UNIVERSITY OF CAPE COAST

WOMEN EMPOWERMENT AND INFANT AND YOUNG CHILD FEEDING PRACTICES IN GHANA

LOUIS KOBINA DADZIE

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BY

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Thesis submitted to the Department of Population and Health of the Faculty of Social Science, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree 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: Louis Kobina Dadzie

Supervisors' 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: Dr. Joshua Amo-Adjei

Co-Supervisor's Signature:..... Date:.....

Name: Dr. Kobina Esia-Donkoh

ABSTRACT

The first two years of a child's life are particularly important, as optimal nutrition during this period lowers morbidity and mortality. Many factors account for the inability of children to receive adequate nutrition from caregivers. It is known that mothers play key roles in children's nutrition. In Ghana, studies relating empowerment to feeding practices have emphasized decision-making and maternal dietary diversity. Earlier studies focused largely on nutritional knowledge, stunting and child dietary diversity. This study focused on women's empowerment as a pathway to optimal infant and young child feeding (IYCF) measured by minimum dietary diversity, minimum meal frequency and minimum acceptable diet. The study used the Ghana Demographic and Health Survey (GDHS, 2014); a cross-sectional nationwide secondary data. Stata software (v.13) was used to analyse the data. Multiple linear regression analysis was applied to examine the association between women empowerment and IYCF practices. The results showed that children of mothers in formal employment (officers, professionals, clerks and sales workers) had positive association with achieving minimum dietary diversity and minimum acceptable diet. Ownership of land by mothers also had positive association with minimum dietary diversity and minimum meal frequency. A mother's decision on family visits increased the chances of children to attain minimum dietary diversity and minimum meal frequency. The study recommends that equality and women's right campaigns be sustained because it improves the chances of achieving IYCF practices.

KEY WORDS

Empowerment

Infants and Young Child Feeding

Minimum dietary diversity

Minimum meal frequency

Minimum acceptable diet

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DEDICATION

To my family: Mr. Louis Joe Jesse Dadzie, Agnes Gordon, Esi Dadzie, Rosemond Ama Dadzie and the late Kwabena Edusah Amo Broni.

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LIST OF ABBREVIATIONS

GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
GSS	Ghana Statistical Service
IYCF	Infant and Young Child Feeding
MAD	Minimum acceptable diet
MDD	Minimum dietary diversity
MMF	Minimum meal frequency
SDG	Sustainable Development Goals
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
WHO	World Health Organisation

CHAPTER ONE

INTRODUCTION

Background of the Study

Good nutrition is an important basis of health and well-being, especially for children as their bodies need to grow, develop and reach their physical and mental potential (Neelon & Briley, 2011). Accordingly, the Convention on the Rights of the Child stated that every infant and child has the right to good nutrition (World Health Organization, 2018).

Globally, infant and young child feeding (IYCF) is considered a key area to improving child survival and promoting healthy growth and development (Prudhon, Benelli, Maclaine, Harrigan, & Frize, 2018; Marriott, White, Hadden, Davies & Wallingford, 2012; Sinhababu, Mukhopadhyay, Panja, Saren, Mandal, & Biswas, 2010; UNICEF, 2009). There are enormous benefits of properly feeding children as it protects them from several childhood illnesses, amongst them are gastrointestinal infections and malnutrition. It is in this light that the World Health Organisation (WHO) and the United Nations Children's Fund (UNICEF) recommend the introduction of nutritionally adequate and safe complementary (solid) foods from six months together with continued breastfeeding up to two years of age or beyond (UNICEF, 2010). The first two years of a child's life are particularly important, as optimal nutrition during this period lowers morbidity and mortality, reduces the risk of chronic diseases, and fosters better development overall (WHO, 2017). As such, the WHO designed the IYCF tool with the purpose of identifying strengths and possible weaknesses in

policy, with the view to improve and protect, promote, and support optimal infant and young child feeding (UNICEF, 2016). These indicators incorporate both breast-feeding and complementary feeding. Three core indicators of the IYCF practices are; minimum dietary diversity which shows the minimum variety of foods (food from at least four food groups out of a possible seven), minimum meal frequency (minimum number of meals to be consumed in a day) and the minimum acceptable diet (thus, meeting both the minimum number of meals and minimum diet diversity) (UNICEF, 2016).

In 2016, 155 million children under five years of age were stunted (too short for age), 52 million were wasted (too thin for height) and 41 million were overweight or obese (WHO, 2016). Globally, about 52 percent of all children 6-23 months of age are not receiving the minimum recommended number of meals a day with South Asia and sub-Saharan Africa having the lowest rates of minimum meal frequency of all (UNICEF, 2016). Less than one out of three of the world's infants and young children are receiving a diet with the recommended minimum variety of foods (UNICEF, 2016). Only one out of every five children aged 6-23 months eats a minimally diverse diet in sub-Saharan Africa (UNICEF, 2016). The situation even deteriorates with only one out of every six child aged 6-23 months receiving minimum acceptable diet (UNICEF, 2016).

It is documented that no country in sub-Saharan Africa have higher than 30 percent of children fed a diet that was minimally acceptable (Ickes, Hurst & Flax, 2015). Ghana has a minimum of 28 percent, 43 percent, and 13 percent respectively for meal diversity, meal frequency and acceptable diet which is far

from acceptable outcome (GDHS, 2014). Few children receive nutritionally adequate and safe complementary foods meeting the criteria of dietary diversity and feeding frequency that are appropriate for their age (WHO, 2016).

Many factors account for the inability of caregivers to provide adequate nutrition for children. Events at the household level, especially, wealth, number of children and household where family members eat from the same family pot were factors hindering IYCF practices. Another factor worth mentioning is beliefs people ascribe to foods as much as food availability and socioeconomic status (Anderson, Hughes, Fisher & Nicklas, 2005). Cultural determinants of child diet can also exclude foods that are available in the home and foods that other family members eat.

In a previous research in rural Vietnam, it was found that many young children received little of the protein (rice paddy crab, fish and shrimp) that was otherwise ubiquitous in the family pot, because it was deemed by their caregivers to be inappropriate food for young children (Pachón, Schroeder, Marsh, Dearden & Lang, 2002). A quantitative study by Zeitlin (1996) describes a time in Nigeria where parents used food restriction to develop children's moral character. Many of these barriers and belief practices usually lead infants/children to psychosocial problems, such as impaired mental and physical development, reduced educational achievement, increased morbidity, and more time and money spent on taking care of sick children due to frequent morbidity (Barker, Gout, Crowe, 2011; Black, Allen, Bhutta, Caulfield, de Onis, Ezzati, et al, 2008).

Studies on empowerment and feeding practices vary strongly by women's control over resources and child nutritional outcomes (Skoufias, 2005; Quisumbing, 2003; Quisumbing & Maluccio, 2003; Hallman, 2003). Studies have suggested that women who have more equality in education, employment and decision-making tend to have lower fertility and their children have lower risks of malnutrition because they have enough or excess food for their children (Allendorf, 2012; Bongaarts, 2003; Axinn & Barber, 2001; Brewster & Rindfuss, 2000; Subbarao & Raney, 1995; Dixon-Mueller, 1993). In Ghana, studies relating empowerment to feeding practices emphasized decision-making and maternal dietary diversity (Amugsi et al., 2016; Amugsi et al., 2015).

Women and girls constantly face various forms of disempowerment in many respects: health, economic, social and politics (United Nations Development Program, 2010; Adjei, 2015). The existing gender disparities in human development have been so delicate that global 'war' continues to be waged against various forms of discriminations against women. Evidenced through the Sustainable Development Goals (SDGs), Goal 5 is to ''Achieve gender equality and empower all women and girls." Specifically, Target: 5.a requires the undertaking of reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws (United Nations, 2015). This inform this study, an investigation of the measures of women empowerment and its link with IYCF practices and is vital in the bid to achieving SDG Goal 2 ("End hunger, achieve food security and

improved nutrition and promote sustainable agriculture") and 3 ("Ensure healthy lives and promote wellbeing for all at all ages). In spite of the gains made by the international community with respect to fighting power imbalances, which resonates throughout societies, the situation in Africa and for that matter Ghana remains scant (African Development Forum, 2008; Adjei, 2015).

Women's empowerment is not only crucial for women's human rights, but empowering women improves nutrition outcomes for both mothers and their children (USAID, 2012). According to Ewerling (2017), more empowered women are more likely to use modern contraception, have access to antenatal care and skilled birth attendance and provide their children with appropriate nutrition. Women's empowerment as demonstrated has become an important factor in improving nutrition outcomes for women and children. It has therefore, become necessary to determine the association between women's empowerment and infants and young child feeding (IYCF) practices.

Problem Statement

Infant and young child feeding practices form a major aspect of children's nutritional status (WHO, 2017; Liu, et al, 2015; Fein, Li, Chen, Scanlon & Grummer-Strawn, 2014). In Ghana for instance, it is shown that two-thirds of under-5 mortality occurs within the first year of life and about 40 percent of these deaths are preventable by improved breastfeeding and complementary feeding practices (Ghana Statistical Service, Ghana Health Service & ICF International, 2015). Between the period of 2003 and 2014, data from the GDHS surveys show a downward trend and reveal that all three nutritional status indicators have

improved in the last decade. Over the years, the proportion of stunted children has declined steadily from 35% in 2003 to 19% in 2014. Children who were wasted decreased from 8% in 2003 and 9% in 2008, to 5% in 2014. The proportion of underweight children has decreased from 18% in 2003 to the present level of 11% (Afenyo, 2016; GSS, 2015). In Ghana, women are mostly engaged in agricultural activities and lag behind men in terms of educational attainment and predisposition to mass media (GDHS, 2015).

Some challenges associated with child feeding practices and undernutrition in Ghana are evidence to be as a result of interference of grandmothers, poverty, lack of financial support from husbands or partners, cultural beliefs/ practices and workload on the part of the caregivers (Abang, 2013). Barriers to empowerment of women also include socio-cultural discrimination and limited access to resources.

Pragmatic strategies have been recommended to boost infant and young children feeding practices. Typical among the lot is the WHO and UNICEF jointly developed Global Strategy for IYCF whose aim is to improve optimal feeding, nutritional status, growth and development, health and thus the very survival of infants and young children (World Health Organization, UNICEF, (n.d). Despite efforts of health workers to increase the number of children attaining the recommended practices, not much success has been achieved because, feeding practices are often difficult to change as they are directly related to varied economic, socio-cultural and religious factors in the community and to various dynamics prevailing at the household level.

In spite of the many conventions, strategies and programmes in favour of optimal infant and young child feeding practices, a large population of infants and young children in Ghana do not obtain the optimal benefits of correct IYCF practices. Only 13 percent are meeting the minimum acceptable diet in Ghana (UNICEF, 2017; Ghana Statistical Service, Ghana Health Service & ICF International, 2015).

While I acknowledge an increasing and impressive scholarship on IYCF in Ghana, previous studies have focused largely on nutritional knowledge, stunting and child dietary diversity. For instance, there is evidence on nutritional knowledge of caregivers and the diet quality given to children (Ickes et al., 2017; Imdad, Yakoob & Bhutta, 2011). Other studies have investigated maternal knowledge and beliefs of breastfeeding (Matvienko-Sikar et al, 2018; Hackett, Mukta, Jalal & Sellen, 2015; Armar-Klemesu, 2000). There is also evidence on feeding practices and stunting (Krasevec, An, Kumapley, Bégin, Frongillo, 2016; Darapheak, Takano, Kizuki, Nakamura, & Seino, 2013; Krebs, Mazariegos, Chomba, Sami, Pasha, Tshefu …Hambidge, 2012). Amugsi, Lartey, Kimani-Murage and Mberu, (2016) focused particularly on maternal dietary diversity while Amugsi, Mittelmark and Oduro (2015), dwelt on the association between maternal and child dietary diversity by analysing the Ghana Demographic and Health Survey.

This study contributes to the existing evidence base by focusing on women's empowerment as a pathway to optimal IYCF practices. This is critically important given that several development interventions have explicitly aimed at

women's empowerment (Ruel & Alderman, 2013). Some of these programmes have targeted micro credit for women as an economic empowerment valve (Jinia 2016; Ganle, 2015), and formal education, among others.

Furthermore, the study was informed by the fact that scholarly literature on feeding practices in Ghana utilizing infants and young children aged 6-23 months are few and gaps relating to the association between women empowerment and IYCF practices have less been explored. It is against this backdrop that this study sought to determine the association between women's empowerment and IYCF practices in Ghana.

Research Objectives

Generally, the study determined the association between women empowerment and IYCF practices in Ghana. Specifically the study seeks to;

1. Analyse the socio-demographic factors that influence IYCF practices
2. Examine the association between women's empowerment and achievement of minimum dietary diversity for children
3. Determine the association between women's empowerment and attainment of minimum meal frequency of children
4. Examine the association between women's empowerment and achievement of minimum acceptable diet for children

Research Hypothesis

1. H1: there is a statistically significant association between women's empowerment and minimum diet diversity
2. H1: there is a statistically significant association between women's empowerment and minimum meal frequency
3. H1: there is a statistically significant association between women's empowerment and minimum acceptable diet

Significance of the Study

Women are the very ones to give much care in the area of feeding infants and young children. Women empowerment in recent times has also been given attention in various countries. The World Health Organization (WHO) and UNICEF recommends that infants begin consuming safe and nutritionally adequate solid, semisolid, or soft foods starting at 6 months of age while continuing to be breastfed until 2 years of age or beyond. In this regard, as women are seen as the main drivers to meeting these standards, this study will provide information as to which aspects of women empowerment to target in order to enhance attainment of optimal IYCF practices in Ghana. Furthermore, the study will also add to knowledge on infant and young child feeding practices in relation to women empowerment in Ghana.

Organisation of the Study

This paper has five chapters in all. The first chapter comprises the background to the study, which gives brief introduction to the issues and statement of the problem. It also highlights the gaps existing in literature. The

chapter also presents the research objectives and questions for the work, significance of the study and how the study was organised.

Chapter two of the work elaborates on the literature in relation to the subject. This is done in three main parts, namely, the conceptual, theoretical and empirical issues. The conceptual perspectives are detailed with definitions concerning the study. The theoretical discussion focuses on theories on empowerment. The empirical issues focuses on results from similar studies conducted from the global, Africa and also Ghanaian contexts. The section also provides the conceptual framework for the study.

The third chapter concentrates on the methodological approaches that were adopted. It looks at the research design, the study area, population, sampling and sampling procedures, data collection instrument and procedures and the data processing and analysis. The results and discussion of the findings are presented in chapter four while the last chapter comprises the summary, conclusion and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter comprises the conceptual issues, theoretical perspectives, empirical literature and the conceptual framework for the study. The empowerment theory, Feminist social work theory, Kanter's structural empowerment theory and the theory of change for gender equality and empowerment of women and girls are reviewed. The empirical literature espoused specific issues on women empowerment variables and IYCF practices, its components and practices. The conceptual framework then defines and shows the linkages between women empowerment and IYCF practices.

Conceptual Issues on Empowerment

The term "empowerment" has been overused, misused, and co-opted (Sundaram, Sekar & Subburaj, 2014; Stacki & Monkman, 2003; Stromquist, 2002). According to Batliwala (2007), although empowerment as a term is widely used, it has been abused because definitions vary due to cultural and individual understanding. The many origins and sources of inspiration of the notion of empowerment can be traced back to such varied domains as feminism, Freudian psychology, theology, the Black Power movement, and Gandhism (Cornwall & Brock 2005; Simon 1994).

The concept of empowerment was first used formally in the 1970s by Third World feminists and women's organizations with the aim of giving a framework and facilitating the struggle for social justice and women's equality

through the transformation of economic, social and political structures on both national and international levels. Since then, several perspectives have been propounded on empowerment (Rahman, 2013; UNIDO, 2010).

However, Rowlands (1997) argued that before one could dive into understanding empowerment, it is advisable to discuss "power" because power is foundational to the concept. Max Weber defined power as the probability that someone in a relationship will be able to achieve whatever is desired, regardless of the bases upon which that probability rested (Uphoff, 2005). Power, simply, was seen as the capacity or ability to take actions freely and independently, without the control or influence of others. Rowlands (1997) furthered the argument on power when he introduced four forms of power. These include;

Power over: changing the underlying inequalities in power and resources, which constrain women's aspirations and their abilities to achieve them.

Power to: enabling individuals to develop the necessary skills and access the necessary resources to achieve their aspirations.

Power with: enabling individuals to examine and articulate their collective interests, to organize to achieve them and to link with other women's and men's organizations for change.

Power within: enabling individuals to articulate their own aspirations and strategies for change.

Uphoff (2005) also distinguished two types of power, which are: 'power resources' and 'power results'. Power resources related to accumulated, invested

and exchanged assets; whereas, power results were the activities achieved using those resources (Grabe, 2012; Uphoff, 2005).

Grabe (2012), subsequently, highlighted another type of power, which is considered to be one of the major contributions to social inequalities. This power is known as structural power. This power is manifested when dominant individuals have more control over resources than subordinates.

Previous definitions of empowerment were criticized on the basis that empowerment cannot mean power over others and the power to control more than one's share; it should mean power to be, power to control our own greed, our violence inside us; it should mean power to nurture, to heal, to care for others; and should mean power to fight for justice, ethics, morality; power to achieve inner growth leading to wisdom and compassion (Weidenstedt, 2016; Luttrell, Quiroz, Scrutton & Bird, 2009). Power should also mean the ability to exercise one's freedom, make one's own choices, and have a voice and make it heard (Klein, 2017).

Earlier, Chambers (1993) introduced the dimension of freedom. He saw empowerment as when people, especially the poor, are enabled to take more control over their lives, and secure a better livelihood with ownership and control of productive assets as one key element. Mosedale (2005) also espoused that empowerment included a sense of people making decisions on matters which are important in their lives and being able to freely carry them out. Yet, empowerment as a term kept expanding as the equality angle sufficed.

Increasingly, it is appreciated that to move towards equality, we have to empower that which is disempowered. Alkire (2013) emphasized the relevance of equality as a measure of empowerment. According to her, the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control, and hold accountable the institutions that influence their lives is a good measure of empowerment. Grounded on the different conceptions of empowerment, a number of scholars see empowerment as a process (Kabeer, 2005; Bartlett, 2004; Oxaal & Baden, 1997).

Oxaal and Baden (1997) considered empowerment to be a process whereby people can freely analyse, develop and voice their needs and interests, without them being pre-defined, or imposed from above, by planners or other individuals. Bartlett (2004) also views empowerment as the process of enhancing people's ability to make their own decisions rather than being passive objects of choices made on their behalf. This concept emphasized the notion that empowerment is self-driven and it emanates from within. Kabeer (2005) conceptualised empowerment as a process, which entails the expansion in people's ability to make strategic life choices in a context where this ability was previously denied. Malholtra and Schuler (2005) assert that these processes are the methods used to achieve greater freedom of choice and equality.

From the various arguments, empowerment can be conceptualised as power, freedom, equality, process or a combination of them (Askheim & Starrin, 2007; Payne, 2005; Melkote & Steeves, 2001; Freire, 1972; Solomon, 1976).

These have evolved and new concepts such as gender empowerment and women empowerment have also emerged.

Gender Empowerment

Since the "UN Declaration of the Decade of Women" in 1975, attention on women's concerns has steadily increased. However, the Beijing Conference, held in September 1995, represented a turning point in the development of gender equality policies: it launched the gender mainstreaming concept (Istituto per la Ricerca Sociale, 2014) and also resulted in advancing gender equality and women's rights worldwide: the Beijing Declaration and Platform for Action (BPfA). For the last 20 years, the BPfA has been the world's most powerful framework for international and national gender equality policies and practices (Petra Debusscher, 2015).

According to Thompson (2016), gender empowerment is the empowerment of people of any gender. While conventionally being reduced to its aspect of empowerment of women, the concept stresses the distinction between biological sex and gender as a role, also referring to other marginalized genders in a particular political or social context. Rao, Sandler, Kelleher & Miller, (2015) also posit that gender empowerment is conceived as a process by which individuals can overcome many of the hurdles that they face such as education, work status, employment opportunities, healthcare, social security, position in decision making by victim of their gender. Thus, gender empowerment veritably implies empowerment to do away with "subordination" or "discrimination" and

"injustices" in society. It was out of gender empowerment that women empowerment is solidified.

Women Empowerment

Women's empowerment means women gaining more power and control over their own lives. Therefore, women's empowerment can also be seen as an important process in reaching gender equality (Osagi, 2001). Kabeer (1999), states that women empowerment is a process by which those who have been denied the ability to make strategic life choices acquire such ability. Women empowerment touches on women's sense of self-worth and social identity; their willingness and ability to question their subordinate status and identity; their capacity to exercise strategic control over their own lives and to renegotiate their relationships with others who matter to them; and their ability to participate on equal terms with men in reshaping the societies in which they live in ways that contribute to a more just and democratic distribution of power and possibilities (Kabir, 2016; Kabeer, 2005).

Gender equality and women's empowerment are elaborated in the 2030 Agenda such that it declares realizing gender equality and the empowerment of women and girls will make crucial contribution to progress across all the goals and targets. The role of women's empowerment in the 2030 Agenda has also been stressed by looking at the Sustainable Development Goal (SDG) 5 (achieve gender equality and empower all women and girls) and its targets as well as the Addis Ababa Action Agenda and Addis Ababa Action Plan on Transformative

Financing for Gender Equality and Women's Empowerment (EU Parliament, 2016).

As a continuation beyond the Millennium Development Goals (MDGs) that emphasized only equality of opportunity, the 2030 Agenda acknowledges that equality must be based on both opportunity and outcome as stated in Target 10.3 of SDG 5: "Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard" (EU Parliament, 2016; United Nations, 2016).

UNICEF adopted the definition of empowerment as a process and provided a framework of women empowerment (Figure 1), which describes the components of empowerment. At the core of the Women's Empowerment Framework is its argument that women's development can be viewed in terms of five levels of equality, of which empowerment is an essential element of each level. The levels are welfare, access, conscientisation, participation and control.

The welfare addresses the basic needs of women without recognizing or attempting to solve the underlying structural causes, which necessitate provision of welfare services. Basic needs such as food consumption, physical and mental health of women are examples.

Access involves equality of access to resources, such as education opportunities, land, and credit. The path to empowerment is initiated when women recognize their lack of access to resources as a barrier to their growth and

overall well-being, and take action to address this. Examples include; freedom of mobility, land ownership and house ownership.

Conscientisation explains that for women to take appropriate action to close gender gaps or gender inequalities there must be the recognition that their problems stem from inherent structural and institutional discrimination. They must also recognize the role they can often play in reforming the system that restricts their growth such as household and community structures.

Participation is the point where women are taking decisions along with men equally. To reach this level, mobilization is necessary. By organizing themselves and working collectively, women will be empowered to gain increased representation, which will lead to increased empowerment and ultimately, greater control. Instances where women partake in income generation, social network, have bargaining power would improve their decision making and organization.

Control is the ultimate level of equality and empowerment. Here, the balance of power between men and women is equal and neither party has dominance over the other. At this stage in the empowerment framework, women are able to make decisions over their lives, and the lives of their children, and play an active role in development. Further, the contributions of women are fully recognized and rewarded. Characteristic of this stage could be control over resources/finances, decision on own health/ decision on large household purchases etc.

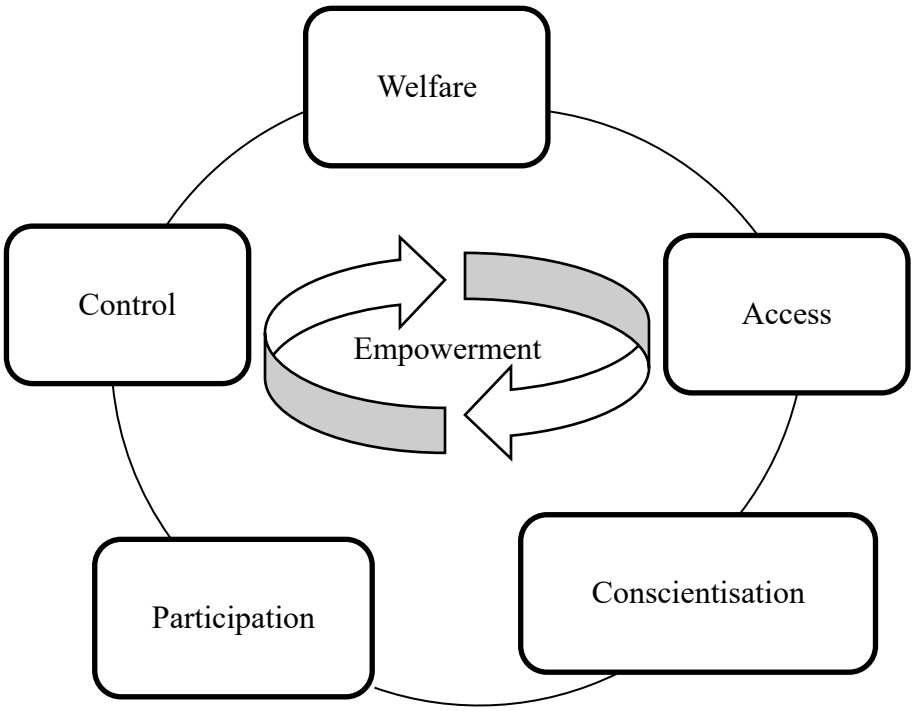

Figure 1: Women empowerment framework

Source: UNICEF (1993)

Gender mainstreaming issues in child nutrition and health policies in Ghana

Definition of gender mainstreaming

The definition of gender mainstreaming is an internationally recognized phrase defined by the Council of Europe as: "The (re) organization, improvement, development and evaluation of policy processes, so that a gender equality perspective is incorporated in all policies at all levels and at all stages, by the actors normally involved in policymaking". Gender mainstreaming is a globally accepted strategy or approach for promoting gender equality. Gender mainstreaming, therefore, is the systematic integration of the respective situations, priorities and needs of women and men in all policies and with a view to promoting and ensuring equality between women and men.

Gender mainstreaming issues in child nutrition

Earlier research works identified some issues associated with gender mainstreaming and child nutrition since social and culturally prescribed roles and values have been ascribed to girls and boys, women and men in different societies and contexts. For instance, a qualitative study in Ghana found co-habitation was the main factor influencing paternal decision-making, so that a father resident with his wife and children had greater authority in decisions about when and where healthcare was sought for a sick child than one who lived in a separate residence (Asenso-Okyere et al., 1997). Another study in Burkina Faso found that, a father's approval of a decision to formula feed was seen as important by most mothers, partly in order to secure resources to purchase formula (Desclaux & Alfieri, 2009). An in depth qualitative study also found that the role of fathers and grandparents was important in supporting or opposing breastfeeding among women who chose to exclusively breastfeed (Machado & Bosi, 2008). It was also noticed that income accruing to women had a larger positive impact on child nutritional status in comparison with income accruing to men (Thomas 1997). lt is argued that attention should be paid to the networks of carers that influence child health and nutrition given that in many societies child care is carried out collectively and with complementary inputs from different household members (Aubel, 2011).

It has been hypothesised that children in some contexts, may benefit more from expenditure in female rather than male headed households, since there is evidence that women channel more resources into health and nutrition for their

dependants (Bruce, 1989). Although women may allocate a greater proportion of the income they control to children, the benefits of this for child health outcomes may be reduced by women's access to relatively lower levels of income.

Gender mainstreaming issues in health policies

In Ghana, there has been reported progress in poverty reduction in the country since 1990. The proportion of Ghanaians in extreme poverty has declined from 37 per cent to 27 per cent. The Ghanaian society is also transforming from a rural community towards rapid urbanizations. This invariably goes with important changes in gender roles of women and men. Growing phenomenon of female headed households (unexpectedly these seem to be not the poorest) with implications for child care at the household levels (HH) and access to health care (mothers are working, opening hours of health facilities usually only in day-time) and probably many more core-households versus extended family arrangements. These impacts on health and health care.

According to the Health sector Gender Policy (2009), the main issues confronting gender mainstreaming in the health sector of Ghana is that, there is a general gender imbalance at all levels of management positions (district, regional and national) in the health sector. Capable and qualified women who could occupy higher positions are found mainly in the lower and middle levels. One could detect slight forms of discrimination which keeps them out of these positions. On the other hand, subtle discriminatory practices and attitudes have also not encouraged men to enter into the nursing and midwifery professions. Most Ministry of Health (MoH) staff, especially women, do not know the

conditions of service and career opportunities that exist. In many instances, staff postings are not mindful of women and men's relationships and social roles. Essential facilities in most work places do not take cognisance of the peculiar needs of women (e.g. baby changing, feeding rooms and nurseries etc). These issues constitute a major constraint to gender considerations in decision-making and ultimately gender mainstreaming in the health sector.

As a result, the ministry of health, in 2009, drafted the gender policy framework premised on the overarching objectives that the promotion of gender equality in the Ghanaian health sector is crucial and critical based on these important principles:

1. The health sector provides services for people with different gender needs and socio-economic status
2. Access to healthcare is an equal right and inherent human dignity for men and women
3. Gender equality promotion in health will support elimination of all discrimination based on gender and sex and the infringement of one's human right
4. Gender equality is vital to the achievement of the Millennium Development Goals (MDGs);
5. Lifelong accessibility to healthcare is crucial to poverty reduction for men and women
6. Women and men have different biological and social differences which affect health needs and roles

7. Gender mainstreaming and sensitivity in health service delivery will support effective and efficient programming
8. Partnership with stakeholders in health

The promotion of gender equality in the health sector is crucial because in Ghana gender differences and needs affect socio-economic status including health. Ghana has committed itself to gender equality and women's promotion and this is enshrined in its constitution Article 17(2) and 26 (1 and 2) (Ministry of Health, 2009).

Theoretical Perspectives on Empowerment

Theories of empowerment include both processes and outcomes, suggesting that actions, activities, or structures may be empowering, and that the outcome of such processes results in a level of being empowered (Zimmerman, 2000). Both empowerment processes and outcomes vary in their outward form because no single standard can fully capture its meaning in all contexts or populations (Zimmerman, 1993). This section discusses the empowerment theory, feminist social work theory, Kanter's structural empowerment theory and the Theory of change for gender equality and empowerment of women and girls.

Empowerment theory

Solomon (1976) is usually associated with the empowerment theory. The main assumption of this theory is that personal, interpersonal and environmental resources are needed to increase and improve the skills, knowledge and motivation of people to achieve valid social roles. Solomon viewed that lack of

these personal, interpersonal and environmental resources will lead to powerlessness. He argued that denial of access to resources needed for good health, interpersonal skills and valued social roles produce powerlessness and undermine the competent functioning of group or individuals.

The empowerment theory proposes strategies of reducing marginalization and inequity in society. It demands for capacity building, awareness building and skill development to improve the status of the marginalized.

Batliwala (1994) in support of the empowerment theory argued that empowerment should centre on the control over material assets, intellectual resources and ideology. The material asset over which control can be exercised may be physical, human, or financial such as land, house, labour, money and access to money. Intellectual resources include knowledge, information, and ideas. Control over ideology signifies the ability to generate, propagate, sustain and institutionalize specific sets of beliefs, values, attitudes and behaviour, virtually determining how people perceive and function within given socioeconomic and political environment. These can be achieved by challenging the patriarchal ideology, male domination and women's subordination; to transform the structures and institutions that reinforce and perpetuate gender discrimination and social inequality (Batliwala, 1994).

The process of empowerment must, thus, address all relevant structures and sources of power. Since the causes of women's inferior status and unequal gender relations are deeply rooted in history, religion, culture, laws and legal systems, social attitudes and political institutions, the solution to women's

subordination must therefore penetrate deeply into the relevant structures and ideologies (Batliwala, 1994).

Nelly Stromquist also developed a model in support of the empowerment theory. Stromquist; (1995) model of empowerment posited that empowerment should focus on the process of changing the distribution of power both in interpersonal relations and in institutions throughout the society. Family practices, religious myth, the social division of labour, the sexual division of labour, marriage customs, the educational system and civil laws, according to Stromquist, combine to produce hierarchies in gender relations in the society. A full process of empowerment therefore must include cognitive, psychological, political and economic components (Stromquist, 1995).

Feminist social work theory

The Feminist social work theory also has much in common with the empowerment theory, particularly in their focus on domination and subordination. Poorman (2003) explained that feminists particularly examine role expectations and status and power differences related to gender while empowerment theorists look more specifically at the role of race/ ethnicity/culture and, to some extent, class status in shaping individuals and problems. In addition, feminist were among the first to recognize that empowerment must be anchored within women's own experiences (Grosz, 2010; Carr, 2003). Feminism emphasizes the importance of the social, political and economic structures that shape human societies and stresses that gender must be considered when examining the effects of oppression and domination and power and powerlessness in our society (Abromovitz, 2012;

Grosz, 2010; Kemp & Brandwein, 2010; Kabeer, 2009; Carr, 2003; Ehrenreich, 2001; Collins, 1991; Crenshaw, 1991; Lorde, 1984; Steinem, 1983).

Central to the feminist social work theory is the belief that the inferior status delegated to women is due to societal inequality; that the personal status of women is shaped by political, economic and social power relations and that women should have equal access to all forms of power. This analysis helps women to understand how they are oppressed and dominated and often inspires them to engage in efforts to bring about broader social change. Feminist scholars, educators and social workers (Abromovitz, 2012; Grosz, 2010; Kemp & Brandwein, 2010; Kabeer, 2009; Poorman, 2003) encourage women to reclaim power to the extent possible in the society, express anger and build self-confidence and self-efficacy. Empowerment has become an essential part of feminist theory and, as such, seeks to increase the personal, interpersonal and political power of the oppressed and marginalized populations for individual and collective transformation (Lee, 2001).

Kanter's Structural Empowerment Theory

Kanter's structural empowerment theory expresses that the characteristics of a situation can either constrain or encourage optimal performance, regardless of personal tendencies or predispositions. The theory recognises power as the ability to mobilize resources to get things done. Thus, power is 'on' when there is access to lines of information, support, resources, and opportunities to learn and grow. When these 'lines' or sources are unavailable, power is 'off' and effectiveness becomes impossible. These lines of power are sources of 'structural'

empowerment within formal and informal systems of the organization (Greco, Laschinger, & Wong, 2006; Laschinger et al., 2004, 2001).

The theory further highlights that high levels of formal and informal power facilitate access to the lines of power and opportunity that enable individuals to be empowered and achieve results in meaningful ways. Formal power is derived when empowered women portray characteristics such as; flexibility, adaptability, creativity associated with discretionary decision-making, visibility, and centrality to individuals' purposes and goals. Informal power is derived from social connections, and the development of communication and information channels with peers and groups (Laschinger et al., 2004, 2001; Kanter, 1993). High level of structural empowerment comes from access to these structures (Laschinger et al., 2004, 2001; Kanter, 1993).

Theory of change for gender equality and empowerment of women and girls

This theory articulates a vision for gender equality and explains the relationship between gender equality, achieving empowerment and securing women and girls' rights. It recognised that achieving long-term and sustainable change requires a holistic approach, which tackles gender inequalities and seeks to empower women and girls from a number of perspectives (The British Council, 2016). It further emphasizes that, change is needed to support women's and girls' awareness, capacities and abilities, as well as creating opportunities and an enabling environment for empowerment. These change processes are conceptualised from the individual and institutional as well as formal and informal actions (Figure 2).

Supporting women's awareness, confidence and individual capabilities according to the theory is crucial to enable women to make transformational change. In that sense, it provides opportunities through the creation of spaces in which women and girls can grow and thrive. The theory also recognised that women's empowerment does not rest with individual women alone; working collectively to achieve change is crucial. Individuals build collaboration and networks between women and women's organisations, as well as influence and build alliances with other stakeholders. In this way, empowered mothers could influence IYCF practices as these alliances will provide them with more information on how to cater for the young children.

In order for women and girls to be empowered, they must have fairer access to resources and opportunities including key services such as health, education, employment and justice, as well as decision-making and political processes. As such, institutional and organisational level policies and practices are being influenced by partnership from different sectors to create more opportunities for women and girls, including representation in decision making and influencing how their priorities are met through the provision of public goods, services and information. In so doing, mothers for example would have more access to financial resources which will have a rippling effect on the nutritional status of the children since these resources will be used to purchase food for the family for which the child is part. A supportive legislative and policy environment is vital for achieving gender equality and women and girls' empowerment. For instance, women who are entitled to lands will be able to farm and cultivate

foodstuffs for the family. This theory enlightened empowerment as capabilities, confidence, collectivity, and fair access to resources for women and girls.

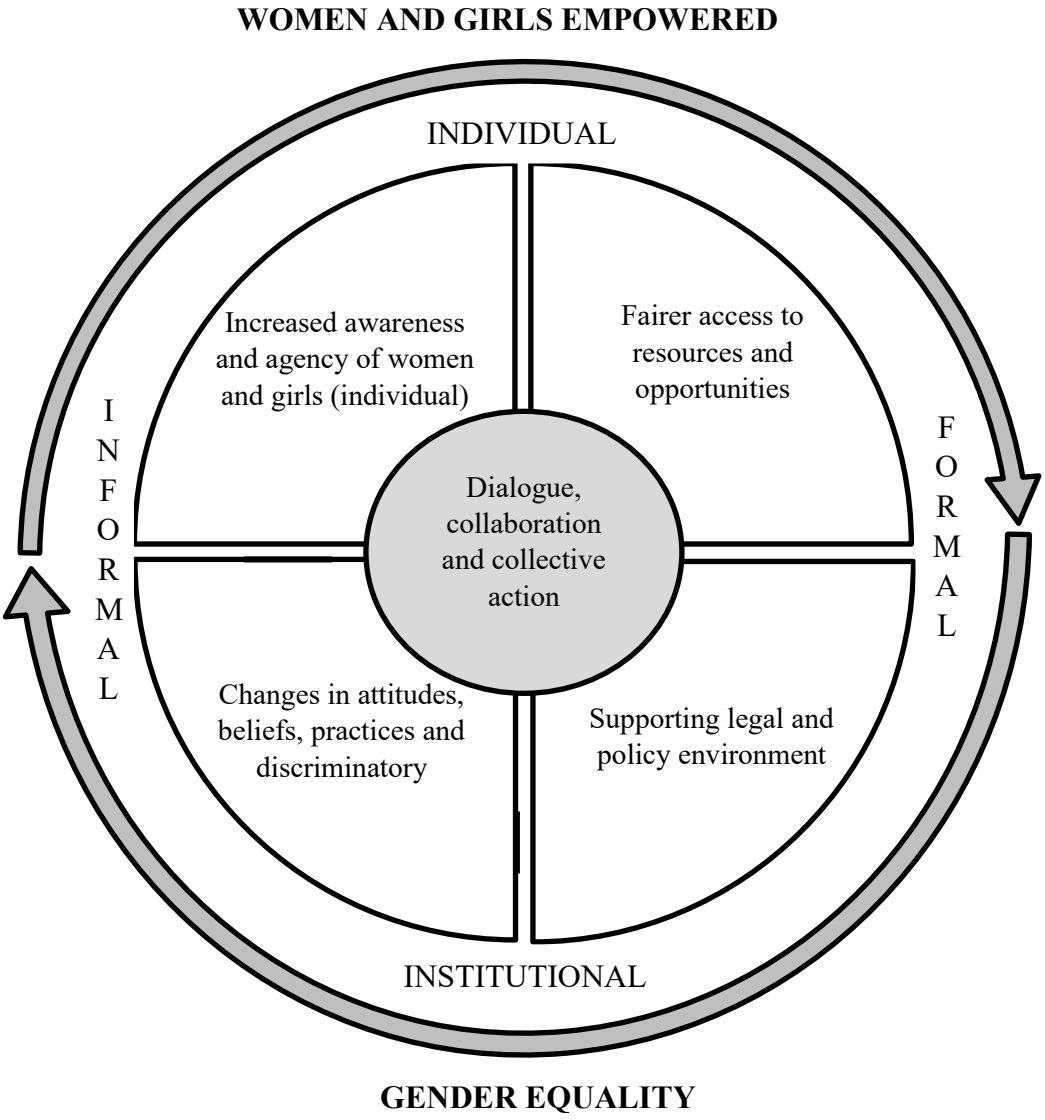

Figure 2: Theory of change for gender equality and empowerment of women and girls

Source: The British Council (2016)

Dimensions of Women Empowerment

Women empowerment appears to have several dimensional focuses and envisages greater access to knowledge, social and economic resources, and greater participation in economic and political decision making processes of a household or country at large (Kabeer, 2005). A number of studies have shown that women may be empowered in one area of life whiles other areas may be deficient (Kishor, 2000, 1995; Beegle et al. 1998; Malhotra & Mather, 1997; Hashemi et al. 1996). Consequently, researchers and experts tend to focus on a single or select few dimensions that influence women empowerment. This focus allows them to present how these specific components can be organized and structured to help ensure the success of the empowerment initiative.

This section concentrates on the main dimensions of empowerment which are economic, socio-familial and legal. It is important to review literature on these three because these dimensions figure prominently in the literature. Further, each dimension has been covered by a number of indicators.

Economic empowerment

Economic empowerment includes women's control over income; relative contribution to family support; access to and control of family resources (Malhotra et al., 2005). According to Browning and Chiappori (1998); Duflo (2003); Blumberg (2005), economic factors have been identified as an important factor for empowering women. Increases in the value of female time and income have been postulated to result in higher bargaining power and greater participation in household decision-making. It also leads to greater investment in

education, housing and nutrition for children (Duflo, 2003). Given the cultural and social constraints imposed on women in developing countries, women's accumulation of resources may not necessarily result in empowering women on their own. Thus, though economic interventions are important, other development initiatives such as education and property rights are essential for empowering women (Kabeer, 2005; Deshmukh-Randive, 2003; Malhotra & Mather, 1997).

Socio-familial

According to Khan and Mazhar, (2017) socio-familial factors are things that can affect our lifestyles as a society and can have influence on individuals behaviour depending on one's social values. Socio-familial empowerment of women includes women's freedom of movement; lack of discrimination against daughters, participation in domestic decision-making; control over sexual relations; ability to make childbearing decisions, freedom from domestic violence. In an empirical study conducted in West Bengal, Adhikari et al., (2011) found that socio-cultural/ familial are important factors affecting the degree of women's empowerment. Mason et al., (2003) also viewed empowerment of women as their freedom from being controlled by other family members and their ability to affect desired outcome within the household.

Legal empowerment

Scholars and practitioners use legal empowerment extensively alike to describe a wide range of activities, from legal information strategies to development of traditional forms of dispute resolution, to minority groups winning legal victories through public interest litigation (Goodwin & Maru, 2014;

Golub, 2010). Nayak et al. (2009) identified several constraints in achieving desired level of women's empowerment, which included legal and constitutional provision among others. Similarly, Kabeer (2001) stresses the failure of many empirical studies in taking account of rights to land and other resources. She postulated that cultural taboos often make women reluctant to claim their legal inheritance rights.

Concept of Infant and Young Child Feeding practice

The period from birth to age two is especially important for physical, mental, and cognitive growth, health, and development. However, this period is often marked by poor IYCF practices that result in poor nutrition (GDHS, 2014). In the first two years of life, impaired growth is easier to prevent and correct and the correction becomes more difficult to accomplish later in childhood (Bhandari, 2016; Georgieff, 2007). Hence, the first two years of life provide a critical window of opportunity for prevention of growth faltering and undernutrition through optimal feeding (Demilew et al., 2017; Salim et al., 2012; Victora, deOnis, Hallal, Blossner & Shrimpton, 2010; World Bank, 2006; WHO, 2003). However, when the time comes to introduce foods from six months of age to complement breast milk, many young children do not receive adequate feeding.

As a result, the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) jointly developed "The Global Strategy for Infant and Young Child Feeding" in 2002 and recommended that children should be breastfed exclusively for the first six months of life, and then continue breastfeeding with proper complementary food up to two years of age and beyond

(Demilew et al., 2017; Salim, Mita, Uddin …Bhuian, 2014; WHO & UNICEF, 2003).

IYCF practices was designed as a tool to assist in assessing the status of feeding practices, policies, and programmes in countries around the world. The purpose of such an assessment is to identify strengths and possible weaknesses, with a view to improving the protection, promotion, and support of optimal infant and young child feeding. IYCF practices are measured with indicators for both breastfeeding and non-breast fed children.

Indicators of IYCF practices

WHO, (1991) provided a set of indicators that could be used to assess infant feeding within and across countries and to evaluate progresses in breastfeeding promotion efforts. Since then, there have been important developments in infant and young child feeding recommendations and scientific knowledge about what constitutes optimal breastfeeding and complementary feeding practices, which have led to the need for revision and expansion of the set of indicators initially recommended. In 2001, for example, the WHO recommended exclusive breastfeeding for 6 months (WHO, 2001), which was a change from the previous recommendation to introduce complementary foods at 4–6 months.

However, indicators that could be used in population-based surveys to measure infant and young child feeding practices had focused mostly on breastfeeding practices. Only one indicator of complementary feeding was included to provide information about whether complementary foods were

consumed, but not about the quantity or quality of those foods (WHO, 2003). The lack of evidence and consensus on simple indicators of appropriate feeding practices in children 6–23 months of age had hampered progress in measuring and improving feeding practices, thereby constraining improvements in infant and young child nutritional outcomes.

In response to concerns about the lack of adequate indicators of complementary feeding, the WHO in 2012 began a process to review and develop indicators of complementary feeding practices. In 2008, the World Health Organization (WHO) published a set of population-level IYCF indicators in response to the need for simple, practical indicators of appropriate feeding practices in children aged 6–23 months that could be developed from large-scale survey data to describe trends over time and allow for national and sub-national comparisons not only of breastfeeding practices but also complementary feeding practices (WHO, 2008; WHO, 2002). These indicators include breastfeeding initiation, exclusive breastfeeding, continued breastfeeding, introduction of complementary foods, minimum dietary diversity, minimum meal frequency, minimum acceptable diet, and consumption of iron-rich foods among other optional indicators. Studies have revealed that improving IYCF practices based on these recommendations when children are well and sick is important to ameliorate under-nutrition and its consequences (Demilew et al., 2017; UNICEF, 2012; WHO, 2010).

Child Undernutriton Levels and Patterns in Ghana

It is also estimated that more than one-third of under-five deaths are attributable to undernutrition (Liu et al, 2012; Black et al, 2008). According to the UNICEF, WHO and World Bank (2012), more than 90% of the world's stunted children live in Africa and Asia. In Ghana, Malnutrition including under nutrition in children of poor families, micro-nutrient deficiency in children and pregnant women and over-nutrition in adults is known to be an underlying factor in high levels of morbidity and mortality (Ghana health sector gender policy, 2009). The nutritional status of Ghana is captured as 17 percent underweight, 22.4 percent stunting prevalence and 5.4 percent wasting prevalence. Micro-nutrient deficiency is high in Ghana.

Some countries in Africa, including Ghana, have made marginal, but steady gains in reducing malnutrition among children less than five years (ICF Macro, 2010). However, according to the last Multiple Indicator Cluster Survey (MICS4), 13 percent of children in Ghana are moderately or severely underweight, 23 percent are stunted (too short for their age.), and 6 percent are wasting (too thin for their height.) (Frempong & Annim, 2017; Ghana Statistical Service (GSS), 2011). Child stunting and underweight have on the decrease since 2003, although the proportion of children who are stunted in Ghana is still higher than the global average of 25 percent (UNICEF, 2013). On the other hand, child wasting and overweight increased between 2003 and 2008. Both indicators increased by 1 percent between 2003 and 2008. Similarly, the GDHS estimate of child wasting is higher than the global estimate of five (5) percent (UNICEF,

2013). Whilst these figures are encouraging when they are benchmarked against other African countries (UNICEF, WHO & World Bank, 2016), they are still above the World Health Organization's (WHO) classification of low prevalence (Frempong & Annim, 2017).

IYCF Policy

The Innocenti Declaration, endorsed by 139 governments at the 1990 World Summit for Children, recommends that all governments develop national breastfeeding policies (Ruel, Brown & Caulfield, 2003). The Global Strategy on IYCF which was developed by WHO in collaboration with UNICEF, was unanimously endorsed by the 55th World Health Assembly in May 2002, and by the Executive Board of UNICEF in September 2002. The Global Strategy specifies key topics that should be covered by national policies, for which some are included in the criteria below. In addition, national authorities are urged to integrate their IYCF policies into other relevant policies, whenever appropriate (WHO, 2003).

National IYCF policies and targets is focused on the key actions and targets identified by the Innocenti Declaration which governments have been encouraged to achieve, as well as additional targets identified in the Global Strategy for IYCF. This policy provides a mechanism for assisting countries in assessing their progress in meeting these key targets (WHO, 2003).

Baby-friendly Hospital Initiative (BFHI) has encouraged all hospitals and facilities providing maternity care to follow the ten steps. It is recommended that hospitals and maternity facilities needing (to purchase) breast-milk substitutes

should do so at full price through normal procurement channels, accepting no free or low-cost supplies. UNICEF's periodic progress reports on BFHI lists the total number of hospitals/maternity facilities in each country and the total number designated "baby-friendly". Some countries have also encouraged "baby-friendly" care in health centres, other similar facilities, and, in a few cases, during home deliveries. The assessment in this part focuses only on the percentage of hospitals and maternity facilities designated "baby-friendly"

The Global Strategy for IYCF also calls for adopting and monitoring the application of a policy of maternity entitlements, consistent with the ILO Maternity Protection Convention No.183 (29) and recommendations. ILO Convention 183 specifies that women should receive:

- at least 14 weeks of paid maternity leave
- one or more paid breastfeeding breaks daily or a daily reduction of hours of work to breastfeed
- job protection and non-discrimination for breastfeeding workers.

The ILO Recommendation 191 specifies that:

- women should receive 16 weeks of paid maternity leave;
- parental leave should be given;
- breastfeeding facilities should be available in the workplace.

In Ghana, in order to promote optimal nutrition during this period, promote healthy growth, and foster better development particularly in the first two years of children's life, the Global IYCF Strategy has been adapted and implemented with the intention to protect, promote, and support appropriate

IYCF. The comprehensive strategy consists of actions to raise awareness through counselling and to provide support for adequate complementary feeding during 6-23 months and continued breastfeeding up to two years (GDHS, 2014).

In developing countries, one of the current challenges to child nutrition is the considerable global and national efforts being devoted to breastfeeding promotion to the neglect of complementary feeding practices (Agbozo, Colecraft, & Ellahi, 2016; Dewey & Adu-Afarwuah, 2008; Lartey, 2008). Sub-Saharan Africa face related challenges in making adjustments to meeting and implementing the WHO guidelines due to human resource capacity, limiting educational strategies targeting IYCF and policies (Ladner, Besson, Rodrigues, Saba & Audureau, 2015; Amankwa & Asiedu, 2014).

Women Empowerment and IYCF Practices

For women to understand, try, and adopt optimal IYCF practices, they must be able to make, or contribute to, household decisions, mainly for the food they buy, how they prepare it, and when and how they feed it to their children (WHO, 2013). Not only is women's empowerment crucial for women's human rights, but a growing evidence base suggests that empowering women improves nutrition outcomes for both mothers and their children (USAID, 2012; Smith & Haddad, 2000).

One review estimated that improvements in women's status and education account for more than half of the global reductions in child underweight from 1970–1995 (Smith & Haddad, 2000). In sub-Saharan Africa, it was noticed that, increasing female secondary education contributed to almost one third of

reductions in child stunting from 1970–2010 (Smith & Haddad, 2015). Clearly, women's empowerment is an important factor in improving nutrition outcomes for women and children. As such, reviewing empirical literature on socio-demographic and various dimensions (economic, socio-familial and legal) of women empowerment that influence IYCF practices (minimum dietary diversity, minimum meal frequency and minimum acceptable diet) is vital.

Socio-Demographic Factors and IYCF Practices

Socio-demographic factors in this study are measured with mother's age and education, residence, household wealth and age of child. These variables were chosen based on previous research, which found significant associations between socio-demographic factors and IYCF practices (Thapa & Niehof, 2013; Woldemicael, 2010; Jejeebhoy, 2000).

Mother's age and IYCF practices

In previous studies, age of mothers were conceptualised into younger mothers (15-24) and older mothers (25-49 years). The relationship between mother's age and IYCF practices has been known to differ from place to place. Ogunlesi, (2010) posited that maternal age is not a significant determinant of child feeding. It was found that, children of older aged mothers according to Wondu and Yang (2017) were more likely to meet minimum dietary diversity. Mothers aged 25–49 years have lower risks of not meeting the minimum dietary diversity for their children compared to early aged once.

On the other hand, younger mothers were risk factors for not meeting minimum dietary diversity and minimum meal frequency. This may be explained by the fact that young mothers lack experience on the quality and quantity of food needed by children transitioning to family foods which could be a factor (Wondu Garoma et al., 2017).

It is ardent that health workers should understand how maternal age influence practices in Ghana in order to plan better promotion intervention from this current study.

Mother's education and IYCF practices

Educational attainment enhances the position of women and helps mothers establish skills, knowledge and resources that they can leverage to bestow instrumental and socioeconomic advantages on their children (Augustine, Cavanagh & Crosnoe, 2009).

Demilew, Tafere and Abitew, (2017) in their study on IYCF practice among mothers with 0–24 months old children in slum areas of Bahir Dar City in Ethiopia found that mothers who attend above primary education were more likely to have appropriate complementary feeding practice than their counterparts. This finding is similar with previous studies, which looked at feeding patterns and stunting during early childhood (Tessema, Belachew & Ersino, 2013). Similarly, studies in Pakistan (Hasnain, Majrooh, & Anjum, 2013) and Nepal (Chapagain, 2013) had familiar results, which showed that mothers who have attained above primary education had greater likelihood of practicing IYCF. Study report from across Asia also proved lack of maternal education as determinants of

inappropriate complementary feeding practices (Senarath & Dibley, 2012). Many other studies (Issaka, Agho, Page, Burns, Stevens & Dibley, 2015; Issaka, Agho, Burns, Page, & Dibley, 2015) indicated that maternal illiteracy could be associated with inappropriate complementary feeding practices.

In Africa, a study in Uganda showed that educated mothers were more likely to have appropriate complementary feeding practices regarding minimum meal frequency, dietary diversity, minimum acceptable diet and iron-rich food consumption (Ickes et al., 2015).

This may be due to the fact that educated mothers have a better understanding of nutrition education than less educated mothers or mothers without formal education. Additionally, educated mothers might read books, leaflets and magazines, and might have a better chance of exposure to nutrition education about IYCF through mass media than their counter parts (Demilew et al., 2017). The current study is in relation to the earlier studies and will demonstrate particularly the association between mother's education and IYCF practices in Ghana.

Residence and IYCF practices

According to the MCHP research, residence is simply defined as the location (home or dwelling) that a person is living in at a particular point in time. There have been variations in results concerning residence with regards to indicators for IYCF practices (Wondu Garoma, & Yang, 2017). A cross sectional study in Somali Region of Eastern Ethiopia found that residence of caregivers had poor practice towards child feeding (Abdi Guled, Mamat, Bakar, Azdie, Assefa &

Balachew, 2016). Similarly, differences were observed with regards to residence in previous comparison studies in West Africa (Issaka, Agho, Page, Burns, Stevens, & Dibley, 2015; Victor, Baines, Agho & Dibley, 2014). The association between residence and the failure to meet minimum dietary diversity requirement among children could be due to poor cultural practices, which differs by setting.

On the contrary, Malhotra (2013) noted that mothers in rural areas are more likely to offer food from four or more food groups but are less likely to introduce complementary food on time. Although these studies give us an overview of the situation, the association has not been made clear. The situation changes with respect to background or country.

Household wealth and IYCF practices

It is often believed that income and wealth are almost interchangeable as measures of household wellbeing. That is to say, many believe that households with high income almost always (or, indeed, necessarily) have high wealth, and low-income households are low wealth ones (Wolff & Zacharias, 2009).

Children living in the poorest households were more likely to have untimely introduction to complementary foods according to studies in India and Pakistan (Kabir, Khanam, Agho, Mihrshahi, Dibley & Roy, 2007). Similar results were reported using pooled data from Kenya, Tanzania and Uganda (Gewa & Leslie, 2015). Higher household wealth generally means having access to more diverse food and having more resources to be allocated to childcare and nutrition (Rakotomanana, Gates, Hildebrand & Stoecker, 2017).

Other studies have found that as the wealth index is raised, the infant feeding practice decreases. It has also been evidenced that, those families with better wealth indices have negative attitude toward optimal feeding practice (negative association) (Abdi Guled et al., 2016; Bayissa et al., 2015).

Contrary to the above, wealth has been found not to be a significant determinant of adequate feeding practices for infants in the age group 6–8 months. On the other hand, wealth was significantly important in determining how many times the child is fed in a day and whether the child is offered food from four or more food groups for children (Malhotra, 2013).

Although wealth seems to be significant with IYCF practices, the situations differ within the three IYCF practices. The Ghanaian situation might be different from other IYCF practices for which studies have been done. This paves way for the current study to highlight the association between wealth and IYCF practices in Ghana.

Age of Child and IYCF Practices

Ages of children are of particular interest to researchers since the age category informs what recommendations are to be met. Various studies have focused on the association between child's age and IYCF practices.

Children in the age of 9-11 months or 12-23 months have been found to have lowered risks of not meeting requirements for minimum dietary diversity. Studies also posit early child age bracket as risk group for inadequate minimum meal frequency (Wondu Garoma, & Yang, 2017).

Other study results have been consistent with these outcomes (Victor et al., 2014; Patel, Pusdekar, Badhoniya, Borkar, Agho, et al., 2012; Senarath, Godakandage, Jayawickrama, Siriwardena & Dibley, 2012). These findings have reported that young children were significantly associated with inadequate dietary diversity.

Other studies also found that early child age bracket were risk factors to not meeting the minimum meal frequency. This contradicts with findings from Heidkamp, Ayoya, Teta, Stoltzfus, and Marhone, (2015) where children 6-8 months of age were much more likely to achieve minimum meal frequency than older children. This current study will provide the association between age of child and IYCF practices in Ghana.

Economic Empowerment and IYCF Practices

Economic empowerment is considered to have a positive association with IYCF practice. This study used maternal access to financial resources, work status and large household purchases as measures of economic empowerment.

Maternal access to financial resources and IYCF practices

In a study on maternal literacy, facility birth, and education and their association with better IYCF practices and nutritional status among Ugandan children, it was found that increased maternal access to financial resources has a positive association with dietary diversity and minimum acceptable diet recommendations (Ickes et al., 2015). In related studies, access to and control over income by women has been shown to have significant positive effect on

child nutrition (Ziaei, 2016; Richards, Theobald, George, Kim, Rudert, Jehan & Tolhurst, 2013; Schmeer, 2005).

However, although women tend to spend a large percentage of financial resources on food, health, and care for their dependents, this may ultimately have a limited effect on child nutritional outcome because women earn relatively little and have limited decision-making power regarding the use of household financial resources (Carlson, Kordas & Murray-Kolb, 2015). It is emphasized that the below achievement of feeding practices may be due to lack of resources to purchase necessary foods (Richards, 2011). This current study is similar to the studies above but will look at control over resources on each of the IYCF practices since other studies looked at the association with nutrition outcomes and food security issues.

Work status and IYCF practices

Research has shown that infants of working mothers have higher odds of inadequate dietary diversity (Rakotomanana, Gates, Hildebrand & Stoecker, 2017). According to Malhotra (2013), analyses of data from the latest National Family Health Survey (2005–2006) and the performance of multivariate logistic regression established that working mothers were more likely to follow good feeding practices compared with mothers without formal employment.

On the other hand, evidence suggests that women work more than 16 hours a day in rural and semi-urban areas due to their household chores. It is believed that such burdens provide little space for them to spend time with their young children and practice recommended infant feeding (Gautam et al., 2016).

Additionally, evidence suggests that mothers who worked outside the home were less likely to offer their children food from four or more food groups (Malhotra, 2013).

Large household purchases

Evidence shows that, mother's power to effect purchasing decisions and resources allocated to food or childcare has been identified as an important factor for child nutritional status. In a study by Mainuddin et al. (2015), it was found that women empowered in deciding major household purchases were significant with women's mobility in visiting hospital which may influence IYCF practices. A study in Bangladesh also found that women's participation in household decision-making and ability to purchase food, have positive impact on the availability of diverse diet and intake among women and children (Bhagowalia, Menon, Quisumbing & Soundararajan, 2010). A recent study on women's participation in household decision-making and higher dietary diversity in Ghana confirms that women participation in decision-making regarding household purchases was significantly associated with higher dietary diversity (Amugsi, Lartey, Kimani-Murage & Mberu, 2016). Association of the minimum meal frequency and minimum acceptable diet with household purchases does not come out clearly. This study will examine which of the other IYCF practices is (in) significant with large household purchases.

Socio-Familial Empowerment and IYCF Practices

Socio-familial dimension of empowerment often refers to the women's ability to make decisions, which would bring significant gains for themselves and

their families (Malhotra, Shuler & Boender, 2002). To measure socio-familial empowerment of women, the study looked at decision making and attitude towards violence.

Decision-making and IYCF practices

Research suggests that decision-making impacts the nutritional status of children (Rahman, Saima & Goni, 2015; Carlson, Kordas & Murray-Kolb, 2015; Desai & Johnson, 2005; Jones, Schultink, & Babille, 2006). Analogous to the above studies, a study in sub-Saharan Africa found that, increasing women's decision-making power has a significant, positive effect on women and children's nutritional status (Smith et al., 2003). A quantitative study by Aubel, (2012), and Dakishoni, Shumba, Msachi and Chirwa, (2008) showed that caregiver's decisions had a positive association to child feeding practice indicators and was significant even when controlled for other household variables like household structure, income generating activities, social support, etc. Shroff, (2007) study found a positive relationship between decision-making and women's health; it has been evidenced that this may not extend to the health of their children. Simply, mothers with low decision-making autonomy are less likely to follow the recommended infant feeding practices. Also, it is not clear for which of the IYCF practices these studies found significance. It is for this reason that this study will look at the decision-making variable and its association with each of the IYCF practices.

Attitude to Violence and IYCF practices

Results show that, when a mother experiences domestic violence, it is likely to negatively affect appropriate feeding behaviours (Ahmed et al., 2012). Related literature identified that domestic violence has an impact on infant and neonatal morbidity and mortality (Shah & Shah, 2010), and also increases the risk of malnutrition in mothers and children (Sethuraman, Lansdown & Sullivan, 2006). At the same time, it is possible that experience of domestic violence is representing some other unmeasured characteristic of mothers that is also correlated with infant feeding behaviours.

Further, studies demonstrate that experience of domestic violence influences mother's ability to breastfeed, and therefore it is a significant predictor of early infant feeding (Kendall-Tackett, 2007; Klingelhafer, 2007). These results suggest that, improving maternal autonomy will have a positive impact on infant care and growth outcomes.

Legal Empowerment and IYCF Practices

Legal empowerment's benefits to women are crucially important in and of themselves. It affirms women's inheritance, citizenship, labor, and other rights. This generates positive ripple effects for children's well-being (Moser, 2012). Captured in this study is ownership of land and house as a measure of legal empowerment.

Land and House ownership and IYCF practices

Women's property right is seen as a tool to promote welfare and well-being of the women themselves and their children (Na et al., 2015). Studies also

posit that income derived from land ownership is not used for buying foods for infants, or that crops cultivated from the land are sold rather than consumed (Hanselman, Ambikapathi, Mduma, Svensen, Caulfield & Patil, 2018). A study in Tanzania showed a statistically significant relationship between land ownership and the introduction to grain (Hanselman, Ambikapathi, Mduma, Svensen, Caulfield & Patil, 2018)

House ownership on the other hand, was identified as a determinant of IYCF practices (Allendorf, 2007). Previous evidence has suggested a connection between women's legal empowerment and better child nutrition (Allendorf, 2007). Furthermore, legal empowerment, as captured by women's legitimate ownership over land and houses has been noticed to be closely associated with women's decision-making power in the household (Schuler, Islam & Rottach, 2010; Allendorf, 2007) as well as protection against domestic violence (Grabe, 2010; Grown, Gupta & Pande, 2005).

In a study conducted in Benin and Niger, it is not clear why women's entitlement to land and houses decreased their ability to feed children appropriately compared with similar women with no land or home ownership. This may be because asset inheritance rules can be complicated and also varies across settings (Kabeer, 1999).

A critical look at the studies above shows that there is no description for which IYCF practices the variables showed significance and for which ones did not show significance. Some studies only gave aggregated findings showing

whether or not there was an association between legal empowerment and IYCF practices.

Conceptual Framework for the Study

A conceptual framework linking economic, socio-familial and legal women's empowerment with IYCF practices has been adopted as the framework for this study. This framework exhibits women empowerment in three sections and links them to the IYCF practices. These sections include the economic empowerment, socio-familial empowerment and legal empowerment. The framework was chosen for its direct and indirect relationship between its factors and IYCF practices (Figure 3).

With reference to the framework, the economic empowerment variables included control over financial resources, decision on large household purchases and work status. Socio-familial empowerment included, decision on family visits, decision on own health, and attitude towards violence. Legal empowerment also entailed the ownership over house or land (Figure 3).

However, the association is conditioned on other maternal, household and community factors, such as maternal time constraints and social beliefs and norms about feeding practices (Stewart, Iannotti, Dewey, Michaelsen, & Onyango, 2013). For example, empowered women may enjoy more freedom to participate in the job market and to move around in their leisure time, but this may lead to mothers having limited time available for child care and feeding (Setegn, Belachew, Gerbaba, Deribe, Deribew & Biadgilign, 2012; Batal, Boulghourjian & Akik, 2010; Sethuraman, Lansdown & Sullivan, 2006) (Figure 3).

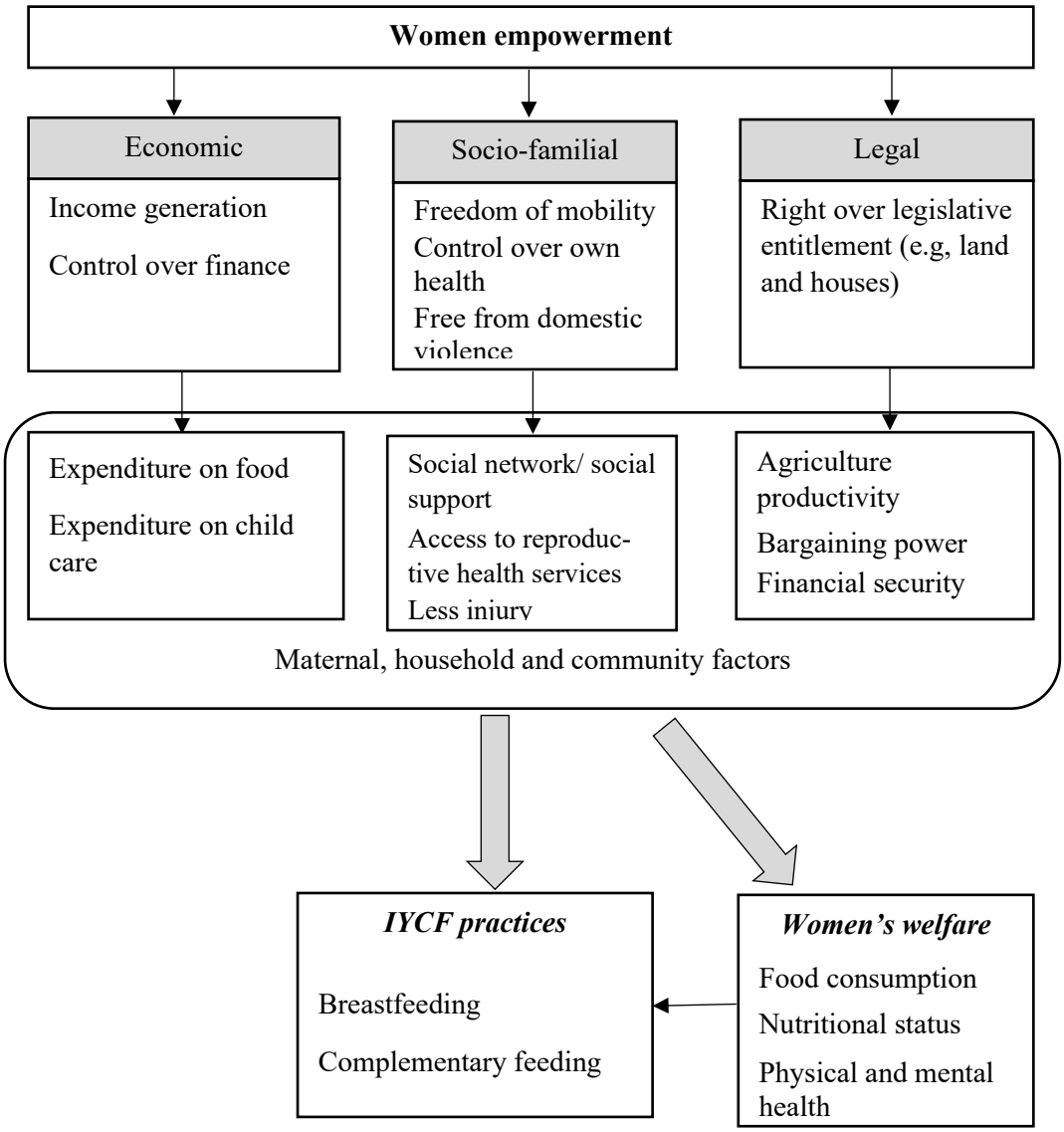

Figure 3: Conceptual framework linking economic, socio-familial and legal women's empowerment with IYCF practices

Source: Na et al., 2015

The dependent variable for the study was the IYCF practices. The expectation is that the economic, socio-familial and legal empowerment would have an influence on the IYCF practices for both breastfeeding and complementary feeding.

The framework validates the conceptualisation of empowerment detailed earlier in this study. It suggests that women are empowered when they are able to take control over key assets. Also, the element of freedom as relevant to empowerment is captured in the framework. Another aspect of the framework is legal empowerment, which shares more light on a move towards equality. As emphasised by Alkire (2013), ownership and expansion of assets are relevant for measuring empowerment. This framework, nonetheless, affirms empowerment as a process; comprising economic, socio-familial and legal empowerment. Nonetheless, the framework confirms the empowerment theory where personal, interpersonal and environmental resources are needed to motivate individuals to achieve results.

Chapter Summary

This chapter reviewed related literature to the subject of study. The literature reviewed mainly focused on the empowerment and IYCF practices. The study reviewed the theory of empowerment, Feminist social work theory, Kanter's structural empowerment theory and the theory of change for gender equality and empowerment of women and girls. The conceptual framework, on which this study is premised, was also discussed in this chapter. The framework, which was adopted from Na (2015), explains that economic, socio-familial and legal empowerment of women including demographic factors that are linked with the achievement of IYCF practices.

CHAPTER THREE

RESEARCH METHODS

Introduction

This section describes the methods and analytical techniques applied to generate the hypothesized results. It presents the source of data, sampling procedure and sample selection, data collection procedures, data processing and analysis, data limitations and ethical issues.

Source of Data and Sampling Procedure

The study used data from the 2014 Ghana Demographic and Health Survey (GDHS). The GDHS is a nationwide survey which covers all the regions and is designed and conducted every five years. The survey is based on cross-sectional design. Data is collected on fertility, antenatal care, delivery care and postnatal care, contraceptive use, child health, and family planning. The GDHS generally focuses on child and maternal health, and is designed to provide adequate data to monitor the population and health situation in Ghana. That notwithstanding, data on men are collected at each round to provide a better context to understand women and children's health.

The survey is carried out by the Ghana Statistical Service in collaboration with ICF Macro International, with the latter largely providing technical support for the survey. The GDHS dataset uses sampling weights to regulate for effects of under- sampling or over sampling and survey biases that have the possibility to affect the generalizability of the results. The sampling weights are alteration factors used to account for differences in probability of selections and interviews

between cases as a result of survey design or chance. The 2014 GDHS interviewed 9,396 women aged 15-49 from 12,831 households, covering 427 clusters throughout Ghana (GSS, GHS & ICF, 2014).

The sampling frame used for the 2014 GDHS is an updated frame from the 2010 Ghana Population and Housing Census provided by the Ghana Statistical Service (GSS 2013b). The sampling frame excluded nomadic and institutional populations such as persons in hotels, barracks, and prisons.

The 2014 GDHS followed a two-stage sample design and was intended to allow estimates of key indicators at the national level as well as for urban and rural areas and each of Ghana's 10 administrative regions. The first stage involved selecting sample points (clusters) consisting of enumeration areas (EAs) delineated for the 2010 PHC. A total of 427 clusters were selected, 216 in urban areas and 211 in rural areas.

The second stage involved the systematic sampling of households. A household listing operation was undertaken in all the selected EAs in January-March 2014, and households to be included in the survey were randomly selected from the list. About 30 households were selected from each cluster to constitute the total sample size of 12,831 households.

Study Population and Sample Selection

The women's questionnaire was used to collect data for the target population from sections on; respondents' demographic background, child nutrition and women empowerment (GSS, GSHS, and ICF International, 2015).

Dyads of mothers and children aged 6-23 months constituted the population for analysis. This study employed this group because they form the basis of the WHO recommendation in calculating the 3 core IYCF indicators. The study sample (1640) was selected out of all (1740) children 6-23 months old. The sample selection is indicated in Figure 4;

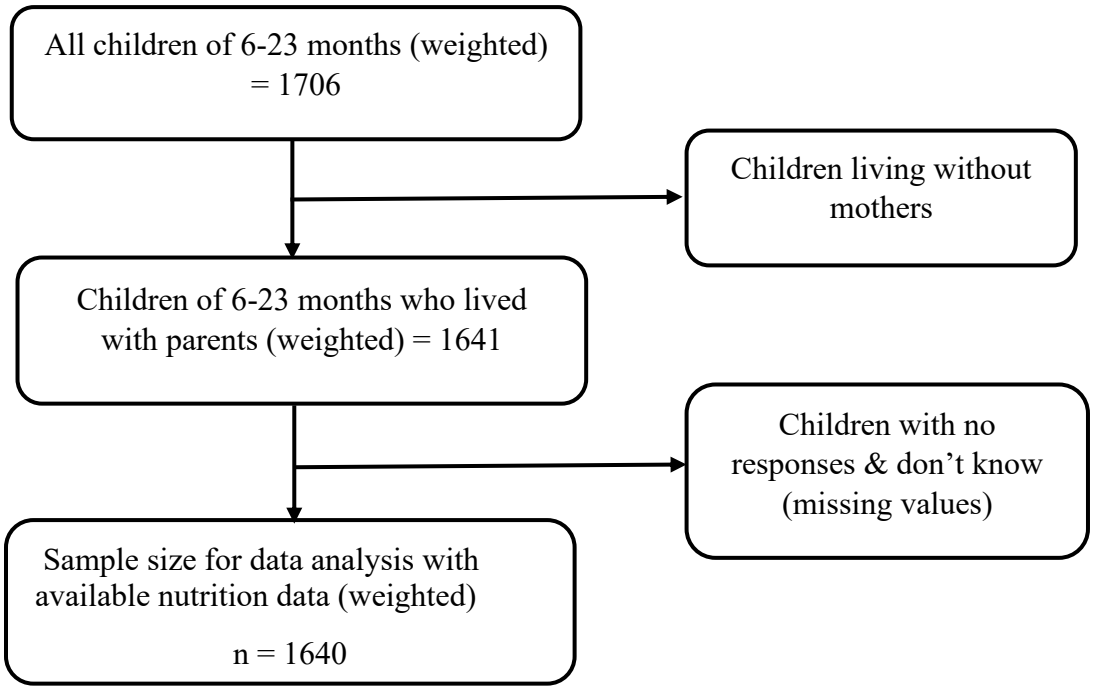

Figure 4: Sample selection criteria

Source: Author's construct

Acquisition of Data

The data for the study was acquired online from the Measure DHS. A registration form was filled to register with Measure DHS. A brief proposal of the study indicating what the data set was going to be used for was sent to Measure DHS. Then, an approval was given to download the dataset. Data files available were in SAS, SPSS, STATA and CIPRO formats and all STATA files were chosen and downloaded.

Description and Definition of Variables

The study used IYCF practices as the dependent variable. Three core IYCF indicators for appropriate complementary feeding were created in accordance to the WHO guidelines: minimum dietary diversity, minimum meal frequency and minimum acceptable diet (Table 1) (World Health Organization, 2010). Minimum dietary diversity was defined as children 6–23 months of age who received foods from at least four out of seven food groups during the past day. The seven food groups used to calculate the summed dietary diversity score were: grains, roots and tubers, legumes and nuts, flesh foods (i.e. meat, fish, poultry and organ meats), eggs, vitamin A-rich fruit and vegetables, other fruits and vegetables, and dairy products. If a child consumed at least one food item from a food group, the group was assigned a value of one for that child. The group scores are then summed to obtain the dietary diversity score, which ranges from zero to seven, where zero represents non-consumption of any of the food items and seven represents the highest level of diet diversity. The IYCF module in the GDHS asked the respondent to report whether or not the child received each

food or beverage using a pre-set list during the previous day. Questions included gave child tinned, powdered or fresh milk, baby formula, fortified baby food, bread, noodles, other made from grains, potatoes, cassava, or other tubers, eggs, meat, pumpkins, carrot, squash, dark green vegetables, mangoes, papayas, other vitamin A fruits, other fruits, liver, heart, other organs, fish or shellfish, beans, peas, lentils, nuts, yogurt and solid, semi-solid foods. These questions were found in the women's questionnaire of the GDHS. Positive responses were tallied based on food groups to create the dietary diversity score.

Minimum meal frequency was defined as children 6–23 months of age who received solid, semi-solid or soft foods a minimum number of times in the previous day. The minimum required frequency varied by child age and breast-feeding status (Table 1). In the DHS, one question asked the respondent to state the number of times the child received solid, semi-solid or soft food in the past day. Three questions assessed the feeding frequency of infant formula, milk and yoghurt. These frequencies were used to calculate the number of milk feeds which were all found in the women's questionnaire of the GDHS.

The minimum acceptable diet, a combined indicator of the prior two, was defined differently for breast-fed and non-breast-fed children and for different age groups. The detailed criteria can be seen in Table 1. The three indicators were analysed as continuous variables.

Table 1: Definition of IYCF indicators by WHO guideline

Indicators	Age group	
	6-8 months	9-23 months
Minimum dietary diversity		
	Food group score ≥ 4	
Minimum meal frequency		
Breastfed	No. of solid, semi-solid or soft food ≥ 2	No. of solid, semi-solid or soft food ≥ 3
Non-breastfed	Total no. of solid, semi-solid or soft food AND milk feeds ≥ 4	
Minimum acceptable diet		
Breastfed	Food group score ≥ 4 AND No. of solid, semi-solid or soft food ≥ 2	Group score ≥ 4 AND No. of solid, semi-solid or soft food ≥ 3
Non-breastfed	Food group score ≥ 4 AND Milk feeds score ≥ 2 AND Total no. of solid, semi-solid or soft food AND milk feeds ≥ 4	

Source: Na et al., (2015)

The independent variables for the study were; age of child, sex of child, age of mother, mother's educational attainment, residence, household wealth status, number of children less than five years, control over women's income, decision on large household purchases, mother's occupation, decision on family visits, decision on own health, attitude to violence, ownership of house and ownership of land.

Three dimensions of women's empowerment: (i) economic empowerment (control over women's income, decision making on large household purchases, work) (ii) socio-familial empowerment (decision making regarding family visits, women's own health, and attitude towards domestic violence under five scenarios) and (iii) legal empowerment (women's judicial and legislative entitlements over land and over house) comprised the study. Composite index for each of the dimensions of empowerment were developed.

Age of child was recoded into 6-8 months, 9-11 months, 12-17 months and 18-23 months in order to allow calculation of the IYCF indices. Sex of the child was categorical. The number of children less than five years and mothers' age were captured as a continuous variable in the multivariate analysis. Control over women's income, large household purchases decision on family visits and own health was recoded as respondent alone, respondent and husband /partner, and husband /partner alone. Mother's occupation was recoded as "Not working", "Agricultural/labour" and "White collar". Attitude towards violence comprised a blend of questions on violence combined and the response variable was recoded as "Don't know", "No" and "Yes".

Data Analysis

The data processing was accomplished using Stata version 13.0 software. Some variables were recoded and renamed to suit the work. The results were then weighted using the sample weight factor (v005) of the GDHS dataset due to the multistage stratified cluster sampling design of the DHS. Multiple linear regression analysis was conducted.

According to Schneider, Hommel and Blettner (2010), linear regression is used to study the linear relationship between a dependent variable and one or more independent variables. The dependent variable must be continuous, while the independent variables may be continuous, binary, or categorical. The linear regression was applied to determine the effect of each independent variable on the dependent variable. The assumption for the linear regression was that the outcome variable should be continuous. The dependent variable, IYCF practices, were captured as a continuous variable, which helped to determine the association between the dependent and the independent variables of the study. It also allowed for the explanation of the beta coefficients of the associations between the dependent and independent variations.

The explanatory variables used in the multiple linear regression were; age of child, sex of child, age of mother, mother's educational attainment, residence, household wealth status, number of children less than five years. The economic empowerment variable included control over women's income, decision on large household purchases and work status. Socio-familial empowerment included; decision on family visits, decision on own health, and attitude towards violence,

which comprised five questions on violence. Legal empowerment entails the ownership over house or land.

Four models in total were created to demonstrate the associations between the various dimensions of women empowerment as well as socio-demographic factors and IYCF practices. Model 1 constituted the economic empowerment variables; control over women's income, decision on large household purchases and maternal occupation. In Model 2, socio-familial variables; decision on family visits, decision on own health and attitude to violence were added to model 1. Model 3 now included the legal empowerment variables of ownership of house and land to the Model 2. The last model now included the demographic characteristics comprising; the age of child, sex of child, age of mother, mother's educational attainment, residence, household wealth status and number of children less than five years. The statistical significance level was set at $P < 0.10$, $P < 0.05$ and $P < 0.01$.

Data Limitation

Limitation comes with self-reporting made by the mother. The GDHS data has a limitation of having only one day of diet recall per child, which may not be representative of the day-to-day dietary intake. Only one data point was used in the study because there have been changes in the definition of IYCF practices indicators by the World Health Organisation (WHO) and so comparison of indicators with previous years will be problematic.

According to Sedgwick (2014), cross sectional studies are usually quick, easy, and cheap to perform. There is no loss to follow-up because participants are

interviewed once. However, it may be prone to non-response bias if participants who consent to take part in the study vary from those who do not, resulting in a sample that is not representative of the population. It is also possible to record exposure to many risk factors and to assess more than one outcome in a cross sectional study. However, because data on each participant are recorded only once it would be difficult to infer the temporal association between a risk factor and an outcome. As a result, only associations, rather than causalities, are reported in this study because of the cross-sectional design of the survey, which does not follow-up respondents. Generalizability of the findings may only be applicable to subjects who share similar characteristics.

Ethical Issues

Since this study used secondary data from GDHS 2014, the IRB-approved procedures for DHS public-use datasets were followed. Data was used for the stipulated purpose for which it was acquired and no attempt was made to identify household or individual respondents. The authorization letter to download and use the DHS dataset for this study is appended.

Chapter Summary

The methods and techniques used for the study were detailed in this chapter. First, the GDHS was used as the source of data, sampling procedure, study population, sample selection and acquisition of data were described. This chapter also comprised the description and definition of variables and the

techniques that were employed to analyse the data and why they were used. Limitations on the use of the data set for the study were also stated in this chapter.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This section presents the findings and discussion of the results. The results of the study are presented in tables. Specifically, this section describes the background characteristics, and provides the regression analysis for further discussion of the findings.

Background Characteristics of Respondents

More than half (52%) of the infant and young children were males. The highest percentage (34%) of the children was within the ages of 12-17 months. Mothers' ages showed low proportions for age groups 15-19 (6%), 40-44 (6%) and 45-49 (2%) years; mothers within the ages of 25-29 years had the highest proportion (28%). Most (55%) of the respondents were residents in rural areas. Few mothers were highly educated (4.40%) and a number of them had no education at all (26.55%). The highest (50.30%) proportion of mothers had secondary education compared to 26 percent who had no education. Household wealth of the respondents showed that the highest proportion of the respondents were in the poorest category, representing close to 23 percent. On the other hand, those in the richest quintile had the lowest proportion (17.44%) (Table 2).

Table 2: Background characteristics of the respondents, categorical variables

Variable	n=1640	Freq.	Percent (%)
Sex of child			
Male		851	51.88
Female		789	48.12
Age of mother			
15-19		95	5.81
20-24		296	18.01
25-29		466	28.40
30-34		372	22.70
35-39		281	17.13
40-44		104	6.37
45-49		26	1.58
Place of residence			
Urban		739	45.09
Rural		901	54.91
Educational level			
No education		435	26.55
Primary		308	18.75
Secondary		825	50.30
Higher		72	4.40

Table 2 Continued

Variable	n=1640	Freq.	Percent (%)
Age of child			
6 to 8		309	18.87
9 to 11		270	16.46
12 to 17		563	34.35
18 to 23		498	30.32
Wealth			
Poorest		365	22.26
Poorer		353	21.55
Middle		303	18.45
Richer		333	20.30
Richest		286	17.44

Source; Computed for GDHS 2014

The mean number of children less than five years in a household was two. Children within the ages of 6-23 months had an average age of 14 months. Also, mean age of the mothers was 30 years (Table 3).

A mean of three diverse meals was found for children who met the minimum dietary diversity. Minimum meal frequency also showed that an average of three meals was consumed within a day. Minimum acceptable diet which is a combination of the minimum dietary diversity and minimum meal frequency, showed a mean of nine.

Table 3: Selected characteristics of the study sample, continuous variables, means and standard deviations (SDs).

Variable	n=1640	Mean	Std. Dev.
Number of children less than 5 years		1.73	0.86
Minimum Dietary Diversity		3.01	2.03
Minimum Meal Frequency		3.48	1.21
Minimum Acceptable Diet		9.13	8.79
Mother's age		29.74	6.86
Age of child in months		14.24	5.17

Source; Computed from GDHS 2014

Association between women empowerment and minimum dietary diversity

Multiple linear regression analysis was conducted to identify the association between women empowerment variables and minimum dietary diversity. Four sequential models were run and the results are presented in Table 4. The R^2 values for the four models were (economic empowerment) 0.012, (economic empowerment and socio-familial empowerment) 0.030, (economic, socio-familial and legal empowerment) 0.054 and (economic, socio-familial, legal empowerment and background characteristics) 0.312. Similarly, the adjusted R^2 also showed values of 0.008, 0.019, 0.037 and 0.288 for models one through four. This explains that after adjusting for the number of predictors in the models, the value increases; improves the model more than expected and therefore the added variables are useful to the model.

In Model 1, decision on large household purchases and mother's occupation were significantly associated with minimum dietary diversity.

Children of mothers who made decisions on large household purchases together with their husbands or partners were negatively associated with attaining minimum dietary diversity than children of mothers who had decisions made by partners (β=-0.317, p<0.10). Also, children of mothers who worked white-collared jobs (officers, professionals, clerks and sales workers) were positively associated with meeting the minimum dietary diversity (β =0.380, p<0.01) than those who were not working (Table 4).

In model 2, decisions on family visits and attitude towards violence were significant. Children of mothers who made decisions jointly with their husbands or partners causes a decrease of 0.487 (β=-0.487, p<0.10) to obtain minimum dietary diversity score than their counterparts who had their husbands or partners decide on family visits. The effect of children attaining minimum dietary diversity varied by mother's attitude towards violence. An increase in the children of women who were in disapproval of violence by one is associated with a 1.587 fitted change in minimum dietary diversity compared to those who did not know (β =1.587, p<0.05) (Table 4).

The third Model had ownership over land to be significant. This showed that, a change of one in children of mothers who owned lands either alone or jointly caused positicve fitted changes in achieving minimum dietary diversity than women who did not own lands (β = 0.876, p<0.01) (β = 0.718, p<0.01) (Table 4).

In Model four, age, education and household wealth were significantly associated with minimum dietary diversity. Age of child and household wealth

had varying significance with minimum dietary diversity. For instance, an increase of one in children aged 18-23 months caused a fitted change of 2.205 to achieve minimum dietary diversity score than those who were 6-8 months of age (β =2.205, $p<0.01$) whiles children of mothers from the richest households was associated with 1.509 fitted change to meeting the minimum dietary diversity requirement compared to those in the poorest households (β =1.509, $p<0.01$). Also, mothers' educational attainments showed that an increase of children of mothers who had attained a higher level of education by one caused 1.883fitted change in attaining minimum dietary diversity as against those who had no education (β =1.883, $p<0.01$). (Table 4)

The results further indicated that economic, socio-familial, legal empowerment and background characteristics, which formed the forth Model, were the best predictors of minimum dietary diversity. The variables, which were significant in Model 4, included; decision on family visits, decision on own health, attitude towards violence and ownership of land (see Table 4).

Table 4: Regression analysis of women empowerment and background characteristics and minimum dietary diversity

Independent variables	Model 1	Model 2	Model 3	Model 4
Economic factors				
Control over women's income				
Respondent alone	0.227	0.349	0.396	0.201
	[-0.448,0.903]	[-0.336,1.033]	[-0.286,1.077]	[-0.393,0.795]
Respondent and husband/partner	0.373	0.494	0.472	0.109
	[-0.331,1.077]	[-0.224,1.213]	[-0.245,1.188]	[-0.515,0.733]
Husband/Partner or other alone	Ref	Ref	Ref	Ref
Decision on large household purchases				
Respondent alone	-0.247	-0.114	-0.147	-0.172
	[-0.660,0.166]	[-0.557,0.329]	[-0.587,0.293]	[-0.559,0.214]
Respondent and husband/partner	-0.317 *	-0.146	-0.167	-0.00140
	[-0.663,0.0279]	[-0.547,0.255]	[-0.565,0.230]	[-0.348,0.345]
Husband/Partner or other alone	Ref	Ref	Ref	Ref
Mothers occupation				
Not working	Ref	Ref	Ref	Ref
White collar	0.380***	0.360**	0.334**	-0.163
	[0.110,0.651]	[0.0835,0.636]	[0.0594,0.609]	[-0.432,0.107]
Agricultural/labour	Ref	Ref	Ref	Ref

Table 4 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
Socio-familial empowerment				
Family visit decision				
Respondent alone		-0.203	-0.128	0.0396
		[-0.733,0.328]	[-0.657,0.401]	[-0.429,0.508]
Respondent and husband/partner		-0.487*	-0.511**	-0.373*
		[-0.986,0.0116]	[-1.007,-0.0151]	[-0.806,0.0599]
Husband/Partner or other alone		Ref	Ref	Ref
Own health				
Respondent alone		-0.303	-0.371*	-0.343*
		[-0.741,0.135]	[-0.806,0.0651]	[-0.724,0.0378]
Respondent and husband/partner		-0.102	-0.132	-0.193
		[-0.522,0.318]	[-0.554,0.289]	[-0.562,0.175]
Husband/Partner or other alone		Ref	Ref	Ref
Attitude towards violence				
Don't know		Ref	Ref	Ref
No		1.987**	1.847*	1.276
		[0.124,3.850]	[-0.00930,3.703]	[-0.362,2.914]
Yes		1.587*	1.471	1.429*
		[-0.291,3.465]	[-0.398,3.340]	[-0.231,3.089]

Table 4 continued

Independent variables	Model 1	Model 2	Model 3	Model 4
Legal Empowerment				
House				
Does not own			Ref	Ref
Alone only			-0.432	-0.172
			[-1.073,0.209]	[-0.740,0.396]
Jointly only			-0.172	0.114
			[-0.571,0.227]	[-0.236,0.465]
Both alone and jointly			0.342	0.179
			[-0.467,1.150]	[-0.523,0.882]
Land				
Does not own			Ref	Ref
Alone only			0.876***	0.583***
			[0.376,1.376]	[0.146,1.019]
Jointly only			0.718***	0.240
			[0.322,1.113]	[-0.113,0.592]
Both alone and jointly			-0.302	-0.255
			[-1.125,0.521]	[-0.972,0.461]
Demographic factors				
Age of child				
6 to 8				Ref
9 to 11				0.914***
				[0.510,1.319]

Table 4 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
12 to 17				1.767***
				[1.431,2.104]
18 to 23				2.205***
				[1.858,2.551]
Sex of child				
Male				Ref
Female				0.105
				[-0.129,0.339]
Mother's age				0.00686
				[-0.0130,0.0267]
Highest Educational level				
No education				Ref
Primary				-0.0944
				[-0.485,0.296]
Secondary				0.194
				[-0.159,0.547]
Higher				1.883***
				[1.271,2.495]
Residence				
Urban				Ref
Rural				0.166
				[-0.162,0.494]

Table 4 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
Household wealth				
Poorest				Ref
Poorer				0.166
				[-0.234,0.566]
Middle				0.230
				[-0.220,0.679]
Richer				1.192***
				[0.698,1.687]
Richest				1.509***
				[0.931,2.088]
Number of children less than 5yrs				-0.00380
				[-0.155,0.147]
_cons	3.014***	1.414	1.437	-0.432
	[2.342,3.685]	[-0.586,3.415]	[-0.560,3.434]	[-2.462,1.598]
R^2	0.012	0.03	0.054	0.312
adj. R^2	0.008	0.019	0.037	0.288

95% confidence intervals in brackets

*p< 0.10, **p< 0.05, ***p< 0.01

Source: Computed from GDHS 2014

Association Between Women Empowerment and Minimum Meal Frequency

The findings showed that women empowerment had significant association with minimum meal frequency. Significant variables included; decision on large household purchases, decision on family visits, attitude towards violence, ownership of house, ownership of land, age of child, mother's educational level and residence. This multiple linear regression was conducted to test the hypothesis that there is no significant association between women empowerment, background characteristics and minimum meal frequency. The R^2 values of the models were 0.006, 0.041, 0.073 and 0.289 respectively for Models 1 through 4. Model four gave the best explanation for minimum meal frequency. (Table 5).

It was noticed that large household purchases was significantly associated with minimum meal frequency. Children of mothers who made decisions with their partners concerning large household purchases were found to increase minimum meal frequency than those who had their partners/others make decisions ($\beta = 0.351$, $p<0.01$). Decisions on family visits also showed that a change of one in children of mothers who made decisions was associated with 0.743 fitted increase in meeting minimum meal frequency ($\beta = 0.743$, $p<0.01$) than those whose decisions were made by partners or other people aside themselves. Children of women who were in disapproval of violence had positive significant association with attaining minimum meal frequency than those who did not know ($\beta = 1.171$, $p<0.10$). A mother's ownership of house and land also showed significant associations with minimum meal frequency. Mothers who owned

houses jointly had their children negatively fitted to attain minimum meal frequency as compared to mothers who did not own houses ($\beta = -0.245$, $p<0.10$). Land ownership showed varying levels of significance. For instance, an increase of children of women who had joint ownership of land by one caused a 0.470 fitted change to attain minimum meal frequency than their counterparts who did not own lands ($\beta =0.470$, $p<0.01$). (Table 5)

Children aged 18-23 months were positively associated ($\beta = 1.387$, $p<0.01$) to meeting the required meal frequency as compared to 6-8 months group. Educational attainment of mothers showed that children who attained minimum meal frequency had strong positive associations ($\beta =0.496$, $p<0.10$) for mothers who had higher educational attainment, compared to mothers with no education. Again, the significance of children to meet minimum meal frequency was negative ($\beta = -0.325$, $p<0.10$) for children of mothers with primary education compared to mothers with no education. Furthermore, it was found that attaining minimum meal frequency among children was negatively associated with children whose mothers resided in rural areas as compared to urban ($\beta =-0.298$, $p<0.10$). It was clear that decisions on large household purchases and family visits, ownership over house and land, age of child, mother's educational attainment and residence were significantly associated with minimum meal frequency in Ghana. (Table 5)

Table 5: Regression analysis of women empowerment and demographics on minimum meal frequency

Independent variables	Model 1	Model 2	Model 3	Model 4
Economic factors				
Control over women's income				
Respondent alone	-0.0528	-0.0953	-0.152	-0.0680
	[-0.618,0.513]	[-0.670,0.479]	[-0.727,0.423]	[-0.595,0.459]
Respondent and husband/partner	-0.0819	-0.0290	-0.119	-0.100
	[-0.671,0.507]	[-0.638,0.580]	[-0.729,0.491]	[-0.668,0.468]
Husband/Partner or other alone	Ref	Ref	Ref	Ref
Decision on large household purchases				
Respondent alone	0.251	0.118	0.0807	-0.186
	[-0.109,0.612]	[-0.268,0.505]	[-0.305,0.466]	[-0.542,0.169]
Respondent and husband/partner	0.118	0.273*	0.275*	0.351***
	[-0.123,0.360]	[-0.00830,0.554]	[-0.00675,0.556]	[0.0851,0.617]
Husband/Partner or other alone	Ref	Ref	Ref	Ref
Mothers occupation				
Not working	Ref	Ref	Ref	Ref
White collar	0.0859	0.128	0.132	0.0543
	[-0.143,0.315]	[-0.111,0.367]	[-0.106,0.371]	[-0.191,0.299]
Agricultural/labour	Ref	Ref	Ref	Ref

Table 5 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
Socio-familial empowerment				
Family visit decision				
Respondent alone		0.514**	0.551**	0.743***
		[0.0792,0.949]	[0.116,0.986]	[0.329,1.157]
Respondent and husband/partner		0.248	0.241	0.304
		[-0.152,0.648]	[-0.159,0.641]	[-0.0638,0.672]
Husband/Partner or other alone		Ref	Ref	Ref
Own health				
Respondent alone		-0.0590	-0.0424	-0.0127
		[-0.418,0.300]	[-0.402,0.318]	[-0.343,0.318]
Respondent and husband/partner		-0.141	-0.160	-0.238
		[-0.505,0.222]	[-0.527,0.207]	[-0.585,0.109]
Husband/Partner or other alone		Ref	Ref	Ref
Attitude towards violence				
Don't know		Ref	Ref	Ref
No		1.169*	0.866	0.243
		[-0.114,2.451]	[-0.422,2.155]	[-0.978,1.464]
Yes		1.458**	1.171*	0.467
		[0.156,2.761]	[-0.135,2.477]	[-0.785,1.719]

Table 5 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
Legal Empowerment				
House				
Does not own			Ref	Ref
Alone only			0.135	0.118
			[-0.385,0.654]	[-0.375,0.611]
Jointly only			-0.345**	-0.245*
			[-0.664,-0.0265]	[-0.535,0.0440]
Both alone and jointly			-0.198	-0.357
			[-0.885,0.489]	[-0.984,0.269]
Land				
Does not own			Ref	Ref
Alone only			-0.129	-0.358*
			[-0.545,0.287]	[-0.738,0.0221]
Jointly only			0.579***	0.470***
			[0.239,0.919]	[0.154,0.785]
Both alone and jointly			0.191	0.263
			[-0.509,0.891]	[-0.380,0.905]
Demographic factors				
Age of child				
6 to 8				Ref
9 to 11				1.179***
				[0.781,1.577]

Table 5 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
12 to 17				0.646***
				[0.361,0.932]
18 to 23				1.387***
				[1.094,1.681]
Sex of child				
Male				Ref
Female				-0.0885
				[-0.302,0.125]
Mother's age				0.000872
				[-0.0179,0.0196]
Highest Educational level				
No education				Ref
Primary				-0.325*
				[-0.707,0.0574]
Secondary				-0.172
				[-0.520,0.176]
Higher				0.496*
				[-0.0170,1.008]
Residence				
Urban				Ref
Rural				-0.298*
				[-0.600,0.00450]

Table 5 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
Household wealth				
Poorest				Ref
Poorer				-0.0412
				[-0.429,0.346]
Middle				-0.163
				[-0.599,0.274]
Richer				-0.0345
				[-0.513,0.444]
Richest				-0.238
				[-0.808,0.332]
Number of children less than 5yrs				-0.0163
				[-0.159,0.127]
_cons	3.407***	1.942***	2.306***	2.465***
	[2.834,3.980]	[0.516,3.369]	[0.866,3.747]	[0.812,4.118]
R-sq	0.006	0.041	0.073	0.289
adj. R^2	-0.004	0.016	0.034	0.231

95% confidence intervals in brackets

$^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

Source: Computed from GDHS 2014

Association Between Women Empowerment and Demographics on Minimum Acceptable Diet

The results show that an association exists between women empowerment and background characteristics on minimum acceptable diet. Specifically, it is observed that control over women's income, decision on large household purchases, decision on family visits, ownership of house and land, age of child and mother's educational level were significantly associated with minimum acceptable diet. The predictive power of the models (R^2 values) were 0.079, 0.117, 0.284 and 0.455 respectively for models I through IV. Model four gave the best explanation for minimum acceptable diet. (Table 6).

It was found that women who had control over income (β = -10.36, $p<0.05$) negatively affected their children to meet the minimum acceptable diet as compared to those who had partners in control of women's income. Children of mothers who made decisions on large household purchases were also negatively affected than others to attain minimum acceptable diet (β = -4.870, $p<0.05$). Children were negatively associated to meeting the minimum acceptable diet if mothers made decisions regarding family visits with partners or husbands (β = -5.610, $p<0.05$) than others deciding on family visits. Ownership over house and land also showed significant results although it varied. For instance, mothers who owned houses jointly with husband/partner reduced the chances of their children to meet minimum acceptable diet in comparison to those who did not own. A mother's ownership of land had an increased association with children meeting

the minimum acceptable diet than those who did not own houses (β = 15.08, $p<0.05$).

Furthermore, age of child and mother's educational attainment showed significance. For all variations in ages of children, it was found that the significance of meeting minimum acceptable diet for children aged nine months and above was higher than for children aged 6-8 months. A mother's higher level of education also had positive association with the child attaining minimum acceptable diet compared to a mother who had no education.

Table 6: Regression analysis of women empowerment and demographics on minimum acceptable diet

Independent variables	Model 1	Model 2	Model 3	Model 4
Economic factors				
Control over women's income				
Respondent alone	-6.463	-6.297	-6.155	-10.36**
	[-15.83,2.902]	[-16.28,3.687]	[-15.42,3.104]	[-19.89,-0.834]
Respondent and husband/partner	-7.275	-6.533	-5.924	-11.65**
	[-16.83,2.279]	[-17.02,3.954]	[-15.66,3.816]	[-21.85,-1.448]
Husband/Partner or other alone	Ref	Ref	Ref	Ref
Decision on large household purchases				
Respondent alone	0.958	0.871	-1.667	-4.870**
	[-3.604,5.521]	[-4.143,5.885]	[-6.389,3.055]	[-9.562,-0.179]
Respondent and husband/partner	-0.601	1.000	0.870	0.166
	[-4.488,3.287]	[-3.562,5.562]	[-3.421,5.162]	[-4.055,4.388]
Husband/Partner or other alone	Ref	Ref	Ref	Ref
Mother's occupation				
Not working	Ref	Ref	Ref	Ref
White collar	4.117***	3.815**	3.065**	0.322
	[1.192,7.041]	[0.817,6.813]	[0.145,5.985]	[-2.909,3.553]
Agricultural/labour	Ref	Ref	Ref	Ref

Table 6 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
Socio-familial empowerment				
Family visit decision				
Respondent alone		-1.085	-1.284	-0.720
		[-7.159,4.989]	[-6.979,4.410]	[-6.495,5.054]
Respondent and husband/partner		-4.740	-5.048*	-5.610**
		[-10.57,1.092]	[-10.55,0.451]	[-11.01,-0.212]
Husband/Partner or other alone		Ref	Ref	Ref
Own health				
Respondent alone		1.281	0.257	2.027
		[-3.145,5.707]	[-3.927,4.441]	[-2.034,6.087]
Respondent and husband/partner		0.570	0.0395	0.573
		[-3.829,4.968]	[-4.197,4.276]	[-3.647,4.793]
Husband/Partner or other alone		Ref	Ref	Ref
Attitude towards violence				
Don't know		Ref	Ref	Ref
No		1.387	0.488	-2.077
		[-2.039,4.813]	[-2.705,3.681]	[-5.512,1.358]
Yes		Ref	Ref	Ref

Table 6 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
Legal Empowerment				
House				
Does not own			Ref	Ref
Alone only			-4.220*	-2.290
			[-9.023,0.583]	[-7.231,2.651]
Jointly only			-6.135***	-4.890**
			[-10.73,-1.545]	[-9.640,-0.140]
Both alone and jointly			-12.69***	-8.201**
			[-19.71,-5.662]	[-15.09,-1.310]
Land				
Does not own			Ref	Ref
Alone only			4.191**	4.078**
			[0.458,7.924]	[0.429,7.727]
Jointly only			5.368***	3.836*
			[1.365,9.371]	[-0.230,7.903]
Both alone and jointly			20.51***	15.08***
			[12.36,28.66]	[7.176,22.99]
Demographic factors				
Age of child				
6 to 8				Ref
9 to 11				5.974*
				[-0.447,12.40]

Table 6 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
12 to 17				8.174***
				[3.140,13.21]
18 to 23				9.252***
				[3.992,14.51]
Sex of child				
Male				Ref
Female				-1.283
				[-3.990,1.424]
Mother's age				0.121
				[-0.0965,0.338]
Highest Educational level				
No education				Ref
Primary				3.387
				[-1.704,8.478]
Secondary				1.433
				[-3.055,5.922]
Higher				7.836***
				[2.159,13.51]
Residence				
Urban				Ref
Rural				1.977
				[-1.686,5.640]

Table 6 Continued

Independent variables	Model 1	Model 2	Model 3	Model 4
Household wealth				
Poorest				Ref
Poorer				-0.980
				[-6.250,4.291]
Middle				1.040
				[-5.038,7.118]
Richer				5.138
				[-1.441,11.72]
Richest				5.839
				[-1.254,12.93]
Number of children less than 5yrs				1.005
				[-0.937,2.947]
_cons	13.80***	14.33***	15.91***	5.662
	[4.409,23.18]	[4.904,23.75]	[7.151,24.67]	[-8.257,19.58]
R-sq	0.079	0.117	0.284	0.455
adj. R^2	0.053	0.061	0.205	0.327

95% confidence intervals in brackets

*p< 0.10, **p< 0.05, ***p< 0.01

Source: Computed from GDHS 2014

Table 7: Association between composite empowerment variables and IYCF

Composite empowerment variables	Minimum Dietary Diversity	Minimum Meal Frequency	Minimum Acceptable Diet
Economic Empowerment	0.128 [-0.0760,0.333]	-0.0348 [-0.204,0.134]	0.805 [-1.256,2.865]
Socio-familial Empowerment	0.116 [-0.0921,0.323]	0.0658 [-0.115,0.246]	0.64 [-1.450,2.730]
Legal Empowerment	0.231*** [0.108,0.355]	0.00155 [-0.104,0.107]	0.868 [-0.398,2.134]
Total Empowerment	-0.353* [-0.745,0.0398]	0.0925 [-0.241,0.426]	1.104 [-2.750,4.957]
_cons	3.298*** [2.649,3.947]	3.262*** [2.755,3.770]	4.100 [-2.192,10.39]
R^2	0.009	0.005	0.026
adj. R^2	0.007	0.003	0.013

95% confidence intervals in brackets
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The results from the composite empowerment variables showed that legal empowerment (β= 0.231, p<0.01) and total empowerment (β= -0.353, p<0.10) indicators were significantly associated with minimum dietary diversity. It could be found that total empowerment, however, was negatively associated with meeting minimum dietary diversity for children. Although total empowerment was not significant for the other IYCF practices, the beta coefficients show a positive relation. (Table 7)

Discussion

This work focused on the pathways through which women empowerment and background characteristics influence IYCF practices, as measured by minimum dietary diversity, minimum meal frequency and minimum acceptable diet among children aged 6-23 months. It has been stated that women empowerment, particularly economic, has positive influence on child nutrition as it increases women's ability to channel resources to child nutrition (Malapit, Kadiyala, Quisumbing, Cunningham & Tyagi, 2015).

Background Characteristics and IYCF Practices

With regards to background characteristics, age of child, educational attainment of mothers, residence and household wealth were significantly associated with IYCF practices. Age of child showed positive significant associations with all the three core IYCF practices. This opposes the view that young children were significantly associated with inadequate dietary diversity (Victor, Baines, Agho & Dibley, 2014; Patel, Pusdekar, Badhoniya, Borkar, Agho, et al., 2012; Senarath, Godakandage, Jayawickrama, Siriwardena & Dibley 2012). Younger child age consistently showed no significance with meeting the criteria of minimum meal frequency, minimum dietary diversity, and minimum acceptable diet. This finding is in line with previous studies in which younger children had higher odds of being fed inadequately in terms of frequency and variety in Bangladesh (Kabir et al.,2012), India (Patel et al., 2012) and Sri Lanka (Senarath et al., 2012).

Wondu et al., (2017) also posit early child age bracket as risk group for inadequate minimum meal frequency. It has been noticed from the study that in the Ghanaian context, children are likely to meet the IYCF practices as they age which could be due to the fact that Ghanaian women practice IYCF better as the child survives.

Additionally, mother's educational level had positive association with minimum dietary diversity, meal frequency and acceptable diet. This validates previous work of Demilew et al., (2017) which espoused that educated mothers might read books, leaflets and magazines, and might have a better chance of exposure to nutrition education about IYCF through mass media than their counterparts.

Urban settlement of respondents decreased the likelihood of meeting minimum meal frequency. Among the possible reasons for the decreased likelihood of children attaining the minimum meal frequency are time restrictions, workload and other effects of modernization on the mother.

With regards to household wealth, the results supported earlier findings (Rakotomanana et al., 2017), which posited that higher household wealth generally means having access to more diverse food and more resources to be allocated to childcare and nutrition. This is also in line with previous studies, which have identified household wealth as a consistent predictor of dietary diversity in young children, but not of meal frequency (Na, Aguayo, Arimond & Stewart, 2017; Joshi et al., 2012; Kabir et al., 2012; Senarath et al., 2012).

Women Empowerment and Minimum Dietary Diversity

The results indicated that decision on family visits had significant but inconsistent associations with all three measures of IYCF practices. It is argued that, as women gain more freedom to visit other families in the community, they may be more likely to engage in some form of social networking with other community members and exchange ideas and cultural beliefs on child-care practices (Na et al., 2015). It was also observed that decisions made together by women and husband/partner on family visits had negative significant outcomes in attainment of minimum dietary diversity and minimum acceptable diet compared to decisions made by others. This shows the greater implication of the husbands' influences on decision-making regarding visits and affirms the feminist social work theory where men have had dominion over women and the women to be dependent on them.

Furthermore, decision on own health and attitude towards violence showed significance with minimum dietary diversity. This may be due to the fact that the indicators under the socio-familial dimension of this study (freedom to visit family, to decide her own health, to be against domestic violence under unjustified situations) may as well predict behaviours that benefit women's own welfare rather than benefiting others in the family, such as children (Basu & Koolwal, 2005).

The significance of attitude towards violence with minimum dietary diversity supports related studies which found that domestic violence has an impact on IYCF practices and increases the risk of malnutrition in children

(Sethuraman et al, 2006; Jejeebhoy, 1998). This finding however, contradicts the findings of Go et al., (2003), which found no significant association between the perceived domestic abuse and IYCF practices. Ziaei (2016) also found a negative association between experience of domestic violence and feeding of young children. It is explained that women's exposure to domestic violence is closely associated with child maltreatment and abuse (Hamby, Finkelhor, Turner & Ormrod, 2010) which can also negatively affect their health and growth (Leeb, Lewis & Zolotor, 2011). Children of women exposed to domestic violence are shown to be at higher risk of hospitalization (Pavey, Gorman, Kuehn, Stokes & Hisle-Gorman, 2014), morbidity from diarrheal diseases and pneumonia (Asling-Monemi, Naved & Persson, 2009), and mortality (Ackerson & Subramanian 2009; Asling-Monemi, Pena, Ellsberg & Persson, 2003) which has consequences on the nutritional intake of children.

In this study, both negative and positive associations were observed when examining legal empowerment. With regards to minimum dietary diversity, land ownership showed positive significant association. Contrarily, a recent study by Hanselman et al. (2018), also found that land ownership was not associated with the minimum dietary diversity, especially the introduction of grains. This difference can be explained by the fact that income derived from land ownership is used for buying foods for infants, or that crops cultivated from the land are consumed rather than sold.

Women Empowerment and Minimum Meal Frequency

It was also noticed in Philippines that maternal contribution to household income and control over her income were significantly related to increased weekly household food expenditure (Schmeer, 2005). These findings complement the findings of the study on the significance of decision-making control on large household purchases with minimum meal frequency and minimum acceptable diet. It is noted that, although a child may be having frequent diet intake, this may not necessarily imply that the child has taken adequate diet even though it may lead to attainment of minimum acceptable diet. This finding is in line with the empowerment theory. Women's action by using the available resources leads to the achievement of IYCF practices.

Minimum meal frequency and minimum acceptable diet indicated a consistent pattern captured in the relationship between legal empowerment and IYCF practices. Ownership of house and ownership of land decreased and increased the ability of meeting IYCF practices respectively for both minimum meal frequency and minimum acceptable diet. In a study in Benin, it was not quite clear why women's entitlement to land and houses decreased their ability to feed children appropriately compared with similar women with no land or home ownership. This may be because asset inheritance rules can be complicated and also varies across settings (Kabeer, 1999). However, in the context of India, Rao argued that granting land rights to women led to an increase of work burden without much improvement in their food security or social status (Rao, 2006). This is corroborated by Kanter's structural empowerment theory, which showed

that resources such as physical capital (e.g. land) may lead to advancement of women and could have a ripple effect on the nutrition of the children.

Women Empowerment and Minimum Acceptable Diet

To meet the minimum acceptable diet, mothers need to be able to feed their children diverse diet and the recommended number of meals. This, however, can be difficult for many mothers to achieve in poor societies and low economic capacity to secure food for their household (Udoh & Amodu, 2016).

The results showed that women's control over income had significant association with attainment of minimum acceptable diet. This is in support of earlier works (Ziaei, 2016; Ickes et al., 2015; Richards et al, 2013), which found association between women's control over income and minimum acceptable diet. This may be as a result of the typical spending nature of women on food and health care of children (Hallman, 2003). Again, a study across Sub-Sahara African countries demonstrated that women who made decisions on large household purchases and who had control over the household income were more likely to have their children attain adequate feeding practices (Na et al., 2015).

Furthermore, house ownership had a significant association with minimum acceptable diet. This is in contrast to Cofie (2013) who found no association between ownership of house and young child nutrition. This can be explained by the fact that strengthening women's formal ownership of assets can increase the availability of collateral to obtain loans (van der Meulen Rodgers & Kassens,

2018), which in turn can provide women the financial means to invest into their children's nutritional needs.

The theory of change for gender equality and empowerment of women and girls substantiates these findings. Empowered women become able to influence relations and decisions as they function within the three dimensions of gender equality, achieving empowerment and securing women's rights. In this case, empowered women make use of their power and availability of resources and rights to allocate resources into caring for their children's nutritional needs. These findings, moreover, validates the framework linking economic, socio-familial and legal women's empowerment with IYCF practices.

Chapter Summary

In this chapter, the results of the study were presented and discussed. Tables were used to present the results in accordance with the objectives of the study. Findings of the study were compared to those of past studies discovering similarities and contradictions. Furthermore, the discussion situated the findings in the theories reviewed as well as the conceptual framework.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter provides an overview of the study findings, conclusions and recommendations.

Summary of the Study

The study analysed the association between women empowerment and IYCF. Specifically, the analyses were based on economic, socio-familial and legal empowerment and their association with IYCF practices and also to determine the socio-demographic factors that influenced IYCF practices.

Hypotheses were tested to examine the associations between women empowerment and the three core IYCF practices (minimum dietary diversity, minimum meal frequency and minimum acceptable diet). A conceptual framework linking women's economic, socio-familial and legal empowerment with IYCF practices was adopted for the study (Na et al., 2015).

The study was driven by the positivist philosophy and therefore applied quantitative methods in addressing the objectives. Data from the 2014 GDHS was utilized. The GDHS adopts a two-stage sample design by first selecting a sample frame based on the Population and Housing Census and secondly, selecting households systematically from the clusters. Target population for the study was dyads of mothers and children aged 6-23 months.

Key Findings of the Study

It was found that, the highest percentage (80%) of the minimum dietary diversity of children comprised bread, noodles and others made from grains. The multiple regressions showed that, children of women who were in disapproval of violence had positive association with attainment of minimum dietary diversity. Also, children of mothers who owned lands either alone or jointly had positive association with achieving minimum dietary diversity than mothers who did not own lands. Children whose mothers worked in white collared jobs also had positive effects with attaining minimum dietary diversity than those who did not work. Family visit decisions by mothers likewise had positive association with children to meet minimum dietary diversity. Age, educational level and household wealth had positive effects to meeting minimum dietary diversity for children.

A mother's ability to decide on large household purchases as well as family visits had positive effects on children meeting the minimum meal frequency. Interestingly, a mother's ownership of house had a negative effect on children to meet minimum meal frequency. On the other hand, land ownership by mothers positively influenced children to meet the minimum meal frequency. Children's ages although had varying figures, showed consistent increase in the significance to meeting minimum meal frequency. A mother who had attained a higher educational level was positively associated with child attaining minimum meal frequency. Mothers who resided in rural areas seldom reported children receiving minimum meal frequency.

Unexpectedly, women's control over income, decisions on large household purchases and decisions on family visits showed negative effects with attainment of minimum acceptable diet. Further, findings showed that children of mothers who worked white-collared jobs had significant association with attaining minimum acceptable diet. Similarly, children's age had positive effect with meeting minimum acceptable diet. Children of mothers who attained higher education also had positive association with attaining minimum acceptable diet.

Conclusions

The overall results showed a positive relationship between socio-demographic variables and IYCF practices. Better socio-demographic conditions promoted the consumption of adequate foods among infants and young children. Furthermore, economic, legal and socio-familial empowerment (formal work, ownership of land, attitude towards violence and decision on family visits) of women encouraged attainment of minimum dietary diversity for children. Minimum meal frequency was largely influenced by economic and socio-familial empowerment of women as decisions on large household purchases and family visits improved minimum meal frequency. Mothers who worked in formal jobs (measured as part of the economic factors) promoted the consumption of minimum acceptable diet of children.

Recommendations

1. Interventional programs by Ministry of Gender and Social Protection and other stakeholders should target households and mothers with lower socio-demographics characteristics such as lower educational level to improve complementary feeding practices of children.
2. Legal rights of women in Ghana must be sustained and improved since they form key elements to attaining minimum dietary diversity and minimum meal frequency.
3. The Ministry of Gender and Social Protection must improve on advocacy to inform and empower women to accept formal work as it promotes minimum acceptable diet for children.

Suggestions for Future Research

1. It may be prudent for future studies to conduct an in-depth study to explore the reasons why mothers fail to meet recommended IYCF practices.
2. A study can also be conducted on political dimension of women empowerment, which could not be explored in this study due to data limitations.
3. It is also recommended that further studies should be conducted on the role and influence of family members and husbands of mothers on IYCF practices.

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APPENDIX

Aug 13, 2018

Louis Kobina Dadzie
University of Cape Coast
Ghana
Phone: 0247281309
Email: louis.dadzie1@stu.ucc.edu.gh
Request Date: 08/13/2018

Dear Louis Kobina Dadzie:

This is to confirm that you are approved to use the following Survey Datasets for your registered research paper titled: "Women empowerment and IYCF practices in Ghana":

Ghana

To access the datasets, please login at: https://www.dhsprogram.com/data/dataset_admin/login_main.cfm. The user name is the registered email address, and the password is the one selected during registration.

The IRB-approved procedures for DHS public-use datasets do not in any way allow respondents, households, or sample communities to be identified. There are no names of individuals or household addresses in the data files. The geographic identifiers only go down to the regional level (where regions are typically very large geographical areas encompassing several states/provinces). Each enumeration area (Primary Sampling Unit) has a PSU number in the data file, but the PSU numbers do not have any labels to indicate their names or locations. In surveys that collect GIS coordinates in the field, the coordinates are only for the enumeration area (EA) as a whole, and not for individual households, and the measured coordinates are randomly displaced within a large geographic area so that specific enumeration areas cannot be identified.

The DHS Data may be used only for the purpose of statistical reporting and analysis, and only for your registered research. To use the data for another purpose, a new research project must be registered. All DHS data should be treated as confidential, and no effort should be made to identify any household or individual respondent interviewed in the survey. Please reference the complete terms of use at: https://dhsprogram.com/Data/terms-of-use.cfm.

The data must not be passed on to other researchers without the written consent of DHS. Users are required to submit an electronic copy (pdf) of any reports/publications resulting from using the DHS data files to: archive@dhsprogram.com.

Sincerely,

Bridgette Wellington

Bridgette Wellington
Data Archivist
The Demographic and Health Surveys (DHS) Program