UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE

CONTRIBUTION OF MALE INVOLVEMENT IN CHILD CARE TO DIETARY INTAKE AND GROWTH OF CHILDREN 6 – 23 MONTHS IN JIRAPA MUNICIPALITY

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UDS/MPHN/0006/19

DISSERTATION PRESENTED TO THE DEPARTMENT OF NUTRITIONAL IENCES, SCHOOL OF ALLIED HEALTH SCIENCES, UNIVERSITY FOR :VELOPMENT STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENT)R THE AWARD OF MASTER OF PHILOSOPHY (MPHIL) IN PUBLIC HEALTH]TRITION

DECEMBER, 2021

DECLARATION

Student

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

Student Signature:  Date: 16/12/2021

Alfred Yibonteng Gunyog

Supervisor

I hereby declare that the preparations and presentation of the thesis was supervised in accordance with the guidelines on supervision of thesis laid down by the University for Development Studies.

Supervisor's Signature:  Date: 21/3/2022

Dr. Alhaji Mahama Saaka

ABSTRACT

Suboptimal complementary feeding practices contribute to stunted growth in many countries, including Ghana. Effective strategies, including engaging men, especially fathers, in complementary feeding practices are needed. Although fathers have a critical role in providing support to improve child nutrition, there are few studies on male involvement in nutrition and feeding practices. Therefore, this study assessed the level of male involvement in child feeding and its association with the dietary intake and nutritional status of children 6-23 months of age in the Jirapa Municipality.

A community-based analytical cross-sectional study that employed both quantitative and qualitative data collection methods was used on male partners with children aged 6-23 months in Jirapa municipality. A multistage sampling procedure was used to select a sample size of 392 father-child pairs. A structured interview questionnaire with both close and open-ended questions was used. The data were analysed using SPSS version 22 and WHO Anthro version 3.2.2.1 (analyse the anthropometric data). The study showed that the level of involvement of the male parents in their children's care was generally high among the majority (63%) of fathers. In multivariable binary logistic regression analysis, factors such as income status [AOR = 1.80 (95% CI: 1.13–2.88)], nutrition-related knowledge [AOR = 2.41 (95% CI: 1.53–3.79)], and nutrition-related attitude [AOR = 2.33 (95% CI: 1.48–3.68] were found to influence fathers' participation in the care and feeding of their children. A unit increase in the age of the father was associated with 5% less involvement in childcare and feeding activities (AOR = 0.95, 95% CI: 0.92–0.98). Fathers' involvement in childcare activities was not associated with the timely introduction of complementary foods, although it was significantly associated with minimum dietary diversity (COR = 1.55; 95% CI: 1.06, 2.40) and minimum acceptable diet (COR = 1.90; 95% CI: 1.25, 2.89). In the multivariable logistic regression analysis, which controlled for potential confounding factors, high father involvement (at least median score) in

childcare and feeding activities remained a significant independent predictor of minimum acceptable diet (MAD) [AOR 1.60; 95% CI (1.04 – 2.47)] compared to low father's involvement (less than median score). Children whose fathers had a positive attitude towards childcare were 2.0 times more likely to be fed with MAD [AOR = 2.05 (95% CI: 1.35 - 3.14)] than their counterparts whose fathers' attitudes were poor. Male partner involvement in child feeding activities was not associated with the nutritional status or growth of children aged 6-23 months. It can be concluded that the level of male partner involvement in the care of their children 6-23 months was high in the Jirapa municipality. The involvement of the male partners in their children's care was significantly associated with the dietary intake of children 6 – 23 months, but this involvement was not associated with their growth or nutritional status.

DEDICATION

I have a great pleasure, honor and gratitude to whole heartedly dedicate this thesis to my family: my parents (Mr. and Mrs. Gunyog), my wife (Miss Vivian Gbang) and my children (Vanessa, Viola and Valene) for their prayers, support and encouragement.

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It certainly takes the Grace of the Almighty God for breaking all obstacles that would have hindered the successful completion of this thesis and seeing me through to its logical conclusion, I glorify His Holy name.

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I cannot leave out all the dedicated and selfless lecturers who spent time, knowledge and effort to impact in me the requisite knowledge and skills for which this thesis has tremendously benefited. To them I am so thankful and may the Almighty God richly bless them in their endeavors.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

AOR	Adjusted Odds Ratio
ATR	African Traditional Religion
C.I	Confidence Interval
CHAG	Christian Health Association of Ghana
CHPS	Community-Based Health Planning and Services
COR	Crude Odds Ratio
DDS	Dietary Diversity Score
EBF	Exclusive Breast Feeding
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
GSS	Ghana Statistical Service
ICPD	International Conference on Population and Development
INDDEX,	International Dietary Data Expansion
MAD	Minimum acceptable diet
MDD	Minimum Dietary Diversity
MDD	Minimum Dietary Diversity
MMF	Minimum Meal Frequency
NRA	Nutrition-Related Attitudes Score
TZ	Tuo Zaafi
UN	United Nations
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

It has widely been reported that children the world over have the same potential of growth in early childhood, provided the appropriate conditions of life are met, such as adequate feeding and low exposure to diseases (WHO, 2006). Restricted growth resulting from malnutrition among children is an important indicator of overall living standards and well-being. Indeed, undernutrition impedes how well the child will grow and develop in life, resulting in a cycle of underachievement and low standards of living in the future. It is apparent from studies that stunting within the first few years of every child, for instance, has been associated with defective mental functioning and development, dwindled performance in school and unfavorable economic productivity and maternal health outcomes in later life (Dewey & Begum, 2011). It is sad to note that children under nutrition have contributed to more than one-third of under-five deaths (Liu et al., 2012). Children therefore require utmost attention and care in terms of feeding to ensure optimum growth and development.

The United Nations Children Emergency Fund (UNICEF, 2015) revealed that child malnutrition infringes on a child's right to optimum growth and development for which the male parents who mainly decide for many families must be concerned. Indeed, countries that are battling poverty emanating from poor male involvement are usually down by the burden of famine and its attendant undernutrition (UNICEF, 2015). It is certainly a worrisome situation to ascertain that a good number of children globally and in particular Africa suffer from inadequate growth and development purely due to poor and inadequate feeding. These children unfortunately suffer from conditions related to undernutrition and micronutrient deficiency (UNICEF, 2019b).

The factors that can result in child-undernutrition have been found to be multifaceted and clearly outlined by UNICEF as the conceptual framework of malnutrition. This framework analyses these factors of undernutrition based on a relative risk, that is, immediate risk factors, underlying risk factors and basic risk factors (UNICEF, 2015). The immediate causes or risk factors have been identified as underfeeding as well as infections, while the underlying factors include food shortages at the household level, poor sanitation, insufficient and poor health care practices and poor feeding practices. The basic causes have been found to be household resources, income status and sociocultural practices in households and communities (UNICEF, 2015). All these factors result in an outcome called child undernutrition or death.

Malnutrition among infants and young children, in other words, children who are yet to celebrate their fifth birthday, is a major problem of concern globally and therefore needs great attention. Many studies across the globe have shown that child under nutrition cannot and should not be taken for granted. Studies have shown that globally, wasting among children under 5 years stands at 7.3%, overweight is 5.9% and stunting is estimated to be 21.9% (WHO, 2019). Indeed, in Africa, the prevalence of stunting is estimated at 30%, for wasting it is estimated at 7.1% and the prevalence of overweight in the continent is also estimated at 4.9%. The prevalence of undernutrition in the West African subregion has also been found to be 29.2% for children who are stunted, 8.1% for children who are wasted, and 2.1% for children who are overweight. In Ghana, studies have shown that of the children who are yet the celebrate their fifth birth day, 19% have been found to be short for their age (stunted), 11% were found to be underweight, and 3% were overweight (GSS; GHS, 2015). It has also been revealed that stunting among children below the age of five years in Ghana is estimated at 18%, while an estimated prevalence of 7% was found to be wasted (Ghana statistical service, 2018). In the Upper West Region, stunting, wasting and overweight were found to be 22.2%, 4.4% and

13.5%, respectively. Again, for the Upper West Region, prevalence rates of 15% and 6% constituting stunting and wasting, respectively, were recorded (Ghana statistical service, 2018).

It must be noted that to ensure the optimum growth of children, the role of male involvement in child care cannot be underestimated in every society across the globe. This is especially true when men are considered gatekeepers and key decision makers in many households as well as at the community level, especially in Africa (World Health Organization., 2015). Male involvement can be viewed as the willingness of male partners to take cognizance of the fact that they need to fully take part in matters relating to the health and wellbeing of both the mother and the child (Byamugisha et al., 2010). Indeed, it is not for nothing that over two decades ago, male involvement in child care was considered a key component at a conference organized by the world body (United Nations), which extensively discussed matters relating to the health and wellbeing of people in the globe (United Nations, 1999). The active participation of the male partners on issues relating to the health and wellbeing of families was considered imminent at the conference. Member countries at the conference were therefore tasked to ensure that the inclusion of males in reproductive and child health programs becomes a major strategy. Specific to this mandate was for countries to develop comprehensive measures to involve males in family planning, antenatal care, delivery and postnatal care (United Nations, 1999). Pursuant to this agenda, there has been conscious and growing attention globally among the relevant ministries to ensure that the male partners participate fully in all sexual, reproductive and child health programs (USAID, 2014). Ensuring adequate child health care is so essential that the involvement of the male counterparts is required to ensure adequate nourishment and growth.

Furthermore, Jorosi-Tshiamo et al. (2013) pointed out that globally, the participation of fathers in child care activities has beneficial impacts, such as reducing negative behavioral tendencies, improving child growth and wellbeing and indeed fostering good father-child interactions. It

has therefore been noted by the WHO (2016a) WHO (2016) that male partners take interest and fully participate in activities relating to their wives and children to foster improved health and wellbeing.

A study in Ghana showed that there is some level of involvement of the male partner in deciding how their earnings are used for the upkeep of the family (GDHS, 2014). In patriarchal societies across Ghana, especially Northern Ghana, men decide for the family. In the Jirapa municipality, the man determines everything for the household even to the extent of controlling the woman's own resources, such as money. It would therefore be of interest to establish the contributions made by men with regard to their involvement in childcare. This study therefore seeks to uncover the contributions that are made by the male parents regarding the care of their children and the relationship to the dietary intake and growth of these children who are within 6 – 23 months in the Jirapa municipality.

1.2 Problem Statement

Malnutrition among children is a global health problem affecting many populations, including Jirapa municipality. Available evidence shows that the Jirapa Municipality is actually suffering from high child malnutrition. Indeed, a study revealed that 16.4% of children in the municipality were suffering from underweight, 21.5% were found to be stunted, and 6.6% were found to be (Zereyesus et al., 2016) wasting. The study further added that 32.8% of households in Jirapa municipality suffer from moderate to severe hunger, which results in suboptimal child feeding practices in these households due to inadequate food availability.

Anecdotal reports suggest that the Jirapa municipality by its patriarchal nature, men control all the households' resources even if that is the female partner working to ensure the welfare of the children. Many women are involved in several manual activities such as farming, carrying of firewood and petty trading just for the upkeep of the family.

The need to get fathers to support their children as well as their mothers in all aspects of health is essential because it promotes the sustainable health and wellbeing of families across communities (WHO, 2016). Although fathers have a critical role in providing support in improving child nutrition, there are few studies on male involvement in nutrition and feeding practices, especially in Ghana. In particular, there is no available information regarding the contributions usually made by the male partners in the care of their children and how it influences their dietary intake and growth in the Jirapa municipality. Therefore, this study assessed the level of male involvement in child feeding and its association with the dietary intake and nutritional status of children 6 – 23 months of age.

1.3: Aim and objectives of the study

The main aim of the study was to assess the contribution of male involvement in childcare to the dietary intake and growth of children 6-23 months of age. The specific objectives were as follows:

i. To determine the level of male involvement in the care of children 6-23 months
ii. To identify the factors that influence male involvement in child care, including feeding
iii. To establish the relationship between male involvement and dietary intake of children
iv. To determine the relationship between male involvement and child growth

1.4: Significance of the Study

The study sought to uncover the contributions that are made by involving male partners in childcare. The findings of the study may serve as a guide for health planners, including the Jirapa Municipal Health Directorate, in their efforts and strategies to improve child health through male involvement in the municipality. The findings of the study may also add to the body of knowledge on male involvement in childcare and feeding practices.

1.5: Conceptual Framework

The conceptual framework that guided the study is structured based on the fact that male involvement in child care is essential and the factors that are likely to influence it must be

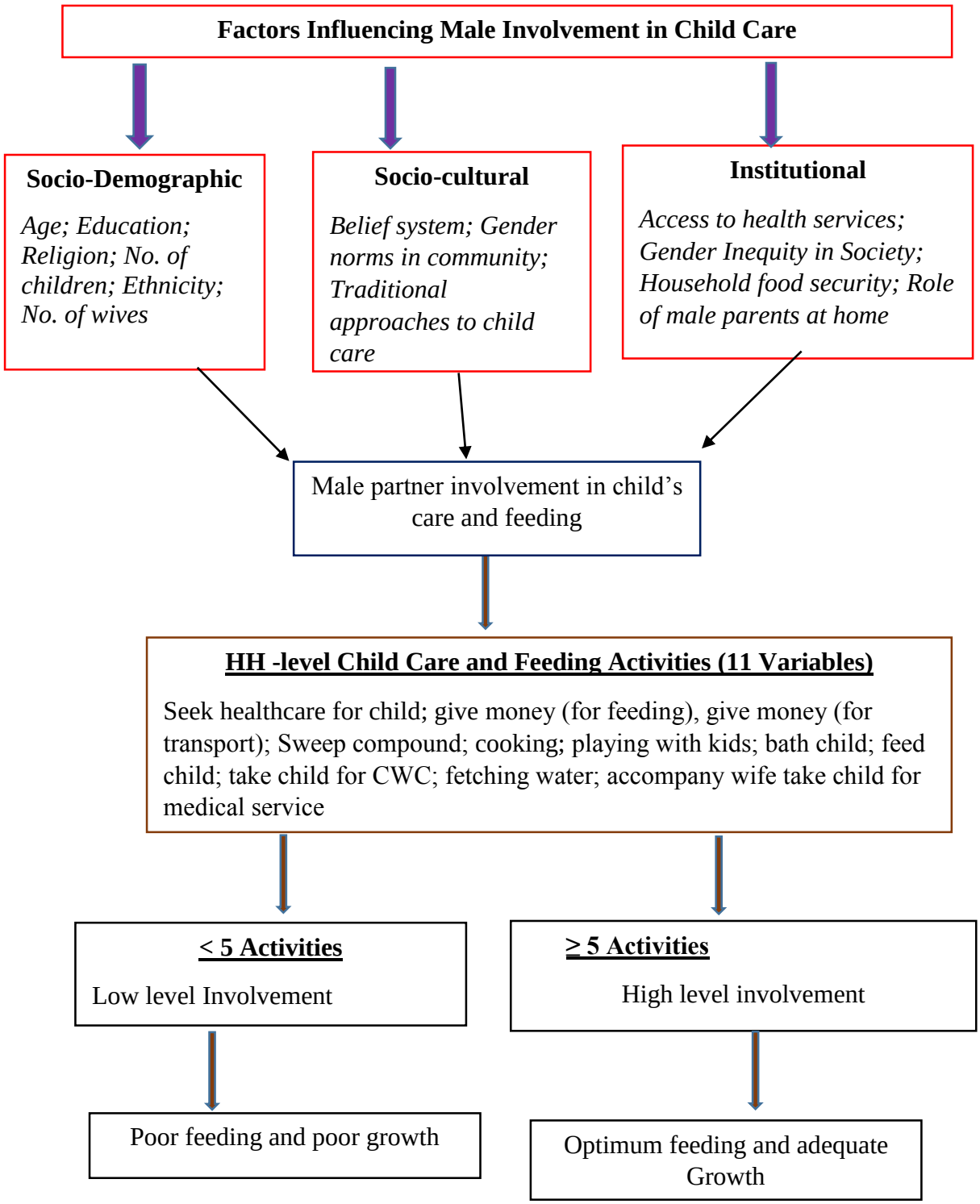
considered (Fig 1.1). Indeed, the factors that influence male involvement and how it leads to child dietary intake and growth are illustrated based on a number of studies across the globe (Craymah et al., 2017; Jorosi-Tshiamo et al., 2013; Ditekemena et al., 2012). For the purposes of this study, the factors are categorized into three categories: social and demographic factors, cultural factors within society and institutional factors.

Variables such as the age of the male partner, educational background, religion and number of children constitute the sociodemographic factors as were identified by Aborigo et al. (2018) and Ditekemena et al. (2012) in their studies.

Indeed, Jorosi-Tshiamo et al. (2013) revealed that in Botswana the Sociocultural factors such as the belief system, gender norms, ethnicity were influencing the male partner, such that some were unable to participate in some family activities (helping their wives at home). With regard to the institutional factors, studies have revealed that mostly they involve; access to health care, gender inequity, food security at the household level and the role of male partners at the household level (Craymah et al., 2017; Jorosi-Tshiamo et al., 2013; Ditekemena et al., 2012). In Uganda for instance Gopal et al. ((2020), noted that the health care system put in place is not male-friendly, thus when it comes to reproductive and child health thereby discouraging many men from accompanying their wives there.

All these factors (variables) as indicated largely will determine what the involvement of the male partners would always be when it comes to childcare and feeding. The level of male involvement are assessed using 11 household (HH) level activities pertaining to child care and feeding. In this situation, where the activities carried out were less than five (the mean), it was considered low and above five was considered high as put out by Gibore et al. (2019). A high level of male involvement in the activities of child care and feeding is expected to result in optimal feeding and growth. On the other hand low level of involvement is expected to result

in poor feeding and poor growth. This concept was applied by designing appropriate questionnaires (considering all the factors) to ensure the collection of appropriate and meaningful data.



Developed by: Author

Figure 1.1: Conceptual framework of Male partner involvement in child care and feeding

CHAPTER TWO
LITERATURE REVIEW

2.1: Involvement of Male Partners in the Care of Children

The participation of male partners in the care of children is defined by Jorosi-Tshiamo et al. (2013) as the process whereby male partners directly engage their children in every aspect of the child's life. This they indicated included feeding and clothing the child, sending the child for health care services, and many more activities that would be essential for the child to grow and develop appropriately as required (Jorosi-Tshiamo et al., 2013). Male involvement has further been explained by Gopal et al. (2020) as the full participation, total involvement and active support that is offered by men towards maternal health as well as childcare needs. These two expressions of male involvement in childcare explicitly indicate that the male partner is considered a principal agent that will meaningfully contribute to ensuring that the child attains optimal growth and development in life. Fathers (male partners) therefore need to have consistent and regular access to their children to make sure they offer the appropriate care for the growth and wellbeing of these children.

Indeed, for Gopal et al., (2020), the accessibility of male partners to their children means that they should be able to interact appropriately with the children and to make responsible decisions as and when necessary for the survival and safety of the children and the family. Alio et al., (2013) also explained that the involvement of male partners can occur if they are always present at home, make themselves available to the family, have greater and common understanding, and of course willing to learn about the maternal and child health process and offer the needed support thereof.

Due to the critical role that the male partners play in determining the growth and development of the children, governments across the globe were all encouraged to institute measures that will make fathers consciously take part in activities meant to bring about required health and

wellbeing of the children and their mothers (World Health Organization, 2014). The male partners are to be sensitized on the need to partake in critical family life activities. These include planning the size of the family, promoting the health of the child and mother, ensuring that the child is kept in school, ensuring that an adequate amount of food is made available and making money available to cater for the needs of the family (World Health Organization, 2014).

It is duly vital to note again that the safety and survival of children is seen in the hands of a couple that is much united in thoughts and deeds, demonstrates effort in concert and strives to surmount the bottlenecks in the maternal and child health process. This is imperative because by establishing why newborn babies die in Uganda, it was apparent that the male partner's role at ensuring that the child survives beyond the first thousand (1000) days of life was considered inextricably relevant (Waiswa et al., 2010). Indeed, a review of the literature by Jorosi-Tshiamo et al., (2013) in Botswana revealed that men are more highly placed in society than their female counterparts, and their decisions are considered supreme regarding child care and survival. It must further be noted from a recent work by Chung (2021) that the participation of male parents in the care of their children contributes enormously to improving the general health and wellbeing of such children while inhibiting any form of undesired tendencies as the child grows.

Notably, some fathers make meaningful contributions to improving and sustaining the life of their children across many countries. As Dumbaugh et al., (2014) uncovered from their study in parts of rural Ghana, men make it a duty to accompany their wives to seek medical care for their children when in ill health. They, however, noted that although the majority of the male partners became interested in activities relating to the care of their children, they were sometimes unable to take part because of their constant engagement in economic activities such as farming. Indeed, the fathers showed so much concern for their children to the extent that they personally search for treatments either local or scientific medicines for the sick child

(Dumbaugh et al., 2014). Similarly, Kansiime et al., (2017) demonstrated that in the rural southwestern district of Uganda, the level at which fathers willingly partake in activities related to the health and wellbeing of their children was generally found to be high (65.5%). They pointed out that although the fathers' record of making sure their children were sent for routine CWS was recorded as low, they made tremendous financial contributions (93.6%) to enable their wives to undertake services worthy (such as buying food) to improve their children's survival and wellbeing. This corroborates the findings of Abate & Belachew, (2017) that male partner involvement was found to be high in regard to giving financial support and feeding the child. Additionally, Abera et al. (2017) also identified that the male parents' participation in the feeding practices of newborns was found to be high (72.4%) and was mainly related to the educational status of the male partners.

Furthermore, Jorosi-Tshiamo et al. (2013), in reviewing the literature on male involvement in child care in Botswana, uncovered that male partner involvement in their children's care was not adequate in both rural and urban communities. They noted that the fathers mostly get involved only when there are emergencies such as ill health or when the wife is no longer (that is divorce or death). Additionally, Ganle et al., (2016) found that many fathers failed to take part in child care-related activities in some parts of Ghanaian society, just as Tweheyo et al., (2010) also ascertained. For Tweheyo et al., (2010) in the Northern part of Uganda many of the male parents were disinterested in the activities regarding child health which is also similar to the findings of Craymah et al., (2017) in Anomabo of the Central region of Ghana. In contrast to these findings, Kumbeni et al., (2019) revealed in Kassena Nankana municipality that many of the male partners actively participate in activities that will yield the desired health and wellbeing of the child.

2.2: Factors influencing male involvement in child care

The factors that can influence male involvement in childcare are varied and multifaceted across many studies. Indeed, Jorosi-Tshiamo et al., (2013) reviewed a study in Botswana on 'male involvement in child care activities', and factors such as cultural, patriarchal and legislative environments were found to influence male partner involvement in child care. Accordingly, they brought forth the fact that in Botswana socioculturally, men are made to understand and believe that their only role as fathers is simply to provide finances for the female partners to care for the children because they (wives) are considered the primary caretakers of the children. Additionally, the patriarchal factor was found to influence a good number of male partners to shirk their roles in relation to childcare and feeding. Interestingly, the legislative architecture in Botswana offers more rights to women than men regarding childcare. This leaves the male partners with very limited roles, such as providing finances.

Studies have further pointed out that the attitude of health care professionals is more favorable towards mothers than fathers, which discourages many male partners from actively involving themselves in child care-related matters (Craymah et al., 2017; Jorosi-Tshiamo et al., 2013; Ditekemena et al., 2012). Additionally, Aborigo et al., (2018) noted that the male partners were discouraged from going along with their female partners to the health facilities because space is not created for them to be by their wives at the point of care but are rather made to stand under trees to wait. Again, recently in Uganda, Gopal et al., (2020) vividly unearthed the failure of the health care system to make provision for male-friendly reproductive and child health services, thereby making the male partner so constrained in accompanying their counterparts for services. This finding revealed a total defiant of the directives from the program of action as agreed on at the 1994 International Conference on Population and Development (ICPD), which called on all member countries to make provision for men and women 'a reproductive

health care service' in a manner that is accessible, affordable, acceptable, and convenient (World Health Organization, 2014)

Furthermore, Dumbaugh et al., (2014) in their study on "perceptions of, attitudes towards and barriers to male involvement in newborn care in rural Ghana", the male partners reported that they are usually not allowed to become involved in their wives' pregnancy, including the child's birth as well as the rearing of the children. Accordingly, the practice occurs because of the nature of societal construction of masculinity in patriarchal dominant societies where provision is not made for men who are willing to take care of their children but rather become stigmatized. They further contended that because society generally views men as being providers or 'bread weaners' of families, many of them are compelled to travel away from their homes just to work to support their families. The male parents in most instances do not avail themselves at home to regularly offer the needed support to their children mainly due to the distant work schedule they engage in. Additionally it is due to the fact that the men are always undermined in society when they choose to offer support to their wives regarding their children's upbringing (Craymah et al., 2017; Rakotomanana et al., 2021). Again, prohibitive cultural norms in many societies account for the poor level at which husbands or fathers participate in services pertaining to the child and mother with specific regards to healthcare issues (Craymah et al., 2017).

Furthermore, religion also plays an influential role in male involvement. Gibore et al., (2019), for instance, revealed that males who were of Christian origin were more involved in maternal and child health as they accompanied their wives to antenatal clinics than their Muslim counterparts. It has also been shown that the educational level and employment status of male partners also influence the extent to which the male parents participate in activities relating to the child and mother's health and wellbeing (Aborigo et al., 2018). Indeed, male parents with higher educational attainment were more involved in maternal and child health issues than their

counterparts with low or no education. Similarly, Ditekemena et al., (2012) observed that in Sub-Saharan Africa, fathers with a higher level of education showed more interest and usually took part in services meant to improve the health and wellbeing of the child and mother than fathers with a low level of education or not educated at all. Likewise, Aborigo et al. (2018) indicated that fathers who are gainfully employed and are earning income were more likely to play an active role in going along with their female partner to seek health care for the child. Ditekemena et al., (2012), on the other hand, revealed that in Uganda, drivers are less likely to become involved in the care of their children compared to other categories of workers, such as farmers. This can be explained by the frequent travel away from home that characterizes driving as a form of occupation.

Indeed, it has further been ascertained from a study that many men accompany their female partners to seek health care services only when the condition is so critical that the woman finds it difficult to walk at all and needs to be picked with a means of transport to the health facility for the needed services (Aborigo et al., 2018). The study noted that the men do that to also have first-hand information about the condition of their women and/or their children (Aborigo et al., 2018). The study further explained that fathers' lack of commitment to sending their women and children to seek health care services such as antenatal care and growth monitoring is mainly to avoid being mocked at or shunned by their male counterparts within society.

It is clear from numerous studies that the factors that influence male involvement in child care range from economic activities to religion to the nature or type of employment, educational level and societal stigma. While very few studies indicated some involvement of the male partners in child care, many others pointed to the fact that male involvement is poor in relation to the care of the child as well as the mother.

2.3: Knowledge and Attitudes of Male Partners towards Child Care and Feeding

According to the Cambridge Advance Learners Dictionary (third edition), knowledge is an understanding an individual gets about something by experience or study, which is either in the individual's mind or it is known generally by people. Attitude, on the other hand, is the feeling or opinion about something or someone (Cambridge Advance Learners Dictionary - third edition). It is often very difficult to change people's attitudes.

Knowledge is a fundamental determinant of human attitude, as it is intimately related to attitude, which also informs practice. In the study of Roshin & Sujatha (2013), it was made known that less than half (47%) of the male parents were discovered to have some knowledge on matters relating to the care and welfare of their children. In fact, they identified a substantial interplay between the knowledge of male parents and that of their attitude with respect to how they care for their children. They revealed that knowledge and some demographic characteristics, such as age and educational level, were related, just as attitude was also associated with the same demographic features (Roshin & Sujatha, 2013). Accordingly, fathers who are relatively older and those with a higher level of education exhibit better knowledge and attitudes towards what is required for their children's welfare and survival than their counterparts.

Furthermore, Abhinaya et al. (2016) uncovered from their study that the majority of fathers have adequate knowledge of the need to breastfeed exclusively and its related benefits, such as the best of infant food, bonding, emotional accomplishment and protectiveness. They succinctly spelt out that the knowledge acquired by the male parents on caring for their children was greatly influenced by their exposure to relevant health care messages given to them by the health care professionals. This knowledge eventually meaningfully impacts their attitude regarding the feeding of their children (Abhinaya et al., 2016). This is in accord with a study

in Malaysia that established that children who were poorly breastfed were parents who had inadequate knowledge (Noraini Mohamad, 2015).

Fathers with useful knowledge on matters of their children's health and welfare stand the opportunity to show up attitudes that will enure the utmost benefit of their children. Indeed, recently in Bangladesh, it was revealed that the knowledge acquired by the male parents on the feeding practices of their infants was enormously reflected in the knowledge exhibited by the mothers, which ultimately enforced the practice of ensuring that the children were adequately fed as much as possible (Ouyang & Nasrin, 2021). It is, however, telling to ascertain that in the rural community of Zimbabwe, the knowledge of fathers and mothers on their kids feeding although was high, the practice was found to be inadequate (Mushonga et al., 2017). Accordingly, many parents with the required knowledge on the essential feeding practices of their children failed to practice the same partly due to some unfavorable economic conditions and some sociocultural limitations.

2.4: Feeding Practices of Infants and Young Children

The feeding practices of infants and young children are essential determinants of the health and wellbeing of children. Indeed, children younger than 24 months deserve the right to optimum nutrition. Poor nutrition negatively impacts the child's growth and survival. Empirically, poor nutrition accounts for approximately 45% of child mortality globally (Bhandari & Chowdhury, 2016**).** Again, poor dietary intake by infants and young children results in a number of malnutrition conditions, such as stunting **(**144 million**),** wasting (47 million) and overweight **(**38.3 million), worldwide (WHO, 2020). To combat this threat, WHO (2009) developed eight (8) key indicators, among others, targeting the feeding practices of infants and young children across the globe. These indicators include timely initiation of breastfeeding; exclusive breast feeding for infants younger than six months; continuous breastfeeding for at least 24 months; complementary feeding from the 6^{th} month, minimum dietary diversity; minimum meal

frequency; minimum acceptable diet; and intake of iron-rich or iron-fortified foods (UNICEF, 2012; WHO, 2009; WHO and UNICEF, 2021)

2.4.1: Initiation of breastfeeding

Breast milk in its natural form contains all the essential nutrient substances that are required to foster growth and to engender the desired development of babies (WHO, 2017). It is recommended that breast milk be offered to children soon as they are born so that they derive its full benefits. It is important to note that the time breastfeeding is initiated is very relevant to the survival of babies the world over (WHO, 2017). Initiation of breastfeeding has been categorized mainly into two groups: early initiation, whereby the baby within the first hour of birth is kept on breast, and late or delayed initiation, whereby the baby is kept on the breast after an hour of birth (WHO, 2017). For clarity, initiating breastfeeding early means putting newborn to the breast within an hour after birth, which offers maximum benefit to the newborn and the mother (WHO, 2008).

Indeed, initiating breastfeeding early enough is an important step towards ensuring successful breastfeeding to improve the health and wellbeing of the newborn (WHO, 2017). It is expected that the mother will establish bodily contact (skin-to-skin) with the baby within 30 minutes after delivery. In the case of caesarian section, mothers should be supported to establish bodily contact and to breastfeed their baby within the first hour when they are able to respond. It is further recommended that the newborn be put to breast first prior to the performance of any other task, such as getting it to bath, measuring the weight, and cleaning the umbilical cord, among others. It is imperative to note that when one begins very early to breastfeed, it has the chances to increase successful breastfeeding and enhance bonding of mother and baby (WHO, 2020; WHO, 2017).

It has been revealed that babies who are kept on breast very soon after being born have a greater chance of survival than those who initiate delayed breastfeeding (WHO, 2017). Accordingly,

infants who initiate delayed breastfeeding (breastfeeding after one hour of birth) have greater chances of dying within the first 28 days, while early initiation of breastfeeding improves the survival of the infant to 3 months or 6 months (WHO, 2017). Similarly, Smith et al. (2017) revealed that infants who initiate breastfeeding after 24 hours have an increased risk of death within 28 days of birth than those who initiate breastfeeding earlier. Moreover, Edmond et al. (2006) in their study in some parts of rural Ghana revealed that deaths of some newborns (neonates) could have been avoided if they were put to breast very soon after they were born. Again, Mullany et al. (2008) in their study in Nepal also revealed that neonatal mortality could be prevented by approximately 19.1% and 7.7% when breastfeeding begins very early within 30 or 60 minutes after birth and within the first 24 hours of birth, respectively.

Apparently, a number of studies across the globe showed that prompt and timely breastfeeding is a major problem that needs greater attention. It was revealed from a baseline survey on the promotion of complementary feeding in Ghana that only slightly more than half (52.2%) of the respondents reported having kept their newborns to the breast soon after delivery (the first 60 minutes). Further analysis ascertained that more than half (54.5%) of this number started breastfeeding within the first half of an hour upon delivery (USAID, 2011). Additionally, Sharma and Kafle (2020), in their study of children living in slum areas of Pokhara, found that only 55% of mothers started to breastfeed their newborns earlier than an hour upon delivery. They further posited that women who are below the age of 20 years had a greater tendency to put their newborns to the breast earlier than their older counterparts. This is an indication that the young women have a better understanding and appreciation of the positive gains that accompany putting the newborn so early to the breast. Timely introduction of the breast to the newborn infant has indeed been observed to be practiced by the majority of women in many countries worldwide. Considering Zambia, for instance, it was brought to light that out of the number of mothers surveyed, 99.4% had put their kids to the breast, the majority of whom

began breastfeeding earlier than an hour of birth (Katepa-Bwalya et al., 2015). This clearly indicates that health educational messages on the need for timely breastfeeding of newborns yield some desirable outcomes in Zambia.

Moreover, it must be noted that the practice of early exposure of newborns to breast milk in some parts of the globe need much to be desired. A study, for instance, in Kumbungu District of the Northern region of Ghana on 'assessing infant and young child feeding practices on the nutritional status of children below the age of two years', revealed that less than half of the respondents (46.5%) indicated they were able to put the newborn to the breast prior to an hour after birth (Pedavoah, 2015). Similarly a study by UNICEF (2020) in countries that are economically underdeveloped, observed that only 44% of newborns were reported to have been put to the breast soon upon delivery.

2.4.2: Exclusive Breastfeeding

Breastfeeding exclusively on breast milk requires that babies be strictly put on only breast milk for a period not exceeding six months from birth. Putting newborns to only breast milk for a period of six months upon their delivery (exclusive breastfeeding) is very beneficial to both the mother and the newborn. It has been explained that mothers or wet nurses can breastfeed the babies directly or have the breast milk expressed to feed them (UNICEF, 2012). Indeed, no other liquids or solid foods, with the exception of medication or nutritional supplements, should be given to the infant within the initial six-month period (UNICEF, 2012; WHO, 2020). Studies further revealed that feeding babies exclusively on breast milk for the first six-month period has a strong correlation with optimal growth and resistance of the infant to infections such as diarrheal diseases (UNICEF, 2012). It must also be noted that breastfeeding has a great impact on the life of the child; it is able to reduce the rate of infection, produces an immune-competent body and offers a well-nourished body for adequate growth and development (UNICEF, 2012).

Indeed, many studies across the globe on the rate of exclusive breastfeeding have not been so impressive. For instance, a study in Ghana by USAID (2011) revealed that only 47.7% of the respondents were found to be practicing exclusive breastfeeding even though as high as 80% were found to have endorsed the fact that exclusive breastfeeding is good and should be practised. Similarly, WHO (2020) revealed that the globally exclusive breastfeeding rate stands at only 44%, a rate similar to what UNICEF (2020) reported from low- and middle-income countries (42%).

It is important to note that a number of intervening factors can contribute to the rather poor performance of exclusive breastfeeding among breastfeeding mothers across many countries. Indeed, it has been revealed that children of working mothers are introduced earlier to foods other than breast milk before they can attain the 6th month (Tampah-Naah et al., 2019). Accordingly, for children to be fed exclusively on breast milk, the parents need to devote enough time to ensure the practice. They further opined that influences from other family members, such as the mother-in-laws and the health condition of the mother, also account for the poor exclusive breastfeeding (Tampah-Naah et al., 2019).

Moreover, Pedavoah (2015) also revealed in his study in Kumbungu district of the northern region of Ghana that the exclusive breastfeeding rate was only 59.2%, just as Sharma & Kafle (2020) also revealed that approximately half of the mothers (50.5%) practiced exclusive breastfeeding in Pokhara. Quite interestingly, Gyampoh et al. (2014), in their quest to establish the knowledge and practices of mothers on child feeding in Accra, Ghana, found that most of the mothers (80.9%) were reported to have practiced exclusive breastfeeding.

2.4.3: Continuous Breastfeeding

To the extent that breast milk is so essential for the survival of the growing child, it is still required after the infant graduates from the 6th month of birth. Indeed, breast milk still needs to be offered to the child for at least two years coupled with other family foods so that the

nutritional requirements can be met to engender steady growth and development (UNICEF, 2012; WHO, 2020). Appropriate and adequate breastfeeding can ultimately contribute to saving the lives of several children across the globe (WHO, 2020). It is rather worrisome to note that some male parents do not know the requirement for breastfeeding so that they can offer the needed support to their female partners who usually breastfeed. As explicitly pointed out by Lynette (2018) on the 'participation of fathers on breastfeeding process in Kenya', it revealed a low level of knowledge of the male parents on the feeding of their newborns. This therefore has the potential of inhibiting how these male parents would offer assistance that they need to offer to their female counterparts to ensure that the children are breastfed well.

Indeed, mothers and caretakers are advised against the use of feeding bottles to feed infants (UNICEF, 2012). Accordingly, nipple confusion results in the refusal of the infant to breastfeed directly from the mother's breast and exposes the infant to infections such as diarrheal diseases. For this reason, UNICEF (2012) recommends that babies should be fed breast milk using a cup (not a bottle with a nipple) for situations where the baby cannot breastfeed from the mother directly. They also indicated that in situations where the infant finds it difficult to swallow, an infant feeding tube should be used as a means to provide breast milk to the baby (UNICEF, 2012). With regard to bottle feeding, a study in Kumbungu in the northern region of Ghana showed that some mothers (28.5%) still use feeding bottles to feed their children amidst the widespread condemnation that it is not good and should always be avoided (Pedavoah, 2015).

2.4.4: Complementary Feeding

It is duly required that from six months of age, the infant is introduced to other foods to complement the nutrient needs of the growing infant. This is simply because breast milk alone at that age becomes inadequate to facilitate growth and development. The addition of other foods with continuous breastfeeding spans normally from age 6 – 23 months of the child (United Nations Children's Fund (UNICEF), 2020).

Babies should be offered locally available and affordable foods enriched in additional calories and micronutrients provided in soft or mashed form and in small quantities, several times a day while increasing the frequency and amount as the child grows. This is critical to prevent growth faltering, as breast milk alone is highly inadequate to meet nutritional needs (United Nations Children's Fund (UNICEF), 2020). To ensure that the child attains steady growth, the food to supplement the breast milk must be started on time. An early or delayed introduction of the food will prone the child to nutritional deficiencies, which will eventually culminate in poor growth (United Nations Children's Fund (UNICEF), 2020). To buttress this finding, Saaka et al. (2015) in their work established the fact that children who have been offered timely supplementary feeding were more protected from infections than their colleagues who were started earlier or later Koletzko et al. (2020); however, they uncovered that in regard to time to initiate complementary feeding, countries across the globe hold different views. For instance, 74% of the 34 countries studied indicated that complementary feeding should ideally start at the 6th month of birth, whereas some other countries (9%) recommended that it should start at the fifth (5th) month after birth (Koletzko et al., 2020). Similarly, Sharma and Kafle (2020) revealed from their study in the urban slum of Pokhara that more than half of mothers (51.6%) introduced their children to complementary feeding at the 6th month, while the rest did so earlier. This, they noted, contributes enormously to inadequate breastfeeding and its attendant undernourishment among children who are younger than two years in the locality. Curious to note is the rather abysmal record regarding timely complementary feeding in Ghana. As it was uncovered from a baseline survey, only 37.6% of mothers in Ghana introduced other foods to their children on time (at six months), while the majority failed (USAID, 2011). It must be noted that few years afterwards Saaka et al. (2016) in their quest to bring out facts relating to the prevalence of appropriate complementary feeding among children 6-23 months in the northern part of Ghana discovered that only a handful of children, 14.3%, were introduced in

a timely manner to other foods. In another study in the same area (rural parts of Northern Ghana), it revealed that only 15.7% of children 6-23 months obtained appropriate intake of meals (Saaka et al., 2015). Subsequently, progress appeared to have been made in this part of Ghana regarding the timeous exposure of children younger than two years to essential meals, as the percentage tremendously increased to 66.4% in 2020 (Anin et al., 2020). These findings vividly indicate that much needs to be done with regard to ensuring that parents and caretakers offer their children appropriate and adequate food for normal growth and development to occur.

2.4.5: Minimum Dietary Diversity of Children 6 – 23 Months

Minimum dietary diversity (MDD) refers to the intake of four food groups or more from the seven recommended food groups that are required for meeting the daily energy and nutrient needs (WHO, 2008). The proportion of children who are aged 6–23 months and consumed from at least four out of the seven food groups would be said to have met the minimum diversified diet (WHO, 2008). These seven (7) food groups include grains, roots and tubers, legumes and nuts, dairy products, flesh foods (that is, meat, fish, poultry and organ meats), eggs, vitamin-A rich fruits and vegetables, and other fruits and vegetables (WHO, 2008). In contemporary times, however, a diversified diet is measured using eight (8) food groups: breast milk; grains, roots and tubers; legumes, nuts and seeds; dairy products; flesh foods; eggs; vitamin A-rich fruits and vegetables; and other fruits and vegetables (UNICEF, 2020). On this basis, a minimum diversified diet is the intake of at least five (5) out of the eight (8) food groups for children 6-23 months. An assessment using any of these (either the seven or eight food groups) would yield the same results.

The minimum dietary diversity of children who have attained half a year but yet to celebrate their second birth day (6-23 months) is of special focus because it is the critical period from which growth faltering resulting from undernutrition emanates. The period therefore offers a window of opportunity to provide children with more nutrient-rich foods for the child to

achieve the requisite mental development and physical growth to prevent childhood undernutrition (WHO, 2008). Indeed, according to WHO (2008), the minimum cut-off of consumption of food from four food groups is because it offers a more nutritious diet for lactating and nonlactating children. When a child is able to eat at least four of the food items in the previous day, the chances are that the child would have eaten a minimum of flesh foods and at least a fruit or a vegetable within that period, including a staple food that is essential for normal growth and development (WHO, 2008).

A baseline survey in Ghana revealed that many children 6 – 23 months of age were poorly diversified (USAID, 2011). Similarly, Boadi and Kobina (2017) uncovered that less than half of children in Ghana (47%) were offered the minimum of a diversified diet, which relates intimately with that of Saaka et al. (2015, 2016) in the northern parts of Ghana, where approximately 35% of children 6 – 23 months were found to have enjoyed a minimum of a diversified diet. Furthermore, while Sealey-Potts & Potts (2014) revealed that few children in Tobago we reported to have met their minimum diversified diet, it was observed to be better (59.9%) in Addis Ababa in Ethiopia (Solomon et al., 2017). They observed that staple foods (grains, roots and tubers) were commonly consumed by the majority of the children (92.6%) a day prior to the survey. It is also vital to note that in recent times, UNICEF (2020) showed that very few children aged 6 – 23 months (29%) in countries that are underdeveloped across the globe were offered a minimum of a diversified diet.

Indeed, these findings across different countries affirmed the position of WHO (2020), that many countries worldwide failed to ensure that children within 6–23 month age brackets receive adequate and appropriate nourishment, resulting in undernutrition and its attendant poor growth and development (WHO, 2020). Indeed, Sié et al. (2018) established in their study in rural Burkina Faso that dietary diversity was greatly related to child under nutrition,

particularly stunting, whereas no relationship was established between dietary diversity and wasting among children younger than two years.

In fact, parental knowledge and comprehension about what constitutes a recommended diet for young children is required, as it will contribute to informing their practice. As the work of Apriyanto (2020) in Timor-Leste uncovered, many parents of children younger than two years lack adequate comprehension regarding the recommended diet expected of their young children. Similarly, Boadi and Kobina (2017), in their study on the 'dietary diversity and the malnutrition of children in Ghana, observed that the level of education of parents was identified as a very significant determinant of the child's fulfilment of a diversified diet. Accordingly, children of parents with a higher level of education were offered the required diversified diet than those of parents with a lower level of education.

It is, however, curious to note from the study of Agize et al. (2017) in Ethiopia that although the majority of mothers (51%) with children 6-23 months demonstrated sufficient knowledge on what constitutes dietary diversity, very few children (16%) were, however, reported to have been offered a diversified diet. Moreover, a couple of studies have identified finance as a remarkable ingredient in determining a diversified diet. Indeed, Saaka et al. (2016), in their study on 'magnitude and factors associated with appropriate complementary feeding in Northern part of Ghana', discovered that the dietary diversity of children is determined by the financial status of their parents. They noted that for a child to be able to meet the minimum dietary diversity, the parents must have sufficient money. In the same way, Kunhipurayil & Srivastav (2021), in studying the 'determinants of minimum acceptable diet among children 6-23 months in urban slum', identified that children of parents with high economic status were able to consume a diversified diet adequately as expected, just as others found the same (Jacquier et al., 2020; Mulat et al., 2019). This means that children of poor parents would likely miss out on this inalienable dietary requirement.

However, the work of Boadi and Kobina, (2017) did not give credence to the fact that money is a central determinant in how the kids are fed diversified meals. In fact, in their study, it was revealed that some of the regions considered wealthy in Ghana, such as Eastern and Western regions (Ghana statistical service, 2015), recorded their dietary diversity to be below the national average of 3.12 alongside the northern region, which was classified as one of the poorest regions (Boadi and Kobina, 2017). The Volta region was identified as the region with the highest dietary diversity score of 3.39, while the upper west region (one of the poorest in Ghana) also recorded 3.17, which is also slightly above the national average of 3.12 (Boadi and Kobina, 2017).

Based on the findings from several studies across the globe, it is copiously clear that educational status and the income status of families constitute significant determinants of the child's dietary intake.

2.4.6: Minimum Meal Frequency (MMF)

It is the measure of the number of children within age 6–23 months old who are either breastfeeding or not and are offered foods of varied textures; solid, semisolid, or soft foods for the minimum number of times or more. Additionally, children who are not breastfeeding are required to be given dairy products (INDDEX, 2018; UNICEF, 2012).

The minimum feeding recommendations for children who are still breastfeeding include the following: children 6–8 months, should eat two to three (2-3) times for one day; for children aged 9–11 months, should eat four times a day (in addition to a snack). Again, it is also expected that children who are aged 12-23 months, they should eat five times a day in addition to two snacks (UNICEF, 2020; USAID, 2011). The consistency of the food should be increased with an increasing age of the child. For instance, the child after graduating successfully from the period of exclusive breastfeeding (0-6 months) should begin with meals that are soft and later to meals that are semisolid and gradually be introduced to meals that are solid (family foods)

by the time the child reaches 12 months of age. Accordingly, the consistency of the meals should be appropriate so that it can offer the requisite nourishment the child needs for optimal growth. Otherwise, a diet with poor consistency, such as overdilution, would normally yield low, inadequate or no nutrients for the growth and survival of the child (UNICEF, 2020).

It has been uncovered from a survey that the majority of parents in Ghana are completely oblivious of the frequency at which their children are required to consume the requisite meals per day as they graduate from one age to another in their life (USAID, 2011). In a study by Saaka et al. (2015) in rural part of Northern Ghana, over half of children 6-23 months (58.2%) were reported to have consumed nutritious meals as frequently as recommended, as Gyampoh et al. (2014) also discovered similarly in Accra (64%). Likewise, Kunhipurayil & Srivastav (2021) observed that slightly over half of children living in urban slums (52%) were offered the desired meals frequently as required. Apparently, it was unveiled that children who met the minimum meal frequency in many communities were of parents who were well to do (Kunhipurayil & Srivastav, 2021; Saaka et al., 2015).

2.4.7: Minimum acceptable diet (MAD)

The minimum acceptable diet is an essential feeding indicator for 6- 23-month-old children. It is meant to determine whether kids that have been offered both minimum meal frequency and dietary diversity are breastfeeding.

In a quest to unearth the knowledge and practices of lactating mothers on the feeding of their children in Accra, it was ascertained that the minimum acceptable diet offered to children 6 – 23 months was 32% (Gyampoh et al., 2014), which supports the work of Saaka et al. (2015), that in rural settings of northern Ghana, only 27.8% of children 6-23 months benefited from the minimum acceptable diet. In a similar fashion, Birie et al. (2021) identified that in Goncha district of northwestern Ethiopia, only 12.6% of children 6-23 months were offered the required meal that is acceptable to provide the needed nourishment for growth. Interestingly, a recent

study showed that many more male children (44.8%) were found to be offered nutritious meals frequently as recommended than their female counterparts (20.5%), especially in urban slums (Kunhipurayil & Srivastav, 2021).

It is imperative to avert attention to the fact that some religious activities have been found to have tremendous adverse impacts on the child's dietary intake. As Mulat et al. (2019) discovered in their study on the extent to which 6- to 23-month-old children are offered MAD during the period of fasting among a religious group in northwestern Ethiopia, as low as 8.6% of the children were offered nutritious meals as frequently as desired. An indication that a vast number of these vulnerable kids were poorly fed during the fasting period just to satisfy a religious requirement. Again, the socioeconomic status of families is so crucial at making sure children are properly catered for nutritionally. Indeed, it is demonstrable from a number of studies that children whose parents had formal education as well as higher wealth status were able to meet the expected minimum diet that is considerably acceptable to foster the needed growth (Birie, Kassa, Kebede, et al., 2021; Kunhipurayil & Srivastav, 2021).

2.5: Father Involvement in Infant and Young Child Feeding

In the study of Kasiime et al. (2017) in Uganda, it was discovered that the majority of the children under five years were exclusively breastfed. The study interestingly drew attention to the fact that many children were introduced to other foods prior to their attainment of six months old, a practice that apparently violates the principle underlying exclusive breastfeeding. Even though the study found no association between length of exclusive breastfeeding, mix feeding or replacement feeding and how nourished the child is, it found a relationship between male involvement in terms of providing transportation money to their wives to be able to send child to child welfare clinics and a child who is well nourished.

The study of Kasiime et al. (2017) further revealed that male involvement is high in regard to offering physical support and financial support, which culminate in child feeding. They,

however, observed a low involvement of the male partners in deciding when babies should be fed, that is, the period when the child requires only breast milk or when to begin feeding the child on other foods. This informed why the majority of the male partners appeared ignorant about matters relating to the feeding of their children (Kasiime et al. 2017). Indeed, it has become apparent from this study that male partners who failed to show interest in the feeding of their children were likely to have them undernourished.

Furthermore, it must also be noted that the source of drinking water is essential in determining children's nutrition, as Kasiime et al. (2017) discovered. They noted that children from households who drink mainly from springs stand the chance of suffering from under nutrition than their peers who use other sources, such as pipe water and boreholes. Indeed, they found that the use of water from boreholes was a protective factor against malnutrition.

Interestingly, according to Kasiime et al. (2017), over 80% of the respondents in their study were involved in farming to feed their families. This helps to improve food security in households. Despite the fact that the majority of their respondents (80%) reported they were involved in farming, almost all of them (94%) purchased food items or foods at some point in time for their household consumption. Even though the study did not indicate the season during which most purchases of foods are made, one can deduce that it would be during the lean season when many households suffer shortages of food stuff.

2.6: Relationship between Male Involvement and Child Nutritional Status

A recent study by Inbaraj et al. (2020) in an urban slum of Bangalore revealed that a good proportion of the male partners were involved in child feeding. Accordingly, many of the male parents found time to feed their children every day, while some of them also engaged their children with stories during feeding to enable them to eat. However, no relationship was established between fathers' involvement in feeding their children and the nutritional status of their children (Inbaraj et al., 2020). In contrast, Abate and Belachew (2017) revealed that

fathers' involvement in the feeding of their children was found to influence children's nutritional status. Tran (2018) also observed that children whose fathers failed to send them for medical services were 1.7 times more likely to suffer malnutrition than their peers. Similarly, Kansiime et al. (2017) observed that male parents who spearheaded every cost relating to the children's welfare (that is, transportation and medical related cost) consequently result in proper nourishment of such children. Expatiating further, they indicated that such children grow well because of the exposure to appropriate dietary counselling the parents benefit from as they avail themselves regularly to the child welfare clinic. They further opined that the nutritional status of a child corresponds to the number of activities usually executed by the father at home in favor of the child. Apparently, the income level of families is a critical determinant as far as good nutrition of the children is a concern. Indeed, the study of Boadi & Kobina (2017) lends credence to this. They empirically unveiled the fact that children of wealthier parents are better nourished than their counterparts with parents who are poor. This therefore means that the income of fathers is required to undertake the many activities intended to foster good nutrition, which will ultimately engender optimal growth of their children.

Moreover, in a qualitative study about the 'community perspective on the role of male parents during pregnancy, Alio et al. (2013) noted that when the male counterparts participate in activities that their breastfeeding partners engage in, they turn to lessening some burden on them. This they indicated will consequently impact the children's health. They added that the support required of fathers at least at the household level is so essential because it offers mothers physical and mental health with its attendant impact on proper nourishment and growth of their breastfeeding children (Alio et al., 2013).

Chapter Summary

The participation of male partners in the care of their children has been found to be unimpressive, with the influential factors being multifaceted. While some studies found the

involvement of fathers in their children's care significant at influencing their nutritional status, many others did not. Of all the literature reviewed, it became so succinct that no study thus far has been conducted on 'male partner involvement in child care and how that relates to their children's dietary intake and growth' in Ghana either than on maternal-related health. It was therefore essential for this study to be conducted to elicit the contributions of the male partners in their children's care and its relation to the dietary intake as well as the growth of these children, 6 – 23 months, in the Jirapa municipality.

CHAPTER THREE
METHODOLOGY

3.0 Introduction

Methods of a study are the processes that the researcher follows to ensure that the study is successfully carried out. By following the methods diligently, the study objectives were realized. This chapter covers the following: the design of the study; the study area; the population; sample size determination; sampling procedure; inclusion and exclusion criteria; data collection techniques and measurement of study variables; data quality control; independent and dependent variables; data management and analysis; and ethical considerations.

3.1 Study Design

The study was a community-based analytical cross-sectional study that employed both quantitative and qualitative data collection methods involving males who had children 6-23 months of age. In *analytical cross-sectional studies, the* data on the prevalence of both exposure and a health outcome are obtained for the purpose of comparing the health outcome differences (Alexander et al., 2016).

3.2 Study Area

Location and Size

The Jirapa municipality is located in the northwestern part of the Upper West Region of Ghana. It shares boundaries with the Nadowli-Kaleo and Daffiama-Bussie-Issah districts to the south, the Lambussie district to the north, the Lawra municipality to the west and the Sissala West district to the east. The municipality covers approximately 12.4% of the region's population, with a projected population of 91,279 consisting of 43,021 males and 48,258 females from the 2021 population and housing census (GSS, 2021). The municipality is made up of 137 communities of varying sizes.

Figure 2: Map of Jirapa municipality

Culture and Tradition

The municipality is made up of two traditional counsels (Paramouncies) - Jirapa and Ullo. Dagaabas are the dominant tribe, with a few minority tribes, such as Sissala and Waala, in the municipality. The most common food eaten is Tuozaafi (TZ). The taboos vary from one clan to the other.

Food production

The municipality is within the Guinea Savannah climatic zone and experiences one season of rainfall and a long dry spell. The municipality is mainly agrarian, and thus farming serves as the main source of economic activity. Crops cultivated are mainly maize, guinea corn, millet, beans, groundnuts and bambara beans. Most of the women are involved in peasant farming with a cross section of them combined with pito brewing for the sake of family upkeep. As a

means of economic ventures, dawadawa and shea nut gathering are mainly performed by women during the season.

Health

The municipality has forty-five (45) health facilities and three sick bays cited in the three senior high schools, namely, St Francis SHS, Jirapa SHS and Ullo SHS, seven (7) health centres, thirty-seven (37) functional CHPS, one polyclinic and a hospital. Out of the 45 health facilities, three health centres and the hospital are managed by the Christian Health Association of Ghana (CHAG) and one private clinic

3.3 Study Population

The study involved male partners who were aged 18 - 50 years and had children who were within the age range of 6- 23 months. The male partners were either married or cohabitating.

3.4 Sample Size Determination

The sample size was determined using the formula indicated below (Snedor & Cochran, 1967):

$$N = \frac{z^2 * p(1-p)}{d^2}$$

Where:

N = sample size,

z = z score associated with the confidence level

d = desired precision or margin of error

P = estimated proportion of the target population

The following assumptions were made for the purposes of this study:

i. The degree of confidence (z) was set at 95%, which corresponds to 1.96

ii. The margin of error was estimated at 5% (0.05)

iii. The proportion of males involved in child care represented by 'P' was unknown, and therefore, 50% was used.

Therefore, the values in the formula are fixed:

$$N = \frac{1.96^2 * 0.50(1-0.50)}{0.05^2}$$

$$N = \frac{3.8416 * 0.25}{0.0025} = 384.16$$

N = 385

However, to cater for potential nonresponses, the sample size was increased by 10%. Thus,

385 + (385 *0.1)

385 + 38.2 = 423.2 = 424

3.5 Sampling Procedure

3.5.1 Qualitative data

A probability sampling procedure was used to ensure that all eight (8) sub municipalities in the study area (Jirapa municipality) had an equal chance of being represented in the sampling process. A multistage sampling procedure was therefore used to arrive at the required sample size of 424 for the study. First, by simple random sampling, the names of the eight (8) submunicipals, Jirapa, Yagha, Tuggo, Duori, Tizza, Ullo, Sabuli, and Hain, were written on equal-sized pieces of paper. These names were folded and placed in a container and shaken. Afterwards, five sub-Municipals were picked out of the eight. A list of communities in each sub municipality was made, and by simple random sampling, five communities each were selected, making a total of 25 communities for the study.

A sample frame consisting of a list of households in each of the 25 communities was made, and a systematic sampling technique was used to select study participants in each community. To qualify for selection, a household had a male partner with a child under two years. The father and a child were selected for every household, and where the children were more than one, simple random sampling was used to select one eligible child. This was done until a total of 424 samples were obtained.

3.5.2 Qualitative data

Four different focused group discussions (FGD) were conducted in four communities; Baazu, Moyiri, Tampoe and Nimbare communities within the municipality. For each of the

communities 10 male partner (aged 18-50 years) volunteers with children 6 – 23 were selected for the interview. This gave a total of 40 male parents that were used for the focused group discussion.

3.6 Inclusion and Exclusion Criteria

The inclusion criteria involved male partners with children aged 6-23 months and residents in the Jirapa municipality.

The exclusion criteria included male partners with children 6-23 months and were temporal residents of the municipality. Temporal residence referred to those who paid a visit to relatives or friends and therefore had to return within a short period (a month or a year). The exclusion criteria were children 6-23 months who suffered from severe acute malnutrition requiring referral to a nutrition rehabilitation program, severe illness with clinical complications requiring hospital referral and the presence of apparent chronic or congenital abnormalities that hinder feeding or physical growth measurements.

3.7 Data collection techniques and measurement of study variables

3.7.1 Quantitative data

The study employed multiple data collection techniques. First, a structured interviewing questionnaire with both close and open-ended questions was used to illicit responses on the level of male involvement in child care and for factors that influence male involvement in child care: sociodemographic, sociocultural and institutional factors.

The dietary intake of the children was assessed using 24-hour dietary recall to measure dietary diversity and frequency as a proxy measure of optimal feeding. Data on DDS were collected through an interview with the parents or caregivers where the interviewer asked about the different types of foods the child ate the day before the interview using a 24-hour recall approach (Food and Agriculture Organization of the United Nations., 2019).

3.7.2 Qualitative data

Qualitative data was collected through the use of focused group discussions by using focus group discussion guide (Appendix 5). The discussion was centred on the perception, attitude and involvement of male partners in childcare and feeding. For each session the venue (a place devoid of destructions) was chosen by a unit committee member within the community. The principal investigator moderated each FGD with a Community Health nurse who understands the local language (Dagaare) very well. The discussions were recorded using a mobile phone with high quality sound recording. Some demographic characteristics of the respondents were taken (appendix 5).

3.7. 1 Independent and dependent variables

The primary independent variable was male involvement in infant and young child nutrition. Other independent variables considered included sociodemographic characteristics such as age, educational level, marital status, occupation, number of children, level of income, and religion.

The dependent variables **(**that is**, the** primary outcome) were dietary intake and the child's nutritional status (stunting, wasting, and underweight).

3.7.2 Measurement of variables

Measurement of male involvement in infant and young child nutrition

This was determined by relying on a tool used by Gibore et al. (2019) to assess or measure the male parents level of involvement on a scale of eleven (11) household level activities: *seek health care for child; provide money for feeding; provide money for transport; bath child; fetching water; child feeding; preparing food or cooking; sweeping compound; playing with kids; sends child for CWC; and send child for medical service.* This gives a median score of approximately five activities. Therefore, a score below the median was considered low, while a score above the median score was classified as a high level of involvement.

Measurement of dietary intake of children

The child's dietary intake was assessed by using the dietary diversity score (DDS). The DDS was measured using the Food and Nutrition Technical Assistance (FANTA) tool, which indicates the recommendations for feeding children who are 6-23 months old. Minimum dietary diversity (MDD) was defined as the proportion of children aged 6-23 months who received foods from at least four out of the seven food groups [United Nations Children's Fund (UNICEF), 2020; Food and Agriculture Organization of the United Nations., 2018; USAID, 2011]. The seven food groups include (1) grains, roots, and tubers; (2) legumes and nuts; (3) flesh foods (meat, fish, poultry and liver/organ meats); (4) eggs; (5) vitamin A rich fruits and vegetables; (6) dairy products (milk, yogurt, cheese); and (7) other fruits and vegetables (UNICEF, 2020; FAO, 2018; USAID, 2011).

A child who consumed at least one food item from a food group was assigned a value of one for such a child and zero for not consuming any food item from that food group. The group scores were then summed to obtain the dietary diversity score, which ranged from zero to seven, where zero represents nonconsumption of any of the food items and seven represents the highest level of diet diversification.

Assessment of nutritional status of children

To determine the growth of every child, anthropometric measurements were used. Anthropometric data such as age in months, height/length in centimetres, and weight in kilograms were used to determine stunting, underweight and wasting. The age of the study participants was determined using the child health record booklet and birth certificates. The length of children less than two years (0-23 months) was measured in the recumbent position to the nearest 0.1 cm using a measuring board with an upright base and movable headpiece. The weight of the children wearing light clothing was determined using SECA electronic weighing scales to the nearest 0.1 kg.

The growth of the child was also assessed by determining the following nutritional indicators: stunting, wasting, and underweight. The nutritional status of every child was classified using the World Health Organization (2006) Child Growth Standards. A child whose weight-for-age z scores were less than -2 SDs below the median for their age and gender was classified as being underweight. Any child with height-for-age Z scores less than −2 SD below the median was classified as stunted, whereas those with weight-for-height Z scores less than -2 SD below the median were classified as wasted.

3.8 Data Quality Control

The data collection took a period of 2 months (February-March 2021) by trained health professionals, such as community health nurses and nutrition officers working in the municipality. These data collectors were oriented properly on how to collect quality data. To ensure data quality, all interviews were conducted in Dagaare, the predominant dialect of the participants. The data collection tools were translated into Dagaare during the orientation session for data collectors before the data collection. All technical terms were explained and translated to ensure consistency among all data collectors.

The instrument was pretested/piloted in Lawra municipality because it shares similar characteristics with that of the study area. This allowed for necessary corrections before the actual data collection took place.

3.9: Data management and analysis

3.9.1 Quantitative data

It should be noted that the quantitative data was analysed for 392 respondents instead of the estimated number of 424. This was due to misplacement and incompleteness of some of the information. This however did not make the sample unrepresentative because it is still larger than the original sample size that was determined (385 samples).

The data on dietary diversity and frequency were entered into the statistical package for social sciences (SPSS) version 22, where they were further recoded for analysis. The WHO Anthro version 3.2.2.1 was used to analyse the anthropometric data (i.e., weight, height and age). The WHO (2006) recommended protocols for determining anthropometric Z scores were used to ensure accuracy.

Simple proportions were used to describe categorical data at the univariate level and are presented in frequency and percentage distributions. At the bivariate level, Pearson's chi-square test was used to determine the associations between the independent and dependent variables. The computed chi-square was then compared to the critical value 0.05 level of significance at a 95% confidence interval. A relationship between the independent and dependent variables that resulted in a critical p value of less than 0.05 was interpreted as being significant. All the variables that were found to be significant at the bivariate level were included in a logistic regression model to determine the relationship.

3.9.2 Qualitative data

The main themes of each discussion session was reviewed immediately after the discussions and summarized patterns of responses. Recordings from the FGDs were translated from Dagaare into English and then transcribed. Afterwards the data was grouped into specific themes (perception, attitude and male involvement) to make it easy to follow. It was ensured that data analysis was guided by thematic content. The qualitative data is required in order to enhance quantitative results as well as analyzed specific elements in line with quantitative findings.

3.10: Ethical considerations

Ethical approval was obtained from the Kwame Nkrumah University of Science and Technology ethics committee. (Reference no. CHRPE/AP/472/21). Additional approval was obtained from the Municipal Health Directorate, Jirapa (Ref: GHS/UWR/JMHD/f-11) before the study was conducted. Written informed consent was obtained from all participants after

giving a description of the study. Confidentiality was seriously adhered to throughout the study processes.

CHAPTER FOUR
RESULTS

4.1 Sociodemographic characteristics of study participants

A sample size of 424 was set out to be used. However, a complete data set for 392 respondents (92.5%) was included in this analysis. The mean age of the fathers was 35.5 ± 7.2 years. Nearly half of the respondents (49.2%) were found to be within 30-39 years. Regarding education, 38.5% had no education at all, while 37.8% had at least secondary education, while those with primary education constituted 23.7%. The respondents were mostly Dagaabas (95.7%), and the majority of them (76.3%) were Christians (Table 4.1a). With respect to occupation, the majority were farmers (67.9%), with as high as 91.3% earning below GH¢500.00 as average household income (Table 4.1b). Indeed, most of the respondents (84.5%) were found to be in a monogamous marriage relationship. Regarding the number of children, 45.4% and 29.8% of the respondents had more than three children and one child, respectively, with almost a quarter having two children (24.7%) each.

Table 4.1a: Sociodemographic characteristics

Characteristics	Frequency (n=392)	Percentage (%)
Paternal age (years)		
20-29	86	21.9
30-39	193	49.2
40-49	113	28.8
Educational level of mothers		
None	151	38.5
Primary	93	23.7
Secondary	98	25.0
Tertiary	50	12.8
Ethnicity		
Dagaaba	375	95.7
Waala	6	1.5
Sisaala	7	1.8
*Others	4	1.0
Religion		
Christianity	299	76.3
Islamic	27	6.9
Traditional	66	16.8
Occupation		
Farming	266	67.9
Trading	40	10.2
Public/Civil Servant	50	12.8
Artisans/Craft	34	8.7
Others	2	0.5

Table 4.1b: Socio demographic characteristics

Characteristics	Frequency (n=392)	Percentage (%)
Household Income		
< GHS 500	358	91.3
GHS 501-1000	24	6.1
> GHS 1000	10	2.6
Number of children		
1	117	29.8
2	97	24.7
>3	178	45.4

*Others: Fulani, Ewe *Source: Field data 2021*

4.2. Level of father's involvement in childcare and feeding activities in the past 6 months

In determining the level of involvement of fathers relative to the care of their children, eleven household-level activities were used. Regarding sending children to a health facility for care, the majority of the respondents (65.8%) were involved, and as many as 90.3% were providing money to buy food for the household. Indeed, most of the respondents (82.9%) were providing money to aid transportation of their children to CWC sessions. The majority were also found to have been participating in the feeding of their children (66.3%) at home, as 84.4% further reported playing with their children at home. Furthermore, most respondents (72.7%) were found not to have participated in the bathing of their children at home, just as 82.9% were not involved in fetching water at the household level. Again, with regard to cooking food at home, the majority (72.7%) were not involved. As high as 86.6% further indicated that they do not participate in sweeping their compound. Regarding 'accompanying wives to send child to CWC', most fathers (92.6%) were found not to be involved. In regard to ensuring that husbands accompanied their wives to attend to the child's medical conditions, slightly more than half (51%) were not involved. Considering a median score of five (5), the majority were (63) found to have a high level of involvement in child care and feeding activities.

Table 4. 2: Level of fathers' involvement in childcare and feeding activities

Activity	**Response**		
Health and finance		**Frequency (n)**	Percentage (%)
Have you ever taken your child to health institution since his birth?	Yes	134	34.2
	No	258	65.8
Provide money to buy food for the child	Yes	38	9.7
	No	354	90.3
Provide transport money to child health clinic	Yes	67	17.1
	No	325	82.9
Providing physical support			
Participate in child feeding	Yes	132	33.7
	No	260	66.3
Assist in household chores: bathing the child	Yes	285	72.7
	No	107	27.3
Assist in household chores: Assist in fetching water	Yes	325	82.9
	No	67	17.1
Assist in household chores: Helps with cooking	Yes	285	72.7
	No	107	27.3
Assist in household chores: handling and or playing with the child	Yes	61	15.6
	No	331	84.4
Assist in household chores: sweeping the compound	Yes	340	86.7
	No	52	13.3
Accompanies wife/attends growth monitoring sessions	Yes	363	92.6
	No	29	7.4
Accompanies wife/attends child's other medical consultations	Yes	200	51.0
	No	192	49.0
Categorization of male involvement			
Low (Less than median score of 5)		145	37.0
High (At least median score)		247	63.0

Source: Field Data, 2021

Interestingly, focused group discussions revealed an unfettered and unflinching desire of fathers to care for their children. Accordingly, they undertake a number of activities that are aimed at the child.

Regarding the contribution fathers make at ensuring their children feed and grow well, a father expressed the following:

> "*Me my work is mainly farming. I farm to make sure food is available so that their mother will always prepare food for them" (a father, FGD – TAMPOE).*

Another father also said:

> "*For me, I cook for the children when their mother is not around or is sick*".

In terms of the fathers' involvement in the health care needs of the child, they expressed the following:

> *"It is a serious concern for me when my child is sick. If I observed that the child had a fever, I usually asked the mother to send him to the hospital. Sometimes I personally send him if the mother is delaying and I see that the child is suffering" (Tampoe - FGD).*

Another male parent also indicated:

> *"For me I back the child personally to the hospital for treatment when I see that she is sick. I don't even wait for the mother. I have done that severally because I need the child that is why I gave birth to her." (FGD -Baazu)*

Regarding the fathers giving money to their wives to buy items (food or clothen) for their children, a participant noted this:

"Me, it is not all the time I always have money, but anytime I get money I give to my wife. I always do that because she is the one that always has the child. So she can use the money to buy food or anything the child wants" (FGD - Nimbare).

4.3 Factors that influence male involvement in child care, including feeding

A high educational level of the respondent was positively associated with the father's involvement in child feeding. In bivariate analysis, household wealth index, nutrition-related attitudes, father's age, nutrition knowledge, father's education and number of wives were significantly associated with level of male involvement in child feeding activities.

Table 4.3: Factors associated with fathers' involvement in childcare and feeding

		Categorization of Father's Involvement		
Variable	**N**	Low (less than median score of 5) **n (%)**	High (at least median score of 5) **n (%)**	**Test statistic**
Household Wealth Index				
Low (Less than median score)	143	75 (52.4)	68 (47.6)	Chi-square (χ^2) = 23.1, p < 0.001
High (At least median score)	249	70 (28.1)	179 (71.9)	
Nutrition-related attitudes score (NRAs)				
Negative (Less than median score)	195	96 (49.2)	99 (50.8)	χ^2 = 24.9, p < 0.001
Positive (at least median score)	197	49 (24.9)	148 (75.1)	
Father's age (years)				
Under 25	**18**	4 (22.2)	14 (77.8)	χ^2 = 8. 7, p = 0.01
25-35	**197**	62 (31.5)	135 (68.5)	
More than 35	**177**	79 (44.6)	98 (55.4)	
Classification of overall nutrition knowledge score				
Low (Less than median score)	174	88 (50.6)	86 (49.4)	χ^2 = 24.8, p < 0.001
High (At least median score)	218	57 (26.1)	161 (73.9)	
Father's education				
None	151	73 (48.3)	78 (51.7)	χ^2 = 16.2, p < 0.001
Primary	93	23 (24.7)	70 (75.3)	
Secondary	98	35 (35.7)	63 (64.3)	
Tertiary	50	14 (28.0)	36 (72.0)	
Number of wives				
1	332	112 (33.7)	220 (66.3)	Fisher's Exact Test = 9.9, p = 0.004
2	57	31 (54.4)	26 (45.6)	
3	3	2 (66.7)	1 (33.3)	

4.4: Factors associated with fathers' involvement in childcare and feeding practices (Multivariable logistic regression analysis)

In multivariable binary logistic regression analysis, fathers who had a positive attitude towards childcare and feeding were 2.3 times more likely to become involved in childcare and feeding practices (AOR = 2.33, 95% CI: 1.48–3.68) than fathers who had negative attitudes. Fathers of high socioeconomic status as measured by household wealth index were also 1.8 times more likely to be involved compared to their counterparts who were poor AOR = 1.80 (95% CI: 1.13–2.88). Fathers who scored high overall nutrition-related knowledge had a higher level of involvement than their counterparts who were less knowledgeable (AOR = 2.41, 95% CI: 1.53–3.79). A unit increase in the age of the father was associated with 5% less involvement in child care and feeding activities (AOR = 0.95, 95% CI: 0.92–0.98) (Table 4.4). The set of variables accounted for 20.3% of the variance in fathers' involvement in childcare and feeding activities (Nagelkerke R Square = 0.203).

Table 4 4: Factors associated with fathers' involvement in childcare and feeding practices

Variable	Wald	Sig.	Adjusted odds ratio (AOR)	95% C.I.for AOR	
				Lower	Upper
High overall nutrition knowledge score	14.523	<0.001	2.41	1.53	3.79
High wealth index	6.015	0.014	1.80	1.13	2.88
Positive attitude to childcare and feeding	13.146	<0.001	2.33	1.48	3.68
Age of father	9.447	0.002	0.95	0.92	0.98
Constant	3.057	0.080	2.99		

In focused group discussions, the financial status of fathers was observed to play a critical role in determining their contributions to the care of their children. As expressed by a father and supported by others:

"I always wish to do many things for my children but the money. Now money is needed for everything. If the child is sick and you go to the hospital, it is money, whether the child has insurance or not. Me, I am a farmer, I farm to make sure food stuff is available in the house, but that is not all. I still need to buy food ingredients for my wife to prepare food for the children. It is sometimes not easy" (FGD – Tampoe).

4.5 Fathers' Attitudes towards Child Care and Feeding

Generally, fathers' attitudes towards childcare and feeding practices were positive except in regard to whether women need not ask permission from other household members to buy items such as clothing and medicine for themselves (Table 4). 5a). The study revealed that as many as 90.8% of the respondents agreed that it is important to breastfeed a child within the first hour of birth. The data also showed that the majority of the respondents (89%) agreed that breastfeeding a child for two or more years is good. Again, in regard to complementary feeding, the majority (70.4%) agreed that complementary feeding should start at 6 months and not earlier or later than that.

Furthermore, as many as 88% of the respondents agreed that children who are 9 to 23 months old should eat at least 3 times a day. Regarding given children's variety of food for healthy growth, almost all the respondents (96.7%) agreed and as high as 94.4% also agreed that green leafy vegetables are rich in substances that help the body to make blood for children. The majority of the respondents, 85.2%, further agreed that it is helpful to give fish and meat to children frequently in sufficient amounts, with 81.6% agreeing to the fact that fat and oil should be added to children's food for strength and vitality. In regard to providing porridge that is thick enough to stay on the spoon for better nutrition and growth, the majority again agreed (87.8%) (Table 4.5a).

Similarly, the majority (91.3%) agreed that food for the baby should be thick, mashed or chop fine as the baby grows older (Table 4.5b). Regarding the fact that one should always remember

to wash hands with soap and water before handling the child's food, almost all the respondents (99.7%) agreed, as 99.2% also agreed that cooking utensils should be kept clean and safe from germs. Furthermore, as many as 92.1% of the fathers who were interviewed disagreed that the health of the child is a woman's business, as the majority (87%) also did not support the fact that women alone are to make sure the family eats well. Again, the majority of the male parents, 83.2%, disagreed that 'because men work hard to provide for the family, they should be given priority at meal times'. Indeed, the majority of the respondents (86.7%) agreed that men should take part in bathing and feeding of their children as well as the provision of health care, as 64.3% were also in support of the fact that fathers should take their children to the child welfare clinic. In regard to the fact that women need not ask permission from other household members to buy items such as clothing and medicine for themselves, slightly more than half, 53.6%, of the respondents, however, agreed, while 45.7% disagreed (Table 4.5b).

Generally, a median score of 34 showed that the overall nutrition-related attitude was high in approximately half of the male parents (50.3%) that were interviewed.

Table 4.5a: Father's attitudes towards infant and young child feeding recommendations

Variables	Responses Category	Frequency	Percentages
		N=392	%
It is important to breastfeed child within 1 hr after birth	Disagree	1	0.3
	Neutral	35	8.9
	Agrees	356	90.8
Breastfeeding for 2 or more years is good	Disagree	3	0.8
	Neutral	40	10.2
	Agrees	349	89.0
Start complementary feeding at 6month not earlier not later	Disagree	14	3.6
	Neutral	102	26.0
	Agrees	276	70.4
Child age 9-23months eats at least 3times a day	Disagree	2	0.5
	Neutral	45	11.5
	Agrees	345	88.0
Give children variety of food for healthy growth	Disagree	1	0.3
	Neutral	12	3.1
	Agrees	379	96.7
Green leafy vegetables are rich in substances that help body make blood for children	Neutral	22	5.6
	Agrees	370	94.4
It is helpful to give children fish and meat frequently in sufficient amount	Disagree	13	3.3
	Neutral	45	11.5
	Agrees	334	85.2
Add fat and oil to children food for strength and vitality	Disagree	5	1.3
	Neutral	67	17.1
	Agrees	320	81.6
Give porridge that are thick enough to stay on the spoon for better nutrition and growth	Disagree	5	1.3
	Neutral	43	11.0
	Agrees	344	87.8

Table 4.5b: Father' attitudes towards infant and young child feeding recommendations

Variables	Responses Category	Frequency	Percentages
		N=392	%
Make food thicker, mashed or chop fine as your baby grows older	Disagree	3	0.8
	Neutral	31	7.9
	Agrees	358	91.3
Always remember to wash hand with soap and water before handling child food	Disagree	1	0.3
	Agrees	391	99.7
Keep cooking utensils clean and safe from germs	Neutral	3	0.8
	Agrees	389	99.2
Health of child is a woman's business	Disagree	361	92.1
	Neutral	5	1.3
	Agrees	26	6.6
Making sure family eats well is solely a woman's responsibility	Disagree	341	87.0
	Neutral	4	1.0
	Agrees	47	12.0
Because men wok hard to provide for family, they should be given priority at meals times	Disagree	326	83.2
	Neutral	6	1.5
	Agrees	60	15.3
Men take part in child care such as bathing, feeding, and provision of health care	Disagree	27	6.9
	Neutral	25	6.4
	Agrees	340	86.7
Men should take children to CWC sessions	Disagree	103	26.3
	Neutral	37	9.4
	Agrees	252	64.3
Women need not ask permission from other household members to buy items such clothing and medicine for herself	Disagree	179	45.7
	Neutral	3	0.8
	Agrees	210	53.6

Source: Field data, 2021

Overall nutrition-related attitudes (NRAs)	Frequency (n)	Percentage (%)
Low (Less than median score of 34)	195	49.7
High (At least median score of 34)	197	50.3

It is important to indicate that even though fathers care so much about their children's health and welfare, some become so reluctant when their wives are present and able at home. The expression of this father supports this assertion:

If it has to do with sending child for weighing, that one my wife does that because I cannot always get chance from my work. However, if something happens that my wife cannot send the child, then I would be compelled to do that".

4.6 Fathers' knowledge levels in child care and feeding practices

Fathers had a fair idea of child care and feeding practices (Table 4. 6). A large proportion of fathers (at least 80%) were more knowledgeable about feeding practices, such as best food for a newborn baby, knowing fruits/vegetables to help fight against diseases, and why a woman should wait at least two or three years between pregnancies. They, however, had limited knowledge with regard to knowing that frequent breastfeeding produces enough breast milk, knowing which food group can give more blood, reasons why it is important to give foods in addition to breast milk to babies and reasons why children under 6 months should not be given water.

Table 4.6a: Fathers' knowledge levels in child care practices

Variable	No.	%
Proportion of fathers knowing babies should start breastfeeding soon after birth	258	65.8
Proportion of fathers knowing the best food for a new-born baby	370	94.4
Proportion of fathers knowing the age for introducing semisolid foods into a child's diet	265	67.6
Proportion of fathers knowing children should be breastfed for at least 2 years	285	72.7
Proportion of fathers who knew that water should not be given to a child less than 6 months	221	56.4
Proportion of fathers knowing the meal frequency for a child aged 9-23 months in a day	338	86.2
Proportion of fathers knowing frequent breastfeeding produces enough breast milk	85	21.7
Proportion of fathers knowing fruits/vegetables help fight against diseases	330	84.2
Proportion of fathers knowing food group that gives more blood	215	54.8
Proportion of fathers knowing which food group can give more blood	94	24.0
Proportion of mothers knowing that children should be given animal foods such as eggs and meat	300	76.5

Table 4.6b: Fathers' knowledge levels in child care practices

Variable	No.	%
Proportion of fathers giving reasons why a woman should wait at least two or three years between pregnancies, that is before becoming pregnant once again (Mentioning at least one)	338	86.2
Proportion of fathers who could mention three reasons why it is important to give foods in addition to breast milk to babies	120	30.6
Proportion of fathers who could mention three reasons why children under 6 months should not be given water	112	28.6
Proportion of fathers knowing different ways to encourage active feeding (At least 3)	312	79.6
Proportion of fathers knowing at least three consequences of malnutrition in pregnant women	274	69.9
Proportion of fathers who could give at least two reasons why mothers or caregiver should give the child soft foods or thick porridge	223	56.9
Proportion of mothers knowing three ways men can help their wives to improve nutrition in the family	167	42.6
Overall nutrition knowledge score		
Low (Below median score of 27)	174	44.4
High (At least median score)	218	55.6

In fact, the results from the focus group discussion further support this:

> *"For me, I don't joke with my children's health because I want them that is why I brought them forth. It would be wrong for me to push everything unto my wife. We have to both help each other to cater for them so that they can be beneficial to us in the future" (male participant, Tampoe FGD).*

4.7 Complementary feeding practices

The overall prevalence of appropriate complementary feeding practice combining key indicators three (timely introduction of complementary food, adequacy of meal frequency, and meeting MDD) was 49.7%. The proportion of children meeting the minimum dietary diversity (≥4 of 7 food groups) was 69.4%. Grains, roots and tubers were the most commonly consumed food group (97.7%) by children in the previous 24 hours preceding the survey. The

consumption of all other food groups was less than 50%. The majority of the respondents 332 (84.7%) indicated that they started complementary feeding at 6 months (Table 4.7).

Table 4.7: Complementary feeding practices for children aged 6-23 months

Feeding practice	Frequency (n)	Percentage (%)
Consumption of grains, roots & tubers;	383	97.7
Consumption of legumes and nuts	181	46.2
Consumption of dairy products	54	13.8
Consumption of flesh foods (meat, poultry, and fish	320	81.6
Consumption of eggs	6	1.5
Consumption of vitamin A-rich fruits and vegetables	296	75.5
Consumption of other fruits & vegetables	233	59.4
Introduction of complementary foods at 6 months	332	84.7
[1]Minimum meal frequency (MMF),	309	78.8
[2]Minimum dietary diversity (MDD),	272	69.4
[3]Minimum acceptable diet (MAD)	228	58.2
[4]Appropriate complementary feeding practice	195	49.7

[1]Minimum meal frequency is defined as 2 times for breastfed infants 6-8 months; 3 times for breastfed children 9-23.9 months; 4 times for nonbreastfed children 6-23.9 months. "Meals" include both meals and snacks, and frequency is based on the mother's report.

[2]Minimum dietary diversity (MDD): Eating from at least four food groups in the past 24 hours

[3]Acceptable diet is defined as a child who had at least the minimum dietary diversity and the minimum meal frequency during the previous day.

[4]Appropriate complementarity is defined as having met the minimum acceptable diet and complementary food being introduced at 6 months.

4.8 Relationship between fathers' nutrition-related attitudes and selected recommended indicators of complementary feeding practices

There was a statistically significant positive correlation between fathers' knowledge and attitude towards appropriate complementary feeding of their children (r = 0. .182, p < 0,001. There was no evidence of an association between the nutrition knowledge score of fathers and

the appropriate complementary feeding practice of mothers, crude odds ratio (COR) = 1.26 (95% CI: 0.84-1.88, p > 0.05). However, fathers' nutrition-related attitudes were associated with optimal complementary feeding practice indicators (Table 4.8). Fathers with a positive attitude (attitudes scores of at least the median score) were more likely to have their wives feed their children from ≥4 food groups, COR = 1.82, (95% CI: 1.18, 2.81). Wives of fathers with a more favorable attitude also had higher odds of giving their children the minimum acceptable diet (COR = 2.29; 95% CI: 1.52, 3.45). Women whose husbands had the most positive attitudes were more likely to practice appropriate complementary feeding compared to fathers with less positive attitudes (COR = 2.10, 95% CI: 1.41, 3.15).

Table 4.8: Relationship between fathers' attitudes towards infant feeding and selected recommended indicators of complementary feeding practices

Child Feeding practice	Crude odds ratio (COR)	95% confidence interval (CI**)**
Timely introduction of complementary food	1.63	0.93 – 2.86
Minimum meal frequency (MMF),	2.54	1.52-4.23
Minimum dietary diversity (MDD),	1.82	1.18-2.81
Minimum acceptable diet (MAD)	2.29	1.52-3.45
Appropriate complementary feeding practice	2.10	1.41-3.15

4.9 Relationship between fathers' involvement in child care activities and recommended indicators of complementary feeding practices

There was no evidence of an association between fathers' involvement in childcare activities and the timely introduction of complementary foods. However, fathers' involvement was positively associated with minimum meal frequency (MMF), minimum dietary diversity (MDD) and minimum acceptable diet (MAD) (Table 4.9a). Fathers with high involvement were more likely to have mothers feed their children from ≥4 food groups, COR = 1.55; 95% CI: 1.06, 2.40]. Fathers with higher levels of involvement were positively associated with a minimum acceptable diet (COR = 1.90; 95% CI: 1.25, 2.89).

Table 4.9a: Relationship between fathers' involvement in childcare activities and selected recommended indicators of complementary feeding practices

Child Feeding practice	Crude odds ratio (COR)	95% confidence interval (CI**)**
Timely introduction of complementary food	0.57	0.31 – 1.06
Minimum meal frequency (MMF),	2.18	1.33-3.57
Minimum dietary diversity (MDD),	1.55	1.0-2.40
Minimum acceptable diet (MAD)	1.90	1.25-2.89
Appropriate complementary feeding practice	1.43	0.95-2.16

In the multivariable logistic regression analysis, which controlled for potential confounding factors, high father involvement (at least median score) in childcare and feeding activities remained a significant independent predictor of minimum acceptable diet (MAD) [AOR 1.60; 95% CI (1.04 – 2.47)] compared to low involvement (less than median score) father involvement.

Children whose fathers had a positive attitude towards childcare were 2.0 times more likely to be fed with MAD [AOR = 2.05 (95% CI: 1.35 - 3.14)] than their counterparts whose fathers' attitudes were poor.

Table 4.9b: Relationship between fathers' involvement in childcare activities and MAD (multivariable regression analysis)

	Wald	Sig.	Adjusted odds ratio (AOR)	95% C.I.for AOR	
				Lower	Upper
High male involvement	4.55	0.03	1.60	1.04	2.47
Male positive attitude	11.13	0.001	2.05	1.35	3.14
Constant	2.90	0.09	0.73		

4.10 Association between male involvement and child growth

Self-reported male involvement in child feeding activities was not associated with the nutritional status of children aged 6-23 months (Table 4.10). Similarly, child-feeding practices were not associated with child growth indicators. Only high nutrition knowledge and positive

nutrition-related attitudes (NRAs) of the father towards childcare and feeding were protective against stunted growth.

Table 4.10a: Association between selected variables and nutritional status of children aged 6-23 months (bivariate analysis)

	Stunted n (%)	**Test statistic**	Wasted n (%)	**Test statistic**
Variable				
Categorization of overall fathers' involvement in childcare and feeding practices				
Low (less than median)	22 (15.2)	Chi-square (χ^2) = 0.5, p = 0.5	*18 (12.4)*	Chi-square (χ^2) = 0.5, p = 0.5
High (At least median score)	44 (17.8)		*25 (10.1)*	
Religion of mother				
Christianity	42 (14.0)	Chi-square (χ^2) = 8.4, p = 0.02	33 (11.0)	Chi-square (χ^2) = 5.1, p = 0.08
Islam	5 (18.5)		*6 (22.2)*	
ATR	19 (28.8)		*4 (6.1)*	
Classification of overall nutrition knowledge score				
Low (Below median score)	35 (20.1)	χ^2 = 5.6, p = 0.02	23 (13.2)	χ^2 = 1.6, p = 0.2
High (At least median score)	**31 (14.2)**		***20 (9.2)***	

Table 4.10b: Association between selected variables and nutritional status of children aged 6-23 months (bivariate analysis)

Variable	Stunted n (%)	**Test statistic**	Wasted n (%)	**Test statistic**
Nutrition-related attitudes (NRAs)				
Low (Below median score)	41 (21.0)	χ^2 = 4. 9, p = 0.03	22 (11.3)	χ^2 = 0. 04, p = 0.8
High (At least median score)	25 (12.7)		***21 (10.7)***	
Meeting Minimum dietary diversity of child				
No	18 (15.0)	χ^2 = 0.4, p = 0.5	16 (13.3)	χ^2 = 0.9, p = 0.3
Yes	48 (17.6)		***27 (9.9)***	
Meeting Minimum acceptable diet				
No	26 (15.9)	χ^2 = 0.2, p = 0.6	18 (11.0)	χ^2 = 0.0, p = 1.0
Yes	40 (17.5)		*25 (11.0)*	
Sex Of Child				
Male	32 (21.1)	χ^2 = 3.2, p = 0.08	18 (11.8)	χ^2 = 0.2, p = 0.7
Female	34 (14.2)		25 (10.4)	

CHAPTER FIVE
DISCUSSION

5.0: Introduction

This chapter discusses the results of the study with related literature across the globe and situates it according to the study objectives. The study is basically aimed at uncovering the contributions made by fathers in caring for their children who are aged 6 – 23 months and how that impacts on their dietary intake as well as growth. The discussion covers the main findings based on the study objectives.

5.1: Level of father's involvement in childcare and feeding activities in the past 6 months

The level at which fathers in the past 6 months took part in the care of their children at the time of the data collection was determined using a composite index comprising eleven variables. The majority of the respondents (63.0%) in this study reported a high level of involvement in childcare and feeding activities. The level of involvement of the male parents in their children's care is consistent with the study by Kansiime et al., (2017) in rural southwestern district of Uganda, that the level at which fathers got involved in services pertaining to their kids was generally high. This result, however, is inconsistent with the study of Craymah et al. (2017), which uncovered a low level of male parents' participation in the care of their children in Anomabo in Ghana. This gives an indication that male involvement generally across Africa need much attention. This can be done through public sensitization on the need as well as making some male partners to serve as ambassadors of male partner involvement.

It is also imperative to note that many of the male parents (65.8%) usually take part in making sure they send their children anytime they fall sick to health facilities for medical attention. This is in line with the work of Dumbaugh et al. (2014) in parts of rural Ghana where many male parents take it upon themselves in making sure that the sick child is sent for treatment at health care facilities. In contrast, Tweheyo et al. (2010) established that in the northern part of

Uganda, very few male parents showed their active participation in seeking health care services for their sick children. Interestingly, Jorosi-Tshiamo et al. (2013) opined that the male parents' involvement in sending their sick children for medical care mostly comes in when the mothers are not available.

It was also observed that as high as 90.3% of the male parents make sure that money is made available to purchase food staff/food for the family. Majority of the male partners (82.9%) also reported that they give out money to enable their spouses transport their child to the child welfare clinic. This clearly affirms the study of Abate & Belachew, (2017) that male partner involvement was high in regard to giving financial support to the household for the purposes of feeding and transporting children for health delivery services.

The findings of this study on the level at which fathers participate in their children's care can therefore summarily be described as high in the Jirapa municipality.

5.2: Factors that influence male involvement in child care, including feeding

The study found that factors such as high educational level, household wealth index, nutrition-related attitudes, father's age, nutrition knowledge, father's education and number of wives married were significantly associated with level of male involvement in child feeding activities. It was observed, for instance, that male parents with no educational background at all were less likely to be involved in the care of their children than those who had some education, especially those with a higher education. This finding confirms that of Ditekemena et al. (2012), who reported that in Sub-Saharan Africa, male parents with a higher level of education showed more interest and usually took part in services pertaining to their children than those with low educational status. Again, it has become so obvious that children born to highly educated parents are better fed a nutritious diet than their counterparts who are born to fathers with low education (Birie, Kassa, & Kebede, 2021; Kunhipurayil & Srivastav, 2021; Mulat et al., 2019). Education has therefore become very central in regard to issues relating to empowering the

male parents to carry out their responsibility of caring for their children. This is because education offers individuals the opportunity to get an enhanced comprehension of their responsibilities and the need to exercise the same in the family alongside the opportunity to get a job that will earn them some income that would be used to cater to the family needs.

Moreover, from a multivariable binary logistic regression analysis, it was observed that the income level of the fathers plays a very meaningful role as far as the care of their children is concerned. This study observed that fathers with a high level of income were more likely to offer the needed care and support that are needed for their children than those with low financial status. This conforms with the finding of Aborigo et al. (2018) that male parents who are well to do were more likely to play an active role in offering maximum care and support to their young children. This is indicative of the fact that money is pivotal in executing many of the activities at the household level by the male parents. For instance, buying food, paying for medical bills, transportation, just to mention a few all involve money. Indeed, many studies have identified the financial stand of parents as one of the key determinants of a child's dietary intake; children of wealthy parents are better nourished than those of poor parents (Birie, Kassa, & Kebede, 2021; Kunhipurayil & Srivastav, 2021; Mulat et al., 2019).

It was further observed that fathers who had a positive attitude towards childcare and feeding were more likely to become involved in childcare and feeding practices than fathers who had negative attitudes. This has to do with fathers with satisfactory education concerning what food is appropriate for the child and how frequently the child is required to eat to ignite optimal growth. Similarly, fathers who scored high overall nutrition-related knowledge had a higher level of involvement compared to their counterparts who were less knowledgeable. This relates to the work of Mushonga et al. (2017) in rural Zambia, where she observed that parents with an increase in nutrition-related knowledge stand the chance of giving their children a good diet than their counterparts with poor knowledge. Additionally, Abera et al.(2017) in southern

Ethiopia observed that educated fathers were more receptive to executing tasks that favor children's dietary needs. Indeed, with the requisite knowledge and attitude, fathers get to internalize their children's care as paramount and therefore exhibit the same. Again, it was established that the age of the fathers was also associated in that a unit increase in age of father was associated with 5% less involvement in child care and feeding activities.

5.2.1: Fathers' Knowledge Attitudes towards Child Care and Feeding

A greater number of fathers clearly knew some of the recommended feeding practices for the newborn, food that is best for a newborn child, and consumption of fruits and vegetables as protective against diseases. This contrasts the findings of Roshin & Sujatha (2013), which showed that less than half (47%) of the fathers were knowledgeable about matters relating to the feeding and general welfare of the children. In the same wayApriyanto (2020) in Timor-Leste uncovered that many parents of children younger than two years lack adequate knowledge of what constitutes good dietary intake for these children. This study again showed that many fathers knew the very reason a woman needed to wait for a minimum of two years before becoming pregnant again. It is, however, interesting to point out that many of the fathers were ignorant in regard to some other feeding practices, such as frequent breastfeeding producing enough breast milk, food offering the body with more blood and relevance of exclusive breastfeeding.

Regarding fathers' attitudes towards child care and feeding practices, it was generally observed to be positive except in regard to whether women need not ask permission from other household members to buy items such as clothing and medicine for themselves. The study revealed that as many as 90.8% of the respondents agreed that it is important to breastfeed a newborn baby within the first hour of birth, related to the finding of Abhinaya et al. (2016), which revealed that the majority of fathers agreed to the fact that breast milk alone should be offered to kids soon as they are born up to the 6^{th} month of such a kid. This study also identified that the majority of the fathers (89%) agreed to the fact that children should be breastfed for a minimum

of two years to foster adequate growth of the child. Again, in regard to complementary feeding, this study discovered that close to three-quarters of the male parents agreed that complementary feeding should start at 6 months and not earlier or later than that.

Furthermore, the findings showed that 88% of the male parents agreed that children aged 9 to 23 months should be offered meals a minimum of three (3) times per day, which corresponds with a recent work of Ouyang and Nasrin (2021) that many fathers were so positive about the feeding of their kids that they use to support their feeding. Indeed, this study clearly uncovered that most of the male parents have appropriate knowledge in regard to the feeding practices for the kids. These feeding practices include: consumption of varied foods for growth (96.7%); green leafy vegetables being a great source of haemoglobin (94.4%); the consumption of fish and meat (85.2%). It also include the addition of fat and oil to kid food (81.6%); provision of thick porridge (87.8%); and increased food consistency as the child grows (91.3%). These findings demonstrate palpably that most of the fathers in Jirapa municipality have adequate knowledge and good attitudes regarding the care and appropriate feeding practices of their children. It has also emerged from this study that almost all the male parents agreed to the fact that before one handles food or feeds the child, the hands must be thoroughly washed (99.7%), while the cooking utensils must be kept clean and safe from germs (99.2%). Interestingly, most of the male parents (92.1%) completely rejected the notion that their children's health should be the sole responsibility of the mothers, as 87% vehemently disagreed with the assertion that it is only the woman's responsibility to ensure that the family eats well as expected.

Moreover, the assertion that men should be given priority at meals simply because they work hard to provide the needs of the family was fervently rejected by most of the male parents (83.2%), emphasizing the need for every member of the household, especially the children, to be fed adequately as expected. This study again revealed that the male parents agreed

essentially that they can also as fathers bath and feed their children (86.7%) and also take them for child welfare services (64.3%) regularly as much as possible. Quite surprisingly, slightly over half (53.6%) of the male partners completely agreed with the assertion that wives must always seek permission from their husbands before they can purchase items or medications for themselves. This attitude, as exhibited by some husbands, appeared inimical, as it does not accord the women with the autonomy they deserve as partners in the marital relationship.

Overall, based on the assessment of fathers' nutrition-related attitudes on the Likert scale, approximately half of these fathers (50.3%) exhibited high nutrition-related attitudes.

5.3: Relationship between male involvement and dietary intake of children

The study did not establish any significant association between fathers' involvement in child care activities and the timely introduction of complementary foods. It, however, showed that the male parents' involvement in the care of their children is found to be positively associated with minimum meal frequency (MMF), minimum dietary diversity (MDD) and minimum acceptable diet (MAD). This finding corroborates that of Kasiime et al. (2017), who ascertained that male parents who offered the needed care for their children had a positive impact, as it culminated in proper feeding of these children.

Indeed, women whose husbands were highly involved in the care of their offspring were more likely to feed their children with a diversified diet and to make them meet their minimum acceptable diet. This means that for children in individual families to be well nourished, the active involvement of the male parents cannot be overlooked, as rightly put out by Kasiime et al. (2017) that male partners who failed to show interest in the feeding of their children were likely to have them undernourished.

5.4: Relationship between male involvement and child growth

The study showed that male parents' involvement in caring for their children was not associated with growth. For instance, it was revealed in a self-reported male involvement in child feeding

activities that it was not associated with the nutritional status of children aged 6-23 months. Indeed, the child feeding practices the fathers were involved in were not in any way associated with child growth indicators. This is consistent with the study of Inbaraj et al. (2020), which ascertained that no relationship was found between fathers' involvement in feeding their children and their children's nutritional status. Except for Tran (2018), who found that children whose fathers failed to offer them the needed care were more likely to suffer from poor nutrition than their peers.

Interestingly, in this study, it was established that fathers' participation has a positive influence on children's dietary intake but has been unable to influence the growth of children. This can result from the fact that the knowledge shared by fathers on their children's care and feeding was not appropriately translated into practice, as Mushonga et al. (2017) observed in rural Zimbabwe. Furthermore, this study revealed that male parents with high nutrition knowledge and positive nutrition-related attitudes (NRAs) regarding the care and feeding of their children, 6-23 months, were found to be protective against stunted growth, as Abate and Belachew (2017) also found.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The study mainly sought to determine the 'Level of male involvement in child care to the dietary intake and growth of children 6 – 23 months in the Jirapa municipality'. This chapter therefore presents the conclusions drawn from the study as well as the appropriate recommendations.

6.1 Main findings

The key findings as per the study objectives are as follows:

Objective One: To determine the level of male involvement in the care of children 6-23 months

i. The study showed that the level of involvement of the male parents in their children's care was generally high among the majority (63%) of fathers.
ii. Providing financial support to cater for the food and health care needs of the child were the common care activities undertaken by fathers,

Objective Two: To identify the factors that influence male involvement in childcare, including feeding

In multivariable binary logistic regression analysis, factors such as income status [AOR = 1.80 (95% CI: 1.13–2.88)], nutrition-related knowledge [AOR = 2.41 (95% CI: 1.53–3.79)], nutrition-related attitude [AOR = 2.33 (95% CI: 1.48–3.68] and age of father AOR = 0.95 (95% CI: 0.92–0.98) were found to influence fathers' participation in the care and feeding of their children.

Objective three: To establish the relationship between male involvement and dietary intake of children.

High father involvement (at least median score) in childcare and feeding activities remained a significant independent predictor of minimum acceptable diet (MAD) [AOR 1.60; 95% CI (1.04 – 2.47)] compared to low involvement (less than median score) father involvement.

Objective four: To determine the relationship between male involvement and child growth.

Male parents' involvement in the care of their children was not associated with the growth of children aged 6-23 months in the Jirapa municipality.

6.2: Conclusions

Based on the results of the study, it can be concluded that male involvement in childcare and feeding of their children aged 6-23 months was considerably high in the Jirapa municipality. Furthermore, male involvement was positively associated with feeding children diversified diets, although there was no significant association with child growth indicators.

6.3: Recommendations

Based on the findings of this study, the following recommendations are made:

i. First, the Municipal Health Directorate, Jirapa, in collaboration with the social welfare department should intensify their sensitization agenda on male involvement to get many more men to truly support their wives in their children's upbringing.

ii. The Jirapa Municipal Health Directorate should regularly hold nutrition education sessions in the various communities involving both mothers and fathers to enable them to have an enhanced knowledge and attitude towards child feeding.

6.4: Study limitations

The study basically focused on only male partners and their views about their involvement in their children's care and therefore did not consider the views of their female partners, which could confirm their responses. This, however, did not compromise the results, as they were verily assured of the confidentiality of their responses and the fact that the findings would not haunt them in any way. Again, the study was primarily on infants and young children who were on other feeds in addition to breast milk (6 – 23 months), and fathers' involvement in the care of infants undergoing exclusive breastfeeding (0-6 months) could not be studied.

Because the study employed a cross-sectional study design, the exposure (child feeding) and the outcome (child growth) were studied simultaneously and therefore were not able to establish any causal relationship between child feeding (exposure) and growth (outcome).

The 24-hour dietary recall was used as a way of assessing the dietary intake of the children, which is prone to recall bias. Respondents were each probed further to ensure that they clearly recall the exact food that was consumed.

6.5. Recommendation for Further Study

Study can be conducted by the Ghana health service or other interested researchers purposely focusing on the contribution of the male partner towards maternal and child health during the period of exclusive breastfeeding.

Future researchers can conduct a Prospective cohort study where a group of children whose fathers are involved in their care and feeding and another group of children (6-23) without the needed care and feeding from their fathers. The nutritional status of these two groups of children can then be compared at the 5^{th} year of birth. Or

Future researchers can carry out retrospective case control study. In this case, a group of malnourished children (cases) and another group of well-nourished children (control) aged below 5 years are studied into the past on the basis of their exposure to fatherly care.

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APPENDICES

APPENDIX 1: INTRODUCTORY LETTER FROM SCHOOL

UNIVERSITY FOR DEVELOPMENT STUDIES

(School of Allied Health Sciences)

Tel: +233243588774/0504642361

P.O. Box 1883
Tamale, Ghana

Our Ref: UDS/MPHN/0006/19
Your Ref:

November 19, 2020

Department of Nutritional Sciences

UNIVERSITY FOR DEVELOPMENT STUDIES

TO WHOM IT MAY

CONCERN Dear

Sir/Madam,

INTRODUCTION: MPHIL. PUBLIC HEALTH NUTRITION STUDENT

I write to introduce Mr. Alfred Gunyog Yibonteng, who is a final year MPhil. Public Health Nutrition Student of the Department of Nutritional Sciences, School of Allied Health Sciences.

He is undertaking a study titled **"Contributions of male involvement in child care to the dietary intake and growth of children under two years in the Jirapa Municipality**". This study constitutes part of the requirement for the award of MPhil. in Public Health Nutrition. He requires permission to collect the necessary data on his topic in the Upper West Region.

Please extend to him the necessary support to facilitate his work. Thank you for the cooperation.

Yours sincerely,

Dr. Humphrey G a r t i
(Ag. Head of Department)

APPENDIX 2: INTRODUCTORY LETTER FROM STUDY SITE

In case of reply the date and number of this letter should be quoted *Tel: +233) 0200515506* *Fax:* *Email:* *My Ref. No GHS/UWR/JMHD/f-11* *Your Ref…* *Our Core Values: People Centered Professionalism, Team Work, Innovation, Discipline and Integrity.* *GPS Address: XJ-002-2047*	GHANA HEALTH SERVICE Your Health · Our Concern	*GHANA HEALTH SERVICE* *MUNICIPAL HEALTH DIRECTORATE* *P. O. BOX JP48,* *JIRAPA, UWR.* *GHANA* *16th February, 2021*

THE IN-CHARGES
SABULI, ULLO, YAGHA, DUORI AND JIRAPA.

Dear Sir/Madam,

LETTER OF INRODUCTION: MR. ALFRED GUNYOG YIBONTENG

The above named person is a final year Mphil student of UDS who seeks to collect data for his research work titled: ***"Contribution of male involvement in child care to the dietary intake and growth of children under two years in the Jirapa Municipality"***

It would be appreciated if you could give him the necessary assistance that he may need to collect the data sucesscully.

Thank you.

Yours faithfully.

Florence Angsomwine
Municipal Directora of Health Services

APPENDIX 3: RESPONDENT'S CONSENT FORM

UNIVERSITY FOR DEVELOPMENT STUDIES

SCHOOL OF ALLIED HEALTH SCIENCES, TAMALE

DEPARTMENT OF NUTRITIONAL SCIENCES

RESPONDENT'S CONSENT FORM

Section A: Background Information

Tittle of Study: Contributions of male involvement in child care to the dietary intake and growth of children *6 – 23 months* in Jirapa municipality.

Principal Investigators: Alfred Gunyog Yibonteng and Dr. Mahama Saaka (PhD)

Category of Participants: Male partners aged 18 – 50 years with children *6 – 23 Months*

Section B: Consent to Participate in the Research

Purpose

I am a student of the University for Development Studies, Tamale, and I am conducting a study on the topic "*Contributions of male involvement in child care to the dietary intake and growth of children 6 – 23 Months in Jirapa municipality*". A research study is a way to learn more about people. If you decide that you want to be part of this study, you will be asked questions relating to male involvement in child care, dietary information about the child, and the growth of the child would be determined by measuring the weight and height of the child. You will also be asked questions regarding sociodemographic and socioeconomic characteristics. Any information obtained is for the purposes of fulfilling the requirements of the academic research in the MPhil program. It will also contribute to the literature on the contributions of male involvement in child care in the academic world.

Study Procedure

The study will interview male partners and mothers feeding the children under two years. They would be interviewed through the use of a questionnaire that will take approximately 30 minutes to answer all the questions. Additionally, the weight and length of the child were measured. The child health record booklet would be needed to extract some information.

Benefits/Risks of the Study

A benefit here means that something good happens to you. Your participation is likely to help improve the care of children, as the information would result in the development of strategies that will improve the health of children. The study does not have any risk to the life and health of any respondent.

Confidentiality

Your name will not be recorded during the interview process. Your information will be collected and written down for our analysis. The information about you will be stored in a file that will not have your name written on it but a number assigned to it instead. The information that we collect from you will be kept private. Your data will be secured from unauthorized access. When we finished this study, we wrote a report about what was learned. This report will not include your name or that you were in the study.

Compensation

Should you agree to participate in the study, there will be no payment (either in cash or in kind) for your participation in the study. In the event of any injury resulting directly from your participation in the study, the principal investigator will assess the situation, and together with the respondent, arrive at an agreed solution. There will be no anticipated expenses on the part of the respondent for participating in the study.

Withdrawal from Study

Your participation is voluntary, and it is up to you to participate or not. The choice that you make will have no effect on you. You can withdraw your consent at any time, without specification of reasons and without any disadvantage. You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too.

Questions

Participants in the study have the full right to ask questions and to receive satisfactory answers in line with the study. Participants with questions or concerns regarding the study and their rights in the event of study-related injury may contact the study team through the information provided below.

Contact for Additional Information

Please contact the principal Investigator or Local Investigator at the following addresses if you have any further questions, need clarifications about your rights or experience any problems in this study.

Alfred Gunyog Yibonteng
Community Health Nursing Training College
P. Box 46, Jirapa
0553678400
gunyogfred@gmail.com

Dr. Mahama Saaka (PhD)
Snr Lecturer, School of Allied Health Sciences
University for Development Studies, Tamale
0207061136
mmsaaka@gmail.com

APPENDIX 4: QUESTIONNAIRE FOR QUANTITATIVE DATA

CONTRIBUTIONS OF MALE INVOLVEMENT IN CHILD CARE TO THE DIETARY INTAKE AND GROWTH OF CHILDREN UNDER TWO YEARS IN JIRAPA MUNICIPALITY

STUDY QUESTIONNAIRE

INFORMED CONSENT

(Target group: Male partners aged 18 – 50 years with children under two years)

I am a student of the University for Development Studies, Tamale, and I am conducting a study on the topic "*Contributions of male involvement in child care to the dietary intake and growth of children under two years in Jirapa municipality.*

I would like to have an interview with you on this topic. I would be very much appreciative if you could participate in this study. You and your child have been selected to be part of the study to respond to a questionnaire that will take approximately 30 minutes of your time. All of the information you give will be confidential and will not be seen by anyone.

When I finish the interview with you and your partner, the research team will weigh and measure the length/height of your child. This is to enable us to evaluate the child's health and nutritional status. The information will also help the scientific community and governments recognize the important role men play in child care. It will also help in creating programs to assist families.

Your participation in the study is purely voluntary, so you are at liberty to opt out. I would, however, be grateful if you agree to participate since your views are important. If I should come to any question you don't want to answer, just let me know and I will go to the next question.

Do I have your consent for the interview? 1. Yes ☐ 2. No ☐

Signature/Thumb Print of Participant _____

Date_____

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS

(Target group is the fathers)

1. Age of respondent …….. (Years)
2. Educational status

   a. None ☐ b) Primary ☐ c) Secondary ☐ d) Tertiary ☐
3. Religion

   a. Christianity ☐ b) Islamic ☐ c) Traditional ☐ d) others ……
4. Ethnicity

   a. Dagaare ☐ b) Waala ☐ c) Sissaala ☐ d) others ……
5. Occupation

   a. Farming ☐ b) Trading ☐ c) Public/civil servant ☐ d) Others ……
6. What is the average household monthly income? …….
7. Number of wives married

   a. 1 ☐ b) 2 ☐ c) 3 ☐ d) > 3 ☐
8. Number of children

   a. 1 ☐ b) 2 ☐ c) 3 ☐ d) 4 and above ☐

SECTION B: LEVEL OF MALE INVOLVEMENT IN CHILDCARE AND FEEDING ACTIVITIES (FOR MALE RESPONDENT)

Administer this to the father of the same child the mother responded for. Call the child by their name during the interview

In the past 6 months, have you been engaged in the underlisted activities? Tick the response given by the father of the target child

Activity	Response	
	Yes	**No**
Health and finance		
B1: Have you ever taken your CHILD to health institution since his/her birth?		
B2: Provide money to buy food for the child		
B3: Provide transport money to send child to child health clinic		
Providing physical support		
B4: Participate in child feeding		
B5: Assist in household chores: bathing the child		
B6: Assist in household chores: Assist in fetching water		
B7: Assist in household chores: Helps with cooking		
B8: Assist in household chores: handling and or playing with the child		
B9: Assist in household chores: sweeping the compound		
B10: Accompanies wife/attends growth monitoring sessions		
B11: Accompanies wife/attends child's other medical consultations		

SECTION C: ASSESSMENT OF FATHERS' ATTITUDE IN CHILD FEEDING

Now I will like to mention some key child care and feeding practices. Please tell me how much you agree with them.

Variable	**How much you agree with the message?** 1. Strongly agree 2. Agree 3. Do not know 4. Disagree **5.** Strongly disagree
A. It is important to breastfeed a child within one hour after birth	
B. Breastfeeding for 2 or more years is good	
C. "Start complementary feeding at six months; not earlier, not later	
D. A child aged 9-23 months eat at least 3 times in a day	
E. "Give your children a variety of foods for healthy growth"	
F. "Green leafy vegetables are rich in substances that help the body to make blood for children and adults"	
G. "It is helpful to give your children fish and meat frequently in sufficient amounts"	
H. "Add fats and oils to your children's food for strength and vitality"	
I. "Give porridge that are thick enough to stay on the spoon for better nutrition and growth"	
J. "Make foods thicker, mashed or chopped fine as your baby gets older"	
K. "Always remember to wash your hands with soap and water before handling your child's food"	
L. "Keep your cooking utensils clean and safe from germs"	
M. The health of a child is a woman's business.	
N. Making sure the family eats well is solely a woman's responsibility	
O. Because men work hard to provide for the family, they should be given priority at meal times.	
P. Men take part in childcare such as bathing, feeding, and provision of health care?	
Q. Men should take their children to growth monitoring sessions (child weighing)?	
R. Women need not ask the permission of other household members to buy items such as clothing and medicines for herself; personal supplies (soap, shampoo, dental paste, sanitary napkins, etc.)	

SECTION D: KNOWLEDGE OF HUSBANDS IN CHILD FEEDING

1. If a woman gives birth to a newborn, how long should it take for the baby to start breastfeeding?

   a.) **Within first hour of delivery** b) 2 to 23 hours after delivery

   c) The next day (more than 24 hours) d) do not remember

2. What is the best food for a newborn baby?

   a. **Only breastmilk** b) Other c) Do not know

3. What is the recommended minimum number of years that a woman should breastfeeds her child?

   a. Six months or less b) 6–11 months c) 12–23 months

   d) **24 months and more** e) don't know

4. At what age should babies start eating foods in addition to breastmilk?

   a. **At six months** b) Don't know

   c) Other (Specify)…….

5. How many times should a child aged 9-23 months eat in a day?

   a. Once b) Two times c) **Three times or more**

   d) Do not know

6. It is recommended that a woman waits at least two or three years between pregnancies, that is, before becoming pregnant once again. Mention the reason(s) why this is recommended? (Multiple responses possible)

   a. To rebuild up body stores of nutrients (fat, iron and others)

   b. For the mother to be healthier before having a new baby

   c. Don't know

7. Mention one reason you think pregnant women should eat variety of food groups, including fruits and vegetables, protein sources, dairy products and grains.

   _____

8. What should a lactating mother do to have enough breastmilk?

   a. Eat plenty food such as hot porridge

   b. Frequent breast feeding, correct positioning and good attachment to the breast.

   c. Cannot tell

9. Give one reason why green leafy vegetables should be consumed by both children and adults.

    a. Protection against diseases b) Give energy

    c) Give blood d) cannot tell

10. If a child eats TZ+ okro soup and another child eats rice + beans stew, which of them is likely to have more blood? ----------

11. During the first six months, a baby living in a hot climate needs water in addition to breast milk. Do you agree to this? _____

12. If the chief of your community told you that "A young child (aged 6 up to 24 months) should not be given animal foods such as eggs and meat". What will you tell him?

    a. The chief is wrong because such foods are needed for the growth of the child.

    b. The chief is right because eating such foods makes the child become thief in the future.

    c. The chief is right because he is the chief and knows what is good for the child.

    d. Does not know what to tell the chief

13. Which of the following foods can give more blood?

    a. Beans b) Liver c) Green leafy vegetables d) Cannot tell

14. Mention three reasons why you think it is important to give foods in addition to breast milk to babies from the age of six months. (Multiple responses possible)

    a. Breast milk alone is inadequate at 6 months of age

    b. Provide more nutrients for growth

    c. Provide more blood for the child d) Cannot mention

15. Health workers recommend that children less than 6 months should not be given water. Give three good reasons to support this. (Multiple responses possible)

    a. To avoid infection

    b. Water will occupy the stomach and therefore prevent intake of more breastmilk

    c. Breastmilk itself has enough water for the child

16. Could you please, mention 3 ways to encourage young children to eat well? (Multiple responses possible)

    a. Giving them attention during meals, talk to them, make mealtimes happy times

b. Clap hands c) Make funny faces/play/laugh

d) Demonstrate opening your own mouth very wide/modelling how to eat

e) Say encouraging words f) Draw the child's attention

g) Serve the preferred food of the child

17. All the foods in this world can be grouped into four groups. Mention three of such groups (multiple responses possible)

a. Energy-giving foods, e.g., maize and yam

b. Animal source foods

c. Plant-based protein foods, e.g., legumes such as beans, groundnuts, nieri, and agushie

d. Protective food such as fruits and vegetables, e.g., bean and cassava leaves, mango, and pawpaw. Protective foods are rich in minerals and vitamins, and they protect the body from infections and strengthen the immune system.

18. Mention three reasons why some children are not fed well by their mothers. (Multiple responses possible)

a. Lack of food b) Poverty c) Lack of nutrition knowledge

d) Cultural barriers, etc. e) cannot mention

19. The three abovementioned consequences of malnutrition in pregnant women affect birth outcomes. (Multiple responses possible)

a. Increased risk of fetal neonatal and infant death b) Intra- uterine growth restriction

c) Low birth weight and prematurity d) Birth defects

e) Cretinism f) Brain damage g) Increased risk of infection

20. Give three reasons why mothers or caregivers should give the child soft foods or thick porridge that have been enriched with milk, oil, groundnuts paste, peas or beans, egg or sugar to make it more nutritious. (Multiple responses possible)

a. Thin watery gruels are not healthy for the baby, as they fill the stomach without providing enough energy and nutrients.

b. There is no single food that has all the nutrients the body needs, so the child must eat different foods.

c. The child's stomach is small and so cannot take large amounts of food at a go. Therefore, feed your baby **frequently** with **small amounts** of thick porridges so that she/he grows strong and healthy.

21. Suggest three ways men can help their wives to improve nutrition in the family.

(Multiple responses possible)

a) Men can support their wives in accessing diverse diets during and after pregnancy (e.g., proving money for food ingredients such as meat and fish eggs).
b) Men can help improve women's nutrition by helping them with their workload, such as fetching water, helping with childcare or sweeping the compound.
c) Including men in nutrition education activities and discussions can help them recognize the importance of providing nutritious food to their families and increasing their participation in household chores related to childcare and feeding.
d) Men can also take up a supportive role in agricultural activities, providing women with productive farming land

SECTION E: HOUSEHOLD SOCIO-ECONOMIC STATUS *(Administer To Husbands)*

Question	Code	Response
E1. What type of house do member of household dwell in?	1=Block house 2=Brick house 3=Mud house 4= Others, specify…	
E2. What type of fuel does your HH mainly use for cooking?	1= Firewood 2= Electricity 3= Liquefied Petroleum Gas (LPG) 4= Fire Wood 5= Charcoal 6= Kerosene 8= Others, specify	
E3. What is the main source of lighting for the household?	1=Electricity 2=Solar/Sunlight 3=Kerosene Lamp 4=Other, specify	
E4. What is the main source of water for drinking, cooking and hand washing in your household? ***(Only one response is required)***	1=Piped water 2= Borehole 3= Protected well 4= Unprotected well 5= Surface water (river, stream, dam, lake, pond, canal) 6.=Rain water 7= Other (Specify)	
E5. What kind of toilet facility do member of household usually use?	1=Own flush toilet 2=Public or shared flush toilet 3=Own pit toilet 4=Public or shared pit toilet 5=No facility(bush)	

Possession and Income

F6. Does your household have access to or own…?		YES =1 No = 0
A	Electricity?	
B	Radio?	
C	Television?	
D	Satellite dish?	

E	Mobile telephone?	
F	Electric fan?	
G	Computer/DVD/VCD?	
H	Mattress/bed?	
I	Refrigerator?	
J	Bicycle?	
K	Motorcycle?	
L	Car or truck?	
M	Tricycle?	
N	Animal-drawn cart?	

SECTION F: INFANT AND YOUNG CHILD FEEDING PRACTICES

(Target Group: Mothers of Children 6-24 Months)

Question	Code	Response
F1. Is your child currently breastfeeding?	1=Yes 2=No	
F2. After delivery of the index child, how long did it take you to breastfeed him/her for the first time?	1= Within first hours of delivery 2=2 to 23 hours after delivery 3=The next day (more than 24 hours) 4=Do not remember	
F3. Before putting child to the breast for the first time after delivery, what was child given to drink? (Multiple responses possible)	1= Nothing 2= Milk (other than breast milk) 3= Plain water 4= Sugar or glucose water 5= Gripe water 6= Sugar-salt-water solution 7=. Fruit juice 8= Infant formula 9= Tea/infusions 10= Honey 11= Other (specify) …….	
F4. When you delivered (Name of child) what did you do with the first yellowish breast milk?	1= Give it to the baby 2= Discard it/spill it 3= Don't know	
F5. Did (name of child) drink anything from a bottle with a nipple during the past 24 hours?	1= Yes 2= No	
F6. Is child currently eating other foods apart from breast milk? (if No skip to section C)	1=Yes 2=No	
F7. If yes, when did you start complementary feeding?	1= Before 6 months 2= At 6 months 3= 7 to 9 months 4= After 9 months	

	5= However, to start	
F8. Yesterday did (child name) eat any solid or semisolid foods?	1=Yes 2= No 3=Does not apply (child does not eat solid foods) 4=Does not know	
F9. How many times did (Name of child) eat solid or semisolid food or soft foods other than liquids yesterday during the day or at night?	1=one 2=two times 3=three times	

F10. Please, mention all the foods and drinks that were eaten by (Name of child) over the past 24 hours whether at home or outside the home. ***(Hint: start with meal eaten at supper yesterday).***

Eating moment	Name of dish	Ingredients
Breakfast		
Snack before lunch		
Lunch		
Snack before dinner		
Dinner		

F11. From the meals mentioned by the mother, indicate whether (name of child) ate from the following food groups during the past 24 hours whether at home or outside the home.

Food group	Examples	Yes →1 No →0
Grain, roots and tubers	Bread, noodles, biscuits, any other food made from millet, sorghum, maize, rice, yam, etc.	
Dairy products	Milk, cheese, yogurt or other milk products	
Flesh foods	Organ meat, flesh meats and fish	
Eggs	Eggs	
Legumes	Beans, peas, lentils, nuts, seeds, or foods made from these	
Vitamin A- rich fruits and vegetables	Dark green leafy vegetables, Fresh vitamin A-rich fruits, Vitamin A-rich vegetables and tuber and Oils and fats	

Other fruits and vegetables	Any form of dried fruits and vegetables (okro, pumpkin, baoba, wild types	

F12. In your view, what role does your husband play in the care of your children**? (Multiple responses possible)**

a) Give economic support b) Give advice

c) Help in home activity d) Do not know

SECTION G: ANTHROPOMETRY FORM

Interview Date (DD/MM/YYYY): ……

Community Name: …….

Household Name: ……

Subdistrict Number: ……

Name of Child: …….

Sex of Child: Male [1] Female [2]

Date of birth of child (DD/MM/YYYY): …….

Date of birth verified from: *Not verified* [0] *Birth certificate* [1]

Health record booklet [2] *Community register* [3] *other document* [4]

Specify ……

Age of child (in completed months): ……

Weight of child (kg): ……

Height of child (cm): …….

APPENDIX 5: FOCUS GROUP DISCUSSION GUIDE

QUALITATIVE DATA COLLECTION TOOL

University for Development Studies

School of Allied Health Sciences

Focus Group Discussion Guide - Fathers

Topic*: Contributions of Male Involvement in* Child Care to the Dietary Intake and Growth of Children under Two Years

Participants: Males

Focus Group Discussion Guide

Selection criteria: A male aged 18 years to 50 years whose child is under two years.

Introduction

Greetings (Good morning/Good afternoon). Thank you for joining our group. My name is Alfred Gunyog, and I will be leading this discussion group along with _____. Have any of you talked in a group like this before? This is called a focus group. It's a way for us to hear what you have to say when we design new programs that are supposed to help you. We will talk for about an hour.

We are going to talk about contributions of your involvement as males in issues of young child care. We want you to talk about what you think and/or know about men's involvement with their partners in times of child care: feeding, medical care, etc.

We are also interested in talking with you about the level of your participation in child care and feeding. To make our analysis meaningful, your sociodemographic information would be needed.

Right now, however, I want to first let you know a few things about what we are to do: how u participate or wish to participate

Procedures/Ground Rules

1. No right or wrong answer; want to her your personal opinions
2. Be honest; want to know what you truly think
3. We want to hear from everyone- so don't be shy
4. No need to raise your hand
5. One person talks at a time
6. No official breaks but going to washroom is allowed

Getting Started: Let's start.

Demographic Characteristics

Age	Education	No. Chn	Ethnicity	Religion	No. wives	Occupation

Level of Men: perception, attitude and involvement in childcare and feeding

i. In what ways do men in this community assist with the feeding of their children to make them grow well?

ii. Do you think it is culturally right for men in this community to assist with household chores such as bathing, feeding, and provision of health care? Give reasons for your answer.

iii. What in your opinion are some of the factors that make some men help their spouses with these household chores?

iv. What are the barriers to men engaging in household chores such as bathing, feeding, and provision of health care?

v. Do you think men in this community should accompany their wives to growth monitoring sessions (child weighing) or antenatal care?

vi. If yes, why and if no why?

APPENDIX 6: ETHICAL CLEARANCE LETTER _KNUST

Kwame Nkrumah
University of Science
and Technology, Kumasi

College of Health Sciences
SCHOOL OF MEDICINE AND DENTISTRY

COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS

Our Ref: CHRPE/AP/472/21

1st October, 2021

Mr. Gunyog Alfred Yibonteng
Department of Nutritional Sciences
University for Development Studies
TAMALE.

Dear Sir,

LETTER OF APPROVAL

Protocol Title: ***"Contribution of Male Involvement in Child Care to Dietary Intake and Growth of Children 6- 23 Months in Jirapa Municipality."***

Proposed Site: ***Jirapa Municipality.***

Sponsor: ***Principal Investigator.***

Your submission to the Committee on Human Research, Publications and Ethics on the above-named protocol refers.

The Committee reviewed the following documents:

- A notification letter of 16th February, 2021 from the Jirapa Municipal Health Directorate (study site) indicating approval for the conduct of the study at the Municipality.
- A Completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Protocol.
- Questionnaire.

The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, beginning **1st October, 2021** to **30th September, 2022** renewable thereafter. The Committee may however, suspend or withdraw ethical approval at any time if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you for your application.

Yours faithfully,

Rev. Prof. John Appiah-Poku
Honorary Secretary
FOR: CHAIRMAN

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