0.31-0.65).

These results are consistent with recent studies in Ghana (Boakye-Yiadom et al., 2021; Kyei-Arthur, Agyekum, & Afrifa-Anane, 2021). Boakye-Yiadom et al., (2021) in a study among postnatal care attendants at Konfo Anokye Teaching Hospital (KATH) in Kumasi, found that older maternal age was associated with delayed EIBF (Boakye-Yiadom et al., 2021). However, two other recent studies in Ghana found that older maternal age was associated with better breastfeeding practices (Asare et al., 2018; Kyei-Arthur, Agyekum & Afrifa-Anane, 2021; Manyeh et al., 2020). Unlike Asare and colleagues, and Boakye-Yiadom and colleagues whose studies were among clinic attendants, Kye-Arthur and colleagues' study used data from the 2014 GDHS and is, therefore, more representative of breastfeeding practices among women in Ghana. That notwithstanding, more research is needed to clarify the nature of the relationship between maternal age and breastfeeding in Ghana.

Religious affiliation was significantly associated with exclusive breastfeeding only at the bivariate level. For instance, compared to Christians, women who practised traditional religion were 42% less likely to practice exclusive breastfeeding (OR=0.58, 95% CI= 0.35-0.96) and this was statistically significant. There was no statistically significant association between exclusive breastfeeding and other religious categories. The effects of religion on breastfeeding have also been noted and sufficiently explained in the section under the initiation of breastfeeding (Afaya et al., 2017; Seidu et al., 2020).

Women of higher socio-economic status were generally more likely to practice exclusive breastfeeding than those in the least socio-economic group. However, socio-economic status was not statistically significantly associated with exclusive breastfeeding. Since socioeconomic status was strongly correlated with occupational status in this study (p-value= <0.001), women in higher socio-economic status are more likely to be those who are employed or engaged in income-generating activities than those in the lower socio-economic group. Existing literature in Ghana and other settings shows that higher maternal socio-economic status is associated with a lower probability of exclusive breastfeeding (Diji et al., 2016; Horwood et al., 2018; Manyeh et al., 2020; Yeboah, Forkuor & Agyemang-Duah, 2019).

Diji et al., (2017) reported that women who were self-employed were more probable of practicing exclusive breastfeeding than those who were formally employed. Also, Yeboah et al., (2019) reported that unemployed women were significantly more likely to exclusively breastfeed than those who were formally employed. Similarly, in Kwazulu Natal, South Africa, a study among Primary Healthcare Clinic attendants revealed that being in a higher socio-economic tertile and 'returning to work', was a strong predictor of non-compliance with exclusive breastfeeding (Horwood et al., 2018).

**Table 14. Women's autonomy and exclusive breastfeeding**

| | Bivariate regression analysis | | | Multivariate regression analysis | | |
|---|---|---|---|---|---|---|
| | *Exclusive Breastfeeding | | | *Exclusive Breastfeeding | | |
| **Variable** | **OR | CI 95% | P-value | ***aOR | CI95% | P-value |
| **Autonomy** | | | | | | |
| Least | 1 | | | 1 | | |
| Moderate | 0.83 | 0.63-1.10 | 0.186 | 0.86 | 0.64-1.15 | 0.294 |
| High | 0.80 | 0.61-1.06 | 0.125 | 0.78 | 0.58-1.08 | 0.129 |
| **Level of education attained** | | | | | | |
| None | 1 | | | 1 | | |
| Pri/JHS/Middle | 1.10 | 0.82-1.47 | 0.514 | 0.85 | 0.62-1.24 | 0.330 |
| SHS + | 1.26 | 0.78-2.04 | 0.337 | 1.01 | 0.69-1.78 | 0.962 |
| **Age group** | | | | | | |
| 15-24 | 1 | | | 1 | | |
| 25-34 | 0.69 | 0.52-0.93 | **0.016** | 0.68 | 0.49-0.93 | **0.016** |
| 35-49 | 0.45 | 0.33-0.61 | **<0.001** | 0.45 | 0.32-0.65 | **<0.001** |
| **Religion** | | | | | | |
| Christianity | 1 | | | 1 | | |
| Traditional | 0.58 | 0.35-0.96 | **0.036** | 0.63 | 0.39-1.04 | **0.051** |
| Islam | 1.04 | 0.76-1.42 | 0.802 | 1.05 | 0.78-1.40 | 0.764 |
| No religion | 1.20 | 0.58-2.48 | 0.625 | 1.26 | 0.59-2.67 | 0.539 |
| **Scio-economic status** | | | | | | |
| Poorest | 1 | | | 1 | | |
| Very poor | 0.93 | 0.62-1.41 | 0.736 | 0.88 | 0.56-1.37 | 0.571 |
| Poor | 1.07 | 0.68-1.68 | 0.777 | 1.04 | 0.64-1.68 | 0.869 |
| Less poor | 1.30 | 0.89-1.92 | 0.174 | 1.24 | 0.84-1.82 | 0.284 |
| Least poor | 1.40 | 0.97-2.01 | 0.075 | 1.27 | 0.85-1.89 | 0.233 |
| **Place of residence** | | | | | | |
| Urban | 1 | | | | | |
| Peri-urban | 0.75 | 0.42-1.32 | 0.312 | 0.68 | 0.36-1.27 | 0.226 |
| Rural | 0.92 | 0.54-1.58 | 0.761 | 0.86 | 0.47-1.58 | 0.620 |

***Exclusively breastfeeding children within the first six months of birth, **unadjusted odd ratios, ***adjusted odds ratios**

Source: GEHIP, 2015

## Chapter Summary

In summary, the prevalence of timely initiation of breastfeeding is comparable with the literature in Ghana. The prevalence of exclusive breastfeeding was however lower than those reported in previous studies. Maternal autonomy was positively associated with the initiation of breastfeeding but negatively related to exclusive breastfeeding. Breastfeeding experiences shared by mothers revealed that younger cohorts of mothers are more assertive in decision-making regarding infant care and feeding practices. Individual and community-level factors that promote the maternal capacity, agency and control over infant feeding care include knowledge of the benefits of breastfeeding, formal education, urbanization, rising levels of women empowerment and the existence of an accessible and supportive healthcare system. These factors impact traditional and cultural norms, beliefs and practices that do not promote appropriate breastfeeding. The narratives also revealed an increasingly supportive role by traditional gatekeeping structures such as mother and father-in-laws, and relatives which are partly achieved through CHPS (a community-based, participatory and ownership health system).

This notwithstanding, women's participation in formal employment and other income-generating activities affects the lengths and quality of time available for childcare. Autonomous women were more likely to be formally employed or engaged in artisanal and income-generating activities; p-value = <0.001 (see appendix 20) and therefore unable to practice exclusive breastfeeding. Exclusive breastfeeding seems to also be affected by the increasing availability of safe drinking water and food supplements, and

lingering misconceptions that breastmilk is not sufficient nourishment for infants. The dry climatic conditions and high temperatures in Northern Ghana fuel the perception children may dehydrate if they are not frequently served water.

# CHAPTER SEVEN

# WOMEN'S AUTONOMY AND CHILD AGE-APPROPRIATE VACCINATION

## Introduction

Typically, research studies in Africa have mainly focused on complete vaccinations as defined by the WHO (1 dose of BCG, 3 doses of polio, 3 doses of DPT and 1 dose of measles vaccine) (Acharya et al., 2018; Anokye et al., 2018; Budu et al., 2020; Nadella et al., 2019). Other studies examined vaccine coverage (Adokiya, Baguune & Ndago, 2017; Baguune, Ndago & Adokiya 2017). Little attention has been focused on whether children receive "ALL" vaccines at the recommended ages. In this study, only 5.1% percent of the children sampled received all the vaccines at the appropriate ages. This is far from the 87.3% figure reported by Laryea and colleagues in their study among attendees at a tertiary health facility (Laryea, Parbie, & Frimpong, 2014). However, the investigators noted that timely vaccine uptake was mainly for initial vaccines. The proportion of children receiving vaccines later increased with the latter vaccines. The findings of this study suggest that an overwhelming majority of children in this setting do not receive ALL the scheduled vaccines at the appropriate age. This observation was confirmed when the age-restricted condition was relaxed in the analysis. Vaccination coverage for the various antigens soared compared to what pertains concerning timely vaccinations (Table 15).

**Women's Autonomy and Child Age-Appropriate Vaccination Status**

Table 15 shows vaccination coverage levels for the various antigens included in this study were generally higher ranging from 92.5% for measles and DPT3 to 97.8% for Polio1. However, the proportion of children who received these antigens at the appropriate ages was much lower ranging from 29.4% for DPT1 to 82.1% for measles. Although the coverage level for polio1 was very high (97.8), the proportion of children who received polio1 at the appropriate age was low (31.8%).

**Table 15. Vaccination Coverage compared with Vaccine Timeliness**

| Antigen | *Coverage (Percentage) | **Timeliness (Percentage) |
|---|---|---|
| | N= 1, 247 | N= 1, 247 |
| BCG | 97.7 | 62.4 |
| Polio 1 | 97.8 | 31.8 |
| DPT 1 | 95.8 | 29.4 |
| Polio 2 | 96.5 | 70.8 |
| DPT 2 | 94.6 | 67.5 |
| Polio 3 | 94.2 | 75.2 |
| DPT 3 | 92.5 | 72.4 |
| Measles | 92.5 | 82.1 |

***The proportion of children aged 12-24 months old who received each of the scheduled vaccines; **Proportion of children who received each of scheduled vaccines as determined by the WHO or not later than a month after the scheduled date. BCG= Vaccination against Tuberculosis, Polio 1, 2 & 3= against Poliomyelitis, DPT1, 2, & 3 = against Diphtheria-Tetanus-Pertussis, OPV= against rotavirus, Measles**

The low coverages for age-appropriate vaccinations may be attributed to stockouts of vaccines or the use of multidose vials resulting in deferred vaccinations. Typically, multidose vial vaccines can cover between 2 to 20 children and deferrals are often made to minimize wastage and cost if the

number of children scheduled to be vaccinated are not up to the maximum number each multidose vial is expected to cover (Heaton et al., 2017).

In the bivariate and multivariate analysis (Table 16), a composite age-appropriate vaccination variable was used for the analysis. The results showed that women's autonomy was negatively related to and not significantly associated with age-appropriate vaccination. Although in the adjusted model, children of women with moderate and high autonomy were 12% and 29% respectively less likely to receive age-appropriate vaccination compared to those of women with least autonomy this was not statistically significant.

The results are inconsistent with the findings of studies in other settings (Desalew et al., 2020; Jung, 2018; Wado, Afework, & Hindin, 2014), which showed that maternal autonomy impacts positively child immunization. In their systematic review and meta-analysis of literature in Ethiopia, Desalew and friends found that maternal autonomy significantly reduced incomplete child vaccination by almost half (Desalew et al., 2020). Similarly, in Nigeria, women's participation in their own healthcare decisions was significantly negatively associated with child complete immunization (Rolle, 2019). Jung (2018) study among Korean and Japanese women found that self-efficacy and decision-making authority and control of the use of household resources were positively significantly associated with child vaccination (Jung, 2018).

As demonstrated in earlier studies in Ghana, perhaps, women with higher autonomy were more likely to be formally employed; whose working hours may conflict with child's vaccination schedules (Abekah-Nkrumah et al., 2020; Anokye et al., 2018; Dun-Dery & Laar, 2016). Anokye et al., (2018) study in Koforidua, Ghana, found that women part-time workers were more than twice

likely to complete their child's vaccination schedules than those fully employed. Working place constraints such as reporting and closing time, short maternity leave, and lack of support from employers may probably affect working mother's ability to complete their children's vaccinations and to practice appropriate breastfeeding (Abekah-Nkrumah et al., 2020; Dun-Dery & Laar, 2016).

In terms of the covariates, the level of education attained was positively related and associated with a higher likelihood of age-appropriate vaccination, but this was not statistically significant, maternal age and religious affiliation were not statistically significantly associated with age-appropriate vaccination. Socio-economic status and place of residence were significantly associated with age-appropriate vaccination at the bivariate level but were not significant in the multivariate analysis.

**Table 16. Women's Autonomy Index and Age-Appropriate Vaccinations**

| Variable | Bivariate regression analysis | | | Multivariate regression analysis | | |
|---|---|---|---|---|---|---|
| | *Age-appropriate vaccination | | | *Age-appropriate vaccination | | |
| | **OR | 95% CI | P-value | ***aOR | 95% CI | P-value |
| **Autonomy** | | | | | | |
| Least | 1 | | | 1 | | |
| Moderate | 1.89 | 0.49-1.58 | 0.656 | 0.88 | 0.49-1.59 | 0.666 |
| High | 0.63 | 0.33-1.20 | 0.160 | 0.71 | 0.38-1.33 | 0.281 |
| **Level of education attained** | | | | | | |
| None | 1 | | | 1 | | |
| Pri/JHS/Middle | 0.86 | 0.47-1.58 | 0.626 | 0.84 | 0.43-1.64 | 0.602 |
| SHS + | 1.73 | 0.76-3.95 | 0.188 | 2.30 | 0.85-6.26 | 0.100 |

Table 16 cont'd

| | | | | | | |
|---|---|---|---|---|---|---|
| **Age group** | | | | | | |
| 15-24 | 1 | | | 1 | | |
| 25-34 | 0.76 | 0.43-1.34 | 0.343 | 0.67 | 0.38-1.19 | 0.167 |
| 35-49 | 0.73 | 0.35-1.51 | 0.383 | 0.57 | 0.25-1.30 | 0.177 |
| **Religion** | | | | | | |
| Christianity | 1 | | | 1 | | |
| Traditional | 1.24 | 0.59-2.61 | 0.561 | 1.56 | 0.70-3.50 | 0.272 |
| Islam | 0.91 | 0.52-1.58 | 0.732 | 1.00 | 0.56-1.77 | 0.987 |
| **Socio-economic status** | | | | | | |
| Poorest | 1 | | | 1 | | |
| Very poor | 1.08 | 0.49-2.42 | 0.842 | 0.89 | 0.40-1.98 | 0.771 |
| Poor | 0.46 | 0.20-1.02 | **0.057** | 0.50 | 0.21-1.14 | 0.097 |
| Less poor | 0.68 | 0.32-1.47 | 0.324 | 0.53 | 0.23-1.24 | 0.140 |
| Least poor | 0.74 | 0.31-1.75 | 0.493 | 0.77 | 0.32-1.86 | 0.560 |
| **Place of Residence** | | | | | | |
| Urban | | | | | | |
| Peri-urban | 4.76 | 0.73-31.21 | 0.102 | 6.01 | 0.57-63.09 | 0.133 |
| Rural | 5.41 | 0.85-34.36 | **0.062** | 6.26 | 0.66-59.52 | 0.108 |

***Scheduled vaccinations received at the age determined by the WHO or not later than a month after the scheduled date, **unadjusted odd ratios, ***adjusted odds ratios**

Source: GEHIP, 2015

The results contrast with recent studies in Ghana and other settings that found that maternal education was statistically significantly associated with child vaccination status (Acharya et al., 2018; Budu et al., 2020; Debie et al., 2020; Desalew et al., 2020; Immurana & U, 2018). Immurana and U (2018) examined the determinants of polio and pentavalent vaccines using data from the 2014 GDHS and found that compared to women who had no education, those who had secondary education were significantly more inclined to patronize the second and third doses of the polio vaccine as well as the third dose of the pentavalent vaccine for their children. Budu and colleagues also used the 2014 GDHS data and observed that children of mothers with secondary

education were significantly more likely to have received complete vaccination compared with those whose mothers had no education. Similar findings were made in Ethiopia (Desalew et al., 2020).

Maternal age was inversely related but not statistically significantly associated with age-appropriate vaccination. This is consistent with evidence from earlier studies in Ghana and other settings (Adenike et al., 2017; Adokiya, Baguune & Ndago, 2017). In Techiman, Southern Ghana, Adokiya et al., (2016) examined factors associated with immunization coverage and found that older maternal age was significantly associated with a less likelihood of being immunized. Children of women 40-45 years old were more than 80% less likely to be immunized compared to those of women aged less than 20 years. In Nigeria, Adenike et al., (2017) also reported that maternal age, employment and educational status were significantly associated with a child's immunization status. Children of older women were significantly less likely to be immunized. The findings of Ahuru (2019), were unusual in that they examined complete immunization using data from the 2013 Demographic and Health Survey and reported that maternal age had a u-shape relationship with child immunization.

Respondent's socio-economic status was inversely related but not statistically significantly associated with age-appropriate vaccination. Although children of women in the poor socio-economic group were significantly more likely to receive age-appropriate vaccination at the bivariate level, the association was not significant in the adjusted regression model. Similarly, children of women in the other higher socio-economic categories were more likely to receive age-appropriate vaccination than those in the poorest group but the differences were not statistically significant.

Earlier studies showed that the socio-economic status of women significantly influences child vaccinations (Acharya et al., 2018; Adenike et al., 2017; Immurana & U, 2018). Acharya et al., (2018) study in the Democratic Republic of Congo reported that children of women in the highest wealth quintile were nearly twice and significantly more likely to be fully immunized compared to mothers in the poorest wealth quintile. Arabi (2017) study in Ghana and Adenike et al., (2017) used employment status as a proxy for maternal socio-economic status and reported that children of women who were employed were significantly more likely to have received the pentavalent and polio vaccines than those whose mothers were unemployed. However, Adokiya et al., (2016) study in Southern Ghana did not find any statistically significant association between a child's immunization status and maternal occupational status.

Religious affiliation was not significantly associated with age-appropriate vaccination. Although children of women who practice traditional religion were 56% more likely to receive age-appropriate vaccination compared to those of Christians in the adjusted regression model, it was not statistically significant. Evidence of the effects of religious affiliation and child vaccination in Ghana is inconsistent. For instance, Adokiya et al., (2016) and Baguune et al., (2017) studies found that children of Muslims were significantly more likely to receive full vaccination than Christians. A recent analysis of the 2014 GDHS data also revealed that compared to children of Christian mothers, children of Traditionalists and those who had no religion were significantly less likely to receive complete vaccination (Budu et al., 2020). In contrast, a similar study that used the 2014 GDHS data indicated among other factors that wealth,

maternal education, and religion were not associated with complete vaccination status (Asuman, Ackah & Enemark, 2018; Donfouet, Agesa & Mutua, 2019).

Compared to children of women in urban areas, those in peri-urban and rural areas were about six-fold more than fourfold likely to receive age-appropriate vaccination in the adjusted regression model, it was not statistically significant. Recent studies suggest that children in rural parts of Ghana are more likely to receive vaccinations than those in urban areas (Asuman, Ackah & Enemark, 2018; Donfouet, Agesa & Mutua, 2019). Asuman et al., 2018 used the 2008 and 2014 waves of GDHS data to examine inequalities in vaccination coverage and found that children in rural areas are more likely to have received complete vaccinations than those in urban areas. A hitherto pro-urban advantage in 2008 shifted in favour of rural communities in 2014. Similarly, Donfouet et al., (2019) used data from Kenya, Ghana and Côte d'Ivoire and found that inequalities in childhood immunization persisted in these countries over time to the disadvantage of rural communities but decreased sharply in Ghana over time. Other studies in Ghana and Ethiopia also reported that urban residence was associated with lower odds of incomplete vaccination (Desalew et al., 2020; Moran et al., 2020). It is believed that increased community-based focus sensitizations and education played a significant role in the increased vaccination uptake in rural communities in Ghana

**Chapter Summary**

In summary, vaccination coverage levels for the various antigens included in this study were generally high but the proportion of children who received these antigens at the appropriate ages was low ranging from 29.4% for DPT1 to 82.1% for measles. Women's autonomy status was negatively related

to child age-appropriate vaccination status. Children of women with higher autonomy status were less likely to receive all vaccines at the appropriate age but this was not statistically significant. The results are inconsistent with existing literature and raise the need for serious efforts to be made towards ensuring that children in the Upper East region of Ghana receive all vaccines at the appropriate age as recommended by the WHO.

# CHAPTER EIGHT

# WOMEN'S AUTONOMY, NEONATAL, INFANT AND UNDER-FIVE MORTALITY

## Introduction

Although numerous interventions have been put in place to enhance maternal and child health in Ghana, neonatal, infant and under-five mortality continue to pose a major health challenge, especially in impoverished communities. This section of the study presents results on the association between "women's autonomy" and the three indices of child mortality. The findings are discussed and compared with relevant theories and existing empirical evidence.

## Distribution of Neonatal, Child and Under-Five Mortality by Women's Autonomy Status

There were 447 neonates, 1,219 infants and 4, 117 under-five children of which 217 neonates, 505 infants and 874 under-fives respectfully died. Table 16 shows that proportionally, the highest neonatal (37.3%), infants (37.2%) and under-five (35.5%) deaths occurred among women with higher autonomy. The higher the maternal autonomy status, the greater the proportion of neonatal deaths. In contrast, the second highest number of infant and under-five deaths occurred among women with moderate autonomy. Under-five deaths were evenly distributed across the various levels of "women's autonomy". Maternal autonomy was significantly associated with neonatal, infant and under-five mortality.

**Table 17. Percentage Distribution of Neonatal, Infant and Under-Five Mortality by Women's Autonomy Index**

| **Variable** | | **Child Mortality** | |
|---|---|---|---|
| Autonomy Status | Neonates (within 28 days of life. N= 217 | Infant (within 365 days of life). N= 505 | Under-five years N= 874 |
| Least (%) | 25.8 | 32.3 | 33.5 |
| Moderate (%) | 36.9 | 30.5 | 31.0 |
| High (%) | 37.3 | 37.2 | 35.5 |
| **P-value** | **0.013** | **0.056** | **0.034** |

Source: GEHIP, 2015

**Women's Autonomy and Neonatal Mortality**

Table 17 presents bivariate and multivariate regression analysis of women's autonomy, maternal socio-demographic characteristics, and neonatal mortality. Paradoxically, "women's autonomy" was positively related and significantly associated with neonatal mortality. In the adjusted regression model, women with moderate autonomy were significantly more likely to experience neonate death as compared to those with the least autonomy increased (aOR= 1.76, 95% CI=1.07-2.89) and this was statistically significant. Similarly, neonates born to women with high autonomy were 75.0% more likely to die compared to those born to women with least autonomy (aOR= 1.75, 95% CI= 1.04-2.92) and this was statistically significant.

These findings are inconsistent with two recent studies that involved multiple countries in Africa and other developing countries (Adedini, Akinyemi & Wandera, 2001; Doku, Bhutta & Neupane, 2020). Adedini and colleagues

whose study involved 18 African countries including Ghana, found that a higher position of women in a household (based on a composite score of marital dyad), was significantly associated with a lower risk of neonatal mortality (Adedini, Akinyemi & Wandera, 2019). Doku and colleagues' study focused on the "relationship between women's empowerment and neonatal, infant and under-five mortality". In their meta-analysis of pooled data from 59, "Low- and Middle-Income Countries" (LMICs), the researchers found that women with a lower score of individual-level women's empowerment index (ILWEI) had 18%, higher risk of neonatal deaths than those with higher ILWEI. However, country level analysis revealed an inconsistent relationship between WEI and mortality outcomes (Doku, Bhutta & Neupane, 2020).

The evidence from this study is puzzling because it is known that autonomous women are more likely to attend ANC, deliver in a health facility and to observed appropriate practices (Adhikari, 2016; Ameyaw et al., 2016; Lamichhane, 2018; Mondal, Karmakar & Banerjee, 2020; Obasohan et al., 2019). Women with "higher autonomy" are also more likely to utilize postnatal care and seek prompt medical care when their neonates are unwell (Budu et al., 2020). All these are associated with child health benefits which are expected to confer a neonatal survival advantage to autonomous women compared to women with no or weak autonomy.

Narratives, from mothers interviewed, revealed that lack of autonomy played minimal or no role in the death of their most recent child. Childcare in this setting is a collective family responsibility, especially in times of ill health. As such, there are minimal restraints on women's freedom to utilize healthcare services when children are sick. Participants explained that no reasonable

person would attempt to prevent a mother from seeking care for her sick child. On the contrary, mothers are blamed if failure to seek care results in the death of a child.

> *Oh, it was not that my husband or someone told me not to take the child to the hospital. How can anyone say that to me? If I do not send the child to the hospital and anything bad happens, everyone will blame me for it. My husband and I sent the child to the hospital. He was sick for only three days and we gave him all kinds of treatment. We also gave some local treatment. For me, it is God who gives and it's Him who takes away. No one has control over death.* ***IDI with a 35-year-old peasant farmer in the Garu-Tempane district***

A few mothers explained that circumstances other than an inability to take decisions or act when it mattered concerning the health of their children may have caused their death. These mothers blamed poor skilled healthcare services and, in some cases, accused nurses of misdiagnoses (mistaken actual labour for symptoms of malaria in pregnancy) and delays in making critical decisions including referral of complicated labour cases. These mothers believed that delays in referring them to higher facilities for care caused the death of their children.

> *When I was due for birth, I was supposed to go through a CS (caesarian section) but that did not happen on time and so by the time the CS was done and the babies brought out, one of them could not breadth well and passed on later. I strongly believe it happened because of the delay. -* ***IDI with a 34-year-old mother at Kulbia in the Bolgatanga Municipality***

*When I was due, I felt waist pains and so I decided to visit the clinic (Atobisi CHPS). At the clinic, they told me it was not labour but rather systems of malaria and gave me drugs. The next day the pains worsened, and I went back to the same clinic. I got there around 12 noon and the nurse insisted that the pain was not because of labour. I was there till 9 pm before they transferred me to the regional hospital. There, they also said I was not due for labour. Around 4 am they told me I cannot give birth on my own unless they operate on me. By the time they finished operating on me, the child could not breathe well and died shortly after.*

***IDI with a 28-year-old Artisan at Atobisi in the Bolgatanga Municipality***

Consistent with earlier studies in Ghana and other countries in Sub-Saharan Africa, (Adjei et al., 2021; Nigatu et al., 2014; Tesema & Worku, 2021; Worke, Mekonnen, & Limenh, 2021), this study found that maternal education was positively related and associated with neonatal mortality in the bivariate analysis but not in the adjusted regression model. Compared to neonates born to women who had no education, those born to women who attained primary/JHS/Middle level of education were 47% less likely to die (OR=0.53, 95% CI= 0.31-0.93) and this was statistically significant. In the adjusted model, this association lost its statistical significance. Although neonates born to women who attained secondary or higher education were less likely to die compared to those born to women with no education, the difference was not statistically significant

Adjei et al., (2021) found that in Southern Ghana, compared to mothers who had no education, those that attained a Middle or JHS level of education

were associated with a 30% increased risk of neonatal mortality. In contrast, Tesema and Worku (2021) reported that in Ethiopia, women who have no education had a 79% higher risk of experiencing neonatal mortality. In the former study, the risk of neonatal death disappeared with a higher level of education beyond Middle and JHS. Women who attained secondary or higher education were associated with a 63% lower risk of neonatal mortality. A higher level of education is associated with a lower risk of neonatal mortality because educated women tend to have better access to health information and better knowledge of danger signs (Kibaru & Otara, 2016; Quansah et al., 2016), attendance of ANC and health facility delivery by skilled personnel and skilled counselling (Boah et al., 2020; Saaka, 2020).

On the other hand, the odds of dying for neonates born to mothers of traditional religion was 1.68 times higher than those born to mothers who were Christians (OR= 1.68, 95% CI=1.14-2.48) and this remained statistically significant in the adjusted regression model.

Higher maternal socio-economic status was associated with decreased odds of neonatal mortality. The accounts of mothers are indicative that poverty plays a critical role in maternal health-seeking behaviour and contributes to child mortality in this setting. Poverty causes a delay in health decision-making and affects mothers' ability to afford the cost of transportation and medicals. The narratives of mothers in this study support evidence from earlier studies (Dalinjong, Wang & Homer, 2018; Dapaah & Nachinaab, 2019; Navarrete et al., 2019; Seidu et al., 2020) that identified poverty as a strong predictor of maternal and child healthcare utilization. Dapaah and colleagues reported that the cost of ANC care was a significant deterrent for women's use of ANC

services. Attendees reportedly paid on average between gh50.00 and gh100.00 per visit. Considering the high levels of poverty in the study setting, these service fees are high enough to deter many especially clients who do not have valid health insurance from seeking care (Dalinjong, Wang & Homer, 2018; Navarrete et al., 2019; Seidu, 2020). Attempts to sell assets or borrow from relatives to enable mothers to afford the anticipated cost of care delay healthcare utilization and may result in fatal outcomes as can be deduced in this narrative.

> *One evening, I noticed the child breathing heavily, looked strange and his body was hot. I gave him a para but his fever became worse. The next morning, around 3 am I started walking to the hospital because I did not have money to pick up a taxi. I even went to a friend for financial help, but she could not help me. At the hospital, the doctor examined the child and asked me when it started. The child was admitted, and the nurses and Doctor tried to give him "water" (transfusion) but could not locate his vein. Later they told me the child needs blood and one of the nurses offered to donate blood for the child but a few minutes later, the doctor invited me and a few nurses to his office and said he tried his best, but the child passed. I felt heartbroken.* ***IDI with a 34-year-old Artisan in Sherigu in the Bolgatanga Municipality***

Maternal age was strongly associated with neonatal mortality even after adjusting for confounding factors. Neonates born to "women aged 35-49 years old" were more than four times more likely to die (OR= 4.51, 95% CI=2.32-8.79) compared to those born to women aged 15-24 years old. In the adjusted regression model the odds attenuated (aOR=3.97, 95% CI= 1.79-8.52) and remained statistically significant. These findings resonate with the findings of

earlier studies (Abbam, 2018; Babayara & Addo, 2018; Acheampong & Avorgbedor 2017; Sarkodie 2021). Older women are generally less likely to be educated and to have higher parity, more likely to deliver at home, and so on which all are known risk factors for child mortality (Schimmel et al., 2015; Sonneveldt, DeCormier Plosky & Stover, 2013).

Place of residence was significantly associated with neonatal mortality even after adjusting for confounding factors. In the unadjusted regression model, compared to neonates in urban areas, those in peri-urban (OR= 0.40, 95% CI= 0.20-0.87) and rural areas (OR= 0.51, 95% CI= 0.27-0.97) were significantly less likely to die. In the adjusted regression model, the likelihood of neonate deaths in semi-urban and rural areas compared to urban areas increased and remained statistically significant. Compared to neonates in urban areas, those in semi-urban areas were 68% less likely to die (aOR= 0.32, 95% CI= 0.13-0.81). Similarly, neonates in rural areas were 62% less likely to die compared to those in urban areas (aOR= 0.38, 95% CI = 0.19-0.75).

These results could be partially attributed to expansions of the CHPS in the Upper East region (Awoonor-Williams, Phillips & Bawah, 2016; Phillips et al., 2019; Sakeah et al., 2021). Expansion of CHPS in the region has targeted less resourced districts and rural communities and has brought health services closer to rural people and increased interaction between health workers and community members, and increased preventive care, counselling and treatment. Sakeah et al., (2021) noted that there has been improvement in maternal and child health indicators including uptake of ANC, facility delivery and skilled birth attendance, and timely and effective treatment and control of infectious and respiratory infectious diseases.

Rural districts and communities have also benefited from the support of Non-Governmental Organizations and health systems research activities which impacts greatly health inequalities between urban and rural communities (Awoonor-Williams et al., 2013; Sakeah et al., 2021). For instance, the implementation of ICMI activities across the region and a health system strengthening project (GEHIP); in four rural districts (Garu-Tempane, Bongo, Builsa South and Builsa North) resulted in accelerated CHPS coverage and reductions in neonatal and under-five mortality in the region (Bawah et al. 2019; Phillips et al., 2019). On the contrary, women in urban areas are more likely to be employed or engaged in commercial and income-earning activities to the detriment of healthy childcare. Urban women may also hire the services of babysitters who may be less knowledgeable and experienced in childcare leading to detrimental health consequences including death

**Table 18. Women's Autonomy, Socio-demographic Characteristics and Neonatal Mortality**

| Variable | Bivariate and multivariate regression analysis | | | | | |
|---|---|---|---|---|---|---|
| | Bivariate Analysis | | | Multi-variate Analysis | | |
| | Neonates (within 28 days of life) | | | Neonates (within 28 days of life) | | |
| | *ORs | 95% CI | p-value | **aORs | 95% CI | p-value |
| **Autonomy** | | | | | | |
| Least | 1 | | | 1 | | |
| Moderate | 1.61 | 1.03-2.51 | **0.035** | 1.76 | 1.07-2.89 | **0.027** |
| High | 1.99 | 1.30-3.05 | **0.002** | 1.75 | 1.04-2.93 | **0.034** |
| **Socio-Demographic Characteristics Highest level of education attained** | | | | | | |
| None | 1 | | | 1 | | |
| Pri/JHS/Middle | 0.53 | 0.31-0.93 | **0.028** | 0.83 | 0.42-1.61 | 0.577 |
| SHS + | 0.75 | 0.35-4.21 | 0.620 | 0.70 | 0.16-3.13 | 0.639 |
| **Age group** | | | | | | |
| 15-24 | 1 | | | 1 | | |
| 25-34 | 1.58 | 0.71-3.50 | 0.258 | 1.50 | 0.60-3.73 | 0.379 |
| 35-49 | 4.51 | 2.32-8.79 | **0.<001** | 3.97 | 1.93-8.13 | **0.001** |
| **Religion Affiliation** | | | | | | |
| Christianity | 1 | | | 1 | | |
| Traditional | 1.68 | 1.14-2.48 | **0.010** | 1.15 | 0.70-1.89 | 0.584 |
| Islam | 0.60 | 0.36-1.01 | **0.056** | 0.63 | 0.34-1.18 | 0.147 |
| No religion | 0.68 | 0.23-2.04 | 0.486 | 0.57 | 0.19-1.68 | 0.300 |
| **Socio-economic status** | | | | | | |
| Poorest | 1 | | | 1 | | |
| Very poor | 1.10 | 0.56-2.14 | 0.780 | 0.97 | 0.47-2.00 | 0.933 |
| Poor | 0.75 | 0.42-1.33 | 0.322 | 0.99 | 0.52-1.88 | 0.982 |
| Less poor | 0.73 | 0.42-1.26 | 0.251 | 0.74 | 0.36-1.50 | 0.393 |
| Least poor | 0.72 | 0.42-1.25 | 0.240 | 0.86 | 0.46-1.59 | 0.620 |
| **Place of Residence** | | | | | | |
| Urban | 1 | | | | | |
| Peri-Urban | 0.42 | 0.20-0.87 | **0.022** | 0.32 | 0.13-0.81 | **0.017** |
| Rural | 0.51 | 0.27-0.97 | **0.039** | 0.38 | 0.19-0.75 | **0.006** |

***Unadjusted Odds Ratios, **adjusted Odds Ratios**
Source: GEHIP, 2015

**Women's Autonomy, Maternal Characteristics and Infant Mortality**

Women's autonomy was negatively related to and significantly associated with infant mortality in the unadjusted regression model but not in the adjusted model. In the unadjusted model, infants of women who had high autonomy were more likely to die (OR=1.36, 95%CI=1.07-1.74) than those born to women who had the least autonomy; and this was statistically significant. The likelihood of infant deaths among "women with high autonomy" compared to those with least autonomy decreased slightly in the adjusted model (aOR=1.31, 95% CI= 0.93-1.86) but was no longer statistically significant. These findings contrast with the results of some earlier studies (Doku, Bhutta & Neupane, 2020; Memiah et al., 2020).

Doku et al., (2020), found that women with low individual levels of women empowerment index were 12% and 17% more likely to experience infant and under-five deaths respectfully compared to those with higher empowerment index. The investigators explained however that country-level analysis revealed an inconsistent relationship between women's empowerment index and child mortality. Memiah and colleagues' study looked at data from five East African countries: "Burundi, Kenya, Rwanda, Tanzania, and Uganda" and found that sexual autonomy was significantly associated with 18% and 16% lower rates of infant and under-five mortality respectively (Memiah et al., 2020).

Since maternal occupational status was strongly associated with socio-economic status (p-value= <0.001) in this study, probably, women with "higher autonomy" are more likely to be engaged in more productive and materially rewarding activities such as formal employment and income-generating

activities; and therefore, less likely to have adequate and quality time for childcare (Addo, 2019). Women in formal employment are more likely to entrust the care of their children to the hands of the house helps and nannies who may be less knowledgeable and experienced in the danger signs of illness (Ekwochi et al., 2015; Kibaru & Otara, 2016; Nigatu et al., 2014). Children left in the care of house helps and Nannies are also more likely to experience fatal abuse and domestic accidents than those being cared for by their mothers (Sackitey, 2018). This may partly explain why higher maternal autonomy is associated with higher infant and under-five mortality in this study setting.

As predominantly reported by earlier studies (Adjei et al., 2021; Dare et al., 2021; Kanmiki et al., 2014; Monden & Smits, 2013; Sarkodie, 2021) maternal education was positively and significantly associated with infants mortality. In the unadjusted regression model, infants of women who attained secondary or more level of education were 79% (OR= 0.21, 95% CI= 0.11-0.40) less likely to die compared to those whose mothers had no education and this was statistically significant. In the adjusted model, the likelihood of infants among women who attained secondary or higher education compared to those with no education attenuated (aOR= 0.39, 95% CI= 0.16-0.94) and remained statistically significant. Although infants of women who attained Primary/JHS/Middle-level education were less likely to die compared to those born by women who had no education, the difference was not statistically significant in the adjusted regression model.

Several reasons may account for these findings. First, educated women are more likely to have better access to health information and to know danger signs in child health and therefore, seek early and appropriate healthcare

(Kibaru & Otara, 2016; Quansah et al., 2016; Woldegiorgis et al., 2019). Also, educated women are more likely to delay marriage and childbearing and to achieve lower parity and thereby avoid the high child mortality risk associated with early marriage, childbearing and high fertility (Aheto, 2019; Paelermo et al., 2018). Educated women are also more probable of attending antenatal care, receiving skilled care counselling and be delivered by a skilled attendant (Boah, Mahama & Ayamga, 2018; Saaka, 2020). In contrast, women who have not had formal education are more likely to dwell in rural areas with poorer health infrastructure, road networks and referral systems. They are also more likely to delay seeking care in health facilities or to have access to medical doctors and other skilled health personnel. The combined effects of all these factors confer huge child survival benefits to educated women.

Although infants of women who practice traditional religion were more likely to die compared to infants of Christians, the difference was not statistically significant in the adjusted regression model. In contrast, infants of Moslem women were 34.0% less likely to die compared to those of Christians (OR=0.66, 95%CI= 0.51-0.86) and this was statistically significant. In the adjusted regression model, the likelihood of infant deaths among Moslems compared to Christians decreased slightly (OR= 0.63, 95% CI= 0.46-0.88) and remained statistically significant. These results resonate with the findings of (Adewusi & Nwokocha, 2018; Antai, 2009; Ganle 2015; Gyimah, 2007).

Maternal age was significantly associated with infant mortality. Infants of women aged 25-34 years compared to those aged 15-24 years were more than three times likely to die (OR= 3.13, 95% CI=2.01-4.87) and this was statistically significant and remained the same in the adjusted model. Similarly, after

adjusting for confounding, infants of women aged 34-49 years old were about seventeen times more likely to die compared to those of women aged 15-24 years old (OR=17.17, 95% CI=10.53-28.02) and remained statistically significant. However, in both models, the confidence intervals were too wide.

**Table 19. Women's autonomy, socio-demographic characteristics and infant mortality**

| **Mortality** | **Bivariate and multivariate regression analysis** | | | | | |
|---|---|---|---|---|---|---|
| | **Bivariate Analysis** | | | **Multi-variate Analysis** | | |
| | **Infants (within 365 days of life)** | | | **Infants (within 365 days of life)** | | |
| | ***ORs** | **95% CI** | **p-value** | ****aORs** | **95% CI** | **p-value** |
| **Autonomy** | | | | | | |
| Least | 1 | | | 1 | | |
| Moderate | 1.04 | 0.78-1.38 | 0.799 | 1.01 | 0.75-1.36 | 0.943 |
| High | 1.36 | 1.07-1.74 | **0.013** | 1.31 | 0.93-1.86 | 0.122 |
| **Socio-Demographic Characteristics Highest level of education attained** | | | | | | |
| None | 1 | | | 1 | | |
| Pri/JHS/Middle | 0.34 | 0.23-0.49 | **<0.001** | 0.94 | 0.63-1.40 | 0.765 |
| SHS+ | 0.21 | 0.11-0.40 | **<0.001** | 0.39 | 0.16-0.94 | **0.037** |
| **Age group** | | | | | | |
| 15-24 | 1 | | | 1 | | |
| 25-34 | 3.13 | 2.01-4.87 | **<0.001** | 3.14 | 1.94-5.07 | **<0.001** |
| 35-49 | 20.55 | 13.13-32.17 | **<0.001** | 17.17 | 10.53-28.02 | **<0.001** |

Table 19 Cont'D

| | | | | | | |
|---|---|---|---|---|---|---|
| **Religion Affiliation** | | | | | | |
| Christianity | 1 | | | 1 | | |
| Traditional | 2.27 | 1.70-3.03 | **<0.001** | 1.11 | 0.80-1.54 | 0.516 |
| Islam | 0.66 | 0.51-0.86 | **0.002** | 0.63 | 0.46-0.88 | **0.006** |
| No religion | 1.62 | 0.87-3.00 | 0.125 | 0.91 | 0.47-1.76 | 0.766 |
| **Socio-economic status** | | | | | | |
| Poorest | 1 | | | 1 | | |
| Very poor | 0.85 | 0.59-1.22 | 0.368 | 0.93 | 0.64-1.36 | 0.710 |
| Poor | 0.81 | 0.54-1.21 | 0.295 | 1.31 | 0.81-2.09 | 0.259 |
| Less poor | 0.93 | 0.60-1.44 | 0.742 | 1.11 | 0.70-1.75 | 0.663 |
| Least poor | 0.74 | 0.49-1.10 | 0.136 | 1.20 | 0.76-1.89 | 0.429 |
| **Place of Residence** | | | | | | |
| Urban | 1 | | | 1 | | |
| Peri-urban | 0.78 | 0.24-1.44 | 0.417 | 0.93 | 0.50-1.74 | 829 |
| Rural | 0.70 | 0.45-1.07 | 0.100 | 0.68 | 0.43-1.08 | 099 |

***Unadjusted Odds Ratios, **adjusted Odds Ratios**
Source: GEHIP, 2015

**Maternal Autonomy and Under-five Mortality**

Women's autonomy was not significantly associated with under-five mortality. However, in the unadjusted and adjusted regression models, women with high autonomy were 20.0% and 15.0% respectively more likely to have an under-five death when compared with women with least autonomy. On the contrary women with moderate autonomy were slightly less likely to suffer under-five deaths compared to those with the least autonomy. These counterintuitive findings are inconsistent with recent studies (Doku, Bhutta & Neupane, 2020; Memiah et al., 2019). Duku et al., (2020) study reported that women with lower individual-level empowerment indices were 17% more likely to experience under-five deaths compared to those with a higher empowerment index. Similarly, Memiah et al., (2019) in their study of five East

African countries found that women's ability to exercise discretion not to have sex without suffering any consequence was significantly associated with 16% less likelihood of under-five mortality.

The study found that maternal level of education was a strong predictor of under-five mortality. Women who had secondary or higher education were significantly less likely to have under-five death (OR=0.24; 95% CI= 0.16-0.58) compared to those who had no education. In the adjusted model, women who had secondary or higher education were 71% less likely to experience under-five mortality (aOR=0.39; 95% CI=0.18-0.87) compared to those born to women who had no formal education, and this remained statistically significant. Although infants of women with Primary/JHS/Middle level of education were less likely to die compared to those of women with no education, the difference was not statistically significant in the adjusted regression model.

These results are in line with empirical literature in Ghana and other countries in Africa (Nyaaba et al., 2020; Sarkodie, 2021). However, the nearly 60% less likelihood of under-five death reported among women with secondary or higher education in this study, is much higher than the 40% less likelihood of under-five mortality reported by Nyaaba et al., (2020). Sarkodie (2021) found that compared to women who had no education, those with secondary or higher education were more than threefold likely not to experience under-five death. Similarly, Babayara et al., (2017) used data from the "Navrongo Demographic and Surveillance system" and found that mothers who had no education accounted for 82.2% of under-five deaths (Babayara & Addo, 2018).

**Table 20. Association between women's autonomy, socio-demographic characteristics and under-five mortality**

| Variable | Bivariate and multivariate regression analysis | | | | | |
|---|---|---|---|---|---|---|
| | Bivariate Analysis | | | Multi-variate Analysis | | |
| | Under five deaths | | | Under five deaths | | |
| | *ORs | 95% CI | p-value | **aORs | 95% CI | p-value |
| **Autonomy** | | | | | | |
| Least | 1 | | | 1 | | |
| Moderate | 0.95 | 0.79-1.15 | 0.606 | 0.95 | 0.78-1.15 | 0.577 |
| High | 1.20 | 0.95-1.51 | 0.116 | 1.15 | 0.89-1.47 | 0.289 |
| **Socio-Demographic Characteristics Highest level of education attained** | | | | | | |
| None | 1 | | | 1 | | |
| Pri/JHS/Middle | 0.40 | 0.31-0.53 | **<0.001** | 0.87 | 0.65-1.15 | 0.311 |
| SHS+ | 0.24 | 0.16-0.58 | **<0.001** | 0.39 | 0.18-0.87 | **0.023** |
| **Age group** | | | | | | |
| 15-24 | 1 | | | 1 | | |
| 25-34 | 2.50 | 1.74-3.59 | **<0.001** | 2.38 | 1.62-3.50 | **<0.001** |
| 35-49 | 13.41 | 9.48-18.99 | **<0.001** | 10.87 | 7.46-15.84 | **<0.001** |
| **Religion Affiliation** | | | | | | |
| Christianity | 1 | | | 1 | | |
| Traditional | 1.88 | 1.46-2.43 | **<0.001** | 1.27 | 1.01-1.60 | **0.044** |
| Islam | 0.68 | 0.55-0.84 | **<0.001** | 0.69 | 0.55-0.86 | **0.001** |
| No religion | 1.71 | 1.13-2.59 | **0.012** | 1.29 | 0.83-2.01 | 0.256 |
| **Socio-economic status** | | | | | | |
| Poorest | 1 | | | 1 | | |
| Very poor | 0.97 | 0.78-1.20 | 0.771 | 1.17 | 0.94-1.47 | 0.153 |
| Poor | 0.82 | 0.66-1.03 | 0.081 | 1.04 | 0.83-1.31 | 0.726 |
| Less poor | 0.02 | 0.77-1.35 | 0.888 | 1.19 | 0.86-1.65 | 0.287 |
| Least poor | 0.82 | 0.62-1.08 | 0.157 | 1.09 | 0.85-1.41 | 0.461 |
| **Place of Residence** | | | | | | |
| Urban | 1 | | | 1 | | |
| Peri-urban | 0.68 | 0.44-1.04 | 0.074 | 0.69 | 0.48-1.01 | **0.054** |
| Rural | 0.69 | 0.52-0.92 | **0.011** | 0.63 | 0.48-0.83 | **0.001** |

***Unadjusted Odds Ratios, **adjusted Odds Ratios**
Source: GEHIP, 2015

Consistent with earlier studies (Kanmiki et al., 2014; Acheampong & Avorgbedor, 2017; Schimmel et al., 2015), maternal age was also strongly significantly associated with under-five mortality. Compared to women aged 15-24 years old, the odds of under-five mortality among women aged 25-34 was 2.5 (OR=2.50; 95%CI= 1.74-3.59). After controlling for possible confounding, under-five mortality among women aged 25-34 compared to those 15-25 years decreased slightly (aOR=2.38, 95% CI=1.61-3.50) and remained statistically significant. Similarly, in the adjusted model, under-five children of women aged 35-49 years old were more than ten times likely to die (aOR=10.81, 95%CI= 7.46-15.84) compared to those aged 15-24 years and remained statistically significant.

Kanmiki et al. (2014) found that women aged 35-49 were about 11 times more likely to experience under five deaths than those younger than 20 years. Since older women are more likely to have higher parity, the under-five mortality disadvantage associated with old age may partially be due to the increased risk of death linked to higher parity (Schimmel et al., 2015; Sonneveldt, DeCormier Plosky & Stover, 2013). Also, women in their late thirties and forties are more prone to severe pregnancy complications such as high blood pressure, diabetes, kidney failure and obstetric shock which have dire consequences on maternal and child mortality (Lean et al., 2017). In contrast, younger cohorts of women are comparatively healthier and more likely to be educated and therefore benefit from the associated child health advantages.

Maternal religious affiliation was significantly associated with infant and under-five mortality even after adjusting for confounding. Under-five children of Muslim women were significantly less likely to die compared to

those of Christians. In the bivariate regression analysis, under-five children of Moslem women were 32% less likely to die compared to those of Christians (OR=0.68; 95%CI= 0.55-0.84). The relationship remained virtually unchanged in the adjusted regression model (aOR=0.69, 95% CI= 0.55-0.86). Although women who had no religious affiliation were more likely to experience under-five death compared to Christians, the difference was only statistically significant at the bivariate level.

These findings partially align with those by Gyimah (2007). However, in Gyimah's study, children of traditional worshipers and Moslems were more likely to die than those of Christians (Gyimah, 2007). The child mortality advantage to Moslem mothers is at variance with studies that showed that Muslim women are less likely to access skilled maternal care due to Islamic obligations to maintain bodily sanctity, avoidance of bodily exposure to male or alien caregivers, and caregiver's poor knowledge of Islamic religious and cultural practices (Ganle, 2015; Ganle et al., 2015). Also, children of Moslems and traditional worshipers are less likely to receive full immunization (Adewusi & Nwokocha, 2018; Antai, 2009).

In this study setting, women who practice traditional religion are more likely to be rural dwellers and less educated (Doctor, 2005; Takyi & Addai 2002). As such, the child mortality disadvantage to them may be attributed to their poor "knowledge of danger signs" in child health and limited access to health information and child healthcare services. Traditional religious practitioners are also less likely to deliver in a health facility and to practice timely and exclusive breastfeeding. All these factors negatively impact child

health and may account for the excess neonatal, infant and under-five deaths among women who practice traditional religion compared to Christianity.

**Chapter Summary**

In summary, the study found an inconsistent relationship between maternal autonomy and child mortality. Higher maternal autonomy was positively related and significantly associated with better neonatal and infant mortality outcomes. In contrast, higher maternal autonomy was associated with a higher likelihood of experiencing under-five mortality. The age and educational status of women were significantly associated with neonatal, infant and under-five mortality in this study setting. As women attain secondary or higher levels of education, they are less likely to experience a neonatal, infant or under-five child death.

On the other hand, the older the age of participants, the more likely it is that they would experience a child's death. Place of residence is significantly associated with neonatal and under-five mortality. Children of women who live in peri-urban and rural areas in the study setting had better survival chances than those who live in urban settings. Religious affiliation was also significantly associated with infant and under-five mortality. Infants and under-five children of Moslem women were less likely to die compared to those of Christian women. However, children of women who practice traditional religion were more likely to die than those of Christian women.

# CHAPTER NINE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## Introduction

Despite efforts aimed at improving child survival, child mortality remains high and constitutes a major public health challenge in Ghana. Achieving the SDG3 target 3.2 in Ghana requires policy response and health interventions that go beyond well-established biological causes of child death. This study investigated the association between women's autonomy, maternal healthcare practices and child mortality. In this chapter, a summary of the key findings, conclusions, and recommendations based on the findings, and conclusions drawn are presented. The chapter also highlights the study's major contributions to knowledge and acknowledges its limitations.

## Summary of Key Findings

The study involved 3, 243 women aged "15-49 years" who reported ever having given live birth at the time of the survey. Close to a third of the participants have not had formal education and less than 5% of them attained secondary or higher education. Nearly all the participants were married and a little more than half (53 %) were Christians. About 68.5% of the participants attended their first ANC within the first trimester of pregnancy, and a much higher proportion (93.3%) attended a minimum of four ANCs before delivery and nearly 8 out of 10 (79.7%) of the participants delivered in a health facility. A little over half of mothers (51.0%) initiated breastfeeding within the first hour of delivery but only 11.2% of them practised exclusive breastfeeding. The proportion of children 12-24 months old with an observed vaccination card who received vaccines included in this study at the appropriate ages ranged from

29.4% for DPT1 to 82.1% for measles. However, only 5.1% of them received ALL the vaccines at the appropriate ages. There were 447 neonates, 1,219 infants and 4, 117 under-five children of which 217 neonates, 505 infants and 874 under-fives respectively, died.

The study showed that "women's autonomy" was not a strong predictor of ANC and facility delivery in this study context. Women's autonomy was positively but not significantly associated with attendance of ANC in the first trimester of pregnancy and ANC4+. In contrast, women's autonomy was negatively associated with health facility delivery, but this was not statistically significant. However, "women's autonomy" was positively and significantly associated with the initiation of breastfeeding but was not statistically significant in terms of exclusive breastfeeding and "age-appropriate vaccination".

The socio-economic status of women was positively and statistically significantly associated with four or more ANC attendance, but other co-variates examined were not significantly associated with antenatal care attendance in the first trimester of pregnancy. Similarly, "maternal age, level of education attained, socio-economic status and religious affiliation" were strong predictors of health facility delivery. The level of education attained, religious affiliation, socio-economic status and place of residence were all significantly associated with the initiation of breastfeeding. On the other hand, maternal age has a significant association with "exclusive breastfeeding" while religious affiliation was only marginally significantly associated with exclusive breastfeeding.

The study also found that contrary to expectations, women's autonomy was not protective of child mortality. Maternal autonomy was positively associated with neonatal and infant mortality. Compared to women with diminished autonomy, those with higher autonomy status were significantly more likely to experience neonatal and infant mortality. Similarly, higher levels of maternal autonomy were associated with higher odds of under-five mortality, but this was not statistically significant.

Maternal age and place of residence were significantly associated with neonatal mortality while the maternal level of education attained, age and religious affiliation were significantly associated with infant mortality. For under-fives, maternal level of education attained, age, religious affiliation and place of residence were significantly associated with under-five mortality.

Narratives by women and father-in-laws, and mother-in-laws showed that "women's autonomy" is a complex and fluid concept that needs to be understood and interpreted within a given context. Women in this study setting were not as powerless and passive in household decision-making as often portrayed. Women seeking their partner's approval of health and related household decisions reflect shared community values (respect, humility). Such politeness and courtesies risk being misconstrued as lacking autonomy. The narratives also revealed growing male irresponsibility and despondency due to unemployment and economic hardships and this enhances women's independent child healthcare decision-making. It also encourages positive deviancy by women concerning cultural norms and practices that do not promote good maternal child healthcare practices and child health in general.

Consistent with the tenets of the theory of structuration, prevailing normative structure at the community and family level constrict women's access to money and productive resources and this diminishes their autonomy. The narratives from women and mothers-in-law and fathers-in-law showed that individual and community-level factors such as higher levels of education attained, involvement in income-generating activities such as basketry and petty trading and the existence of accessible and supportive healthcare system enhance women's autonomy and embolden women to question and disregard traditional and cultural norms, beliefs and practices that are inimical to child health.

**Conclusions**

Informed by the findings and review of existing literature, the study concludes that the relationship between women's autonomy and maternal healthcare practices was weak and inconsistent. In this study setting, "women's autonomy" promotes timely attendance of ANC in the first trimester of pregnancy as well as attendance of a minimum of four ANCs before birth, but the relationship was statistically weak. In contrast, higher "women's autonomy" impacts negatively on health facility delivery and age-appropriate child vaccinations. Compared to women with lower autonomy status, those with higher autonomy status were less likely to deliver in a health facility and their children are less likely to receive age-appropriate vaccinations. Thus, women's autonomy was not protective of child's age-appropriate vaccination in the Upper East region of Ghana. An overwhelming majority of children in the region did not receive age-appropriate vaccinations and may not be fully protected as anticipated by the WHO.

On the other hand, higher women's autonomy significantly enhances initiation of breastfeeding within the first hour of birth but exclusive breastfeeding. Narratives from the qualitative component of the study revealed that socio-cultural factors, norms, myths and misconceptions and the collective role of the family in childcare constrain women's independent decision-making regarding child breastfeeding practices in the study setting. This study concludes that higher maternal autonomy does not guarantee exclusive breastfeeding.

Also, the study found a counterintuitive relationship between women's autonomy status and child mortality. Higher levels of women's autonomy were statistically significantly associated with higher odds of neonatal and infant mortality. Thus, the elevated status of women's autonomy is not protective of neonatal, infant and under-five mortality in the Upper East region of Ghana. However, maternal level of education attained, socio-economic status, age and place of residence were statistically significantly associated with child mortality.

Based on the narratives of the lived experiences shared especially by mothers, the study concludes that women in this setting do not lack autonomy in child healthcare practices as widely portrayed in the literature. Access to resources is key in women's decision-making regarding the utilization of healthcare services. The study also concludes that women's autonomy models that do not factor in the important role of significant others and the socially embedded and interdependent context of life in this setting are not appropriate in explaining maternal child healthcare practices and child mortality.

Lastly, accessible and participatory primary healthcare systems (CHPS) complemented with community health volunteerism enhances women's health decision-making and promote increased utilization of child healthcare services.

**Recommendations**

Based on the findings and conclusions drawn, the following recommendations have been proposed:

1. The low prevalence of ANC attendance and "facility delivery" found in this study is comparable with what has been documented in the "2014 Ghana Demographic and health survey" and points to the need for the Ghana Health Service and especially the District Health Management Teams in the Upper East region and similar settings to embark on community-based health promotion and education activities to improve uptake of timely and adequate ANC services and health facility delivery. This can be achieved through community durbars with the chiefs, elders and people of the various districts and other maternal and child health outreach programmes.
2. The study also recommends the use of community radio talk shows in the dominant local languages to highlight the benefits of timely utilization of maternal healthcare practices such as timely initiation of breastfeeding, exclusive breastfeeding, age-appropriate vaccination and male support and involvement in childcare. Listeners should be encouraged to phone-in and contribute to the discussions. This will create opportunities to demystify myths, misconceptions and inimical cultural norms and practices about breastfeeding.

3. Given the embedded context of social relations and the extended family system in the study context and similar context in Ghana, and the focus on family rather than individual women in child upbringing, there is a need to re-examine the appropriateness of autonomy models that focus on individualism. Contextual models that factor in the unique setting of the African extended family systems are more appropriate for studying how they relate to maternal child healthcare practices and child mortality.
4. Given the importance of SDG4 and the positive and significant association between the level of maternal education attained and maternal healthcare practices, the study recommends that steps should be taken by the Government of Ghana and key stakeholders in education in the Upper East region to sustain and improve the Free Senior High School policy because of its potential to positively impact on female education, delay early marriage, and childbearing which are all key to better child health.
5. The various Municipal and District Assemblies in the Upper East region need to work with the relevant Government ministries and NGOs to develop and implement targeted micro-finance support packages for women in artisanal and other micro-enterprises to enhance women's access to capital. This will empower women in the region economically, improve their businesses and their ability to afford medical bills as well as the food and basic needs of children.
6. Similarly, the departments of the Ministry of Gender, Women Empowerment and Social Protection in the various Municipal and

District Assemblies in the region should develop and embark on community-based livelihood skills training for out-of-school adolescent girls and young married women to equip them with knowledge and skills required to setup small scale income generating businesses.

7. Given that effective operations of CHPS improve access and utilization of maternal and child healthcare services, the study recommends that steps should be taken by the Ghana Health Service and the Ministry of Health to strengthen the community outreach component of CHPS using durbars and meetings with key community stakeholders to promote community participation and ownership in healthcare delivery in Upper East region and similar settings in Ghana.
8. Finally, the least, the study also recommends that future studies should explore explanations for the counterintuitive findings between women's autonomy and exclusive breastfeeding, age-appropriate vaccinations, and under-five mortality.

**Contribution to Knowledge**

The findings of the study contribute to existing knowledge on the effects of "women's autonomy" on the utilization of maternal and child healthcare, practices, and child mortality.

From the available literature, not much research has been done on this topic and especially in using concurrent mixed methods research strategies to investigate the extent and nature of "women's autonomy" and maternal healthcare practices and child mortality in Ghana. The use of this approach in the study helped to appreciate the contextual normative structures that undermine "women's autonomy" as well as the meanings, and interpretations

that structure women's household decision-making and its effects on maternal child healthcare practices in the Upper East region. For instance, autonomy was portrayed as a fluid concept that needs to be understood and interpreted in context. Women in this study context were not as powerless and passive in household decision-making as often portrayed in the literature. However, some gender expectations and norms surrounding what constitutes appropriate behaviour undermine women's autonomy.

Secondly, the results showed a counterintuitive relationship between women's autonomy and mortality. This suggests that the role of men and other significant other family members is critical in maternal healthcare practices and child health in the region. The findings support earlier calls for male involvement in child healthcare as well as the empowerment of women through formal education, livelihood and skills training, and access to micro-enterprise finance schemes as a strategy towards achieving SDG 3 & 4 in the Upper East region and similar settings.

These findings also lend support to calls on the need to review the measurement of 'women's autonomy' in social research to go beyond the individual level to include community-level variables.

**Limitations of the Study**

This study has some inherent limitations which ought to be acknowledged. First, the study relied on cross-sectional household survey data and hence is unable to establish any causality between "women's autonomy" and the study outcomes (utilization of antennal care, facility delivery, breastfeeding, child vaccinations and child mortality). Secondly, the quantitative component of the study used secondary data. Therefore, the study

suffers inherent weaknesses associated with the design, processes and content of the data captured. The analysis was limited to variables captured in the data.

Thirdly, "women's autonomy" is a fluid and multifaceted concept which is difficult to measure accurately. The approach used in eliciting information for generating the autonomy variable may not be very accurate. Narratives in the qualitative component of the study revealed that gender norms, expectations and values that structure appropriate behaviour such as respect and humility may be mistaken as women having weak autonomy. This suggests that women could have interpreted the questions seeking information on decision-making based on their understanding which may be different from what was intended.

In Africa, literature shows that due to socio-cultural reasons (Nareeba et al. 2021), women may omit reporting deaths that occurred soon after birth. For this reason, it is possible that reported neonatal deaths in cross-sectional surveys may underestimate the true neonatal deaths in the sample. Nevertheless, given the generally weak vital registration system in Ghana and the fact that a substantial number of children die at home, the recommended approach of eliciting information on the number of pregnancies women had in their lifetime before asking for the survival status of those pregnancies produces near accurate data on neonatal deaths. There may have been only a few errors and omissions which could not have seriously distorted the neonatal estimates in this survey.

The data was collected in one out of the then ten political administrative regions in Ghana. Since there are significant socio-cultural, economic, religious, in addition to socio-economic development and health infrastructure variations across the country, the results cannot be generalized to Ghana as a whole. The findings apply to the Upper East region and may apply to similar settings in

Ghana. Therefore, caution should be exercised in the interpretation and application of the findings of the study. Notwithstanding these few limitations, this study contributes immensely to knowledge regarding the effects and context of "women's autonomy" on maternal healthcare practices and child mortality. It supports earlier calls for male and community involvement in child healthcare and the empowerment of women through formal education, livelihood skills training and microfinance as a strategy to enhance women's ability to pay medical bills and accelerate progress towards the attainment of SDG 3&4 in the Upper East region and Ghana as a whole.

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# APPENDIXES

## APPENDIX 1: In-depth Interview (IDIs) Guide for Mothers

University of Cape Coast
College of Humanities and Legal Studies
Faculty of Social Sciences
Department of Population and Health

**In-depth Interview (IDIs) Guide for Mothers**

Topic: Women's Autonomy and Child Health in the Upper East Region of Ghana

**Introduction**

This study is being conducted by **Fabian Sebastian Achana**, a PhD candidate at the Department of Population and Health of the University of Cape Coast. You have been invited to participate in this study because we are interested in understanding how household relationships, power dynamics and communication affects child health. Your participation in the study will enable Fabian to complete his PhD studies on time. Your frank responses will contribute to a better understanding of the context of women's autonomy and child health in the Upper East Region of Ghana and contribute to policy and programs that enhance child health in the region. If you agree to participate, it is important that you provide accurate and sincere responses.

**Background**

Kindly tell me about yourself and life in general in this community. Probe:

- How long has she been living in the community, the highest level of education attained, Age and Marital Status, Religious Affiliations, Main occupation or source of livelihood, living circumstances eg with parents/husband)

**Norms/Rules about Child Health**

What are the norms/rules about child health and healthcare in your home/community?

How are the various norms/rules enforced? Who makes sure that these norms/rules are followed?

How does the age of a child affect the enforcement of these norms/rules? Why?

How do community norms about child welfare affect your decision-making on initiation and exclusive breastfeeding?

**Decision-Making on Child Health**

Tell me about your experience concerning decision-making about the health of your child/children who are less than five years old

What will happen if you take a decision about the health of your under five year's old child without approval from your husband or other family members?

What is the role of other family members concerning decision-making about the health of your under-five year's old child/children? (Probe: mother-in-laws, father-in-laws, other relatives, etc.)

Does the type of illness/sickness your child is suffering from matter in the decision-making process? How and Why?

**Probe**: for preventive care such as immunizations etc and curative care eg malaria, diarrhoea, etc

How does the choice of place to seek care/treatment for your sick child matter in the decision-making process? Why?

Who determines where you deliver your babies? How and Why?

How does financial affordability affect decision-making to seek care/treatment for your under-five year's old sick child/children? Why?

How does your ability to visit friends or other family members without seeking permission from your spouse/partner/family members affect child health?

Who usually makes decisions about how you spend **money which you earned yourself**? How does that affect child health?

Are you to refuse your husband/partner sex? Why? How does your ability to refuse to have sex with your husband/partner affect your child health?

How are household decisions regarding purchases such as food, water, clothes and child needs made in this household? Who makes those decisions?

How does household decision-making on household purchases such as food, water, clothes and other child needs affect child health? Why?

**I know how difficult it is to lose a child and the difficulty in remembering such sad memories. However, it is important to understand what happened and how the situation can be avoided in the future. Please, accept my condolences. Kindly tell me about your last child who passed away. What happened?

***Probe if not mentioned**, when and where care was sought and who decided on care seeking

**For each of the above narrations**, **probe for specific issues that warranted decision-making and* **specific examples or experiences in the past.** If the woman is not involved in the decision-making, ask *why she is often not involved in the decision-making. Ask if she has ever made such decisions*

*without first seeking her husband/partner/family's approval. If yes what happened? If no, what will happen if she takes such decisions?*

**Constraints and Enabling Factors of Women's Autonomy**

How easy/difficult is it for you to make decisions independently about the health of your child? Why?

What do people in this community think about women who take decisions about the health of their children without seeking permission from their husbands/partners/relatives?

How do the views of other family members/community members, affects women's decision-making about the health of their children?

What are the things that make it easy/difficult for women to make independent decisions about the health of their children? ***Probe:*** Which of the things mentioned is the most important difficulty/ or makes it easy? Why?

**Conclusion**

Thank the interviewee for her participation and her sincere opinion and views and for the time spent in the interview. Reassure the respondent(s) of the confidentiality of the information obtained and the fact that it will be used only for this study. Remind her of her rights and obligations in the study. In case she needs further information about the study, she can contact the Principal Investigator Fabian Sebastian Achana on his mobile number 0243213284 or and if she has concerns about her rights in the study she can contact the Chairpersons of the University of Cape Coast IRB.

## APPENDIX 2: Focus Group Discussions Guide (FGDs) for Mother's in-laws and Father's in-laws

University of Cape Coast
College of Humanities and Legal Studies
Faculty of Social Sciences
Department of Population and Health

**Focus Group Discussions Guide (FGDs) for Mother's in-laws and Father's in-laws**

Topic: Women's Autonomy and Child Health in the Upper East Region of Ghana

**Introduction**

This study is being conducted by **Fabian Sebastian Achana**, a PhD candidate at the Department of Population and Health of the University of Cape Coast. You have been invited to participate in this group discussion regarding understanding how household relationships, power dynamics and communication affects child health. Your participation in the study will enable Fabian to complete his PhD studies on time. Your frank responses will contribute to a better understanding of the context of women's autonomy and child health in the Upper East Region of Ghana and contribute to policy and programs that enhance child health in the region. If you agree to participate, it is important that you provide accurate and sincere responses.

**Background**

Kindly tell me about yourselves. Probe:

- How long you have lived in this community, the highest level of education attained, Age, Religious affiliations, main occupation or source of livelihood

**Community Norms about Child Welfare**

In this community, what are the norms/rules about child health and healthcare in this community?

In this community, how are the various norms/rules enforced? Who makes sure that these norms/rules are followed?

In this community, does the age of a child matter when enforcing these norms/rules? Why and Why not?

In this community, how do community norms about child welfare affect women's decision-making on initiation and exclusive breastfeeding?

**Decision-Making on Child Health**

In this community, who determines where you deliver your babies? How and Why?

What will happen if a mother or caretaker in this community takes a decision about the health of her child or a child she is taking care of without approval from her husband or other family members?

What is the role of other family members concerning decision-making about the health of children? (Probe: mother-in-laws, father-in-laws, other relatives etc)

In this community, does the type of illness/sickness a child is suffering from matter in the decision-making process? How and Why?

In this community, how does the choice of place to seek care/treatment for a sick child matter in the decision-making process?

**Constraints and Enabling Factors of Women's Autonomy**

How does household decision-making on household purchases such as food, water, clothes and other child needs affect child health? Why?

In this community, how does your ability to visit friends or other family members without seeking permission from their spouse/partner/family members affect child health?

In this community, how easy is it for mothers or caregivers to make decisions independently about the health of their children?

What do people in this community think about women who take decisions about the health of their children without seeking permission from their husbands/partners/relatives?

In this community, how do the views of other family members/community members, affects women's decision-making about the health of their children?

In this community, what are the things that make it easy/difficult for women to make independent decisions about the health of their children? ***Probe:*** Which of the things mentioned is the most important difficulty/ or makes it easy? Why?

In all the scenarios above, probe for specific examples or experiences in the past

Conclusion

*Thank the interviewee for her participation and her sincere opinion and views and for the time spent in the interview. Reassure the respondent(s) of the confidentiality of the information obtained and the fact that it will be used only for the purpose of this study. Remind her of her rights and obligations in the study. In case she needs further information about the study, she can contact the Principal Investigator Fabian Sebastian Achana on his mobile number 0243213284 or and if she has concerns about her rights in the study she can contact the Chair persons of the University of Cape Coast IRB.*

**APPENDIX=3. Table 20. Percentage distribution of occupational status by women's autonomy index**

| | | Autonomy status | | |
|---|---|---|---|---|
| Occupational status | Total | Least (%) N= 1,137 | Moderate (%) N= 1,103 | High (%) N= 3,243 |
| Civil/Public Servant | 1.3 | 0.9 | 0.8 | 2.2 |
| Artisan | 77.6 | 73.8 | 80.7 | 78.3 |
| None | 17.7 | 21.4 | 15.4 | 16.0 |
| Other | 3.5 | 3.9 | 3.1 | 3.6 |
| **P-value =<0.001** | | | | |

**APPENDIX 4. Table 21. Percentage distribution of level of education attained by place of residence**

| **Level of education attained** | | **Place of Residence** | | |
|---|---|---|---|---|
| | Total (%) N= 3, 474 | Urban (%) N= 253 | Peri-urban (%) N= 536 | Rural (%) N= 2,685 |
| SHS+ | 5.2 | 17.4 | 6.0 | 3.9 |
| Primary/JHS/Middle | 24.9 | 30.8 | 23.0 | 24.7 |
| No education | 69.7 | 51.0 | 71.0 | 71.2 |
| Other | 0.2 | 0.8 | 0.0 | 0.2 |
| **P-value = <0.001** | | | | |