CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Throughout history and across all civilizations, faith-based and religious community institutions have played a role in responding to the varying needs of people in the society (Lala, 2007). In the 20th century, churches had a significant influence on the evolution of global health systems, strategies and priorities (Chand and Patterson, 2007). Their involvement ranged from providing direct patient care, treatment and social support in education, to influencing attitudes and promoting or discouraging certain behaviours. Their scope of influence may be confined to their own congregation and, or broadened to affect general populations and key public institutions (Gallup, 2005).

Becker (2007) reported that religion can be an important influence in the development of beliefs about HIV/AIDS among other key factors. In Nigeria, young Christians commonly situate their understanding and explain their behaviours in relation to HIV/AIDS in terms of religion (Smith, 2004). It is therefore important for initiatives, such as health programmes, aimed at changing attitudes and behaviour to learn how best to harness religious beliefs and institutions. Various research on promoting awareness and behaviour change in relation to gender equality emphasise the need to involve religious leaders in order to secure buy-in for programmes, their aims and to increase the reach of initiatives (Friej, 2010; Green, 2003; Muhangi, 2004; Lom, 2001). Similarly, faith-based organisations often have a natural authority and can be effective in reaching isolated communities (Clarke, Charnley and Lumbers, 2011).

In Nigeria as in other African countries, malnutrition continues to kill millions of children and acting as a catalyst to various childhood diseases thus, impeding overall socio-economic development because nutritional well-being of all people is a pre-condition for development and a key objective of progress in human development (Ndure, Sy, Ntiru and Diene, 1999). In Africa, almost two in every five children are

stunted to make a total of 60 million children. This largely unnoticed child malnutrition crisis is robbing the health of tomorrow's adults, eroding the foundations of the global economy, and threatening global stability (Save the Children 2012). Infant and child malnutrition remains a major public health problem in Nigeria with increasing prevalence of underweight and wasting (FMOH, 2007). Faced with this magnitude of problems, many nations with the support of international donor agencies have become increasingly committed to improving the social well-being of their citizens. One approach to addressing malnutrition and ushering in development has been to establish sustainable community nutrition programmes to provide varieties of interventions (Jamison, Breman and Measham*,* 2006; Sua´rez-Herrera, 2006). Ndure *et al* (1999) observed some obstacles to the success of such programmes to include poor targeting of programme beneficiaries; lack of commitments from political entities; and failure to garner adequate financial resources for nutrition activities.

Generally speaking, the most successful public health campaigns are community-based, multi-strategy, and audience-centred (Sua´rez-Herrera, 2006, Jamison *et al,* 2006; Bracht, 1990; Stipp and Weinman, 1990). Community-based programming means formation of partnerships with community institutions, organisations, and leaders to lay the groundwork for changing social environmental conditions that affect people's capacity to change (Bracht, 1990; Finnegan, Bracht and Viswanath, 1989). This recognises the fact that people's behavioural changes, especially in complex and important health aspects do not occur in social isolation but are influenced for good or ill by social relations and the larger social environment (Frankle and Owen, 1993). Community social environments can enhance individuals' capacity for change in two ways. Symbolically, organisations, institutions, and leaders can endow legitimacy on recommended health behaviour changes as valuable, effective, and normative (Rogers, 1983). Tangibly, communities can provide concrete opportunities in various forms (e.g., through programmes and policies) for people to act and to adopt recommended health behaviour changes. The multi-strategy approach of successful public health campaigns is based on the recognition that a full range of health promotion techniques is generally necessary to propel adoption of health promoting behaviour changes through a population. The belief is that multiple strategies create a synergy that increases the likelihood of exposure to information and

opportunities to act and therefore increases the likelihood of spreading change (Rogers and Storey, 1987).

Over the years many approaches have been used in communication for behavioural changes in nutrition. Information-education-communication (IEC) and public nutrition education have been the most common. Both are built heavily on top-down and didactic approaches. Increasingly, methods that build more on experiences from social marketing and participation of the intended risk groups have become popular and these have shown to lead to more lasting changes (Parlato 1992; Smitasiri, Attig and Dhanamitta, 1992). The audience-centered approach includes systematic data-based planning, recognizing that individuals are heterogeneous with respect to making health behaviour changes. Different audience subgroups encounter different conditions and possess different motivations that may enhance or detract them from change efforts or determine whether they seek to make changes in the first place. These characteristics have been formulated into a global approach to planning and development of health promotion campaigns (Green and Kreuter, 1991).

Community organisational capacity, it is noted, plays a great role in decision making and success of health programmes. But in many circumstances, institutional and political frameworks needed to support sustainable progress in our health system lacks strength (Akinyele, 2005). It would be reasoned, and worthy of note, that effectiveness of the traditional institutions in the later seems to be empowered by religious affiliation and influence (Blench, Longtau, Hassan and Walsh, 2006). The seemingly missing link, therefore, in service delivery as a component of public health service, is the creation and promotion of community or individual acceptance and demand for these services. Galal (2003) remarked that community demand is an obvious determinant of success in any nutrition service intervention at such level.

Several arguments have been put forth to explain how and why faith-based organisations (FBOs) are better situated in public health services. Public health is a very broad term, and in the present context, the two major facets of public health that are most relevant are health promotion and direct delivery of health services. Health promotion is generally defined as any activity designed to foster health and all aspects of activities seeking to improve individual or community health status (Tones, 1986). Specifically, health promotion involves dissemination and communication processes to

promote behaviour change. While health promotion can be influenced and implemented by any number of key societal institutions, such as the government, the media, school systems, etc., direct delivery of health services have more specific and technical requirements such as availability of trained medical personnel and treatment resources. However, religious leaders want the best for their constituencies, and can often be persuaded by science and statistics to change positions from harmful practices to more positive alternative practices (UNFPA, 2008).

Religion is an important part of culture and vice versa, and harmful cultural practices rooted or assumed to be rooted in religious values and/or interpretations are some of the most difficult to change. However, when attitudes and beliefs are respected and evidence is presented, most religious leaders are open to the idea that specific areas of development will improve the health and well-being of their members, as well as the exercise of their right to health and other interrelated rights (UNFPA, 2008).

The present study on faith-based approach to nutrition programming hopes to fill this gap as a social marketing approach to nutrition advocacy, education and communication to improve health services demand.

1.2 Statement of Problem

Appreciation of nutritional services and its utilization in Nigeria are very low (Akinyele, 2005). Malnutrition and nutrition-related morbidity continue to be of public health concern in Nigeria. Akwa Ibom State has consistently recorded the highest rates of stunting, wasting and underweight among the States in the South-South region of the country (MICS, 2011, NDHS, 2013). Governments and other agencies involved in health care delivery have in recent times sunk in enormous resources in the area of finance, human and infrastructures for the delivery of quality health care and development. However, health coverage indicators are still very low, and prevalence of health disorders is on the rising (FMOH, 2007). This is because community participation in health development, community ownership of sustainable health outcomes, as well as community - health services linkages are not strong enough to achieve nationally and internationally health-related development goals.

There is a palpable weakness in community organizational capacity fueled by a general perceived lack of credibility and competence in most traditional authorities in Akwa Ibom State. Such institutional and political frameworks lack strength to exert the needed influence to bring about behaviour changes in individuals in the communities to enhance health seeking behaviour and health service delivery (Akinyele, 2005).

While Akwa Ibom State remains a highly predominant Christian state, yet the role of faith-based organizations in community-based nutrition and health programmes are under-exploited and under-utilized, and there is dearth of information about their activities in this direction. In many developing countries faith-based organisations have been recognized and used as effective, respected, and socially inclusive organisations at the community level with success in initiating, expanding, and sustaining community-based health and nutrition programs (Jamison *et al*., 2006). In our environment, people listen more to their religious leaders, being seen as God's representatives. They could be helpful in influencing attitudes and behaviours, discouraging cultural and behavioural attitudes and practices that are inimical to good nutrition and health.

1.3 Justification of Study

The National Policy on Food and Nutrition in Nigeria was formulated to promote the establishment of a viable system for guiding and coordinating food and nutrition activities at various levels of the society. In achieving this, the faith-based organization is a potential social marketing platform for nutrition advocacy, education and communication, being a conventional meeting point of all the strata of the society. Key messages on nutrition can easily reach the vulnerable, as well as the policy makers through systematic and constructive engagement of faith-based institutions. The findings of this study will help to bring to limelight the potential of faith based organisations as effective communication channels to communicate and enhance utilization of nutrition and other health services.

The National Policy on Food and Nutrition also aims at creating awareness and mobilizing communities to utilize available nutrition services within primary health care system. Therefore, a study targeted at changing attitudes and creating desires in people to want to use the available nutrition and health services through behavioural change communication is timely and relevant. It will assist in boosting access and

utilization of services, curb wastes of health resources, and thus, improve the nutrition and health status of people, especially women and children in our communities.

Certain persons are perceived as positive or negative influencers of attitudes and behaviours. Such include mother-in-laws, grandparents, influential persons in the society and deities (beliefs and customs). These form the subjective norms in the society. The perceived influence and power of God as the deity to Christians can be utilized in modeling positive behaviours in nutrition and health. Therefore, in State where religion plays vital social roles, such could be exploited to boost nutrition/health service delivery and acceptance, especially at community level.

1.4 General Objective

To evaluate the impact of Christian faith-based communication (Bible based health messages delivered through churches) on nutrition-sensitive practices and uptake of nutrition-specific services among caregivers in Akwa Ibom State.

1.4.1 Specific Objectives:

The specific objectives of this study are to:

1. Develop nutrition related scripture based information, education and communication (IEC) messages to improve existing nutrition, health and care practices.
2. Train faith-based leaders to facilitate nutrition and health communications in the communities.
3. Assess the outcome of the faith-based messages on knowledge, attitude and practice (KAP) of the people in selected communities.
4. Assess the level of response of community members to service delivery at the primary health facilities following the faith-based behaviour change communication intervention.

1.5 Study Hypotheses

The main hypotheses of this study are stated in null forms, are as given below:

1. Faith-based communication approach will not change caregivers' attitude on exclusive breastfeeding.
2. Faith-based communication approach will not change caregivers' attitude on complementary feeding.
3. Faith-based communication approach will not change caregivers' attitude on micronutrients intake.
4. Faith-based communication approach will not change caregivers' attitude on growth monitoring and promotion.
5. Faith-based communication approach will not change caregivers' attitude on immunization.
6. Faith-based communication approach will not change caregivers' attitude on care giving and men's involvement.
7. There will be no difference in caregivers' attitude on seeking medical treatment and check-up after intervention.
8. Faith-based communication approach will not increase access and utility of services at health facilities.

1.6 Theoretical Framework

An integrated health behavior model, the Faith-Based Behavioural Change Communication Approach (FBCCA) model, was developed as a construct from the Theory of Reasoned Action (TRA), for the intervention. It is designed to increase knowledge, positive beliefs, and attitudes regarding the benefits of preventive primary care services as well as to increase skills, self-efficacy, and intentions in regard to seeking health care. The FBCCA draws strength from the assumption that faith-based organisations and its leadership can endow legitimacy on key health practices as valuable, effective and normative, enough to influence adoption by the followers. The intervention logic model is presented in Figure 1.1

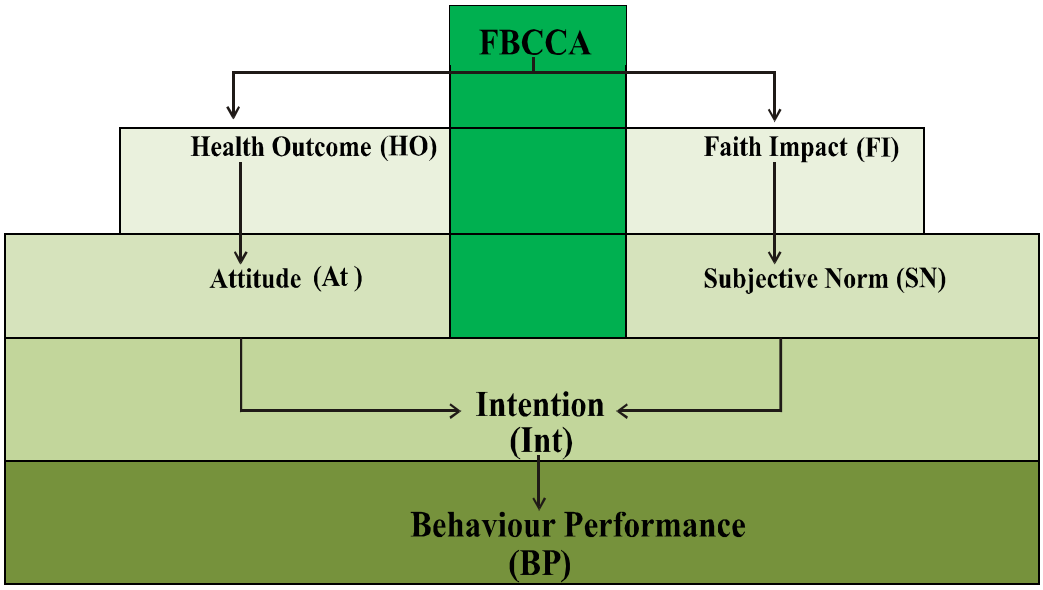


Fig.1.1. Conceptual model of the Faith-Based Behavioural Change Communication Approach (FBCCA)

The Theory of Reasoned Action (TRA) or the Theory of Planned Behaviour (TPB) was originally formulated to explain the relation between attitudes and behavior (Fishbein and Ajzen, 1975)

- TRA proposed that people are more likely to perform a behavior when they intend to perform that behavior.
- The level of intention to perform a behavior is higher among those who have a more positive attitude and more of a subjective norm toward the behavior.
- The attitude toward the act, in turn, is an interactive function of the strength of the person's beliefs about what will happen as a result of the behavior and the strength of the extent to which the person positively or negatively values those outcomes.
- A person's subjective norm, in turn, is an interactive function of the strength of his/her beliefs about whether specific people want them to do the behavior (or not) and the strength of the person's desire to please or otherwise comply with those people.
- Attitudes and subjective norms linearly combine to cause intention, and intention predisposes an individual to perform a behavior within the context of other influences (Montano and Kasprzyk, 2002).

1.7 Scope of the Study

Several researches have been carried out on the different aspects of nutrition and health issues mentioned in this study. While the study intends to add to the existing body of knowledge, it is, however, limited to evaluating the attitude of caregivers and their intention to perform expected behaviours in response to the faith-based communication of nutrition and health messages given in the intervention communities. The study covers faith-based communication approach and change in caregivers' attitude on:

(i) Exclusive Breastfeeding

(ii) Complementary Feeding

(iii) Micronutrients Intake

(iv) Growth Monitoring and Promotion

(v) Immunization

(vi) Care Giving and Men's Involvement

(vii) Seeking Medical Treatment and Check-ups

(viii) Utilization of services at health facilities

CHAPTER TWO

LITERATURE REVIEW

Malnutrition has continued to be one of the most important and welfare problems amongst the population, especially among the infants and young children in Nigeria. It has significant health and economic consequences, which include increased morbidity and risk of death as well as a lower level of cognitive development resulting in low educational attainment. In adulthood, it can lead to increased absenteeism in work place resulting in reduction in workers' productivity. This ultimately reduces a person's lifetime earning potentials and ability to contribute to the national economy. It is therefore internationally recognized and accepted that good nutrition is a basic building block of human capital and as such, contributes to economic development (World Bank, 2006).

Recent and emerging evidence shows that malnutrition is not simply a result of household food insecurity (World Bank, 2006). Many children in food secure households are still underweight or stunted because of inappropriate infant feeding and care practices, poor access to health services, or poor sanitation (Akinyele, 2005). It is also noted, recently, that in the midst of poor populations, there are households with well-infants and children who are named as positive deviants. This scenario, where malnutrition is prevalent among those living in poor resource settings, as well as the economically advantaged population, suggests that behaviour is often an underlying cause of malnutrition.

Actions to improve the overall nutritional status of the poor in developing countries had evolved strategically over the past decades. These initially commenced as intervention programmes that addressed the food related causes of malnutrition and the rehabilitation interventions based on primary health care and community development (Ndure *et al*, 1999). Galal, (2003) posited that improvement in nutrition require individuals and communities to be motivated to understand benefits of certain actions for them to change behavior. In many countries important improvements in micronutrient nutrition have been achieved through changing practices at the

household level, and successful communication strategies are an important part of such interventions (FAO/ILSI, 1997).

Akinyele (2005) noted that malnutrition has multiple causes which are both direct and indirect. While the direct causes include food consumption, care and health; the indirect cause has to do with service delivery systems, among other things. This suggests that programmes aimed at improving nutrition should be designed in a way that strengthens the interface between service delivery and the community by creating a demand for the services. Health services and programmes, it is noted, are viable when they are supported by the population for whom those services and programmes are made (Yeboah, 2007).

2.1 The Challenges of Malnutrition

Child under nutrition remains highly prevalent in Nigeria despite several interventions by various organisations and levels of government. This problem has been associated with high burden of disease, development deficit as well as poor health and death among children (Black *et al.,* 2008; Bejon *et al*., 2008). Nigeria is one of the 20 countries that account for 80 percent of undernourished children in the world, directly or indirectly contributing to more than 50 percent of deaths among under-five children (FMOH, 2010).

In Nigeria as in other African countries, malnutrition continues to kill millions of children and acting as a catalyst to various childhood diseases thus, impeding overall socio-economic development (Ndure *et al*, 1999). The latest Nigeria Demographic and Health Survey (NDHS) report shows that under-five mortality rate remains high at 128 deaths per thousand live births. Judging from the well-known synergy between malnutrition, infection, disease and death, the high rate of mortality may be attributed to the slow improvement in nutritional indicators particularly worsening cases of wasting and underweight in Nigerian children (NDHS, 2013). The high prevalence of malnutrition among under-five Nigerian children is largely due to poor infant and young child feeding (IYCF) practices which remain despite several interventions at the various levels of health service delivery. In Africa, almost two in every five children are stunted to make a total of 60 million children. This largely unnoticed child malnutrition crisis is robbing the health of tomorrow's adults, eroding the foundations of the global economy, and threatening global stability (Save the Children 2012).

Suboptimal breastfeeding practices are a major contributor to the risk of infectious diseases and may influence adult health, nutrition status and intelligence (UNICEF and WHO 2014). Life starts from uterus to new birth and then through to adulthood. In intrauterine life, the nutritional status of the unborn foetus depends largely on the adequacy of the dietary intake of the mother and this determines the outcome of birth of the new born. Postnatal life is a continuum in human development. Normal growth and development depend largely upon the nutritional status of the new born which is in turn, related directly to the nutrition of the mother and inherited characteristics, and to the dietary intake of the infant (Krauss and Mahan, 1982).

In early childhood, nutritional status is of paramount importance for a child's later physical, mental and social development. Malnutrition arises from a complex of nutritional, social and biological deprivation and is manifested in various forms such as stunting (short stature), underweight, muscle wasting, growth retardation, diminished subcutaneous fat and ill health with high mortality rate (Onimawo *et al*., 2006). Malnutrition is a pathological condition brought about by the inadequacy or over consumption of one or more of the essential nutrients necessary for survival, growth, reproduction as well as productivity at work (UNICEF and FGN, 2001). The inadequate or excessive intake of nutrients may result from disease factors that affect digestion, absorption, transport, and utilization of nutrients (UNICEF, 1990a). Malabsorption of nutrients may result from genetic cum environmental conditions or illness. The most critically vulnerable groups are the developing foetus, preschool children, women before and during pregnancy, and lactating women (UNICEF, 1998).

Malnutrition affects all levels of development physically, mentally, socially, psychologically and physiologically. It thus multiplies the effect of prevailing disease or mortality in children and infants (Huffman and Marlin, 1994). In the developing nations, malnutrition usually makes its greatest impact on preschoolers. Under-5 children mortality accounts for nearly 50% of total deaths, and careful examination has shown malnutrition as the major underlying factor (Grantham-McGregor *et al,* 1999). Other reported effects of malnutrition and its various manifestations include stunted physical growth, retarded mental achievement, and low productivity, low resistance to diseases and infections with high morbidity and mortality rates especially in children (Nnayelugo, 1992). Nutritional inadequacies, which prevent the growth of children to their genetic potential, are part of the reasons why those children are underweight, short or thin.

Malnutrition does not often exert equal impact on all population groups. Certain factors and circumstances dictate the target of occurrence (Keke, 1990). The causes of malnutrition are multidimensional and include both food and non-food factors such as low income, uneven household food distribution, poor sanitation, infection, inadequate food production, marketing and preservation as well as poor knowledge of nutrition (Chen and Dseusa, 1981). The adverse effect of the economic recession on the contemporary developing as well as the developed countries, have manifested in household food crisis, dietary inadequacies and infections especially among preschool children in various socio-economic groups. Inadequate intake of food results in problems of malnutrition. Perspective field studies from several different regions of the world indicate that, as many as one third of death of children occurring between 6 months and 5 years of age in developing countries may be attributed to PEM (Hoorwag, 1976; Muller *et al*, 2003). In a study designed to determine the impact of parental socio-economic status on the growth, health and nutritional status and the future outlook of under-5 children, findings showed that the nutritional status of Under-5 children in the study location which happens to be a rural area, was quite poor. Also from the results, it is evident that malnutrition is still a major public health problem among young children due to the poor socioeconomic status (poverty and poor educational background) of their parents (Omilola, 2010).

Report has shown that out of the world's undernourished children, 80% live in 20 countries; nine of these are in sub-Saharan Africa, 29% of Nigerian children under five years are considered underweight (National Demographic and Health Survey (NDHS, 2003). Today Nigeria is among the ten countries in the world with the largest number of underweight children (UNICEF, 2006).

The prevalence of under-nutrition in children under the age of five years moderately and severely underweight in 2003 was 28.7% and 8.9% respectively. Those with moderate and severe stunting were 38.3% and 19.2% respectively and the percentage of those wasting were respectively 9.3 and 2.2.The percentage of children of between 0-59 months overweight was 6.2 (UNICEF, 2008 and WHO, 2008a). The average life expectancy at birth (year) in 1990 to 1995 was 47 with male 46 and that of female 49. In 2000 male was 46 and that of female 48 and in 2006 male was 47 with further decrease for that of female to 46 (World Bank, 2008). Child mortality rate of under-five (that is, probability of dying between birth and exactly five year of age, expressed

per 1000 live births) was 230 in 1990-1995, 207 in 2000 and 191 in 2006 (UNICEF, 2008).

Faced with this magnitude of problems, many nations and international donor agencies have become increasingly committed to improving the social well-being of their citizens. One approach to addressing malnutrition and ushering in development has been to establish sustainable community nutrition programmes to provide varieties of interventions.

2.2 The Conceptual Framework of Malnutrition

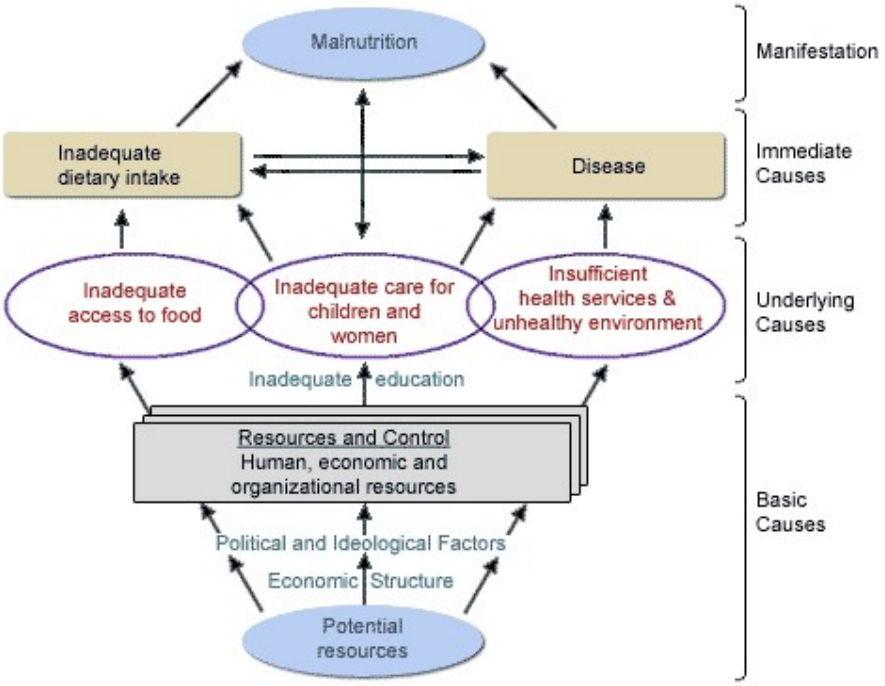
Poverty, ignorance and disease appear to be the heart of the problem of childhood malnutrition in Nigeria, and until there is significant improvement in the socioeconomic status of the vast majority of Nigerians, malnutrition will continue to pose a serious threat to the growth and development of Nigerian children and to future national development. Worsening the situation is the prevailing food price increases which affect nearly every agricultural product in Nigeria without corresponding increase in disposable income of families and population groups (especially the vulnerable groups). Households in Nigeria spend between 70 to 80% of their income on food, leaving about 60% people to food difficulty problem (Obayelu, 2010).

Food and nutrition security are the fundamental challenges to human welfare and economic growth in Africa (Benson, 2008) especially with the recent escalation of food prices, a situation that is making the globe to be facing a worsening food crisis unseen in the last 30 years and having the potential of leading to catastrophe (Ikeokwu, 2008). Lack of access to food influences food intake and consequently impact on the health and nutritional status of households (WHO, 2008a). Access to nutritionally adequate and safe food should be a right of every individual. Food security and nutrition security is not necessarily the same thing. A household is food secure if it can reliably gain access to food of a sufficient quality in quantities that allow all its members to enjoy a healthy and active life. But, individuals in food-secure households may still have deficient or unbalanced diets. Nutrition security is only achieved when secure access to food is coupled with a sanitary environment, adequate health services, and the knowledge and care needed to ensure the good health of all individuals in a household. Whether or not an individual attains his or her full personal and economic potential, however defined, depends to a large degree on the level of his or her nutrition security. The availability of nutrition resources and the degree to which an

individual has access to such resources is a function of how a society is organized economically, politically, ideologically, and administratively (Benson, 2008).

Lack of households' access to food leading to hunger and under-nutrition have been recognized as the number one threat to public health, killing more people than HIV/AIDS, malaria and tuberculosis combined in most countries (WHO, 2008b). Every ten days, the world loses 250,000 people to hunger related deaths, the equivalence of the casualties from the Asian tsunami (Sheeran, 2008). According to Food and Agriculture Organisation (FAO), about 854 million people were undernourished worldwide in 2001-2003 and the number keeps on increasing at a rate of almost four million per year since the second half of the 1990s (Grember, *et al*., 2009). While most of the world's hungry live in Asia (over 500 million), hunger is most intractable in Africa with one in three people deprived of access to sufficient food (FAO, 2006). Africa especially is worst hit with the problems of food and nutrition insecurity with too many people in the continent unable to acquire and effectively utilize at all times the food they need for a healthy life. The Millennium Development Goals (MDGs) adopt nutritional status as one of the key indicators of poverty and hunger. It serves as the first step in recognizing that policies, programmes and processes to improve nutritional outcomes have a role to play in global development. Nutritional assessment in the community is essential for accurate planning and implementation of intervention programmes to reduce morbidity and mortality associated with under-nutrition (UNS/SCN, 2004).

Hunger and malnutrition have been found as the underlying causes of death of over 3.5 million children every year, a rate of more than 10,000 children every day (High-Level Task Force on the global food crisis, 2008). Food crisis is a dual threat to health: under-nutrition, mainly in young children, pregnant and lactating mothers, and chronic diseases (heart disease, diabetes, and some cancers) that are strongly linked to improper diet. Reduction in nutritional intake of many Nigerians as a result of rising food prices have increased the rate of malnutrition with a worsened health status and reduction in resilience to disease and shocks. Worst hit are pregnant and lactating mothers who are at risk of food insecurity and poor nutrition induced by food crisis, with implications.



(Source: UNICEF, 1990)

Fig. 2.1 UNICEF Conceptual Framework

In 1990 UNICEF published a 36-page document entitled *Strategy for Improved Nutrition of Children and Women in Developing Countries.* The UNICEF nutrition strategy, and in particular the conceptual framework, sought to provide an explicit and unified perspective on the nature and causes of malnutrition in order to bring greater coherence and rationality to the effort to alleviate malnutrition in developing countries. In the framework malnutrition and child death are viewed as two of the manifestations of a multi-sectorial development problem that can be analysed in terms of the immediate, underlying and basic causes. The immediate causes are inadequate dietary intake and infectious disease; the underlying causes are household food insecurity, inadequate maternal and child care and inadequate health services and health environment; the basic causes include formal and non-formal institutions, political and ideological superstructure, economic structure and potential resources.

In the context of the UNICEF Nutrition Strategy malnutrition is viewed as one important manifestation of a larger development problem. As such, the goal is not only to eliminate the manifestation (i.e. the symptoms) but to address the development problem itself. This is not to diminish the importance of malnutrition and child death in any way, but only to be clear that the way in which these manifestations are addressed is also important. The framework also views inadequate food, health and care as specific underlying causes to the manifestations though not in all settings. The dominant problem may relate to health conditions in a given community but individual households may still face problems related to food insecurity and/or care. This heterogeneity in causes is one of the rationales for highly de-centralized approaches emphasizing capacity-building and community participation within the larger nutrition strategy and calls for more training and institution-building (Pelletier, 2002). In the opinion of Lunven (1985), the importance of local or community knowledge and the important role of communities in the control of the process of social and behavioural change social change must be emphasized in the strategy.

2.3 Actions Areas in Addressing the Underlying Causes of Malnutrition

The conceptual framework, as mentioned above, shows that causes of malnutrition are multisectoral, embracing food, health and caring practices. The framework is used at national, district and local levels, to help plan effective actions to improve nutrition. It serves as a guide in assessing and analysing the causes of the nutrition problem and helps in identifying the most appropriate mixture of actions.

2.3.1 Food

2.3.1.1 Infant and Young Child Feeding (IYCF) Practices

The high prevalence of malnutrition among under-five Nigerian children is largely due to poor infant and young child feeding practices which remain despite several interventions at the various levels of health service delivery. As part of the strategies to promote optimal infant feeding practices among Nigerian mothers, the IYCF practices are promoted through the health facilities particularly the primary and secondary health facilities which are closer and easily accessible to Nigerian women. Many initiatives have been implemented to promote adequate care practices including exclusive breastfeeding, adequate complementary feeding among other practices among Nigerian women. For instance, the Baby friendly hospital initiative was implemented in Nigeria in 1992 and IYCF strategy, policy and guideline was introduced in 2005.

In spite of these laudable approaches, rates of breastfeeding and complementary feeding indicators remain suboptimal in Nigeria. The key indicators of infant and young child feeding practices in Nigeria are particularly worrisome with early initiation of breastfeeding at 38.0%, 17.0% exclusive breastfeeding rate and only 35.0% of children 20-23 months were still breastfeeding (NDHS 2013).

Infant feeding is a key determinant of child survival and development and the practices vary in different communities. Infant feeding is categorized into breast feeding and replacement feeding. Breastfeeding is a universal socio-culturally acceptable, nutritious way to feed an infant and provides immunity. On the other hand, artificial feeding involves feeding infants on commercial infant formula feeding, home prepared infant formula, modified breast feeding (expressed heat treated breast milk and wet nursing) and use of unsuitable breast milk substitutes (Oguta *et al*., 2001). Exclusive breast feeding is where an infant receives only breast milk and no other liquids or solids, not even water, with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines (Burgess *et al*., 2009).

Infant and young child feeding practices are multidimensional and age specific practices-comprising of breastfeeding and complementary feeding, which together rank among the most effective means to improve nutritional status and the survival of a child. It has been widely recognised that undernutrition occurs as a result of several behavioural deficits with respect to health and nutrition. Based on well-established evidence, the World Health Organisation (WHO) and the United Nations Children's

Fund (UNICEF) recommended that mothers put newborns to the breast within one hour of birth, breastfeed infants exclusively for the first six months and continue to breastfeed for two years and beyond, together with nutritionally adequate, safe, age-appropriate, responsive feeding of solid, semi-solid and soft foods starting in the sixth month (Butte *et al.,* 2002; WHO, 2003). These components together form the nucleus of IYCF. Increasing number of studies has shown the significant impact of early initiation of breastfeeding within the first hour after birth, on reducing overall neonatal mortality (Singh and Srivastava, 1992; Edmond *et al.,* 2006).

According to WHO Indicators (2010); recommended feeding practices for infants till six months of age are to promote and sustain exclusive breastfeeding, these are initiation of breastfeeding within the first hour of life, exclusive breastfeeding for the first six months of life, breastfeeding on demand and non-use of bottles, teats or pacifiers. Recommendations for infants and young children [6–23 months] are designed to sustain breastfeeding and promote adequate complementary feeding, these include:

- Continuing breastfeeding till 2years of age;
- Introduction of solid, semisolid or soft foods at 6 months;
- Appropriate food diversity (at least from four food groups per day);
- Appropriate frequency of meals: two to three times a day between 6 and 8 months increasing to three to four times a day between 9 and 23 months with nutritious snacks offered once or twice a day, as desired;
- Safe preparation of foods; and
- Feeding infants in response to their cues (WHO, 2010).

Continued breastfeeding beyond six months, accompanied by sufficient quantities of nutritionally adequate, safe and appropriate solid, semi-solid and soft foods, also helps ensure good nutritional status and protects against illnesses. Appropriate complementary feeding is critical for the achievement of healthy growth and development and survival of young children. Optimal breast feeding carries significant health benefits for infants and young children (Oguta et al., 2001). For the first six months of life, breast milk alone is the ideal nourishment, providing all of the nutrients including vitamins and minerals an infant needs, meaning that no other liquid or food is needed (Butte *et al.,* 2002). In addition, breast milk carries antibodies from the mother that help combat disease, protecting babies from diarrhoea and acute

respiratory infections. Breastfeeding also stimulates an infant's immune system and response to vaccination and, according to some studies, confers cognitive benefits as well (Dorea, 2009; Drane and Logemann, 2000; Mortensen *et al*., 2002; Anderson *et al.,* 1999; DeKock *et al*., 2000). It reduces infant morbidity and mortality and contributes to good health status, survival and development.

Several scientific evidences have shown the essential role of infant and young child feeding as major factor in child survival, growth and development (Jones *et al.,* 2003; Black *et al.*, 2008). Furthermore, early initiation of breastfeeding within one hour protects the newborn from acquiring infection and reduces mortality in the newborn (Edmond *et al.,* 2007). Also, early initiation of breastfeeding within one hour of birth is vital as it facilitates emotional bonding of the mother and the baby (Mukuria, 2006). It determines the successful establishment of breastfeeding (Mukuria, 2006), and has a positive impact on duration of exclusive breastfeeding (Perez-Escamilla *et al.,* 2012).

The practice of exclusive breastfeeding has been documented to vary across geographical regions of Nigeria. A study in Benin City showed that about 24.5% of interviewed women ever practised exclusive breastfeeding (Oparaocha *et al.,* 2002). Ekanem *et al*. (2012) also reported exclusive breastfeeding rate of 24% among women in Calabar, Cross River State and further showed ethnic variation in the practice of exclusive breastfeeding. A study in Enugu identified that though 90% of interviewed women had adequate knowledge of exclusive breastfeeding, the practice was only 21.2% (Uchendu *et al*., 2009). Uchendu *et al*. (2009) further identified that educational level, small family size and absence of opposing family beliefs as factors that promote practice of exclusive breastfeeding among the mothers. Studies have identified family and community based counsellors as strong influencers of infant feeding practices of mothers (Haider *et al.,* 2000). Indeed, IYCF has been described as the corner stone of successful nutrition programming and success is possible by scaling up practical, cost effective community based IYCF interventions with a significant impact. Good infant and young child feeding practices provide a safety net for a child in the first 1000 days of life which has been widely recognised as a "critical window" for the promotion of optimal growth, health and behavioural development.

In spite of these benefits, in many developing countries early initiation of breastfeeding rates were still unsatisfactory as compared to developed countries. The rates of early initiation of breastfeeding within one hour of birth in developed countries

are high and range from 74% in United States (Li, et al, 2005) to 92% in Australia (AIFS, 2008). In contrast, the key indicators of infant and young child feeding practices in Nigeria are far from being impressive with early initiation of breastfeeding at 38.0%, 13.0% exclusive breastfeeding rate and only 32.0% of children 20-23 months were still breastfeeding (NDHS, 2008). However, Ogunlesi (2010), Agunbiade and Ogunleye (2012) reported that while breastfeeding initiation is on the increase, the duration, and practice of exclusive breastfeeding among women who had their delivery in a health facility, and outside such facility, has remained low. Similarly, adequate care practices for Nigerian children is dwindling; less than one-third (32.3%) of children aged 20-23 months are being breastfed, 92.8% were not exclusively breastfed as at 5 months of age, and infants age one months and below who have received water, non-milk liquids, other milk and complementary foods were 39.4%, 12.6%, 5.5% and 19.9% respectively (NDHS, 2008). This is in deviance to the WHO recommended exclusive breastfeeding for the first six months of life and sustained breastfeeding up till 24 months of age.

The consequences of poor nutrition in terms of both food and feeding behaviours during the first 2 years of life include significant illnesses, delayed mental and physical development, and death. Malnutrition is known to predispose infants to the recurrent severity of diarrhoea and acute respiratory infections among other diseases. In the long term, early nutritional deficits are linked to impairment in intellectual performance, work capacity, reproductive outcomes and overall health during adolescence and adult hood. Poor breastfeeding practices and early or late introduction of adequate and appropriate complementary foods are linked to all the above. Many of the traditional weaning foods used in West African countries are of low nutrient density. Cereal gruels and starchy roots and tubers continue to form the bulk of the weaning foods (Onofiok and Nnanyelugo, 1998; Tagbo and Ughasoro, 2009; Matthew *et al*, 2009). Some children, however, are weaned directly onto the family diet early in life. Infant-feeding practices are not fully developed, therefore, infection and malnutrition are problems associated with poor weaning methods (Onofiok and Nnanyelugo, 1998). Mothers in many instances are observed to have insufficient knowledge of complementary feeding, thus, mothers' education positively correlates with feeding practices (Memon *et al*, 2010).

2.3.1.2 Micronutrients Intake

As reported in the Food Consumption and Nutrition Division discussion paper (Marie and Levin, 2000), balanced diets are not accessible for a large proportion of the world's population, particularly those who live in developing countries. Many populations or subgroups of populations subsist on staple plant-based diets that often lack diversity (and also quantity sometimes), which may result in micronutrient deficiencies (Fielder and Macdonald, 2009). Vitamin A and iron deficiencies are among the nutritional deficiencies of greatest public health significance in the world today (WHO, 2008; FFI, 2008; West et al. 2008). Almost one third of children in developing countries are affected to some degree by vitamin A deficiency, which impairs their growth, development, vision and immune function, and in extreme cases leads to blindness and death (UN ACC/SCN 1997; WHO 1995; Sommer and West 1996). Vitamin A is so important in embryological development that without it, the fertilized egg cannot develop into a fetus (Brody, 2007).

Iron deficiency, which leads to anemia, is well-recognized as the most common dietary deficiency in the world (including developed countries), affecting mostly children and women of reproductive age (Gillespie 1998). Iron deficiency occurs when iron requirements cannot be met by absorption from the diet, such as during periods of rapid growth (infancy, adolescence), in pregnancy, and as a result of menstrual or pathological blood loss (Hurrell *et al.*, 2010). Developing countries' diets are predominantly dominated by plant-based foods and so limit iron absorption due to their high phytate and polyphenol contents (Hurrell, 2002; Zimmermann, *et al*. 2005; Hurrell, *et al*. 2010). It is estimated that more than half of all pregnant women in the world and at least one third of preschoolers suffer from anemia, and many more are iron deficient to some degree (UN ACC/SCN 1997). Iron deficiency is harmful at all ages. In young children it impairs physical growth, cognitive development and immunity; at school age it affects school performance; at adulthood it causes fatigue and reduced work capacity; and among pregnant women, anemia may cause fetal growth retardation or low birth weight, and is responsible for a large proportion of maternal deaths (Gillespie 1998). Because iron and vitamin A deficiencies disproportionately affect children and women during their reproductive years, they hinder both the development of individual human potential and the national social and economic development.

A body of knowledge and experience does exist to effectively address vitamin A and iron deficiencies through both short-term and long-term interventions. The most popular approaches are supplement distribution, food fortification, nutrition education, and the so-called "food-based strategies." Food-based strategies—also referred to as dietary modifications—encompass a wide variety of interventions that aim at increasing the production, availability and access to food—in the present case, vitamin A and iron-rich foods; increasing the consumption of foods rich in these micronutrients; and/or increasing the bioavailability of vitamin A and iron in the diet. Examples of interventions used to achieve these goals include the following:

- *Strategies to increase the **production** of micronutrient-rich foods.* These strategies include agricultural programs and policies to increase commercial production as well as programs to promote home production of fruits and vegetables (home gardens), small livestock production and aquaculture (fishponds).

· *Strategies to increase the **intake** of micronutrient-rich foods.* These approaches refer to nutrition education, communication, social marketing and behaviour change programs to guide consumer food choices and to increase the demand for micronutrient-rich foods. They also include education interventions targeted at specific age groups such as the promotion of optimal breast-feeding and complementary feeding practices for infants and young children.

· *Strategies to increase the **bioavailability** of micronutrients.* These include home processing techniques such as fermentation or germination to increase the bioavailability of micronutrients; food combinations that increase the bioavailability of certain micronutrients (also called food-to-food fortification strategies); and preservation and conservation techniques such as solar drying or production of leaf concentrates to extend the availability of seasonal fruits and vegetables throughout the year.

· *Plant breeding strategies*. Plant breeding technologies are also included in food based strategies because they can increase the concentration of certain trace minerals and vitamins; increase the bioavailability of micronutrients by reducing the concentration of anti-nutrient factors (inhibitors of absorption); or increase the concentration of promoters of absorption.

In practice, most food-based strategies use some combination of interventions of these four groups. As an example, nutrition education and communication strategies can complement production interventions to ensure that increases in food supply or the

income from marketed surplus, will in fact, translate into increased nutrient intakes by the targeted groups. Food-based strategies are often described as a sustainable approach because the process empowers individuals and households to take ultimate responsibility over the quality of their diet through own-production of nutrient rich foods and informed consumption choices. These strategies are said to be "the ideal long-term goal toward which society strives—provision of assurance of access to a nutritionally adequate diet achieved through diversity of food availability, wise consumer selection, proper preparation, and adequate feeding" (Howson *et al.*, 1998). Food based strategies are also appealing because they can address multiple nutrients simultaneously, including calories, proteins and various micronutrients, without the risk of antagonistic nutrient interactions or overload.

2.3.2 Health

2.3.2.1 Immunization

Childhood vaccination (also described as immunization) is an important and effective way to reduce childhood illness and death. However, there are many children who do not receive the recommended vaccines because their parents do not know why vaccination is important, do not understand how, where or when to get their children vaccinated, disagree with vaccination as a public health measure, or have concerns about vaccine safety (Kaufman *et al.*, 2013). The term 'routine vaccinations' means all recommended routine childhood vaccines outlined by the WHO (WHO 2012) with the exception of human papilloma virus vaccine (HPV), which is delivered to adolescents (Kaufman *et al.,* 2013).

According to the Global Vaccination Action Plan, polio eradication is set as the first milestone (WHO, 2014). Routine measles vaccination coverage was selected as the third indicator of progress towards the Millennium Development Goal (MDG 4), of reducing under-five mortality rates by two-thirds by 2015, compared with 1990 baseline data. According to the WHO, by 2008, measles vaccination coverage was 83% globally among children aged 12–23 months old. Nearly 700 million children aged between 9 months to 14 years living in high-risk countries, were vaccinated against the disease from 2000 to 2008, and globally measles deaths declined by 78% during this period, indicating that the global measles vaccination campaign successfully averted over 3.6 million deaths (Dabbagh *et al.,* 2009; Rammohan *et al.*, 2012). The lowest rates were in the South-East Asian (75%) and African (73%)

regions. In low-income countries, 76% of children aged 12–23 months had received measles vaccination (Duclos *et al.*, 2009). However, measles continues to be a major public health problem among children in developing nations, with measles deaths predominantly occurring among children aged below five years. Children living in developing countries with low income and poor health infrastructure are at the highest risk of measles-related morbidity and mortality. Most of the world's measles-related deaths occur in nations with the lowest measles vaccine uptake (Rammohan *et al.*, 2012). In 2008 two-thirds of the 22.7 million children who missed receiving measles vaccine lived in India, Nigeria, China, Democratic Republic of Congo, Pakistan, Ethiopia and Indonesia (Rammohan *et al.*, 2012).

The impact of the implementation of measles reduction strategies among the younger and older children have been assessed in Akwa Ibom State in line with WHO and partners' strategic objectives (Bassey *et al*., 2010). The study showed that there was a significantly higher infection rate (47.9%) among the unvaccinated populations compared to 14.8% observed among the vaccinated populations, including those who had received at least one dose of measles vaccine through routine immunization. Findings in this study further revealed a higher percentage of measles immunoglobulin antibody positivity among those living in rural areas than in urban settings. The variation in serologic profile between urban and rural settings might be due to malnutrition, overcrowding and inadequate or lack of supportive health care in rural communities. However, there was an overall drastic reduction in measles burden from 70% in 2006, to 3.7% in 2008 which testified to a favourable measles vaccination impact in the state and further supported effort by government and WHO to conduct mass measles vaccination across children, 5 years and below irrespective of previous vaccination experience/status.

Despite the high level of awareness on immunization (Odusanya *et al.*, 2008, Adeyinka *et al.,* 2009), as well as positive attitudes reported in several studies on immunization (Odusanya *et al.*, 2008; Adeyinka *et al.*, 2009; Omotara *et al.*, 2012) there is still an emphasized need for adequate health education so that the belief by a small percentage of the respondents that there are substitutes for immunization like concoctions and also the wrong notion that HIV/AIDS and malaria are immunization preventable diseases can be totally banished (Adeyinka *et al.*, 2009).

2.3.2.2 Growth Monitoring and Promotion (GMP)

Growth monitoring is an important component of all child health services (Faber *et al.*, 2009). It is part of the WHO/UNICEF Child Survival Strategy, as well as the goals set at the World Summit on Children in 1990 (Owusu and Lartey, 1992). Child survival strategies (CSS) is defined as steps taken for children aged 0-3 years by individuals and communities to reduce risk, duration or severity of an adverse health condition that detrimentally affects the survival of infants and children (USAID, 2002). These include breast-feeding, immunization, oral rehydration therapy, growth monitoring and promotion, female education, family planning and food fortification. Growth monitoring and promotion is useful for early detection of malnutrition or illness and fosters good development in children (UNICEF, 2001).

The World Health Organisation (WHO) defines growth monitoring and promotion (GMP) as a nutrition intervention that measures and charts the weight of children and uses this information to counsel parents so that they take actions to improve child growth (WHO, 1986). Growth monitoring is not an intervention per se, like oral rehydration therapy or immunization, that by itself can result in improved health or survival. Growth promotion activities such as those focusing on health education: counseling, referral and other actions to follow up results are essential (Brownlee, 1990). Thus many professionals in the field have suggested that this type of activity be termed "growth monitoring and promotion", to emphasize that action based on the results of assessment is an essential component of the intervention (Hendrata and Rohde 1987, Yee and Zerfas, 1987). It can be a reliable means of periodically assessing children's physical development and nutrition status, thus, serves as an early warning for mothers about the poor nutritional state or inadequacy of dietary intake of their children (Owusu and Lartey, 1992, Sanusi and Gbadamosi, 2009). Important aspects of growth monitoring are the mother's appreciation of the growth chart, and how she interprets it. Since it is the mother who keeps the weighing card and takes it to the clinic when she has to; an understanding of what the chart is meant for and being able to interpret it correctly are incentives to her to attend the clinic regularly, and also to interact better with health workers. This enhances her appreciation of the link between child feeding and care, and growth, and thus involves her more directly in her child's continued growth and well-being (Owusu and Lartey, 1992). According to a recent review of small- and large-scale studies, there is evidence that children whose growth is monitored and whose caregivers receive nutrition and health education and

have access to basic health care have a better nutritional status and/ or chance of survival than children who do not (Garner *et al.*, 2000).

However, it been observed in several studies that the knowledge of mothers about each of the components of child survival strategies was high but the practice was very low, particularly, GMP. Sanusi and Gbadamosi (2009), in a study in Ibadan, Nigeria reported that 65.8% of mothers were knowledgeable but only 7.5% of them actually visit the clinic for Growth Monitoring regularly compared to about 94% timely and complete immunization practice for BCG. Ashworth *et al*. (2008) in an excellent review of evidence of impact of GMP had noted low participation rates, poor health workers performance and inadequacies in health system infrastructure as some of the reasons identified. These they attributed to the fact that a third to three-fourth carers in developing countries do not understand the growth chart and therefore its relevance to child nutrition and survival.

As reported from a study in Ghana (Owusu and Lartey, 1992), attendance at clinics for GMP became more irregular with the advancing age of the children. Most of the mothers who attended irregularly considered immunization more important for their child's health than growth monitoring. In this study, 39.5% of the mothers interviewed had no idea of the purpose of growth charts and could not interpret them. However, their understanding of the chart improved with more regular attendance. One potential explanation for low rates of comprehension reported in mothers, could be due to low comprehension of the objectives of GMP by health workers, resulting in a limited communication (Fagbule *et al.*, 1990, Roberfroid, *et al.*, 2005). A study in India reported that there was a gap between knowledge and skill for interpretation of growth-chart data among the assessed Child Development Project Officers (Kapil *et al.*, 1991). It has been shown that when health workers had a correct knowledge of GMP, a substantially higher proportion of growth charts was maintained (Gopaldas *et al.*, 1990).

It has been recommended that GMP practice needs to re-focus on the child as a whole taking into account his/her health, growth, and development, and his/her family and socioeconomic environment. Caregivers should, therefore, be involved in the process to bring together the observations and measurements made by both mothers and health workers (Fagbule *et al.*, 1990). More attention is also called for towards growth monitoring and promotion programmes, strengthen the nutrition counselling elements, combine growth monitoring with other health intervention channels such as

immunization and ensure consistent message delivery (Ashworth *et al*., 2008, Sanusi and Gbadamosi, 2009).

2.3.2.3 Health Care Services

The health of the citizenry is very crucial to the nation's economic growth and development. A healthy labour force will make meaningful contribution to the economic growth and development of the nation (Aregbeyen, 1997). It is not gainsaying that improvement in the health sector is an improvement in the socio-economic development of a nation. A good health is basic to human welfare and fundamental objectives to development. A healthy population is likely to be a productive population and a productive population will lead to a growing economy. However, it is no surprise therefore, that ill health has a powerful effect on a nation's economic progress. Productivity will be minimal and a substantial reduction in maternal illness and deaths would greatly increase women's contribution to economic development. Greater control over reproductive health outcomes, through reduced infant mortality, for example, would pave the way for the demographic transition that is essential to economic progress (WHO, 2002).

As a result of the great role that health performs in development, governments at all levels have continuously striven to maintain, improve sector in Nigeria. This commitment has been demonstrated through a well articulated health policy. However, the implementation has thus far, been handicapped by several constraints. Consequently, the health of the Nigerian people is still being threatened by an inefficient health care delivery. To determine how well the six essential nutrition actions were being implemented in the PHCs, it was found that these services were haphazardly implemented and the challenges inherent in the PHC system made it impossible for these services to have any impact on nutrition (Akinyele, 2001).

Till date, rural Nigeria still remains the most neglected and its people, the most deprived with respect to the provision of modern health care services. In addition, they lack other basic infrastructural necessities that are essential to the maintenance and promotion of good health. This is where the majority of the nation's population who produce the nation's food needs, including valuable export crops resides. The few areas where medical facilities exist, such facilities are often short staffed, poorly maintained and are often inadequately supplied with drugs. Thus rural dwellers are

subjected to high incidence of morbidity and mortality resulting from the prevalence of preventable parasitic and other infectious diseases. In most of the rural areas of Nigeria today, few people could have access to better medical treatment while few who are rich and in higher authorities do meet their health need abroad.

There are social, cultural and political factors that contribute to inequitable health outcomes, the bane of the Nigerian health care system. Some of the factors are the neglect and decay of government health facilities in the last two decades, the political instability that the country has witnessed since independence in 1960 coupled with various economic problems. The outcome of these problems has adversely the health seeking of the consumers (Orubuloye, 2002).

Healthcare seeking behaviour is defined as activity undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy (Ward *et al.*, 1997). Information on health seeking behaviour and health care utilization has important policy implications in health systems development. Factors which influence which treatment sources people seek when symptoms occur include socio-cultural factors like beliefs and household decision making to seek care, social networks, gender and economic status. Furthermore, the decision as to where to seek health care depends upon many factors including the availability of a provider within the community, reputation of the provider, perceived quality of the services, the perceived cause of the disease, cost of treatment, and the arrangements for payment.

Several studies on health seeking behaviour demonstrate the complexity of influences on an individual's behaviour at a given time and place. However, the desired health care seeking behaviour is for an individual to respond to an illness episode by seeking, first and foremost, help from a trained medical practitioner, in a formally recognized health care setting (Omotoso, 2010). Egunjobi, (1983) observed that most patients would choose an institution which they considered would give best services. Other reasons include socio-cultural factors such as, fees, ease of transport, religion and connections with hospital staff. Aregbeyen (1992) in his own view, noted that the nature of illness coupled with poverty, ignorance and lack of medical facilities are some of the reasons for health seeking behaviours of people while Adeagbo (1998) noted that, non-satisfaction with the cost and quality of health services, are the major factors of health seeking behaviour. However, Orubuloye (2002) opined that factors affecting health seeking behaviour of people include better services provided in some

of the established hospitals, nearness to the home of the patients, availability of relatives in the hospital and family decision.

A study in Ekiti , Nigeria (Omotoso, 2010) on the reasons for the seeking of medical services among the rural dwellers showed that the major reasons identified were, the type of ailment suffered by the patients, availability of money at the time of sickness, age of the patients, religious background or belief, educational background, severity of sickness, the patients, and position in the household. Reasons for choice of health facility included cost affordability, closeness to home, staff attitude, quality of service, knowledge of owners/staff, neatness of the environment, availability of services, as well as drugs required. Respondents in the study suggested that improvement of road condition, provision of more personnel, adequate provisions of equipments and materials, prompt attention to clients, clean environments and provision of adequate security around the health facility will improve health seeking attitudes of people.

Abdulraheem (2007) studied the health needs assessment and determinants of health-seeking behaviour among elderly non-institutionalized population, 60 years and over, residing in Ilorin metropolis of Kwara State, Nigeria. More than 60% of the elderly rated their health condition as bad. Leading health problems include body pain, joint pain, generalized body weakness, fatigue and poor sight. The study showed that women are more frequent users of health services than men. The reasons for the difference in health care utilization could be the greater prevalence of illness among female, preference for women health care and availability of increased number of caregivers probably because women played more active role than men in the care giving process. Also, during active productive years in child bearing women are more exposed to health care facility services than men. It is also worth noting that majority of donor agencies concentrate on the care for women health issues than on men. These are often the complaints of men in the rural communities, and as authorities in the homes this inequity has indirect influence on health seeking decisions of many families, since such decisions must, more often, receive the approvals of the men. Some research on sex differences in the use of health care services has focused on differences in the way men and women seek care and, to a lesser extent, on the degree to which the diagnostic and therapeutic steps taken by physicians may vary according to the sex of the patient (Mustard *et al*, 1998).

It is also on record that socio-economic status was the single most important determinant of health-seeking behaviour among the elderly (Abdulraheem, 2007). This is similar to findings from a previous study (Ahmed *et al*, 2005, Orubuloye, 2002). Poverty status emerged as the major determinant of health seeking behaviour. As a result of this, most elderly relied on home remedies from the family since they could not afford orthodox health care service simply because of high cost. Poverty, an important determinant of health care seeking behaviour, has similarly been reported in other studies (Cain, 1991). The preponderance of family care with home remedies (self treatment) as the most common treatment chosen by the elderly when sick is a reflection of poverty and lack of social security and health insurance for the Nigerian elderly citizens (Abdulraheem, 2007). It could also be due to traditional belief in the study area that illnesses among the elderly are better treated with home remedies. Although self-treatment is an alternative and supplement to formal health care (Steverson *et al*, 2003), it is equally very important that health care decisions taken by sick individuals or their givers are both safe and appropriate. Therefore, in order to make self-treatment safe and appropriate, some measures are needed to empower patients to make informed decisions. Apart from self-treatment, cheap care provided by the health care workers (paramedics) and drug store sellers are other important sources of seeking health care by the elderly.

Education of the elderly and their caregivers plays an important role in reducing the use of potentially dangerous drugs by enhancing an individual's capacity to assess services offered, to judge a provider's competence and to evaluate whether costs are justified and reasonable (Abdulraheem, 2007).The impact of education found in this study reflects the association between health and education and therefore underscores the need to promote literacy so that capacity to act appropriately in health care environment is increased. Educational status has also been confirmed as being highly associated with health-seeking behaviour in pregnancy and delivery. Maternal mortality levels are much higher in women with no education compared to women with secondary level or higher education. Ene-Obong *et al* (2001) undertook a study to determine the effects of socioeconomic and cultural factors on the health and nutritional status of women of childbearing age in two rural farming communities in Enugu State, Nigeria. This study showed that the major determinants of the health and nutritional status of women are socioeconomic and cultural. The study also showed that education of girls/women and men can largely help modify the cultural barriers

that discriminate against women. They recommended that female education be given the highest priority. Free or subsidized primary and secondary education for females is imperative. Adult literacy classes and training in income-generating activities also need to be intensified for those who have lost the opportunity for formal education.

Access to information also influences against health-seeking behaviour in women. Access to communication media is important for acquiring information and knowledge on maternal and other health issues. According to NDHS, 2003, the proportion of women that have no access to any mass media was about two to three times that of men in the rural and urban areas, respectively (18.7% women have no access compared to 6.3% for men in urban areas, and 52.2% compared to 22.6% in rural areas). The fact that more than half of women do not have access to any mass media, is likely to affect their knowledge and use of health facilities in pregnancy, delivery and other health concerns. Other channels of communication including interpersonal communication are important in passing on key health messages to the community (FMOH, 2007). Currently, government encourages frequent media advertisement of traditional medicine healers who openly challenge the utility of western medicine, thus making them very popular especially among the poor, and affects their demand of primary health care services.

The introduction of user fees in the public sectors have made a shift in the utilization of public services, thus, increasing the use of other treatment sources such as private health facilities, drug vendors and traditional healers. This is fueled by the fact that the regular supply of drugs and the improvement in the technical quality of the services is not enough to compensate for the additional barrier created by the increased cost of services (Haddad and Fournier, 1995). Uzochukwua and Onwujekwe (2004) had raised concerns that user fees may restrict access to health services or lead to change in healthcare seeking behaviour with its detrimental effect on the poor. However, they observed that contrary to expectations, cost though vital was not the prime reasons for non-use of health facilities. The reasons that deter the least poor households from using health centres were lack of drugs and poor staff attitude. This concurs with the findings of a previous study in Nigeria where only 2% of cases had cost as an important consideration for patient care (Asenso-Okyere *et al.*, 1998).

In logistic analysis to examine the determinants of use of health centres, the availability of good services, proximity of the centres to the homes and polite health workers were reasons that made the people to use the services there. The geographical

proximity of services to peoples' homes has been noted as one of the most important factors that affects utilization of health services, particularly in rural areas of developing countries (Mugisha *et al.*, 2002). These authors asserted that as distance increases the level of utilization decrease and vice versa, and that hence people who live far away from services suffer a greater disadvantage regarding the use of services if they are also poorer and transport is expensive.

2.3.2.4 Social Determinants of Health

In the 19th century public health action resulted from a need to address the devastating effects of the living and working conditions imposed on populations during the industrial revolution. The initial focus of public health action was, therefore, on the social and environmental determinants of the health of the population. By the late 20th century, however, there had been a shift in the emphasis of public health action toward modifying individual risk behaviours. However, recent epidemiological analysis of health, disease and disability in the populations of most developed countries confirms the role of social, economic and environmental factors in determining increased risk of disease and adverse outcomes from disease (Townsend *et al.*, 1988; Harris *et al.*, 1999). Health status is influenced by individual characteristics and behavioural patterns (lifestyles) but continues to be significantly determined by the different social, economic and environmental circumstances of individuals and populations. The relationships between these social factors and health, although easy to observe, are less well understood and much more difficult to act upon. Consequently they have been given much less attention as a basis for public health intervention than have individual behaviours in the recent past.

2.3.3 Care

Care is the provision in the household and the community of time, attention and support to meet the physical, mental and social needs of the growing child and other household members; especially the mother during post- natal period (ICN, 1992). It refers to the behaviours and practices of caregivers (mothers, siblings, fathers, and child-care providers) to provide the food, health care, stimulation, and emotional support necessary for children's healthy growth and development. These practices translate food security and health-care resources into a child's well-being (Engle and Lhotska, 1999). Food, health, and care are all necessary, but none alone is sufficient

for healthy growth and development, according to the UNICEF conceptual framework (UNICEF, 1990b, Engle *et al.*, 1997). All three elements must be satisfactory for good nutrition. Even when poverty causes food insecurity and limited health care, enhanced care giving can optimize the use of existing resources to promote good health and nutrition in women and children. Breastfeeding is an example of a practice that provides food, health, and care simultaneously.

In order to perform care practices, the caregiver or mother needs sufficient education, time and support from family members, the community and society at large (Jonsson, 1995). According to Abbi *et al* (1991), Care manifests in six types of activities practiced by mothers/ caregivers, these are:

- Care for women such as providing appropriate rest time or increased food intake during pregnancy
- Breastfeeding and feeding of young children the appropriate quantity and quality of food for the age and stage of development
- Psycho-social stimulation of children and support for their development
- Appropriate food preparation and storage practices
- Hygiene practices and care for children during illness
- Diagnosis of illness and adoption of health seeking behaviour.

2.3.3.1 Care giving and Men's Involvement

Men not only act decision-makers for women and children's access to health services, but also through abuse or neglect, men's actions can have a direct bearing on the health of their female partners and children (Bhartta, 2013). While the integration of men into nutrition programs is limited (Saiqa *et al.*, 2000), there is a history of male involvement in the area of reproductive health upon which to draw. Prior to the 1994 International Conference on Population and Development, international family planning programs focused on barriers to women's contraceptive use to reduce fertility. After the conference, three primary approaches developed to increase male involvement. The first focused on 'men as clients' to engage them in the process of reproduction from their own needs. The second focused on men as partners in decision-making to improve contraceptive use. However, neither of these approaches addressed the gender inequalities that constrain health. The third approach, more in

line with the mandates from the conference, emphasized men as agents of positive change (Greene *et al.*, 2006).

In health programming, there are several examples of health programs that use the first two approaches and a limited number of programs that involve men as agents of positive change. Impact evaluations of these programs are very few, but the majority of those evaluated have shown positive impacts. One example of a well-evaluated program using the approach of 'men as agents of positive change' is the Men in Maternity program in India (Varkey *et al.*, 2004). This study investigated the feasibility, acceptability, and cost of a model of maternity care that encouraged husbands' participation in their wives' antenatal and postpartum care. The program resulted in a significant improvement in family planning knowledge and behaviours of both men and women, and men accompanied their wives to the clinics and participated actively in the intervention.

In an effort to understand how best to engage grandmothers and men in nutrition programming, the infant and young child nutrition (IYCN) project conducted research in Kenya to document how best to engage and support men and grandmothers to improve maternal and infant nutrition. It was found that while men are currently not involved in the direct care and nurturing of women and young children, there was clear interest in obtaining information to promote this within their families. Men desired to learn from trained experts or professionals (generally other men) on nutrition and health issues and were more likely to gain awareness through these communication strategies. The creation of men's groups led by experts is an important method of enhancing men's participation in maternal and child health and nutrition issues (USAID/IYCN, 2011).

In behaviour change communication strategies, tailored messages targeted men, mostly through the media. In India, Mexico, and Uganda, a project supported by the Interagency Working Group on Gender used the Stepping Stones methodology (a life-course approach to educating and integrating boys and men from several life stages within the health program) to involve men in participatory workshops, challenging them to reflect on their roles as men and fathers in the family, and to help break down gender stereotypes (Welbourn, 1995). A recent World Health Organisation (WHO) publication reviewing the role of engaging men and boys in health programs presents some promising results which can serve as models for infant and young child feeding programs in the future (Barker *et al.*, 2007). Group education, which can range from

single discussions to regular weekly sessions, has been found to effectively communicate concepts, knowledge, and ideas to encourage men's participation in health activities. Evidence has shown that group sessions alone can lead to behaviour change; however, group sessions in combination with other campaigns (e.g., mass media, individual counseling) can lead to even more substantial improvements in attitude and behaviour. In addition, service-based programs, such as those that provide disease screening or counseling, that have recognized men as allies or partners, rather than antagonistic or obstacles, have been shown to lead to positive behaviour change (Aubel, 2011).

Although men defend their official title of 'household head' and maintain that they are the main decision-makers, in reality, men's involvement is relatively limited in terms of pregnancy and newborn care. In practice, senior women advise men and their wives about these issues (Matinga, 2002). While it is important to recognize what may be the dominant cultural role of men/fathers in maternal health and child care, there are significant opportunities for expansion of their role. Men can play a vital role in promoting egalitarian decision-making. Through simple and direct strategies, such as the promotion of sharing responsibility for household chores and child care, men can help combat gender discrimination in households and communities (Aubel, 2011).

2.4 Behavioural Theories and Models

A variety of behavioural theories or conceptual models that can be related to decisions in behavioural events have been proposed. Behavioural or social science theories or conceptual models provide the basis for understanding behaviours. An effective intervention program would use the model-specified procedures to increase a person's motivation and resources for change along the specified processes. Different procedures may be more important at different decisions in the behavioural change process. These theories and models are reviewed to define the concepts and to identify the motivational mechanism(s), the resources that a person needs for change, the processes by which behavioural change is likely to occur, and the procedures necessary to promote change. These include Theory of Social Capital, Mediating Variable Model, the Stages of Change model, Social Cognitive Theory, the Social Support model, and the Social Ecological Model, Prochaska's Trans-theoretical Model, Health Belief Model, Theory of Reasoned Action. Synergy may be achieved by taking the most

promising concepts from each model and integrating them for use with specific populations **(**Baranowski *et al*, 2003**).**

2.4.1 Health Belief Model

The health belief model (HBM) is a psychological health behaviour change model developed to explain and predict health-related behaviours, particularly in regard to the uptake of health services (Janz and Becker, 1984). The health belief model remains one of the best known and most widely used theories in health behaviour research (Carpenter, 2010). The health belief model suggests that people's beliefs about health problems, perceived benefits of action and barriers to action and self-efficacy explain engagement (or lack of engagement) in health-promoting behaviour. A stimulus, or cue to action, must also be present in order to trigger the health-promoting behaviour. Health Belief Model provides a framework when planning a health intervention. It includes constructs of perceived susceptibility to and severity of problems if one does not make a positive behaviour change, perceived barriers and benefits for making a behaviour change, and an individual's perceived capability to perform the desired behaviour change (Croyle, 2005, Glanz *et al.*, 2008). The health belief model stipulates that a person's health-related behaviour depends on the person's perception of four critical areas: the severity of a potential illness, the person's susceptibility to that illness, and the benefits of taking a preventive action, and the barriers to taking that action. According to the HBM, the more people perceive themselves susceptible to a given health risk the more likely it is that they will take decisions towards its prevention (Nganda *et al.* 2004; Conner & Norman 2005; Mbonye *et al.* 2006).

The model also incorporates cues to action (e.g., leaving a written reminder to oneself to walk) as important elements in eliciting or maintaining patterns of behaviour. The construct of self-efficacy or a person's confidence in his or her ability to successfully perform an action has been added to the model, perhaps allowing it to better account for habitual behaviours, such as a physically active lifestyle. However, it does not account for other factors that influence health behaviours (Janz and Becker, 1984). Environmental factors outside an individual's control may prevent engagement in desired behaviours. For example, an individual living in a dangerous neighbourhood may be unable to go for a jog outdoors due to safety concerns (Janz and Becker, 1984). Furthermore, the health belief model does not consider the impact of emotions on

health-related behaviour. Evidence suggests that fear may be a key factor in predicting health-related behaviour (Glanz *et al.*, 2008).

2.4.2 Trans-theoretical model or Stages of Change model

The trans-theoretical model (TTM) of behaviour change assesses an individual's readiness to act on a new healthier behaviour, and provides strategies, or processes of change to guide the individual through the stages of change to Action and Maintenance. The trans-theoretical model is also known by the term "stages of change" (Greene *et al.*, 1999). It is arguably the dominant model of health behaviour change, having received unprecedented research attention, yet it has simultaneously attracted criticism (Armitage, 2009).

The Stages of Change model takes into consideration that individuals may be in various stages when approaching a health behaviour change (Glanz and Rimer, 1995). The most common set of stages include pre-contemplation (not thinking about change or suppressing thoughts of change), contemplation (considering change but taking no action), planning or preparation (anticipating making efforts to change and considering what behaviour one will do), action (actually engaging in efforts to change), and maintenance (expending effort to retain the changes made during action). In the trans-theoretical model, change is a "process involving progress through a series of stages (Prochaska *et al.*, 1997).

2.4.2.1 Stages of Change

Stage 1: Pre-contemplation (Not Ready)

People at this stage do not intend to start the healthy behaviour in the near future (within 6 months), and may be unaware of the need to change. People here learn more about healthy behaviour: they are encouraged to think about the pros of changing their behaviour and to feel emotions about the effects of their negative behaviour on others. Pre-contemplators typically underestimate the pros of changing, overestimate the cons, and often are not aware of making such mistakes. One of the most effective steps that others can help with at this stage is to encourage them to become more mindful of their decision making and more conscious of the multiple benefits of changing an unhealthy behaviour.

Stage 2: Contemplation (Getting Ready)

At this stage, participants are intending to start the healthy behaviour within the next 6 months. While they are usually now more aware of the pros of changing, their cons are about equal to their Pros. This ambivalence about changing can cause them to keep putting off taking action. People here learn about the kind of person they could be if they changed their behaviour and learn more from people who behave in healthy ways. Others can influence and help effectively at this stage by encouraging them to work at reducing the cons of changing their behaviour.

Stage 3: Preparation (Ready)

People at this stage are ready to start taking action within the next 30 days. They take small steps that they believe can help them make the healthy behaviour a part of their lives. For example, they tell their friends and family that they want to change their behaviour.

People in this stage should be encouraged to seek support from friends they trust, tell people about their plan to change the way they act, and think about how they would feel if they behaved in a healthier way. Their number one concern is: when they act, will they fail? They learn that the better prepared they are, the more likely they are to keep progressing.

Stage 4: Action

People at this stage have changed their behaviour within the last 6 months and need to work hard to keep moving ahead. These participants need to learn how to strengthen their commitments to change and to fight urges to slip back. People in this stage progress by being taught techniques for keeping up their commitments such as substituting activities related to the unhealthy behaviour with positive ones, rewarding themselves for taking steps toward changing, and avoiding people and situations that tempt them to behave in unhealthy ways.

Stage 5: Maintenance

People at this stage changed their behaviour more than 6 months ago. It is important for people in this stage to be aware of situations that may tempt them to slip back into doing the unhealthy behaviour—particularly stressful situations. It is recommended that people in this stage seek support from and talk with people whom they trust, spend

time with people who behave in healthy ways, and remember to engage in healthy activities to cope with stress instead of relying on unhealthy behaviour.

In general, for people to progress they need, firstly, a growing awareness that the advantages (the "pros") of changing outweigh the disadvantages (the "cons")—the TTM calls this decisional balance. Secondly, they need confidence that they can make and maintain changes in situations that tempt them to return to their old, unhealthy behaviour—the TTM calls this self-efficacy. And thirdly, they need strategies that can help them make and maintain change—the TTM calls these processes of change.

2.4.2.2 Processes of change

The ten processes include:

1. Consciousness-Raising—increasing awareness via information, education, and personal feedback about the healthy behaviour.
2. Dramatic Relief—feeling fear, anxiety, or worry because of the unhealthy behaviour, or feeling inspiration and hope when they hear about how people are able to change to healthy behaviours.
3. Self-Reevaluation—realizing that the healthy behaviour is an important part of who they are and want to be.
4. Environmental Reevaluation—realizing how their unhealthy behaviour affects others and how they could have more positive effects by changing.
5. Social Liberation—realizing that society is more supportive of the healthy behaviour
6. Self-Liberation—believing in one's ability to change and making commitments and recommitments to act on that belief.
7. Helping Relationships—finding people who are supportive of their change
8. Counter-Conditioning—substituting unhealthy ways of acting and thinking for healthy ways.
9. Reinforcement Management—increasing the rewards that come from positive behaviour and reducing those that come from negative behaviour.
10. Stimulus Control—using reminders and cues that encourage healthy behaviour as substitutes for those that encourage the unhealthy behaviour.

2.4.3 Social learning / Social Cognitive Theory

Social learning theory, later renamed social cognitive theory, proposes that behaviour change is affected by environmental influences, personal factors, and attributes of the behaviour itself. Each may affect or be affected by either of the other two. A central tenet of social cognitive theory is the concept of self-efficacy. A person must believe in his or her capability to perform the behaviour (i.e., the person must possess self-efficacy) and must perceive an incentive to do so (i.e., the person's positive expectations from performing the behaviour must outweigh the negative expectations). Additionally, a person must value the outcomes or consequences that he or she believes will occur as a result of performing a specific behaviour or action. Outcomes may be classified as having immediate benefits (e.g., feeling energized following physical activity) or long-term benefits (e.g., experiencing improvements in cardiovascular health as a result of physical activity). But because these expected outcomes are filtered through a person's expectations or perceptions of being able to perform the behaviour in the first place, self-efficacy is believed to be the single most important characteristic that determines a person's behaviour change. Self-efficacy can be increased in several ways, among them by providing clear instructions, providing the opportunity for skill development or training, and modeling the desired behaviour. To be effective, models must evoke trust, admiration, and respect from the observer; models must not, however, appear to represent a level of behaviour that the observer is unable to visualize attaining.

Social learning theory posits that learning is a cognitive process that takes place in a social context and can occur purely through observation or direct instruction, even in the absence of motor reproduction or direct reinforcement (Bandura, 1971). In addition to the observation of behaviour, learning also occurs through the observation of rewards and punishments, a process known as vicarious reinforcement. The theory expands on traditional behavioural theories, in which behaviour is governed solely by reinforcements, by placing emphasis on the important roles of various internal processes in the learning individual. Social learning theory integrated behavioural and cognitive theories of learning in order to provide a comprehensive model that could account for the wide range of learning experiences that occur in the real world (Bandura, 1977). The key tenets of social learning theory are as follows:

1. Learning is not purely behavioural; rather, it is a *cognitive* process that takes place in a social context.

2. Learning can occur by observing a behaviour *and* by observing the consequences of the behaviour (**vicarious reinforcement**).
3. Learning involves observation, extraction of information from those observations, and making decisions about the performance of the behaviour (observational learning or **modeling**). Thus, learning can occur without an observable change in behaviour.
4. Reinforcement plays a role in learning but is not entirely responsible for learning.
5. The learner is not a passive recipient of information. Cognition, environment, and behaviour all mutually influence each other (**reciprocal determinism**).

2.4.4. Educational Entertainment

Educational entertainment, also referred to as edutainment is content designed to educate and to entertain. It includes content that is primarily educational but has incidental entertainment value, and content that is mostly entertaining but contains educational value. It can be argued that educational entertainment has existed for millennia in the form of parables and fables that promoted social change (Marta Rey-López *et al*., 2006). Modern forms include television productions, film, museum exhibits, and computer software which use entertainment to attract and maintain an audience, while incorporating deliberate educational content or messages.

Entertainment-education in the form of a telenovela or soap opera can help viewers learn socially desired behaviours in a positive way from models portrayed in these programs (Bandura, 2004). The telenovela format allows the creators to incorporate elements that can bring a desired response. These elements may include music, actors, melodrama, props or costumes. Entertainment education is symbolic modeling and has a formula with three sets of characters which the cultural value that is to be examined is determined ahead of time. They include, characters that support a value (positive role models); characters who reject the value (negative role models); and characters who have doubts about the value (undecided). Within this formula there are at least three doubters that represent the demographic group within the target population. One of these doubters will accept the value less than halfway through, the second will accept the value two-thirds of the way through and the third doubter does not accept the value and is seriously punished. This doubter is usually killed (Singhal *et al.*, 1993). Positive social behaviours are reinforced with rewards and negative social

behaviours are reinforced with punishment. At the end of the episode a short epilog done by a recognizable figure summarizes the educational content and within the program viewers are given resources in their community (Bandura, 2004).

Through observational learning a model can bring forth new ways of thinking and behaving (Bandura, 2002). With a modeled emotional experience, the observer shows an affinity towards people, places and objects. They dislike what the models do not like and like what the models care about. Television helps contribute to how viewers see their social reality. Media representations gain influence because people's social constructions of reality depend heavily on what they see, hear and read rather than what they experience directly. Any effort to change beliefs must be directed towards the socio cultural norms and practices at the social system level (Singhal *et al.*, 2004). Before a drama is developed, extensive research is done through focus groups that represent the different sectors within a culture. Participants are asked what problems in society concern them most and what obstacles they face, giving creators of the drama culturally relevant information to incorporate into the show (Bandura, 2004).

2.4.5. The Social-Ecological Model

This model considers the complex interplay between individual, relationship, community, and societal factors. Used as a framework for prevention, a four-level social-ecological model (individual, relationship, community and societal) has been applied to better understand violence and the effect of potential prevention strategies (Dahlberg and Krug, 2002). The ultimate goal is to stop violence before it begins. Prevention requires understanding the factors that influence violence. It allows us to understand the range of factors that put people at risk for violence or protect them from experiencing or perpetrating violence. The overlapping stages in the model illustrate how factors at one level influence factors at another level. Besides helping to clarifying these factors, the model also suggests that in order to prevent violence, it is necessary to act across multiple levels of the model at the same time. This approach is more likely to sustain prevention efforts over time than any single intervention.

The Centre for Disease Control has also adapted the social ecological model (SEM) of health promotion to represent the Colorectal Cancer Control Program's (CRCCP's) multi-level approach to colorectal cancer prevention. At the core of the

model is the individual, surrounded by four bands of influence representing the interpersonal, organisational, community, and policy levels.

Individual Level: The innermost band of the SEM represents the individual who might be affected by the CRCCP. The CRCCP aims to increase the individual's knowledge and influence his or her attitudes toward, and beliefs regarding—

- The need for colorectal cancer screening.
- The intention to be screened.
- The risks and benefits of screening.
- Access to affordable and convenient colorectal cancer screening, diagnosis, and treatment.

The CRCCP SEM highlights the importance of providing individuals with high-quality, appropriate colorectal cancer screening and surveillance and ensuring timely initiation of treatment for people who are diagnosed with cancer.

Interpersonal Level: The second band of the SEM surrounds the individual band and represents colorectal cancer prevention activities implemented at the interpersonal level. These activities are intended to facilitate individual behaviour change by affecting social and cultural norms and overcoming individual-level barriers. Friends, family, health care providers, community health workers or *promotoras,* and patient navigators represent potential sources of interpersonal messages and support. The CRCCP SEM highlights several interventions appropriate for this level, including—

- Providers making screening recommendations to their patients.
- Patients receiving reminders about the need of screening.
- Patient navigators helping to remove logistical and other barriers to screening.

Organisational Level: The third band of the SEM rainbow surrounds the interpersonal band and represents colorectal cancer prevention activities implemented at the organisation level. These activities are intended to facilitate individual behaviour change by influencing organisational systems and policies. Health care systems, employers or worksites, health care plans, local health departments, tribal urban health clinics, and professional organisations represent potential sources of organisational messages and support. The CRCCP SEM highlights several interventions appropriate for this level, including—

- Promoting the use of client and provider reminder systems.
- Providing provider assessment and feedback on their performance.
- Encouraging the coverage and expansion of benefits for screening.
- Adopting worksite policies that support preventive care.

Community Level: The fourth band of the SEM surrounds the organisational band and represents colorectal cancer prevention activities implemented at the community level. These activities are intended to facilitate individual behaviour change by leveraging resources and participation of community-level institutions such as comprehensive cancer control coalitions, tribal health departments, media, and community advocacy groups, which represent potential sources of community communication and support. The CRCCP SEM highlights several interventions appropriate for this level, including—

- Working with coalitions and collaboratives to promote colorectal cancer screening and expand resources.
- Conducting public awareness and educational campaigns.
- Collaborating with tribal health departments to expand colorectal cancer screening.

Policy Level: The fifth and outermost band of the SEM surrounds the community band and represents colorectal cancer prevention activities at the policy level. These activities involve interpreting and implementing existing policy. Federal, state, local, and tribal government agencies may support policies that promote healthy behaviour, including screening. Examples include—

- Collaborating with coalitions to communicate policy decisions to the public (for example, insurance mandates for screening).
- Translating local policies for community members (for example, proclamation by a mayor for colorectal cancer awareness month).

2.4.6. Positive Deviance Approach

Positive Deviance (PD) is based on the observation that in every community there are certain individuals or groups whose uncommon behaviours and strategies enable them to find better solutions to problems than their peers, while having access to the same resources and facing similar or worse challenges. The Positive Deviance

approach is an asset-based, problem-solving, and community-driven approach that enables the community to discover these successful behaviours and strategies and develop a plan of action to promote their adoption by all concerned (Dewar, 1997).

The term “Positive Deviance” initially appeared in nutrition research literature with the publication of a book entitled” Positive Deviance in Nutrition” by Tufts University nutrition professor, Marian Zeitlin, in the 1990s, where she compiled a dozen surveys that documented the existence of “Positive Deviant” children in poor communities who were better nourished than others. In this book, Zeitlin and her colleagues advocated for the use of this concept to address childhood malnutrition issues at the community level by identifying what was going right in the community in order to amplify it, as opposed to focusing on what was going wrong in the community and fixing it (Swartz, 2012). Based on these early successes, the approach was scaled-up both locally and internationally with the development of a community-based nutrition rehabilitation model called PD/Hearth which was promoted by USAID and other international organisations such as UNICEF.

The Hearth approach to childhood malnutrition empowers mothers, families, and neighborhoods to take broad, sustainable community action to ensure adequate child nutrition. Hearth programs engage parents in rehabilitating their malnourished children at home, using diets based on local foods, and are part of a comprehensive nutrition promotion program comprised of growth monitoring, micronutrient supplementation, deworming, and treatment of infectious diseases (Wollinka, 1997). The results of the preliminary evaluations of implementation of the Hearth approach in Haiti, Viet Nam, and Bangladesh indicate a 40% reduction in overall malnutrition and a 68% decline in severe malnutrition. The Vietnamese Ministry of Health and the National Nutrition Program termed the program a model and urged its implementation on a national level. The Haitian program had been most successful in preventing further deterioration in mildly malnourished children. In Bangladesh, 90% of program participants maintained catch-up or adequate growth 2 months after program completion. The significant contribution of these 3 programs to the reduction of malnutrition has attracted the interest of several nongovernmental organisations (Wollinka, 1997).

An observational study comparing the effect of PD on compliance with hand hygiene was conducted in two 20-bed step-down units (SDUs) at a private tertiary care

hospital. Findings showed that PD was responsible for a sustained improvement in hand hygiene in the inpatient setting and was associated with a decrease in the incidence of device- health care-associated infections (Marra *et al.*, 2011).

2.4.7. Theory of Reasoned Action

The Theory of Reasoned Action (TRA) was developed by Martin Fishbein and Icek Ajzen (1975, 1980), derived from previous research that started out as the theory of attitude, which led to the study of attitude and behaviour. The theory was born largely out of frustration with traditional attitude–behaviour research, much of which found weak correlations between attitude measures and performance of volitional behaviours (Hale et al, 2003). The theory of reasoned action states that individual performance of a given behaviour is primarily determined by a person's intention to perform that behaviour. This intention is determined by two major factors: the person's attitude toward the behaviour (i.e., beliefs about the outcomes of the behaviour and the value of these outcomes) and the influence of the person's social environment or subjective norm (i.e., beliefs about what other people think the person should do, as well as the person's motivation to comply with the opinions of others).

The components of TRA are three general constructs: behavioural intention (*BI*), attitude (*A*), and subjective norm (*SN*). TRA suggests that a person's behavioural intention depends on the person's attitude about the behaviour and subjective norms ($BI = A + SN$). If a person intends to do a behaviour then it is likely that the person will do it. Behavioural intention measures a person's relative strength of intention to perform a behaviour. Attitude consists of beliefs about the consequences of performing the behaviour multiplied by his or her valuation of these consequences. Subjective norm is seen as a combination of perceived expectations from relevant individuals or groups along with intentions to comply with these expectations. In other words, "the person's perception that most people who are important to him or her think he should or should not perform the behaviour in question" (Ajzen and Fishbein, 1975).

To put the definition into simple terms: a person's volitional (voluntary) behaviour is predicted by his/her attitude toward that behaviour and how he/she thinks other people would view them if they performed the behaviour. A person's attitude, combined with subjective norms, forms his/her behavioural intention. Miller (2005)

defines each of the three components of the theory as follows and uses the example of embarking on a new exercise program to illustrate the theory:

Attitudes: the sum of beliefs about a particular behaviour weighted by evaluations of these beliefs. You might have the beliefs that exercise is good for your health, that exercise makes you look good, that exercise takes too much time, and that exercise is uncomfortable. Each of these beliefs can be weighted (e.g., health issues might be more important to you than issues of time and comfort).

Subjective Norms: looks at the influence of people in one's social environment on his/her a behavioural intention; the beliefs of people, weighted by the importance one attributes to each of their opinions, will influence one's behavioural intention. You might have some friends who are avid exercisers and constantly encourage you to join them. However, your spouse might prefer a more sedentary lifestyle and scoff at those who work out. The beliefs of these people, weighted by the importance you attribute to each of their opinions, will influence your behavioural intention to exercise, which will lead to your behaviour to exercise or not exercise.

Behavioural Intention: a function of both attitudes toward a behaviour and subjective norms toward that behaviour, which has been found to predict actual behaviour. Your attitudes about exercise combined with the subjective norms about exercise, each with their own weight, will lead you to your intention to exercise (or not), which will then lead to your actual behaviour.

Sheppard *et al*. (1988) suggests that more than half of the research to date that has utilized the model has investigated activities for which the model was not originally intended. Their expectation was that the model would not fare well in such situations. However, they found the model performed extremely well in the prediction of goals and in the prediction of activities involving an explicit choice among alternatives. Thus, Sheppard et al. (1988) concluded that the model has strong predictive utility, even when utilized to investigate situations and activities that do not fall within the boundary conditions originally specified for the model. They admitted that further modifications and refinements are necessary, especially when the model is extended to goal and choice domains.

The theory has even been revised and extended by Ajzen himself into the Theory of Planned Behaviour (TPB). This extension involves the addition of one major

predictor, perceived behavioural control, to the model. This also emphasises the role of intention in behaviour performance but is intended to cover cases in which a person is not in control of all factors affecting the actual performance of behaviour. As a result, the new theory states that the incidence of actual behaviour performance is proportional to the amount of control an individual possesses over the behaviour and the strength of the individual's intention in performing the behaviour. (Miller, 2005). In his article, Ajzen further hypothesises that self-efficacy is important in determining the strength of the individual's intention to perform behaviour. In 2010, Fishbein and Ajzen introduced the Reasoned-Action Approach (RAA) as the successor of the TPB.

The reasoned-action approach (RAA) is an integrative framework for the prediction (and change) of human social behaviour. The reasoned-action approach states that attitudes towards the behaviour, perceived norms, and perceived behavioural control determine people's intentions, while people's intentions predict their behaviours (Fishbein and Ajzen, 2010). Behaviour is determined by the intention and moderated by actual control. Intention is determined by attitude, perceived norm, and perceived behavioural control. Perceived behavioural control influences behaviour directly and indirectly through intention. Actual control feeds back to perceived control. Performing the behaviour feeds back to the beliefs underlying the three determinants of intention. All possible influences on behaviour that are not in the model are treated as background variables and are supposed to be mediated by the determinants in the model.

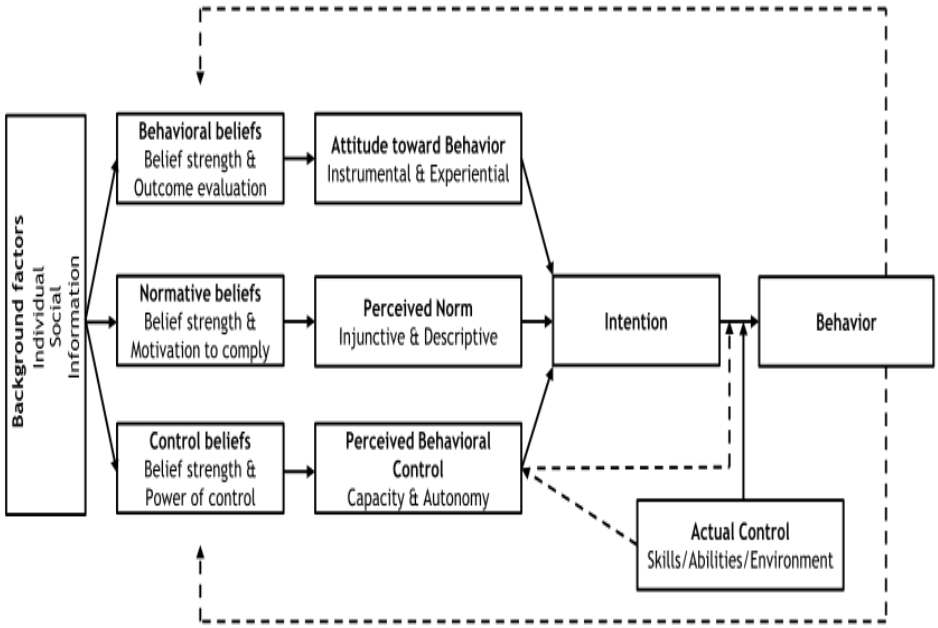


Fig.2. 2. Model of the Reasoned-Action Approach (TAA)

Source: Fishbein and Ajzen, (2010)

The Reasoned-Action Approach uses a number of concepts as defined below:

Behaviours: observable events composed of four elements: the action performed the target at which the action is directed, the context in which it is performed, and the time at which it is performed.

Intentions: the person's estimate of the likelihood or perceived probability of performing a given behaviour.

Perceived behavioural control: people's perceptions of the degree to which they are capable of, or have control over, performing a given behaviour.

Capacity: the belief that one can, is able to, or is capable of, performing the behaviour (comparable to Albert Bandura's concept of self-efficacy); autonomy: perceived degree of control over performing the behaviour.

Actual control: relevant skills and abilities as well as barriers to and facilitators of behavioural performance.

Attitude: a latent disposition or tendency to respond with some degree of favorableness or unfavourableness to a psychological object.

Instrumental aspect: anticipated positive or negative consequences;

Experiential aspect: perceived positive or negative experiences.

Perceived norm: perceived social pressure to perform or not to perform a given behaviour.

Injunctive norm: perceptions concerning what should or ought to be done;

Descriptive norms: perceptions that others are or are not performing the behaviour in question.

To examine how well the theories of reasoned action and planned behaviour predict condom use, the authors synthesized 96 data sets (N = 22,594) containing associations between the models' key variables. Consistent with the theory of reasoned action's predictions, (a) condom use was related to intentions (weighted mean r. = .45), (b) intentions were based on attitudes (r. = .58) and subjective norms (r. = .39), and (c) attitudes were associated with behavioural beliefs (r. = .56) and norms were associated with normative beliefs (r. = .46). Consistent with the theory of planned behaviour's predictions, perceived behavioural control was related to condom use intentions (r. = .45) and condom use (r. = .25), but in contrast to the theory, it did not contribute significantly to condom use. The strength of these associations, however, was influenced by the consideration of past behaviour (Albarracín, 2001).

2.5 The Role of Faith-based Institutions on Health Care Delivery and Promotion

Faith-based organisations (FBOs) have historically played an important role in providing maternal/newborn health services in African countries. However, the contribution of FBOs in service delivery is insufficiently recognized and mapped (Widmer *et al.*, 2011). Faith plays an important role in the lives of many people throughout the world and influence decision, behaviour and practices. It is particularly relevant in health promotion because majority of the adult population especially women are associated with one faith or the other. UNAIDS (2008) reported that seventy percent of the world's population identify themselves as members of one faith community or another and such faith communities play a significant role in influencing people's behaviours and attitudes.

In many settings, religious leaders have great influence in the lives of many people, they are trusted and their speech has a powerful impact at both community and international levels (Gallup, 2005). Religious leaders could address some of the key factors inhibiting the uptake of health and nutritional services including inadequate knowledge and misconceptions; gender inequities and other harmful gender norms; and financial constraints, including transport. For instance, the Sultan of Sokoto is the religious leader of Islamic faith in Nigeria and he is well respected among the Muslim faithful and beyond. Likewise, many Christian leaders possess similar influence. It is therefore not surprising that the Sultan of Sokoto and Pastor E. A. Adeboye were used in the health campaign against HIV/AIDS in Nigeria. Similar gestures have been applied to other health campaigns such as Vaccination against Vaccine preventable diseases in Nigeria.

Faith-based organisations are a vital part of society, providing a substantial portion of care in developing countries, often reaching vulnerable populations living under adverse conditions. Faith-based institutions often adopt approaches that are sustainable and ideally suited for lasting effect on the community. Thus, the programmatic and philosophical interventions they undertake have the potential for long-term continuity, possess a reservoir of volunteers, local leadership, existing groups, and youth activities on which local efforts can draw for their community-based interventions, are important partners with government, are there for the long haul, which helps the sustainability of the services they provide (Green, 2003). There is

therefore the need to recognise them as essential contributors towards universal access efforts (WHO, 2007).

Many faith-based institutions (FBIs) have been involved in provision of care, support, and counseling for people on health related issues including HIV/AIDS. Faith-based health institutions provide a significant portion of health-care services in many countries. With dedicated resources and commitment to serving in remote areas, these facilities often provide models for comprehensive, integrated facility and community-based health-care programmes. Estimation has shown that roughly 100,000 faith-based institutions work on health and development in Africa; and many Christian Health Networks account for between 30-60% of health services in some African countries (Chand and Patterson 2007). As reported (USAID and Access, 2007) in Uganda, 50 percent of maternal health and child services are provided through faith-based institutions. Faith-based institutions have been particularly useful in maternal and child health in Africa. For example, ninety percent of faith-inspired health facilities in sub-saharan Africa offer maternal and newborn services and provide more than fifty percent of nursing training in Malawi, Uganda, Tanzania and Zambia (Pearl *et al.*, 2009; Chand and Patterson 2007). The intervention of faith-based institutions have also resulted in increased uptake and utilization of health services like IPT under direct observation in Uganda (USAID and Access 2007) and exclusive breastfeeding in Burundi (Francisco, 2010). Studies have reported linkages between the involvement of FBOs in campaigns to prevent and mitigate HIV/AIDS and the success of countries in reducing or mitigating the HIV/AIDS epidemic in Africa (Green, 2003; Muhangi, 2004; Lom, 2001). These findings show the capabilities of FBOs in promoting health in developing countries.

The factors highlighted which describe aspects of FBOs that situate them to engage in health promotion include:

- That many members of faith-based institutions have a strong faith in the messages put forth by religious leadership, and strictly adhere to guidelines and practices recommended by it. Numerous studies confirm that religious institutions' influence in public health is derived from their ability to integrate messages into broader belief systems, avoiding mere "superficial awareness creation" about a particular public health issue (Lala, 2007).
- FBOs and religious leaders have enormous outreach potential. They can reach the hearts and minds of their constituents and be generators of sustainable

change in traditions and cultures (UNFPA, 2008). When messages about public health are conveyed by a religious leader in whom a congregation has great faith, the impact can shift people's attitudes and cause them to change key behaviours that improve public health (Lala, 2007).

- Faith-based institutions have meetings of entire communities in which religious messages are delivered and discussed. Religious services and publications (infrastructure for communication) serve as direct and consistent means of communicating a particular message. Because faith-based institutions have a platform to directly access community attention, they are unique vehicles for communication and dissemination of information and hence for health promotion (Lala, 2007)
- Faith-based institutions have key infrastructural components and resources including buildings or venues, personnel and volunteers, and monetary funds. All of these infrastructural components can be used for the advancement of direct medical care or other public health interventions. Studies show that volunteers of FBOs doing health work are highly motivated, dedicated and obedient (Christensen *et al.* 1999). Furthermore, FBOs are usually connected with a macro-level institutional structure with additional resources, externally provided medical volunteers, and capacity to orchestrate large-scale programs. These attributes give faith-based institutions a distinct advantage in implementing public health interventions (Negerie, 1994).

Experience has shown that faith-based institutions (FBOs) play a significant role in health care delivery in many countries and are key to achievement of the Millennium Development Goals (Chand and Patterson, 2007). Following this, the World Health Institution has advocated for greater dialogue and action between religious and public health leaders in numerous areas (WHO, 2006). These and many other observations suggest that the role of FBOs in health and other social endeavours will only continue to expand.

The Vurhonga projects in the Chokwe region of Mozambique witnessed the number of malnourished children receiving enriched porridge grew by 45%. The Vurhonga projects worked with religious leaders and formed pastoral care groups who were a critical link with the community and played an important role in sharing health messages. Seventy-two percent of mothers who attended church during the past month

reported that they heard a health message, exceeding the target of 50% (World Relief, 2004). There was a 47% reduction in the infant mortality rate and a 62% reduction in the mortality rate of children under-five years of age (Edward *et al*, 2007). The Care Group Model has demonstrated successes in other World Relief child survival programs in Cambodia, Malawi, Rwanda and other countries. In Malawi, for example, the number of women using ITNs increased from 8.5% to 60%, while the number of women exclusively breastfeeding until six months after birth increased from 35% to 95% (Chand and Patterson, 2007).

Faith-based institutions have also played a crucial role in increasing access to maternal and newborn health (MNH) services worldwide. In a pilot study conducted in the Kasese District in Uganda with three FBOs (the Uganda Protestant Medical Bureau, the Uganda Muslim Medical Bureau and the Uganda Catholic Medical Bureau), the uptake of intermittent preventive treatment to prevent malaria in pregnancy was found to be higher at the FBO facilities driven distribution than at the national centres (WHO and ACCESS Program, 2006).

The congregation-based malaria prevention program of the Synod of Livingstonia, Malawi, established in 2000 is another FBOs' recorded success. The program was implemented in 26 of the 150 Church of Central Africa, Presbyterian (CCAP) congregations, primarily in hard-to-reach areas. This congregation-based malaria prevention program is a good example of how congregations can be mobilized, both to promote prevention messages and to implement interventions, such as making nets available to people in their homes and places of worship. According to Chand and Patterson (2007), the U.S.-based model of having a parish nurse or congregational health leader within congregations has taken root in several countries. They use behavior change messages to help monitor the health of members and encourage them to get regular checkups. Many congregations promote health care-seeking behavior and reach out to the community by organizing health fairs, well-child clinics and other activities.

A comparative study on emergency obstetric care in Comprehensive Rural Health Project (CRHP) villages in Jamkhed-India and two other successful projects in South Asia was carried out in 2001 (McCord *et al.*, 2001). The study found out that although the CRHP was not started by a church institution, but by two individuals of deep religious faith and care for humanity, several churches and FBOs-including Lutheran World Relief, The United Methodist, The Presbyterian Church, USA and the

Council of Evangelical Churches of Latin America- have embraced and helped implement this multi-sectoral and integrated model of health care in a number of countries in Africa. The CRHP in Jamkhed has shown that a value based approach to mobilizing community members is vital to successful community health care (Chand and Patterson, 2007).

Faith-based institutions are also playing major roles in orchestrating efforts to address HIV/AIDS, from prevention and treatment to educational campaigns and orphan care (Lala, 2007). The significant presence and role that faith-based institutions play in HIV/AIDS is increasingly supported by political will and financial resources (Lala, 2007). For example, U.S. President George W. Bush's program, the President's Emergency Plan for AIDS Relief (PEPFAR) started in 2003, has allocated a total of $45 billion over ten years to HIV/AIDS efforts in badly affected countries in Africa, and enthusiastically supports grants to faith-based institutions (PEPFAR, 2007). According to a report on FBOs and stigma by the Centre for AIDS Development, Research and Evaluation (CADRE), "a growing body of practical resources, training manuals, discussion guides, theological reflections, resource manuals for incorporating AIDS themes into sermons and liturgies, and curricula for training theologians are being produced by religious institutions to assist their own leadership and clergy to better understand and respond to HIV/AIDS" (Cucuzza and Moch, 2003; Dube, 2003).

In Uganda, religious leaders were found to have adapted Uganda's AIDS prevention messages to their own belief systems and this has helped to reduce the once prevailing stigma (Awusabo-Asare, 1999). The progress in Uganda has been paralleled by an increasingly broad international consensus among faith-based institutions that they have a responsibility and key role to take in addressing the HIV/AIDS stigma (Lala, 2007). Otolok-Tanga *et al* (2007) observed that once made aware of the HIV/AIDS problem and the role they can play, local religious leaders in Africa have more often than not been found willing to help.

In Nigeria several church organisations have made marks in the area of health care delivery, and health promotion through communication for behaviour and social change. The Presbyterian Church of Nigeria (PCN) has not only established hospitals, but also believes that the vehicle through which it reaches the people with the gospel of Jesus Christ includes social action – a programme of assisting the needy in the larger society anchored on the philosophy that physical and material well -being prepares the ground for spiritual development. It has therefore set up the Presbyterian

Community Services and Development Department (PCS & D), for the purpose of assisting the needy in the larger society. The PCS & D was established to articulate the social-action policy and programmes of the Church in the areas of HIV-AIDS prevention and care, emergency relief, women empowerment, justice and peace, destitute rehabilitation, agriculture and adult literacy. It is a fully established Faith-Based Organisation, funded by the PCN, overseas Partner-Churches and international donor agencies such as the United States Agency for International Development (USAID). The work of the department is carried out under seven distinct sub-departments among which is the PRESBY AIDS. As the name implies, PRESBY AIDS was set up to educate Church members as well as the public on HIV-AIDS prevention and care and other related services. The other arm is the Women Empowerment, set up to empower women to participate fully in politics, economic and other human activities at all levels through education and mass mobilization (PCN, 2012-2015).

The Catholic Church through the Catholic Relief Services (CRS) believes that people should be empowered to make their own decisions and solve their own problems. This is also known in Catholic social teaching as the principle of subsidiarity. In The Philippines, CRS helped identify and train local leaders in basic health services. CRS' community health program prioritizes activities that have been proven effective, and the establishment of sustainable community groups capable of coordinating activities with health and development partners. CRS' programs focus on child survival, maternal and child health development and HIV and AIDS. CRS' health programs promote social justice, the preservation of human rights and dignity by targeting the most marginalized communities and enabling them to address their own basic health needs. Programs are carried out in partnership with local public, church, and other private institutions. In addition, much more attention is now focused on the technical quality of health interventions, which is accomplished by assessing health needs, designing state-of-the-art programs to meet those needs, training community-based health workers and assessing the impact of interventions. Priority is also given to facilitating greater community participation in assessing health needs and designing, carrying out and evaluating health programs at the community level (CRS, 2015).

2.5.1 The Interfaith Action on Malaria

In Nigeria the malaria burden received attention and support from the World Bank and Nigerian Ministry of Health, through the Nigerian Inter-Faith Action Association (NIFAA) which works to equip religious leaders in Nigeria with life-saving malaria control messages to deliver to their congregants (CIFA, 2011). The Centre for Interfaith Action (CIFA) mobilizes and equips religious leaders for interfaith action with the goal to drive behaviors that will help reach the Millennium Development Goals (MDGs). CIFA approached the leaders of Nigeria's top Muslim and Christian organisations to create NIFAA, an independent, Nigerian-managed NGO designed to mobilize the country's religious leaders to become active and influential participants in national campaigns against disease and poverty, beginning with malaria in early 2009. NIFAA's innovative interfaith public health intervention is producing result as children under the age of five are twice as likely to sleep under a mosquito net in areas where there is interfaith action on malaria.

According to CFA's 2011 report NIFAA's dynamic team of Muslim and Christian professionals directly trained nearly 1,500 religious leaders, who, in turn, have trained more than 15,000 religious leaders to speak to their followers about malaria prevention and treatment. An independent survey commissioned by the Nigeria Malaria Control Programme (NMCP) and World Bank, the 2010 Lot Quality Assurance Sampling (LQAS) survey, indicates that in Akwa Ibom state, where NIFAA trained more than 6,000 religious leaders to deliver faith-based malaria prevention messages, including advocating usage of insecticide-treated nets, more than twice as many children under five slept under a net (51.6 percent) as in nearby and demographically comparable Anambra state (25.1percent) the night before the survey. Followers' knowledge of malaria was also high, with the number of followers knowing the cause of malaria almost doubling after hearing sermons on malaria. Based on the evaluation data from the first three states, the NMCP and World Bank with an investment of $2.9 million replicated the malaria program in seven Nigerian states. CIFA is also actively working with its partners to replicate Nigeria's successful interfaith malaria work in other countries.

2.5.2 Alliances and Partnerships for Health Promotion

Alliance or partnership initiatives to promote health across sectors, across professional and lay boundaries and between public, private and non- government

agencies, do work. They work in tackling the broader determinants of health and well-being in populations in a sustainable manner, as well as in promoting individual health-related behaviour change (Gillies, 1998). Thus, the greater the level of local community involvement in setting agenda for action and in the practice of health promotion, the larger the impact.

However, research is limited concerning the interconnections among public health, health education, and faith-based communities (Chatters, Levin, and Ellison, 1998). Furthermore, researchers and practitioners are increasingly interested in theoretical issues and frameworks explaining the relationships between religious involvement and health. Additionally, research studies are increasingly exploring the associations between religious involvement and health attitudes, beliefs, and behaviors. Therefore, future efforts need to evaluate health education programs in faith communities and examine the contributions of religious institutions to the development of health policy.

The improvement of women's and children's access to needed care and the achievement of millennium development goals (MDGs) 4 and 5 require innovative approaches to service delivery and the establishment of inclusive partnerships (Yadamsuren *et al.*, 2010). The recently launched UN Global Strategy for Women's and Children's Health (WHO, 2010) provides a comprehensive list of clear actions to reverse decades of underinvestment and increase the efficient delivery of services. The list includes a recommendation for national governments and bilateral and multilateral donors to make a concerted effort to align their priorities, increase their commitment to women and children, and invest in the establishment of effective collaborations with existing and new partners. In particular, the Global Strategy calls for civil society to play a role at the community level by educating, engaging, mobilizing, and strengthening the capacities of the community, and advocates increased attention to and investment in women and children.

A potential strategy for reducing maternal and child mortality in high-burden countries could be the development of strong partnerships between faith-based organisations (FBOs) and the broader public health community including policy makers (Gill and Carlough, 2008). According to a study by the Pew Charitable Trusts (Pew-Templeton, 2010), the vast majority of people in sub-Saharan Africa identify themselves as adherents of Christianity or Islam, the world's two largest religions. Other evidence indicates that approximately 75% of Africans trust their religious

leaders (Ferrett, 2005, UNAIDS, 2008). These findings indicate that leveraging the influence of religious leaders and promoting faith-based or faith-inspired health services could be an effective means of addressing the challenges in maternal and child health in Africa, where a growing proportion of maternal and child deaths occur.

CHAPTER THREE

METHODOLOGY

3.1 Study Location / Profile

The study was conducted in twenty communities in Akwa Ibom State. Akwa Ibom State is located in the South-South zone or the Niger Delta region of Nigeria. It has a total population of 4,773,641 (2012) spread into three senatorial districts (Ikot Ekpene, Eket and Uyo) with 31 Local Government Areas and 328 political wards (MED, 2005). Akwa Ibom has 3 major ethnic groups – Ibibio, Annang and Oron. The other minor ethnic groups with peculiar dialects are, Itu Mbonuso, Eket, Ibeno and Obolo people.

The great majority of the people profess Christianity, leaving a small minority as adherents of African traditional religion, and Islam. The dominant Christian sects are Roman Catholic, Methodist, Presbyterian, Qua lboe and Lutheran. The last twenty years has witnessed the registration of over 100 Pentecostal Christian sects. Thus, there are five existing blocs of Christianity, namely: Catholic Secretariat of Nigeria (CSN), Pentecostals Fellowship of Nigeria (PFN), Christian Council of Nigeria (CCN), Organization of African Instituted Churches (OAIC), and the Evangelical Fellowship of West Africa (ECWA). A large number of professed Christians, however, still believe in and practice some aspects of traditional religion. The numerous traditional cults, secret societies, oracles, mythology, folklore and festivals, along with modifications imposed by the Christian religion, have combined to produce a great variety of beliefs and religious practices.

Economically, the people are homogenous with farming and trading being their main occupation. However, several others engage in civil service. Major food crops include cassava, palm oil, plantain/banana, yam, sweet yam, cocoyam, water yam, melon, dark green vegetables, okro, maize, and fruits which are variously present at all seasons.

There are 292 public health facilities and 232 private health facilities with 425 health facilities providing routine immunisation (RI) and other primary health care services. The 2012 annual populations by age are: women of child bearing age

(1,050,201); and pregnant women (238,682); children under-five years (954,728); children under-one year (190, 946) and 0-5 months (95,473). The level of malnutrition in the State is high with stunting, underweight and wasting at 31.6%, 16.9% and 5.2%, respectively. Infant mortality rate is 72 per 1,000 live births while under-five mortality rate is 113 per 1,000 live births (NBS, 2013). Children less than 18 years living with both parents assumed to benefit from parental care is 57%. Fertility rate among women in the State is 4.0%, while maternal malnutrition is at 7.3% (NDHS, 2008).

3.2 Study Design

The quasi-experimental study design was used involving the intervention and control community groups. This design was adopted in order to avoid a situation whereby participants the control would learn about the new approach to behavioural change from the experimental group if they had been selected from the same community. Hence, a particular community was used as the control and the other as the experimental group, and individuals in such communities were then classified accordingly. The experimental group received the faith-based behavioural change (FBBC) messages while the control did not.

3.3 Study Population

The study population consists of women and care-givers from households with children 0 to 59 months of age in the selected wards/communities in Akwa Ibom State.

3.4 Sample Size Determination

The determination of sample size for the study was based on the formula (Cochran, 1963):

$$N = \frac{Z^2_{\alpha/2}(P_1(1-P_1)+P_2(1-P_2))}{d_2}$$

where, $\mathbf{P_1}$ is the reported level of practice of age-appropriate breastfeeding and $\mathbf{P_2}$ represents the expected change following intervention; d is the error margin, $Z^2_{\alpha/2}$ is the area under the normal curve corresponding to $\alpha/2$ level of significance.

The Nigeria Multiple Indicator Cluster Survey (MICS) in 2011 reported 29% of children aged 0 -23 months being appropriately breastfed by age in Akwa Ibom State (NBS, 2013).

$P_1 = 0.29$, $P_2 = 0.33$, $d=0.05$ (5% error margin), **~~Z~~ =1.96**.

Hence,

$$n = \frac{1.96^2 \times 0.29\,(1-0.29)+0.33\,(1-0.33)}{(0.05)^2}$$

$$n = \frac{3.8416(0.29 \times 0.71 + 0.33 \times 0.67)}{0.0025}$$

$$n = \frac{3.8416\,(0.2059 + 0.2211)}{0.0025}$$

$$n = \frac{1.64036}{0.0025}$$

$$n = 656$$

Hence, sample size of 656 was be taken from of the groups (control and experimental) for a total sample size of 1,312. Sample size of each community was obtained by proportional allocation calculated by multiplying the obtained n (656) by the population of the community divided by the total population of the ten communities.

3.5 Sampling Procedure

A multi-stage sampling procedure was used in selecting the respondents for this study which cut across the three senatorial districts of the State. A random sample of ten Local Government Areas (LGAs) was selected by balloting from Ikot Ekpene, Eket, and Uyo senatorial districts. The first ballots pulled three LGAs from each district. On the second ballot one LGA was pulled from the remaining twenty-two resulting in Ikot Ekpene district having four LGAs, thus making a total of ten.

Following this, two wards well distanced from each were purposively selected from each LGA. This procedure was adopted in order to avoid a situation whereby the group in control ward would learn about the new approach to behavioural change from

the experimental group. A community with a health centre was selected from those wards and assigned, by balloting, as control and intervention communities. Thus, ten communities made the control group, and the other ten communities made the intervention group; making a total of twenty communities for the study. Every mother/caregiver in a household with a child 0-59 months in the selected communities who consented to participate in the study was included based on the allocated sample unit.

The selection of church ministers to participate in the intervention was based on the outcome of the pre-intervention analysis of respondents by church denomination. The church denominations attended by the respective respondents in the communities within the intervention group were identified from the questionnaires. The denominations were graded based on the number of respondents from each church denomination, and the first three (3) largest denominations were selected. Thus, three largest churches in the communities were identified and selected from the pre-intervention assessment results, making a total of 30 churches.

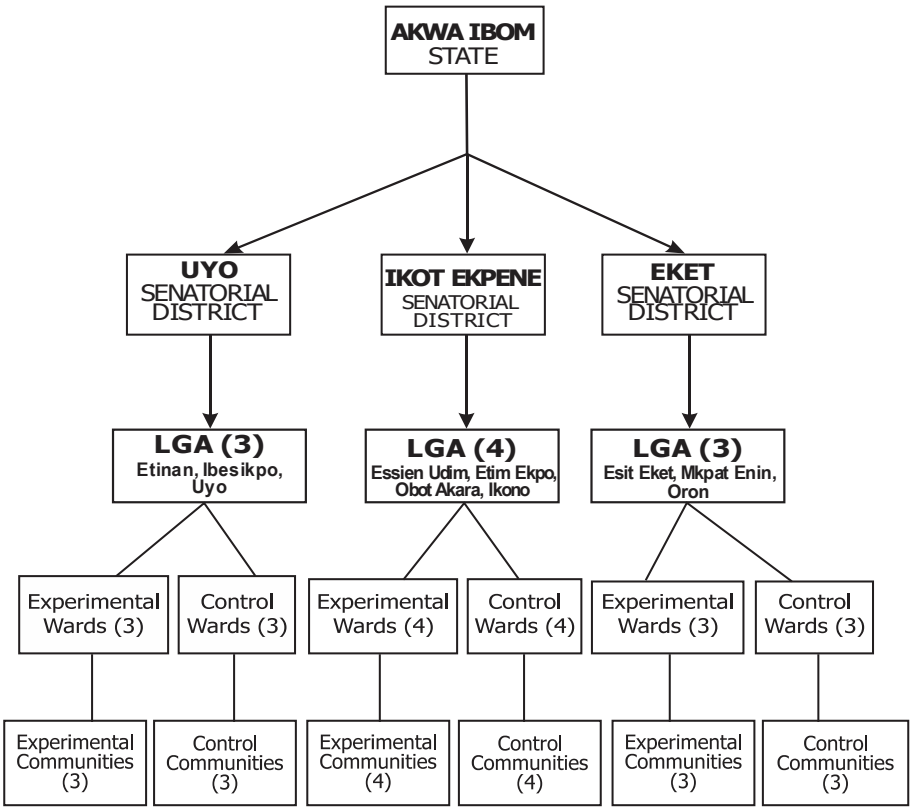


Figure 3.1. Overview of sampling procedure

Table 3.1. Locations and Sample Size of the Intervention Communities.

SN	Senatorial District	Local Government Area	Intervention Ward	Intervention Community	Sample Size
1.	Ikot Ekpene Senatorial District	Essien Udim	Afaha	Afaha Ikot Ebak	183
		Etim Ekpo	Ward 9	Ikot Ebo	44
		Obot Akara	Obot Akara 3	Ikot Utu	29
		Ikono	Ndiya Ward 8	Ikot Akpa Edet	25
2.	Uyo Senatorial District	Etinan	Urban 4	Edem Ekpat	78
		Ibesikpo Asutan	Ibesikpo Ward 5	Afaha Udo Eyop	89
		Uyo	Ikono 1	Ikot Ayan	31
3.	Eket Senatorial District	Esit Eket	Akpautong Ward 9	Akpautong	68
		Mkpat Enin	Ikpa Ikono 3	Ikot Enyiene	79
		Oron	Uya Oron	Uya Oro Ube	32
				Total	656

Table 3.2. Locations and Sample Size of the Control Communities

SN	Senatorial District	Local Government Area	Control Ward	Control Community	Sample Size
1	Ikot Ekpene Senatorial District	Essien Udim	Ukana West 2	Ikot Ide	40
		Etim Ekpo	Ward 6	Atan Uruk Eshiet	32
		Obot Akara	Nto Edino 4	Ikot Abasi Eduo	43
		Ikono	Ukpom Ward 4	Ikot Etim	44
2	Uyo Senatorial District	Etinan	South Iman 3	Efa	118
		Ibesikpo Asutan	Ibesikpo Ward 2	Ikot Udo Ekop	20
		Uyo	Oku 1	Afaha Idoro	72
3	Eket Senatorial District	Esit Eket	Ikpa Ward 4	Ikpa	148
		Mkpat Enin	Ikpa Ibom 4	Ikot Obio Ndoho	106
		Oron	Eyoabasi	Udung Okung 2	34
				Total	656

3.6 Research Instrument

The major study/intervention instrument is the developed **Faith-based Communication Package** (Appendix 5). This was subjected to face validity assessments among ministers from different church denominations during a ministers' conference. It was also presented at some health facilities during health education sessions in communities outside the study areas where clients accepted the messages as attractive, persuasive and useful to them.

Finally, it was assessed through three sessions of focus group discussion among church ministers and workers in three selected intervention communities, and was approved as suitable in terms of the content, logic, language and experience of the intended audience.

It comprised seven (7) sections on biblically explained nutrition and health actions aimed at helping to change knowledge, attitudes and practices in the community. Each brings out the message in a quoted scriptural verse for that purpose, and links them to health knowledge and practices on respective thematic areas and delivers simple do-able actions to promote the practice of the expected behaviour. The sections include Infant Feeding Practices: Exclusive Breastfeeding, Complementary Feeding and Micronutrients Intake; Immunization, Growth Monitoring and Promotion, Child Care and Men's Involvement, and Health-Seeking Behaviour, respectively. The capacity of ministers/leaders drawn from these churches was built on the use of the faith-based behaviour change guide for the intervention through training.

3.7 Data Collection Procedure

The quantitative and qualitative methods were adopted in the study. The qualitative method involved focused group discussions.

The duration of the study from the pre-intervention to the post intervention data collections covered a period of twenty-three (23) weeks. The pre-assessment data collection using questionnaires covered five (5) weeks. Four (4) weeks were used for the orientation and training of the church ministers and workers from the ten intervention communities. One (1) week was spent on the validity assessment of the faith-based communication package (the intervention instrument). Three focus group discussions, one in each senatorial district were conducted for the validity assessment.

The actual intervention covered a period of two (2) weeks. Presentation of the intervention package was carried out by trained ministers/workers in each participating church as teachings/seminars to the members over an average period of about four days spread across two weeks, in two hours session per day. An interval of six (6) weeks was allowed for assimilation, reinforcement of messages by ministers and possible sharing of the messages among other members of the community.

This was followed by a post intervention assessment using questionnaires which span over five (5) weeks.

Records of attendances at the health facilities were obtained for ante-natal registration, tetanus toxoid, child delivery, treatment of adults, immunization, growth monitoring, and child welfare clinics. Data collection form was designed to obtain the said infromation from the health facilities overseeing the study communities at the pre-intervention and post intervention stages to evaluate the impact (level of service demand by attendance) of the experimental package.

3.7.1 Quantitative Method

Quantitative data was collected using a semi-structured questionnaire.

(i) It comprised nine (9) sections covering the socio-demographic information, as well as information on the seven (7) thematic areas covered in the experimental package, and health facility service assessment.

(ii) Each section of the thematic areas carried questions that elicited responses on knowledge, attitude and practice.

(iii) The seven (7) thematic areas include Exclusive Breastfeeding, Complementary Feeding, Micronutrient Feeding, Growth Monitoring and Promotion, Immunization, Care-giving and Men's Involvement, and Seeking Medical Treatment/Check-ups. Data were collected on practice of exclusive breastfeeding, intention to discontinue breastfeeding after 24 months, food groups used for complementary feeding, and intake of micronutrient fortified foods/supplements.

(iv) Section one of the questionnaire was designed to collect information on socio-demographic and socio-economic characteristics of the respondents. Information was obtained on variables such as age of mother/care giver and youngest child, marital

status, religion and name of church denomination, level of education, occupation, monthly income, and family size.

(v) Sections two to eight which covered Exclusive Breastfeeding, Complementary Feeding, Micronutrient Feeding, Growth Monitoring and Promotion, Immunization, Care-giving and Men's Involvement, and Seeking Medical Treatment/Check-ups, respectively, obtained information on knowledge and source of knowledge, attitude, practices, perceived influence and response if message were heard from church (at pre intervention); and acceptance of faith-based message on the theme after hearing from the church, intention and reasons to practice recommended behaviour (at post intervention).

(vi) Specifically, section two on exclusive breastfeeding obtained information on age of the reference child, early initiation and use of colostrum, feeding pattern, type, frequency and duration of feeds; knowledge and source of knowledge on exclusive breastfeeding.

Section three on complementary feeding obtained information on reference child of age 6 to 24 months, type and food groups, current breastfeeding status, intention and time to discontinue breastfeeding. Section four on micronutrients intake obtained information on uptake and intention to obtain micronutrients supplements and fortified foods. Section five on immunizations assessed uptake of immunization services for child and mother during pregnancy. Section six on growth monitoring and promotion obtained information on child weighing, place and frequency. Section seven on care-giving and men's involvement obtained information from the women caregivers about child feeding and care for well and sick child, and father's role. Section eight on seeking medical treatment/check-ups obtained information antenatal care seeking, place of child delivery, sickness type and place of seeking treatment and check up for child and adult members of the family.

(vii) Section nine on health facility service assessment obtained information on availability and distance to health facility, availability and cost of services, as well as attitude of health workers toward the clients, and intention to access services for self or child.

3.7.2 Qualitative Method

Focus Group Discussions: Focus Group Discussions was conducted in a comfortable setting with the use of a focus group discussion guide. An average of seven (7) participants drawn from the ministers and other leaders of churches in the intervention communities were involved. This was to test the relevance and acceptability of the faith-based messages to the churches. Discussions were done in the local dialects. The discussions were guided by the conductor while the responses were recorded in writing and a recorder to effectively recall the contents of the discussion.

3.8 Ethical Consideration

Ethical clearance to conduct the study was obtained from the Ethical Committee of the University of Ibadan/University College Hospital (UI/UCH) Ethical Committee. Ethical approval was also obtained from the Akwa Ibom State Ministry of Health. The principles of respect for autonomy, human dignity, beneficence and non-maleficence were adhered to in the conduct of this study. Verbal informed consent was obtained from study subjects in their own language explaining the purpose of the study and the right to withdraw from it. The respondents were also assured of confidentiality. The purpose of the study was explained to the Community Heads, and the Leadership of the Faith-based Organisations in a letter written and signed by the researcher.

Data collection was handled confidentially and information obtained was not in any way disclosed. The questionnaires were designed to bear numbers and not names for identification purpose.

3.9 Validity and Reliability Test of Research Instruments

The study instruments were validated through content validity. The instruments were first submitted to study supervisor for corrections. Then a small- scale pilot study was carried out on a sample of 30 respondents, to identify any areas of ambiguity in the questionnaire and faith-based message guides to have an idea about time required and other practical points before the final study was launched. Questionnaires and message guides were appropriately adjusted in response to the observations made following the pre-testing.

3.10 Method of Data Analysis

The information collected with the questionnaire was coded to facilitate data entry and analysis. Data were analyzed by use of descriptive and inferential analyses (frequencies, simple percentages, chi-square, and student's t-test) to answer research questions and to test research hypotheses, using the Statistical Package for Social Sciences (SPSS 17.0). Hypotheses were considered to be statistically significant at $p<0.05$, respectively. Data are presented in frequency distribution tables and diagrams.

Knowledge, and intention to practice recommended behaviours were specifically assessed using predetermined scales and comparison of responses at pre-intervention and post-intervention were done based on the calculated means, using student's t-test at 95% significance level. Each nutrition domain covered in the questionnaire had a question to assess impact of the faith-based communication package on knowledge, and intention to practice the recommended practices. An author devised scoring and grading system for knowledge was used with each correct answer attracting a mark. Options to the responses on knowledge assessments were rated with scores of 5, 4, 3, 2 point scores indicating adequate knowledge based on the assessed thematic area, respectively. Options to responses on intention to practice were rated on a 3 points scores with a strong intention weighted 3 points. Knowledge and intention to practice recommended behaviours were analyzed for four domains (the three infant feeding practices and growth monitoring); and mean scores calculated at pre-intervention and 12 weeks post intervention (post-intervention). Mean scores of the respondents at pre-intervention and post-intervention were compared using students t-test. Change in the utilisation of nutrition services was assessed from hospital attendance records on growth monitoring and promotion.

3.11 Study Limitations

The main limitation of this study has to do with the inability to keep all respondents from the pre-intervention phase of the study to the end. Many intervention programmes in communities come with some form of incentives which the present study could not afford.

Also the length of the questionnaire which was influenced by the multiple domains covered in the study affected full participation of respondents and their

responses to some questions, thus leading to many invalid responses. These multiple domains also restricted the data analyses to the use of descriptive and inferential analyses (frequencies, simple percentages, chi-square, and student's t-test); and could not accommodate detailed multi-variate analyses as should have been expected.

Again, of the 30 churches involved in the intervention, fourteen (47%) of them could not implement the intervention, and thus would have affected the overall outcome of the intervention instrument.

CHAPTER FOUR

RESULTS

Out of the 1,284 respondents who consented to take part in the study and were interviewed at the pre-intervention, 1065 (82.9%) stayed through to the post-intervention, with 219 (17.1%) dropping out. A sub-sample of four hundred and sixteen (32.4%) of the respondents had children 0 to 5 months, and 868 (67.6%) were mothers of children 6-59 months. The results of the study are presented here based on valid values as derived from the number of responses to each question.

4.1 Socio-demographic and socio-economic characteristics of respondents

4.1.1 Socio-demographic characteristics of respondents

The socio-demographic data of respondents at the pre-intervention assessment are shown in Table 4.1a, and Table 4.1b. The mean age of the respondents was 27.32 ±7.49 years. The mean age was slightly higher in the control group (27.99 ±7.78 years) than in the intervention group (26.64±7.12 years).

The mean age of reference children was 15.09±9.38 months and higher in the control group (15.16 ±9.18 months) than in the intervention group (15.02±9.57 months). The exclusive breastfeeding age group (0-5 months) was 32.4%, while those 12-24 months were 29.9%, and above 24 months were 24%. Forty percent of the children in the intervention communities were of the exclusive breastfeeding age group (0-5 months), while 40.3% were in the control group. Forty-five of the children in complementary feeding age group were in the control group, and 42.2% in the intervention group. Ninety-nine percent were women of child bearing age. Forty-four percent of them fell within age group 15-25 years of age, while 43.4% fell within 26-35 years (Table 4.1a).

Eighty-seven percent were married, 95.8% were Christians and 0.2% Muslims. Forty-eight percent had secondary education, 45.6% primary. This shows a high level of literacy among the respondents (Table 4.1b). There were no significant differences in religion and educational levels of respondents between the two study groups ($p > 0.05$). A significant difference was however found in marital status between the groups.

Table 4.1a Demographic characteristics of respondents

	Experimental Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
*Age of respondents (yrs)								
15 – 25	298	(47.6)	256	(40.3)	554	(43.9)	10.93	0.012
26 – 35	262	(41.9)	286	(40.5)	548	(43.4)		
36 – 45	62	(9.9)	82	(12.9)	144	(11.4)		
45 and above	4	(0.6)	12	(1.9)	16	(1.3)		
**Total	626	(100)	636	(100)	1262	(100)		
+Child's age (months)								
0-5	256	(39.9)	160	(24.9)	416	(32.4	185.9	< 0.001
6-11	63	(9.8)	113	(17.6)	176	(13.7		
12-23	208	(32.4)	176	(27.4)	384	(29.9		
24+	115	(17.9)	193	(30.1)	308	(24.0)		
Total	642	(100)	642	(100)	1284	(100)		

*Age of respondents: Mean=27.32years, SD=7.49
(Control: Mean=27.99years, SD=7.78; Intervention: Mean=26.64years, SD=7.12
+Age of child: Mean=15.09months, SD=9.38
(Control: Mean=15.16months, SD=9.18; Experimental: Mean=15.02months, SD=9.57)
** Differences in total due to exclusion of non-valid responses

Table 4.1b Demographic characteristics of respondents

Variables	Intervention Communities (n=642)		Control Communities (n=642)		Total (N=1284)		x^2	p-value
	n	(%)	n	(%)	n	(%)		
Marital Status								
Single	60	(9.6)	50	(8.3)	110	(9.0)	13.38	0.004
Married	538	(86.2)	532	(88.1)	1070	(87.1)		
Divorced	18	(2.9)	4	(0.7)	22	(1.8)		
Widowed	8	(1.3)	18	(3.0)	26	(2.1)		
**Total	624	(100)	604	(100)	1228	(100)		
Religion								
Christianity	612	(96.8)	584	(94.8)	1196	(95.8)	4.45	0.108
Islam	0	(0.0)	2	(0.3)	2	(0.2)		
Others	20	(3.2)	30	(4.9)	50	(4.0)		
**Total	632	(100)	616	(100)	1248	(100)		
Level of Education								
Primary	275	(43.8	300	(47.5)	575	(45.6)	2.67	0.445
Secondary	309	(49.2	294	(46.5)	603	(47.9)		
Tertiary	38	(6.1	30	(4.7)	68	(5.4)		
None	6	(1.0)	8	(1.3)	14	(1.1)		
**Total	628	(100)	632	(100)	1260	(100)		

** Differences in total due to exclusion of non-valid responses

4.1.2 Socio-economic characteristics of respondents

The socio-economic characteristics of respondents at the pre-intervention assessment show that 53.0% of the respondents were engaged in trading, 17.2% in farming, and 26.3% were in private engagement. Sixty-eight percent had income level of N10, 000, while 22.5% between N11,000 to N25,000. Sixty-six percent of the respondents had family size of between 3-6 persons, while 25.4% had more than 6 (Table 4.2). There were significant differences in the variables assessed between the intervention and control communities ($p < 0.05$). More of the respondents in the intervention communities were engaged in trading, farming and civil service than those in the control communities. There were more of low income level earners in the intervention communities than in the control communities; while those with family size 3 -6 were more in the intervention communities than in the control communities.

Table 4.2 Socio-economic characteristics of respondents

	Intervention Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Occupation								
Trading	328	(57.5)	280	(48.4)	608	(53.0)	39.76	< 0.001
Farming	104	(18.2)	94	(16.3)	198	(17.2)		
Civil Service	30	(5.3)	10	(1.7)	40	(3.5)		
Private	108	(18.9)	194	(33.6)	302	(26.3)		
**Total	570	(100)	578	(100)	1148	(100)		
Monthly Income								
< N10,000	399	(79.2)	336	(58.5)	735	(68.2)	53.3	< 0.001
11,000 - 25,000	71	(14.1)	172	(30.0)	243	(22.5)		
> 25,000	34	(6.7)	66	(11.5)	100	(9.3)		
**Total	504	(100)	574	(100)	1078	(100)		
Family Size								
2	39	(6.3)	71	(11.2)	110	(8.7)	31.61	< 0.001
3-6	458	(73.4)	371	(58.5)	829	(65.9)		
> 6	127	(20.4)	192	(30.3)	319	(25.4)		
**Total	624	(100)	634	(100)	1258	(100)		

** Differences in total due to exclusion of non-valid or no responses

4.2. Pre-intervention Comparison of KAP of Intervention and Control Respondents

4.2.1. Pre-intervention awareness, knowledge and source of information exclusive breastfeeding

The awareness, knowledge and sources of information on exclusive breastfeeding among caregivers of children 0-6 months in the control and intervention communities at pre-intervention is shown in Table 4.3. There was a high level of awareness on exclusive breastfeeding (83.7%) with a significant difference among the control and intervention groups ($p < 0.05$). About sixty-five percent of the respondents (65.1%) were able to say exactly what exclusive breastfeeding is. This was significantly lower (42.5%) in the control communities than in the intervention communities (79.3%) ($p < 0.05$). Majority of the respondents received information about EBF from health workers (63.2%), while none heard it from the churches. There was a significant difference in source of information on exclusive breastfeeding between the control and intervention communities.

4.2.2 Pre-intervention awareness, knowledge and source of information on complementary feeding

In Table 4.4, awareness, knowledge and sources of information among caregivers of children 6 to 24 months between the control and intervention community groups is presented. Overall, it shows significant differences in knowledge and sources of information between the control and intervention community groups ($p < 0.05$). Awareness and actual knowledge of complementary feeding was quite low at 15.7% and 14.8%, respectively. Knowledge was higher in the intervention communities (27.7%) than in the control communities (6.0%). The highest source of information was health workers (45.1%), followed by friends/relatives (37.1%), and church (0.6%).

Table 4.3 Pre-intervention awareness, knowledge and source of information on EBF among caregivers of children under 6 months

Variables	Intervention Communities (n=256)		Control Communities (n=160)		Total (N=416)			
	n	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of EBF								
Awareness of EBF	256	(100)	92	(57.5)	348	(83.7)	126.9	< 0.001
Correct definition of EBF	203	(79.3)	68	(42.5)	271	(65.1)	0.85	< 0.001
***Source of information**								
Print/Electronic media	23	(9.0)	26	(18.8)	49	(12.4)	28.99	< 0.001
Friends/Relatives	82	(32.0)	14	(10.1)	96	(24.4)		
Health Workers	151	(59.0)	98	(71.0)	249	(63.2)		
Church	0	(0.0)	0	(0.0)	0	(0.0)		
**Total	256	(100)	138	(100)	394	(100)		

Significant at p<0.05. *Multiple responses

** Differences in total due to exclusion of non-valid responses

Table 4.4 Pre-intervention awareness, knowledge and source of information CF among caregivers of children 6 to 24 months

	Experimental Communities (n=386)		Control Communities (n=565)		Total (N=951)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of CF								
Awareness of CF	107	(27.7)	42	(7.4)	149	(15.7)	69.9	<0.001
Correct definition of CF	107	(27.7)	34	(6.0)	141	(14.8)	17.95	<0.001
***Source of information**								
Print/Electronic media	50	(18.9)	10	(11.9)	60	(17.2)	16.75	<0.001
Friends/Relatives	107	(40.5)	22	(26.2)	129	(37.1)		
Health Workers	107	(40.5)	50	(59.5)	157	(45.1)		
Church	0	(0.0)	2	(2.4)	2	(0.6)		
**Total	264	(100)	84	(100)	348	(100)		

Significant at p<0.05. *Multiple responses

** Differences in total due to exclusion of non-valid responses

4.2.3 Pre-intervention awareness, knowledge and source of information on micronutrients intake (MI)

In Table 4.5, awareness, knowledge and sources of information between the control and intervention community groups is presented. There was no significant difference in ability to mention iron as a mineral micronutrient ($p > 0.05$). Being able to know and mention a vitamin A fortified food was significantly ($p < 0.05$) higher among respondents in the intervention communities (19.8%) than among those in the control group (12.5%). This was not so for vitamin A and iodine. Generally, awareness of micronutrient as a term was low (14.1%), with the highest mentioned micronutrient being iron (34.2%). Highest source of information was print/electronic media (43%).

4.2.4 Pre-intervention awareness, knowledge and source of information on growth monitoring and promotion (GMP)

The pre-intervention awareness, knowledge and source of information on growth monitoring and promotion (GMP) in the control and intervention communities is presented in Table 4.6. Significant differences were observed in awareness and source of knowledge. Actual knowledge of GMP assessed by ability to say what the term means showed no significant difference in the two community groups ($p > 0.05$). While awareness was high (73%), actual knowledge was low 7.3%. Knowledge of proper means of assessing child's weight was higher significantly ($p < 0.05$) in the control communities (24.1%) than in the intervention communities (20.7%). The most widely used method to monitor children's growth was by 'just looking' (52.7%), while 22.6% claimed they used weighing scales. Health workers were the main source of information (52.3%) on GMP.

4.2.5 Pre-intervention awareness, knowledge and source of information on immunization

Awareness, knowledge and source of information on immunization in presented in Table 4.7. It shows no significant difference in the awareness on immunization ($p>0.05$). Knowledge and source were significantly different ($p<0.05$) between the control and intervention community groups. Awareness of immunization in the study was 93.7%, but only 21.8% of the women were able to name the tetanus toxoid given to them. The ability to name the vaccine was low in the control group (13.9%) but a little higher in the intervention group (29.8%). The highest source of information was health workers (43.7%), 15.2% got their information from the neighbourhoods (friends/relatives) and 14% got from the church.

Table 4.5 Pre-intervention awareness, knowledge and source of information MI

	Intervention Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of Micronutrients								
Awareness of MI	127	(19.8)	54	(8.4)	181	(14.1)	34.27	< 0.001
Able to mention Vitamin A	70	(10.9)	306	(47.7)	376	(29.3)	207.7	< 0.001
Able to mention Iron, Iodine, or Zinc	205	(31.9)	234	(36.4)	439	(34.2)	2.71	0.099
Able to mention Vit. A fortified food	127	(19.8)	80	(12.5)	207	(16.1)	12.19	< 0.001
Able to mention Iodine fortified food	80	(12.5)	36	(5.6)	116	(9.0)	17.52	< 0.001
Source of information								
Print/Electronic media	216	(39.9)	86	(53.1)	302	(43.0)	24.14	<0.001
Friends/Relatives	99	(18.3)	10	(6.2)	109	(15.5)		
Health Workers	201	(37.2)	50	(30.9)	251	(35.7)		
Church	25	(4.6)	16	(9.9)	41	(5.8)		
Total	541	(100)	162	(100)	703	(100)		

Table 4.6. Pre-intervention awareness, knowledge and source of information on GMP

Variables	Intervention Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
	n	(%)	n	(%)	n	(%)	x^2	p-value
Knowledge of GMP								
Awareness of GMP	408	(63.6)	529	(82.4)	937	(73.0)	56.87	< 0.001
Correct definition of GMP	41	(6.4)	53	(8.3)	94	(7.3)	1.39	0.239
Knowledge of appropriate method to monitor growth								
By just looking	264	(45.8	274	(61.7)	538	(52.7)	29.11	< 0.001
By lifting/holding the child	173	(30.0)	78	(17.6)	251	(24.6)		
By use of weight / height scales	139	(24.1)	92	(20.7)	231	(22.6)		
**Total	576	(100)	444	(100)	1020	(100)		
Source of information								
Print/Electronic media	18	(31.0)	20	(27.8	38	(29.2)	23.82	< 0.001
Friends/Relatives	10	(17.2)	0	(0.0)	10	(7.7)		
Health Workers	30	(51.7)	38	(52.8)	68	(52.3)		
Church	0	(0.0)	14	(19.4)	14	(10.8)		
Total	58	(100)	72	(100)	130	(100)		

** Differences in total due to exclusion of non-valid responses

Table 4.7 Pre-intervention awareness, knowledge and source of information on immunization the among caregivers

Variables	Experimental Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
	n	(%)	n	(%)	n	(%)	x^2	p-value
Knowledge of Immunization Services								
Awareness of Immunization	601	(93.6)	602	(93.8)	1203	(15.7)	*0.010	0.909
Able to mention Tetanus Toxoid/TT	191	(29.8)	89	(13.9)	280	(21.8)	46.59	<0.001
+Source of information								
Print/Electronic media	314	(26.9)	282	(22.7)	596	(24.7)	9.34	0.025
Friends/Relatives	178	(15.2)	202	(16.2)	380	(15.8)		
Health Workers	512	(43.8)	542	(43.6)	1054	(43.7)		
Church	164	(14.0)	218	(17.5)	382	(15.8)		
Total	1168	(100)	1244	(100)	2412	(100)		

*Not significant at p>0.001. +Multiple responses

4.2.6 Pre-intervention knowledge and source of information on care giving and men's involvement (CGMI)

Knowledge and source of information on care giving and men's involvement is presented in Table 4.8. It shows that there was difference in knowledge and source of information among caregivers in the control and intervention communities at the pre-intervention assessment ($p < 0.05$). The pre-intervention knowledge level about care-giving and men's involvement was high (86.4%); but higher in the control communities (89.4%) than in the intervention communities (83.5%). The information was obtained mostly from the print/electronic media (32.9%) and health workers (27.2%). Only 17% of the respondents claimed to have obtained the information from the church.

4.2.7 Pre-intervention knowledge and source of information on seeking medical treatment/check-ups

As shown in Table 4.9, knowledge and source of information on seeking medical treatment/check-ups (SMT/C) differed significantly ($p < 0.05$) between the study groups. Respondents in the control group had higher level of knowledge (94.4%) than those in the intervention group (83.5%).The high level of knowledge (88.8%) was obtained more through information from health workers (33.1%), followed by print/electronic media (32.9%). Church and neighbourhoods (friends/relatives) as source of information were 17% each.

Table 4.8 Pre-intervention knowledge and source of information on CGMI among the caregivers

	Experimental Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of CGMI								
Yes	536	(83.5)	574	(89.4)	1110	(86.4)	9.1	0.003
No	106	(16.5)	68	(10.6)	174	(13.6)		
Total	642	(100)	642	(100)	1284	(100)		
Source of information								
Print/Electronic media	478	(45.2	78	(12.3)	556	(32.9)	294.3	<0.001
Friends/Relatives	267	(25.3	120	(18.9)	387	(22.9)		
Health Workers	164	(15.5	296	(46.7)	460	(27.2)		
Church	148	(14.0)	140	(22.1)	288	(17.0)		
Total	1057	(100)	634	(100)	1691	(100)		

Table 4.9 Pre-intervention knowledge and source of information on SMT/C among the caregivers

	Experimental Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of SMT/C								
Yes	536	(83.5)	574	(94.4)	1110	(88.8)	36.34	< 0.001
No	106	(16.5)	34	(5.6)	140	(11.2)		
Total	642	(100)	608	(100)	1250	(100)		
Source of information								
Print/Electronic media	478	(45.2)	78	(12.3)	556	(32.9)	204.5	< 0.001
Friends/Relatives	167	(15.8)	120	(18.9)	287	(17.0)		
Health Workers	264	(25.0)	296	(46.7)	560	(33.1)		
Church	148	(14.0)	140	(22.1)	288	(17.0)		
Total	1057	(100)	634	(100)	1691	(100)		

4.2.8 Attitude on age of introducing water/other foods among caregivers of children 0-6 months

Attitude on exclusive breastfeeding assessed by intention to introduce water/other foods at 6 months of child age between the intervention and control respondents are shown in Table 4.10. Few (15.9%) would start introducing water and other foods after 5 months of age of child as against 48% who would start at below 3 months. However, more respondents in the control group had positive attitude (37.5%) on age to introduce water and other foods than 7.8% obtained in the intervention group ($p < 0.05$).

4.2.9 Pre-intervention attitude on complementary feeding among caregivers of children 6-24 months

Generally, the attitude on complementary feeding as assessed by continuing breastfeeding, and to stop at 24 months was low (Figure 4.1). Only 2.6% of respondents would stop breastfeeding at 24 months of child's age. There was a significant difference in response between the respondents in intervention (3.1%) and control (1.9%) communities.

4.2.10 Pre-intervention attitudes and perceptions on micronutrients intake among the caregivers

The differences in attitudes on micronutrients intake among caregivers between the control and intervention community groups is shown in Table 4.11. There was significant difference between the control and intervention community groups ($p < 0.05$). On the average, less than 40% of the caregivers would make efforts to access micronutrient supplements or fortified foods. Less than 25% could link micronutrient deficiency to growth failure in children. These however, were higher in the control community group (34.2%) than in the intervention communities with 14.8%, ($p < 0.05$).

Table 4.10 Pre-intervention attitude on age of introducing water/other foods among caregivers of children 0-6 months

	Experimental Communities (n=256)		Control Communities (n=160)		Total (N=416)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Age Intended to introduce water / other foods								
1-3 months	141	(55.1)	28	(29.2)	169	(48.0)	31.37	<0.001
3-5 months	95	(37.1)	32	(33.3)	127	(36.1)		
> 5 months	20	(7.8)	36	(37.5)	56	(15.9)		
****Total**	256	(100)	96	(100)	352	(100)		

Significant at p<0.05

** Differences in total due to exclusion of non-valid responses

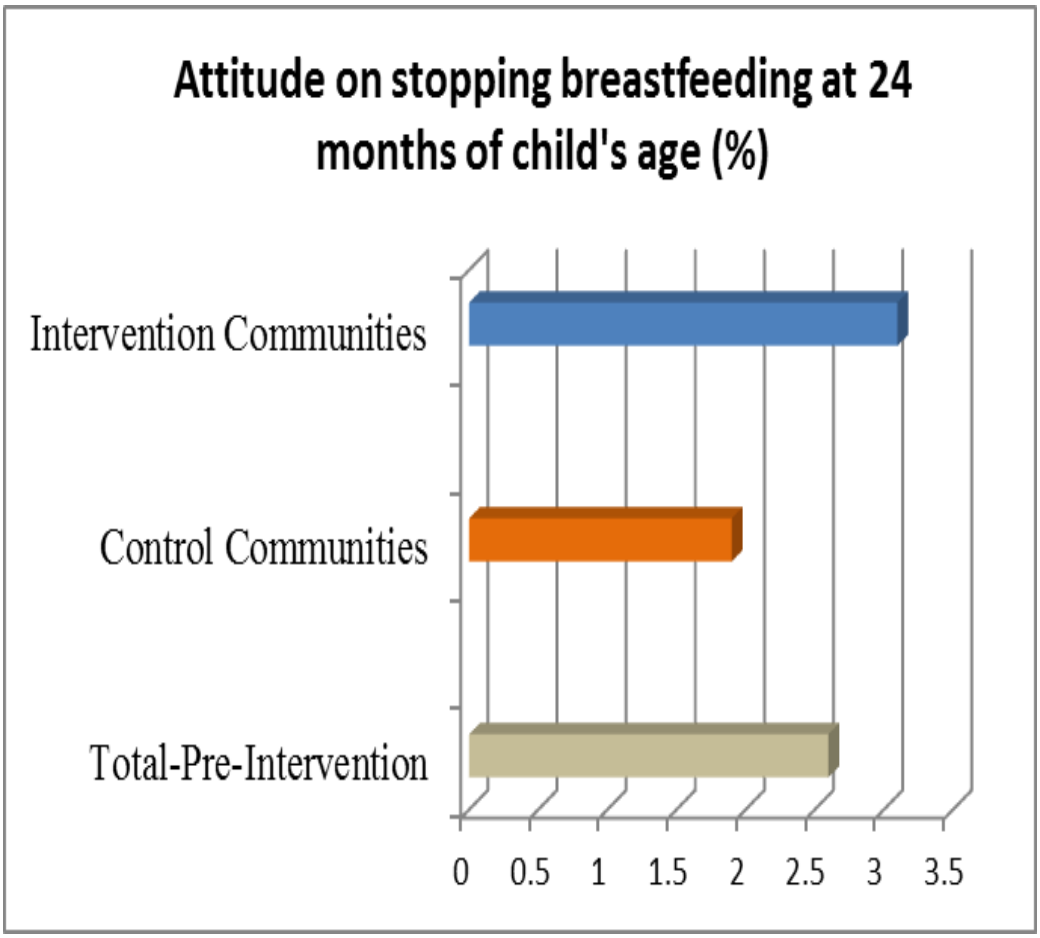


Fig. 4.1 Pre-intervention attitude on stopping breastfeeding at 24 months

Table 4.11 Pre-intervention attitudes toward micronutrients intake among the caregivers

Variables	Intervention Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
	n	(%)	n	(%)	n	(%)	x^2	p-value
Willingness towards use of Micronutrients								
Would create time to access Vit. A for child	62	(9.7)	398	(62.0)	460	(35.8)	380.2	<0.001
Pregnant women would create time to access Iron tablets	88	(13.7)	364	(56.7)	452	(35.2)	258.2	<0.001
Would take pains to search for / buy MN fortified foods	99	(15.4)	404	(62.9)	503	(39.2)	302.1	<0.001
Attitude toward MN deficiency and growth failure in children								
Strongly Disagree	58	(9.0)	4	(0.9)	62	(5.7)	380.3	<0.001
Disagree	267	(41.6)	20	(4.5)	287	(26.4)		
Agree	51	(7.9)	199	(44.8)	250	(23.0)		
Strongly Agree	95	(14.8)	152	(34.2)	247	(22.7)		
Don't Know	171	(26.6)	69	(15.5)	240	(22.1)		
**Total	642	(100)	444	(100)	1086	(100)		

**Differences in totals due to exclusion of non-valid responses

4.2.11 Pre-intervention attitude on immunization

Attitude on immunization among caregivers of children 0-5 months in the control and intervention communities is shown in Fig. 4. 2. There was no significant difference in attitude on immunization among caregivers of children 0-5 months in the control and intervention communities. More caregivers in the control communities (88.8%) agreed that they would create time to take their children to a health facility for immunization compared to 87.2% in the intervention communities ($p>0.05$).

4.2.12 Pre-intervention attitude on faith-based health messages

In Fig. 4.3 is shown how the respondents would react if the church were to communicate messages of exclusive breastfeeding (EBF), complementary feeding (CF), micronutrient intake (MI), growth monitoring and promotion (GMP), immunization (Immun), care giving and men's involvement (CGMI), seeking medical treatment and medical check-ups (SMT/C). There was no significant difference in acceptance of EBF, CGMI and SMT/C message in church among the two communities ($P =0.903$). However, there were significant differences in acceptance of CF, MI, GMP and immunization messages in church among the two community groups ($p <0.05$).

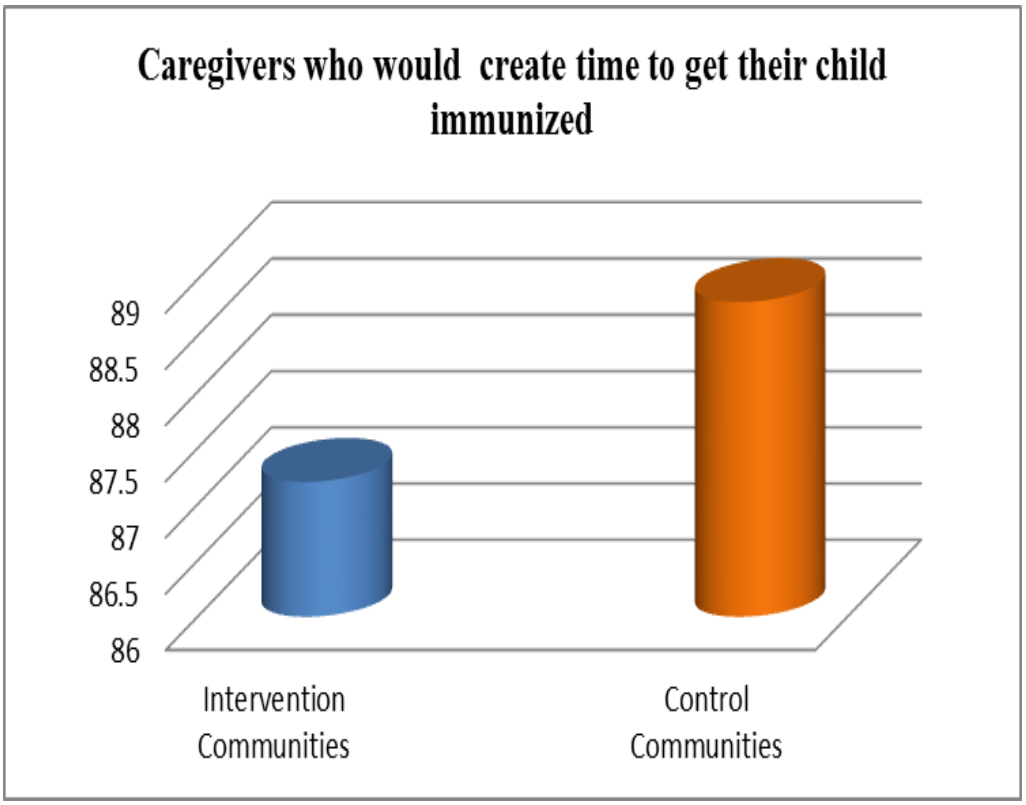


Fig. 4.2 Pre-intervention attitude on child immunization among caregivers

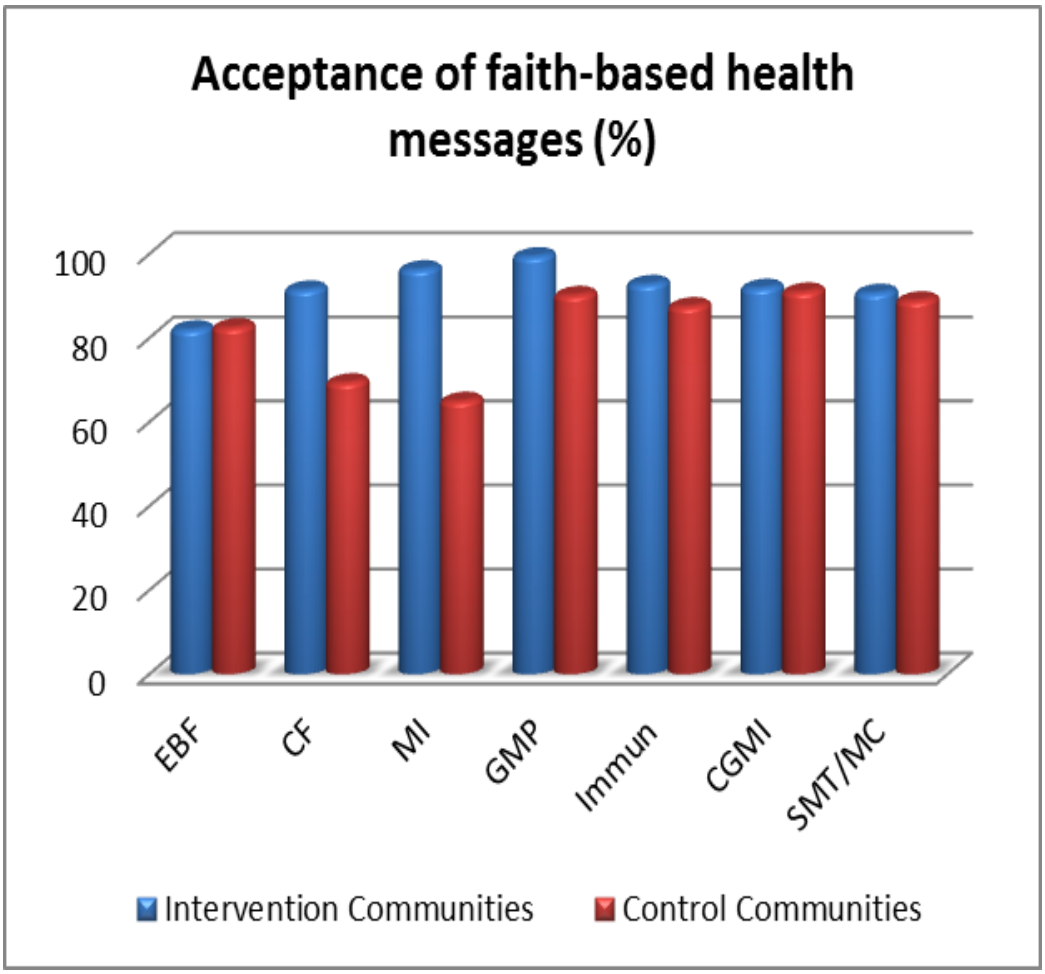


Fig. 4.3 Pre-intervention attitudes on faith-based health messages among caregivers

4.2.13 Pre-intervention practices on early initiation of breastfeeding

The pre-intervention practice of exclusive breastfeeding among caregivers of children 0-5 months in the control and intervention communities are presented in Table 4.12. This shows a 30.4% practice of early initiation of breastfeeding in the two community groups, but higher ($p < 0.05$) in the control communities (45.1%) than the intervention (22.3%). Colostrum use was high among the two groups 94.9% with a significant difference between the two groups ($p < 0.05$); while 77% of respondents claimed they gave no pre-lacteal feeds to their children at birth, with no significant difference among the groups ($p = 0.183$).

4.2.14 Introduction of water/other foods to children 0-6 months

The practice of exclusive breastfeeding assessed by the age of introduction of water/other foods to child between the control and intervention community groups is shown in Figure 4.4. There was a significant difference between the two groups ($p < 0.05$). Generally, 23.9% of the caregivers introduced water/other foods before one month of age of the child, while 1.2% introduced at 5-6 months. Forty-three percent introduced early, at 1-2 months, 34.7% at 3-4 months in the intervention communities. In the control communities, only 4.3% introduced water/other foods at 5-6 months and none in the intervention.

Table 4.12 Pre-intervention practices on breastfeeding among caregivers of children 0-6 months

Variables	Intervention Communities (n=256)		Control Communities (n=160)		Total (N=416)			
	n	(%)	n	(%)	n	(%)	x^2	p-value
Early Initiation								
< 1 hr	57	(22.3)	64	(45.1)	121	(30.4)	28.02	<0.001
> 1 hr	117	(45.7)	58	(40.8)	175	(44.0)		
> 1 day	82	(32.0)	20	(14.1)	102	(25.6)		
**Total	256	(100)	142	(100)	398	(100)		
Use of Colostrum								
Expressed/discarded	0	(0.0)	21	(13.3)	21	(5.1)	33.14	<0.001
Given to baby	256	(100)	137	(86.7)	393	(94.9)		
Total	256	(100)	158	(100)	414	(100)		
Prelacteal Feed								
Nothing Given	203	(79.3)	102	(72.9)	305	(77.0)	1.77	0.183
Water/others things given	53	(20.7)	38	(27.1)	91	(23.0)		
**Total	256	(100)	140	(100)	396	(100)		

** Differences in total due to exclusion of non-valid responses

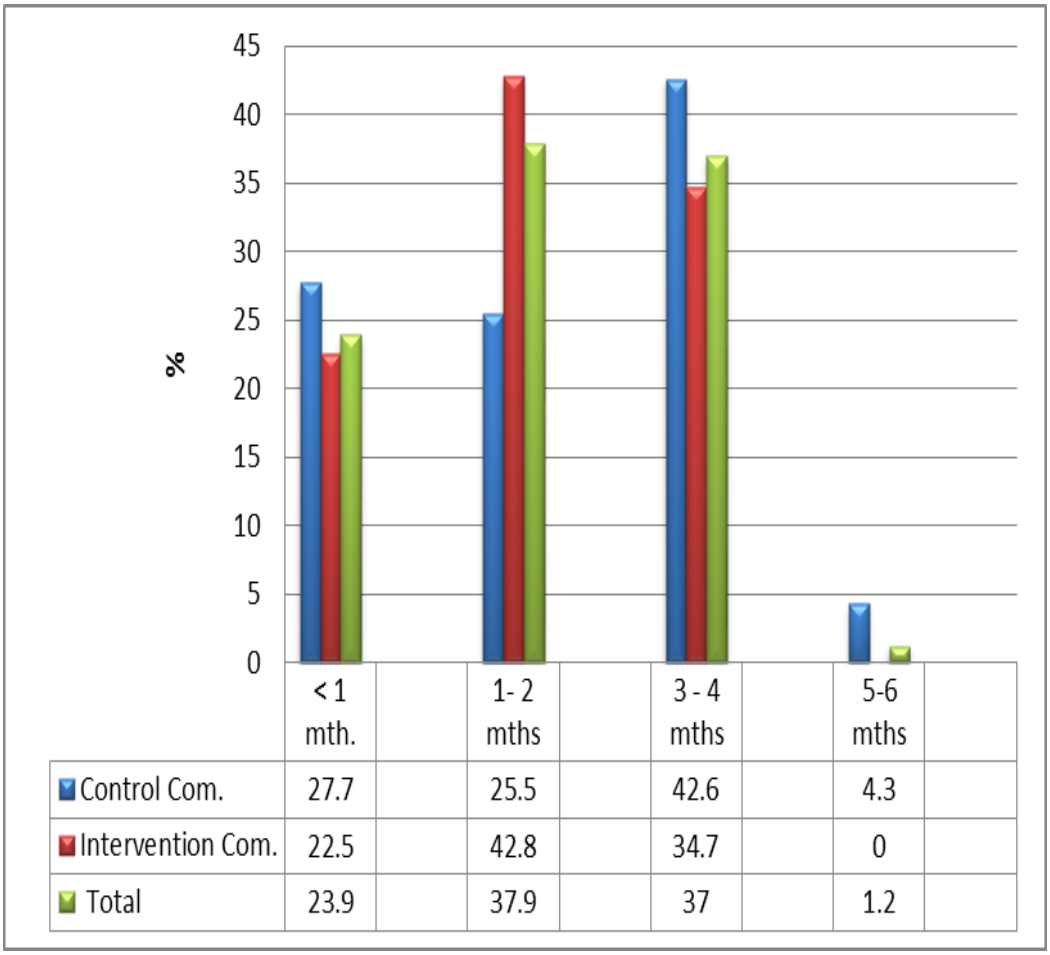


Fig. 4.4 Percentage of children 0-6 months who received water/other foods

4.2.15 Pre-intervention practices on complementary feeding

The practice of complementary feeding (CF) among caregivers of children 6 to 24 months and above showed significant difference between the control and intervention community groups. These are indicated by time of initiation of complementary feeding, period of continued breastfeeding, and food groups used (Table 4.13). Twenty-three percent initiated complementary feeding below one month, while 13.2% started at after 5 months; higher in the intervention (13.5%) than in the control (13.0%) communities ($p<0.05$). Sixty-four percent continued breastfeeding up to 6 to 11 months, and 36.1% up to 12 to 24 months, and none after 24 months. Food groups used for CF were grouped into staples (A), legumes (B), animal protein (C), fats and oils (D), vegetables and fruits (E). Only 14.6 % of caregivers fed complementary foods with all 5 food groups; higher in the intervention (18.6%) than in the control (11.9%) communities ($p<0.05$).

4.2.16 Pre-intervention practices on growth monitoring and promotion

The practice of child growth monitoring and promotion (GMP) in the two community groups at pre-intervention is shown in Figure 4.5. There was a significant difference ($p <0.05$) in the practice of GMP in the two community groups at pre-intervention assessment. Ten percent of respondents practiced GMP in the control communities and none in the intervention group on monthly basis. Overall results show that only 4.3% of caregivers presented their children monthly for weighing, while 39.3% never did.

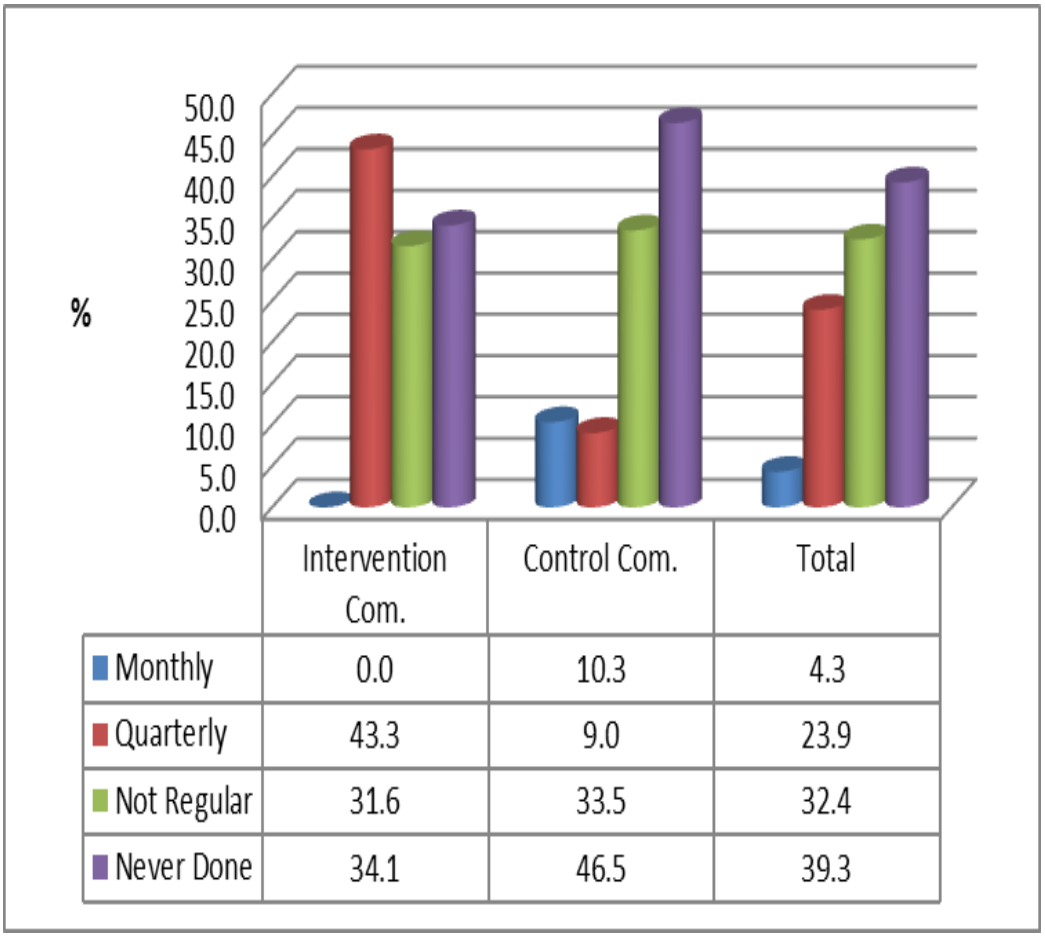
4.2.17 Pre-intervention practices on immunization

Immunization practices among caregivers of children 0-5 months in the control and intervention communities are shown in Table 4.14. There was no significant difference in the practice on immunization among caregivers of children 0-5 months in the control and intervention communities. However, the number of women who received tetanus toxoid was higher in the control (79.4%) than intervention communities with 23.4%, ($p<0.05$). On the whole, 81% of the children were immunized, while 51.4% of the women received the tetanus toxoid immunization.

Table 4.13 Pre-intervention practices on complementary feeding

Variables	Intervention Communities (n=386)		Control Communities (n=565)		Total (N=951)			
	n	(%)	n	(%)	n	(%)	x^2	p-value
CF Age group still breastfeeding								
6-11 months	262	(67.9)	78	(53.4)	340	(63.9)	8.98	0.003
12-24 months	124	(32.1)	68	(46.6)	192	(36.1)		
Above 24 months	0	(0.0)	0	(0.0)	0	(0.0)		
**Total	386	(100)	146	(100)	532	(100)		
Age of Introduction of CF								
< 1 month	38	(9.8)	122	(38.6)	160	(22.8)	91.87	<0.001
1-3 months	133	(34.5)	90	(28.5)	223	(31.8)		
3-5 months	163	(42.2)	63	(19.9)	226	(32.2)		
> 5 months	52	(13.5)	41	(13.0)	93	(13.2)		
Total	386	(100)	316	(100)	702	(100)		
Food groups used for CF								
All 5 groups	72	(18.6)	50	(11.2)	122	(14.6)	9.99	0.007
1-2 groups	211	(54.5)	254	(56.7)	465	(55.7)		
3-4 groups	103	(26.9)	144	(32.1)	247	(29.7)		
Total	386	(100)	448	(100)	834	(100)		

Significant at p<0.05, ** Differences in total due to exclusion of non-valid responses



	Intervention Com.	Control Com.	Total
Monthly	0.0	10.3	4.3
Quarterly	43.3	9.0	23.9
Not Regular	31.6	33.5	32.4
Never Done	34.1	46.5	39.3

Fig. 4.5 Pre-intervention practices on growth monitoring and promotion for children among caregivers

Table 4.14 Pre-intervention practices on immunization among caregivers

Variables	Experimental Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
	n	(%)	n	(%)	n	(%)	x^2	p-value
Utilization of Immunization Services								
Caregivers who got their children immunized	509	(79.3)	531	(82.7)	1040	(81.0)	2.23	*0.135
Women who received Tetanus Toxoid while pregnant of the child	150	(23.4)	510	(79.4)	660	(51.4)	401.81	<0.001

*Not Significant at p>0.05

4.2.18 Pre-intervention practices on care giving and men's involvement

Pre-intervention practices on care giving and men's involvement in the control and intervention communities are presented in Table 4.15. It shows child care-giving practice and men's involvement with a significantly higher level of care by fathers in the control than in the intervention communities. In all, 21.9% of fathers showed care to the well children in playing with, bathing, and feeding the children; while 26.5% showed care by feeding, and attending to child's treatment in sickness. Less than 20% practically fed their children in health and sickness. Feeding a sick child by fathers was higher in the intervention group (17.2%) than in the control (4.3%).

Table 4.15 Pre-intervention practices on care giving and men's involvement

	Experimental Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
What Father does for child in good health								
Plays with child	328	(33.8)	262	(42.8)	590	(37.3)	97.46	<0.001
Baths child	164	(16.9)	44	(7.2)	208	(13.1)		
Feeds child	164	(16.9)	58	(9.5)	222	(14.0)		
Does all 3 above	150	(15.5)	196	(32)	346	(21.9)		
Does none	164	(16.9)	52	(8.5)	216	(13.7)		
Total	970	(100)	612	(100)	1582	(100)		
What Father does for child in sickness								
Feeds child	248	(17.2)	26	(4.3)	274	(13.4)	434.49	<0.001
Takes child for treatment	224	(15.5)	67	(11.0)	291	(14.2)		
Pays for child's treatment	214	(14.8)	209	(34.4)	423	(20.6)		
Gives medication	406	(28.2)	34	(5.6)	440	(21.5)		
Does all 4 above	350	(24.3)	194	(31.9)	544	(26.5)		
Does none	0	(0.0)	78	(12.8)	78	(3.8)		
Total	1442	(100)	608	(100)	2050	(100)		

4.2.19 Pre-intervention practices on care-seeking for pregnancy and delivery

Attendance at antenatal clinics (ANC), antenatal care and child delivery practices are presented in Table 4.16. It shows that there was significant difference between the two community groups on attendance at ANC, source of ANC, and place of child delivery ($p<0.05$). Pregnant women who received ante-natal care, and delivered in hospitals were higher in the intervention communities (66.2%, 63.7%) than in the control (78.6% 32.3%). However, none in the intervention group sought ante-natal care in the primary health centres despite few deliveries there. In all seventy-two percent ever attended ANC, with 50.5%, 27.8%, 13.4% attending ANC at hospital/private clinic, TBA home and primary health centre, respectively. Thirty-nine percent, 30.6%, 12.4%, 8.9% delivered their babies in hospital/private clinic, TBA home, church and primary health centre, respectively. There was a drift from hospitals/private clinics/primary health centres after ANC to TBA homes/Church and home for deliveries.

4.2.20 Pre-intervention practices on care-seeking for treatment of illnesses

As shown in Table 4.17, source of advice/treatment and undergoing body checks differed significantly ($p <0.05$) between the two study groups. Health care seeking practices (source and treatment) was better in the control communities (30.2%) than in the intervention (9.4%). The overall pre-intervention result showed that less than half of the caregivers (45%) sought treatment from hospital/health centre for children, and 18.5% for adults. Majority of adults (63.8%) resorted to self/patent medicine vendors for treatment. Blood pressure, body weight and ante-natal check-ups carried out by the caregivers two weeks prior to the pre-intervention assessment were 16.9%, 16.1% and 15.2%, respectively; while 29.4% never went for any health-check-up.

Table 4.16 Pre-intervention practices on care for pregnancy and delivery

Variables	Intervention Communities (n=642)		Control Communities (n=642)		Total (N=1284)			
	n	(%)	n	(%)	n	(%)	x^2	p-value
Number of who attended ANC during pregnancy								
No	214	(33.3)	109	(21.4)	323	(28.0)	175.6	< 0.001
Yes	428	(66.7)	401	(78.6)	829	(72.0)		
Total	642	(100)	510	(100)	1229	(100)		
Where pregnant women went for ANC								
Church	0	(0.0)	96	(18.5)	96	(8.3)	219.5	< 0.001
TBA home	214	(33.3)	108	(20.8)	322	(27.8)		
Hospital/Private Clinic	428	(66.7)	158	(30.5)	586	(50.5)		
Health Centre	0	(0.0)	156	(30.1)	156	(13.4)		
Total	642	(100)	518	(100)	1160	(100)		
Place of delivery of last child								
Home	39	(6.1)	76	(12.3)	115	(9.1)	160.4	< 0.001
Church	27	(4.2)	129	(20.9)	156	(12.4)		
TBA home	173	(26.9)	213	(34.5)	386	(30.6)		
Hospital/Private Clinic	343	(53.4)	148	(23.9)	491	(39.0)		
Health Centre	60	(9.3)	52	(8.4)	112	(8.9)		
Total	642	(100)	618	(100)	1260	(100)		

Table 4.17 Pre-intervention practices on seeking medical treatment/check-ups (SMT/C) among caregivers

	Experimental Communities (n=624)		Control Communities (n=624)		Total (N=1284)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Source of advice /treatment for sick child								
Church	54	(11.3)	24	(7.8)	78	(9.9)	74.68	< 0.001
Native doctor	53	(11.1)	10	(3.2)	63	(8.0)		
Self/Patent Medicine Vendor	214	(44.7)	78	(25.3)	292	(37.1)		
Hospital/Health Centre	158	(33.0)	196	(63.6)	354	(45.0)		
Total	479	(100)	308	(100)	787	(100)		
Source of advice/treatment for sick adult								
Church	51	(15.9)	22	(8.7)	73	(12.8)	52.3	< 0.001
Native doctor	25	(7.8)	3	(1.2)	28	(4.9)		
Self/Patent Medicine Vendor	214	(66.9)	151	(59.9)	365	(63.8)		
Hospital/Health Centre	30	(9.4)	76	(30.2)	106	(18.5)		
Total	320	(100)	252	(100)	572	(100)		
Body check-ups 2 weeks prior to interview								
Blood Pressure	221	(18.2)	78	(13.9)	299	(16.9)	225.8	< 0.001
Body Weight	224	(18.5)	62	(11.1)	286	(16.1)		
Blood Sugar	222	(18.3)	40	(7.1)	262	(14.8)		
HIV Status	94	(7.8)	40	(7.1)	134	(7.6)		
Antenatal	224	(18.5)	46	(8.2)	270	(15.2)		
None	226	(18.7)	294	(52.5)	520	(29.4)		
Total	1211	(100)	560	(100)	1771	(100)		

4.3. Post-intervention Comparison of KAP of Intervention and Control Respondents

4.3.1 Post-intervention awareness, knowledge and source of information on exclusive breastfeeding among caregivers of children 0-6 months

The awareness, knowledge and sources of information on exclusive breastfeeding among caregivers of children 0-6 months in the control and intervention communities at post-intervention is shown in Table 4.18. There was a higher level of awareness on exclusive breastfeeding among the intervention respondents (100%) than the control ($p < 0.05$). More respondents (95%) in the intervention communities were able to say exactly what exclusive breastfeeding is, compared to 31.4% in the control ($p < 0.05$). Majority of the respondents in the intervention communities received information about EBF from church (35.9%), while none heard it from the churches in the control ($p < 0.05$). Thus, there was significant difference between the control and intervention communities in awareness, knowledge and sources of information on exclusive breastfeeding.

4.3.2 Post-intervention awareness, knowledge and source of information on complementary feeding

In Table 4.19, awareness, knowledge and sources of information between the control and intervention community groups is presented. Overall, it shows significant differences in awareness, knowledge and sources of information between the control and intervention community groups ($p < 0.05$). Awareness and actual knowledge of complementary feeding were quite high in the intervention communities, 91.2% and 85.7%, respectively, compared to 11.4% and 8.2%, respectively in the control communities. Church as source of information was higher in the intervention communities (47.1%) than in the control (2.7%).

Table 4.18 Post-intervention awareness, knowledge and source of information on EBF

Variables	Intervention Communities (n=120)		Control Communities (n=156)		Total (N=276)		x^2	p-value
	n	(%)	n	(%)	n	(%)		
Knowledge of EBF								
Awareness of EBF	120	(100.0)	75	(48.1)	195	(70.7)	85.7	<0.001
Correct definition of EBF	114	(95.0)	49	(31.4)	163	(59.1)	27.49	<0.001
Source of information								
Print/Electronic media	18	(7.7)	18	(17.0)	36	(10.6)	83.67	<0.001
Friends/Relatives	58	(24.8)	9	(8.5)	67	(19.7)		
Health Workers	74	(31.6)	79	(74.5)	153	(45.0)		
Church	84	(35.9)	0	(0.0)	84	(24.7)		
Total	234	(100)	106	(100)	348	(100)		

Significant at $p<0.05$

Table 4.19 Post-intervention awareness, knowledge and source of information on CF

	Intervention Communities (n=421)		Control Communities (n=368)		Total (N=789)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of CF								
Awareness of CF	384	(91.2)	42	(11.4)	426	(54.0)	500.15	<0.001
Correct definition of CF	361	(85.7)	30	(8.2)	391	(49.6)	569.86	<0.001
Source of information								
Print/Electronic media	82	(12.8)	8	(10.8)	90	(12.6)	78.36	<0.001
Friends/Relatives	126	(19.7)	18	(24.3)	144	(20.1)		
Health Workers	131	(20.4)	46	(62.2)	177	(24.8)		
Church	302	(47.1)	2	(2.7)	304	(42.5)		
**Total	641	(100)	74	(100)	715	(100)		

Significant at p<0.05,

** Differences in total due to exclusion of non-valid responses

4.3.3 Post-intervention awareness, knowledge and source of information on micronutrients intake

In Table 4.20, awareness, knowledge and sources of information between the control and intervention community groups is presented. Awareness and knowledge of micronutrient fortified foods were significantly higher in the intervention communities than in the control, but lower in knowledge of iron, iodine and vitamin A as nutrients ($p < 0.05$). Being able to know and mention a vitamin A fortified food was significantly higher among respondents in the intervention communities (41.8%) than among those in the control group (22.5%). More people received messages on micronutrients from the church in intervention communities (24.7%) than in the control communities (10.5%), ($p<0.05$).

4.3.4 Post-intervention awareness, knowledge and source of information on growth monitoring and promotion

The pre-intervention awareness, knowledge and sources of information on growth monitoring and promotion (GMP) in the control and intervention communities is presented in Table 4.21. Significant differences were observed in awareness, knowledge and sources of information ($p < 0.05$). Knowledge of proper means of assessing child's weight and height was higher (43.5%) in the intervention group than in the control (21.4%). Health workers remained as the main source of information (36.9%) on GMP. However, more people received messages on GMP from the church in intervention communities (33.6%) than in the control communities (16.9%)

4.3.5 Post-intervention awareness, knowledge and source of information on immunization

Awareness, knowledge and sources of information on immunization in presented in Table 4.22. It shows no significant difference in awareness on immunization ($p>0.05$). Knowledge and source of information were significantly different ($p<0.05$) between the control and intervention community groups. More respondents in the intervention group (32.5%) were able to name the tetanus toxoid injection given to them compared to 16.2% in the control. The highest source of knowledge was the health workers in the control group (41.4%), while church was higher (29.3%) in the intervention group than in the control (18.3%).

Table 4.20 Post-intervention awareness, knowledge and source of information on MI

	Intervention Communities (n=541)		Control Communities (n=524)		Total (N=1065)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of MI								
Awareness on MN	143	(26.4)	49	(9.4)	192	(18.0)	52.97	< 0.001
Able to mention Vit. A	116	(21.4)	262	(50.0)	378	(35.5)	78.83	< 0.001
Able to mention Iron, Iodine, or Zinc	153	(28.3)	206	(39.3)	359	(33.7)	10.46	< 0.001
Able to mention Vit. A fortified food	226	(41.8)	118	(22.5)	344	(32.3)	45.46	< 0.001
Able to mention Iodine fortified food	120	(22.2)	32	(6.1)	152	(14.3)	429.6	< 0.001
Source of information								
Print/Electronic media	209	(27.1)	89	(49.2)	298	(53.1)	105.2	< 0.001
Friends/Relatives	169	(21.9)	11	(6.1)	180	(6.2)		
Health Workers	202	(26.2)	62	(34.3)	264	(30.9)		
Church	190	(24.7)	19	(10.5)	209	(9.9)		
Total	770	(100)	181	(100)	951	(100)		

Table 4.21 Post-intervention awareness, knowledge and source of information on GMP

	Intervention Communities (n=541)		Control Communities (n=524)		Total (N=1065)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of GMP								
Awareness of GMP	531	(98.2)	457	(87.2)	988	(92.2)	23.4	< 0.001
Correct definition	77	(14.2)	30	(5.7)	107	(10.0)	15.21	< 0.001
Knowledge of appropriate method to monitor growth								
By just looking	139	(48.8)	234	(60.5)	373	(55.5)	42.87	<0.001
By lifting/holding the child	22	(7.7)	70	(18.1)	92	(13.7)		
By use of weight / height scales	124	(43.5)	83	(21.4)	207	(30.8)		
Total	285	(100)	387	(100)	672	(100)		
Source of information								
Print/Electronic media	48	(14.2)	12	(18.5)	60	(14.9)	15.42	<0.001
Friends/Relatives	62	(18.3)	8	(12.3)	70	(17.3)		
Health Workers	115	(33.9)	34	(52.3)	149	(36.9)		
Church	114	(33.6)	11	(16.9)	125	(30.9)		
Total	339	(100)	65	(100)	404	(100)		

Table 4.22 Post-intervention awareness, knowledge and source of information on immunization

	Intervention Communities (n=541)		Control Communities (n=524)		Total (N=1065)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of Immunization Services								
Awareness of Immunization	541	(100)	524	(100)	1065	(100)	1.41	0.235*
Able to mention Tetanus Toxoid/TT	176	(32.5)	85	(16.2)	261	(24.5)	262.2	<0.001
Source of information								
Print/Electronic media	202	(14.6)	255	(22.4)	457	(42.9)	54.09	<0.001
Friends/Relatives	251	(18.1)	204	(17.9)	455	(42.7)		
Health Workers	529	(38.1)	472	(41.4)	1001	(94.0)		
Church	406	(29.3)	208	(18.3)	614	(57.7)		
Total	1388	(100)	1139	(100)	1065	(100)		

*Not significant at p>0.001

4.3.6 Post-intervention knowledge and source of information on care giving and men's involvement

Knowledge and source of information on care giving and men's involvement is presented in Table 4.23. It shows that there was difference in knowledge and the source of knowledge among caregivers in the control and intervention communities at the post-intervention assessment ($p < 0.05$). The knowledge level on care-giving and men's involvement was higher (93.5%) in the intervention group than the control (86.5). More people received messages on micronutrients from the church in intervention communities (34.3%) than 23.3% in the control communities ($p<0.05$).

4.3.7 Post-intervention knowledge and source of information on seeking medical treatment/check-ups

As shown in Table 4.24, knowledge and source of information on seeking medical treatment/check-ups differed significantly ($p < 0.05$) between the study groups. A higher level of knowledge (88.1%) was obtained in the intervention communities than 6.6% in the control. The highest source of knowledge was the health workers in the control group (61.4%), while church was higher (21.4%) in the intervention group than in the control (3.4%).

Table 4.23 Post-intervention knowledge and source of information on CGMI

	Intervention Communities (n=541)		Control Communities (n=524)		Total (N=1065)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of CGMI								
Yes	468	(86.5)	460	(93.5)	928	(89.8)	13.03	< 0.001
No	73	(13.5)	32	(6.5)	105	(10.2)		
Total	541	(100)	492	(100)	1033	(100)		
Source of information								
Print/Electronic media	108	(13.1)	63	(11.6)	171	(12.5)	66.73	<0.001
Friends/Relatives	231	(28.1)	106	(19.6)	337	(24.7)		
Health Workers	202	(24.5)	246	(45.5)	448	(32.8)		
Church	282	(34.3)	126	(23.3)	408	(29.9)		
Total	823	(100)	541	(100)	1364	(100)		

Table 4.24 Post-intervention knowledge and source of information on SMT/C

	Intervention Communities (n=541)		Control Communities (n=524)		Total (N=1065)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of SMT/C								
Yes	473	(88.1)	35	(6.6)	508	(47.5)	126.17	<0.001
No	64	(11.9)	497	(6.5)	561	(52.5)		
Total	537	(100)	532	(100)	1069	(100)		
Source of information								
Print/Electronic media	417	(31.7)	80	(18.3)	497	(28.3)	59.26	<0.001
Friends/Relatives	294	(22.3)	74	(16.9)	368	(21.0)		
Health Workers	324	(24.6)	269	(61.4)	593	(33.8)		
Church	282	(21.4)	15	(3.4)	297	(16.9)		
Total	1317	(100)	438	(100)	1755	(100)		

4.3.8 Post-intervention attitude on age of introducing water/other foods

Attitude on exclusive breastfeeding assessed by intention to introduce water/other foods between the intervention and control respondents are shown in Table 4.25. More respondents (51.7%) would start introducing water and other foods at 5-6 months of child's age in the intervention communities as against 14.9% in the control ($p < 0.05$). Generally, many respondents' attitude tilted towards 1-2 months (37.7%) for introduction of water and other foods.

4.3.9 Post-intervention attitude on complementary feeding

Generally, the attitude on complementary feeding as assessed by continuing breastfeeding, and to stop at 24 months was low (Figure 4.6). Only 6.0% of respondents would stop breastfeeding at 24 months of child's age. There was a significant difference in this attitude between the respondents in intervention (8.8%) and control (2.2%) communities ($p < 0.05$).

4.3.10 Post-intervention attitudes and perceptions on micronutrients intake

The differences in attitudes and perceptions on micronutrients intake among caregivers between the control and intervention community groups is shown in Table 4.26. There was significant difference between the control and intervention community groups ($p < 0.05$). Less than 50% of the caregivers would make efforts to access micronutrient supplements or fortified foods. More than 50% could link (strongly agreed) micronutrient deficiency to growth failure in children. These however, were higher (67.5%) in the intervention community groups than in the control communities (46.3%).

Table 4.25 Post-intervention attitude on age of introducing water/other foods among caregivers of children 0-6 months

	Intervention Communities (n=120)		Control Communities (n=156)		Total (N=276)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Age Intended to introduce water / other foods								
1-2 months	10	(17.2)	65	(46.1)	75	(37.7)	31.54	<0.001
3-4 months	18	(31.0)	55	(39.0)	73	(36.7)		
5-6 months	30	(51.7)	21	(14.9)	51	(25.6)		
Total	58	(100)	141	(100)	199	(100)		

Significant at $p<0.05$.

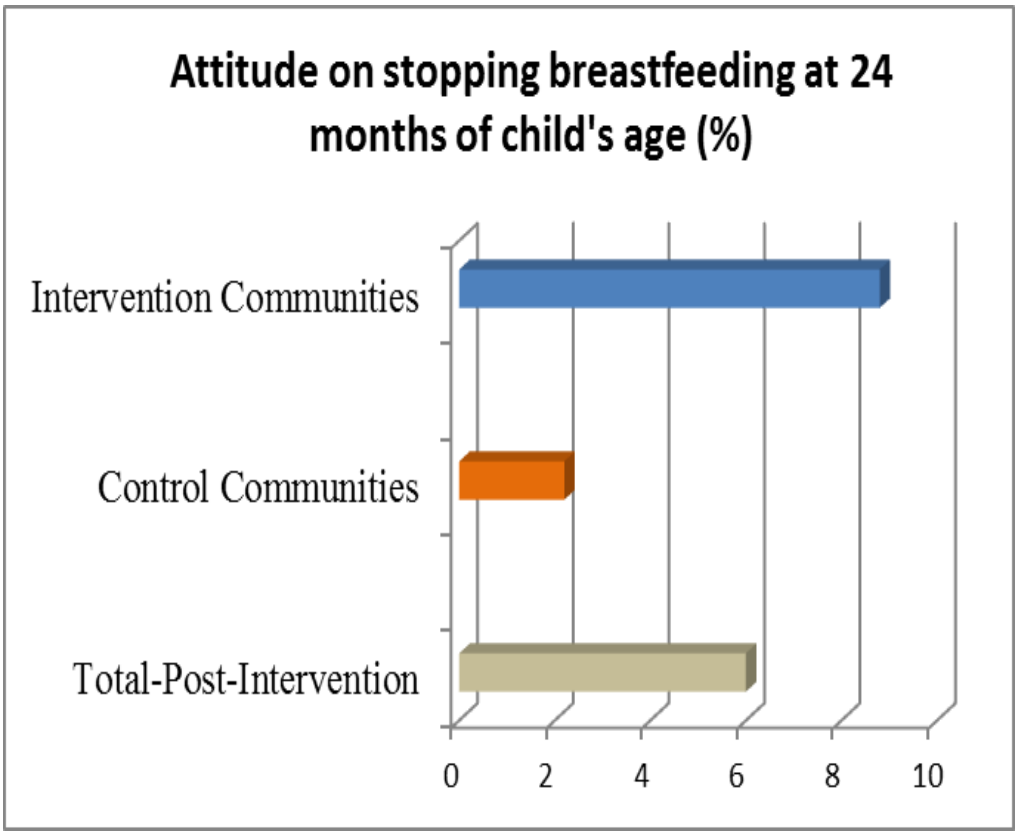


Fig. 4.6 Post-intervention attitude on stopping breastfeeding at 24 months among caregivers of children 6-24 months

Table 4.26 Post-intervention attitudes on micronutrients intake among caregivers

Variables	Intervention Communities (n=541)		Control Communities (n=524)		Total (N=1065)			
	n	(%)	n	(%)	n	(%)	x^2	p-value
Willingness of Caregivers towards use of MN								
Would create time to access Vit. A for child	349	(64.5)	125	(23.9)	474	(44.5)	166.3	<0.001
Would create time to access Iron tablets by pregnant women	318	(58.8)	162	(30.9)	480	(45.1)	79.93	<0.001
Would take pains to search for / buy MN fortified foods	343	(63.4)	128	(24.4)	471	(44.2)	153.6	<0.001
Attitude toward MN deficiency and growth failure in children								
Strongly Disagree	59	(10.9)	4	(1.0)	63	(6.8)	114.4	<0.001
Disagree	7	(1.3)	16	(4.2)	23	(2.5)		
Agree	65	(12.1)	126	(33.0)	191	(20.7)		
Strongly Agree	364	(67.5)	177	(46.3)	541	(58.7)		
Don't Know	44	(8.2)	59	(15.4)	103	(11.2)		
Total	539	(100)	382	(100)	921	(100)		

4.3.11 Post-intervention attitude on immunization among caregivers

Attitude on immunization among caregivers of children 0-5 months in the control and intervention communities is shown in Fig. 4. 7. There was a significant difference in attitude on immunization among caregivers of children 0-5 months in the control and intervention communities. More caregivers in the intervention group (100%) than in the control (94.8%) agreed that they would create time to take their children to a health facility for immunization.

4.3.12 Post-intervention attitude on faith-based health messages among caregivers

In Fig. 4.8 is shown how the respondents would react if the church were to communicate messages of exclusive breastfeeding (EBF), complementary feeding (CF), micronutrient intake (MI), growth monitoring and promotion (GMP), immunization (Immun), care giving and men's involvement (CGMI), seeking medical treatment and check-ups (SMT/C). There were no significant differences in acceptance of CF, GMP, Immun, and SMT/C messages in church among the two communities ($P>0.05$). However, there were significant differences in acceptance of EBF, MI, and CGMI messages in church among the two community groups ($p <0.05$).

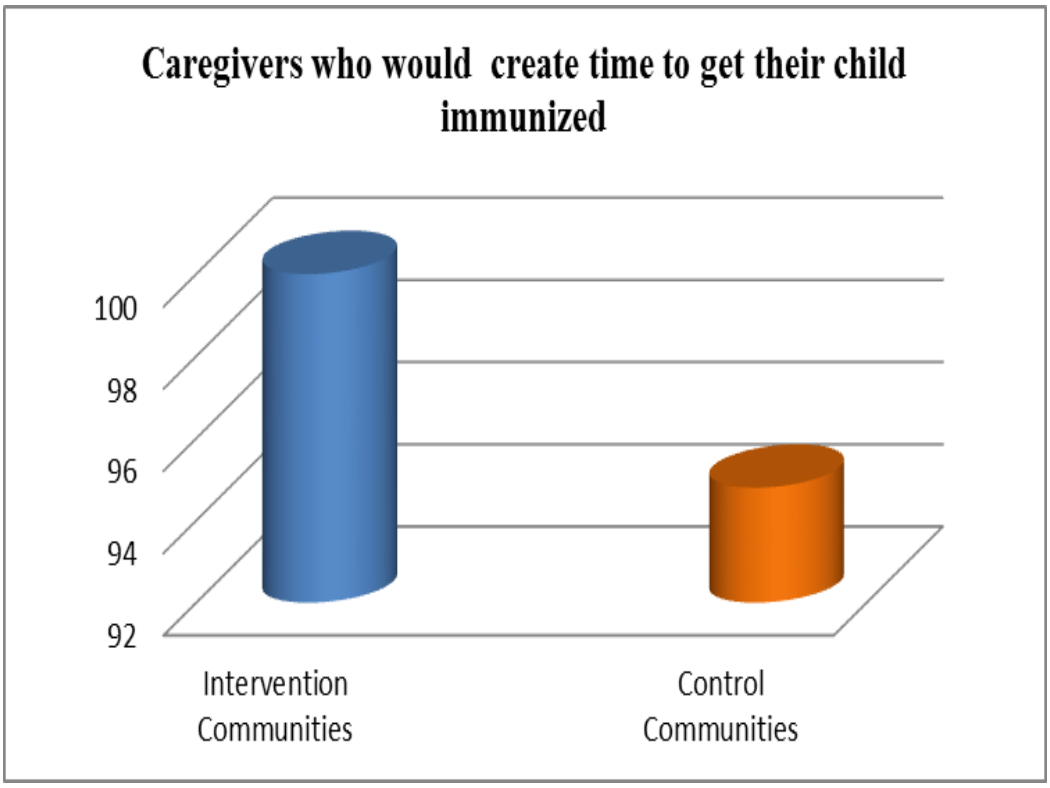


Fig. 4.7 Post-intervention attitude on child immunization among caregivers

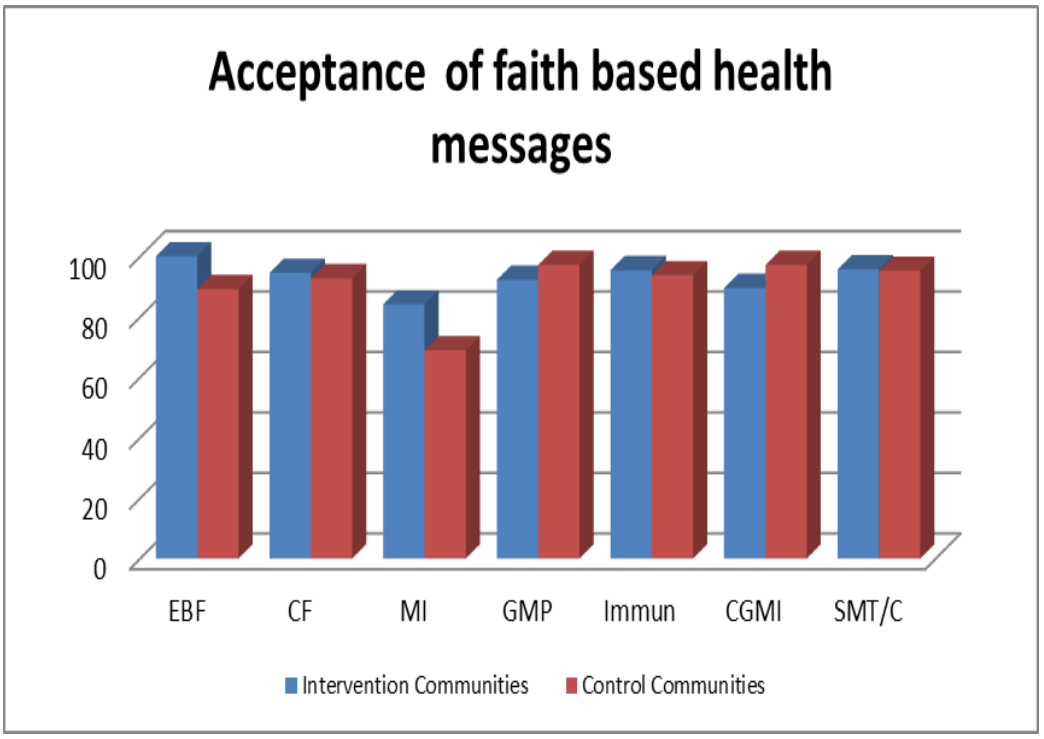


Fig. 4.8 Post-intervention attitudes on faith-based health messages among caregivers

4.3.13 Food groups used in complementary feeding

The number of food groups used for complementary feeding in the intervention and control communities after the intervention is shown in Figure 4.9. Foods were grouped into staples (A), legumes (B), animal protein (C), fats and oils (D), vegetables and fruits (E). Twenty-one percent of caregivers prepared meals with all 5 food groups, 28% used 3-4 food groups, and 51.4 used 1-2 food groups in the intervention communities, compared to a significantly less persons (11.7%) using all food groups in the control communities ($p < 0.05$).

4.3.14 Post intervention practices on growth monitoring and promotion

The practice of growth monitoring and promotion in the two community groups at pre-intervention is shown in Figure 4.10. There was a significant difference ($p<0.05$) in the practice of growth monitoring and promotion in the two community groups at post-intervention assessment. More caregivers in the intervention group (19.7%) presented their children monthly for weighing compared to (9.2%) in the control. More caregivers in the control group (39.5%) did not practice this compared to (25.1%) in the intervention.

4.3.15 Post intervention practices on immunization

The practice on immunization among pregnant women in receiving tetanus toxoid was significantly higher in the control (97.3%) than 27.7% in the intervention communities ($p<0.05$), as shown in Fig.4.11.

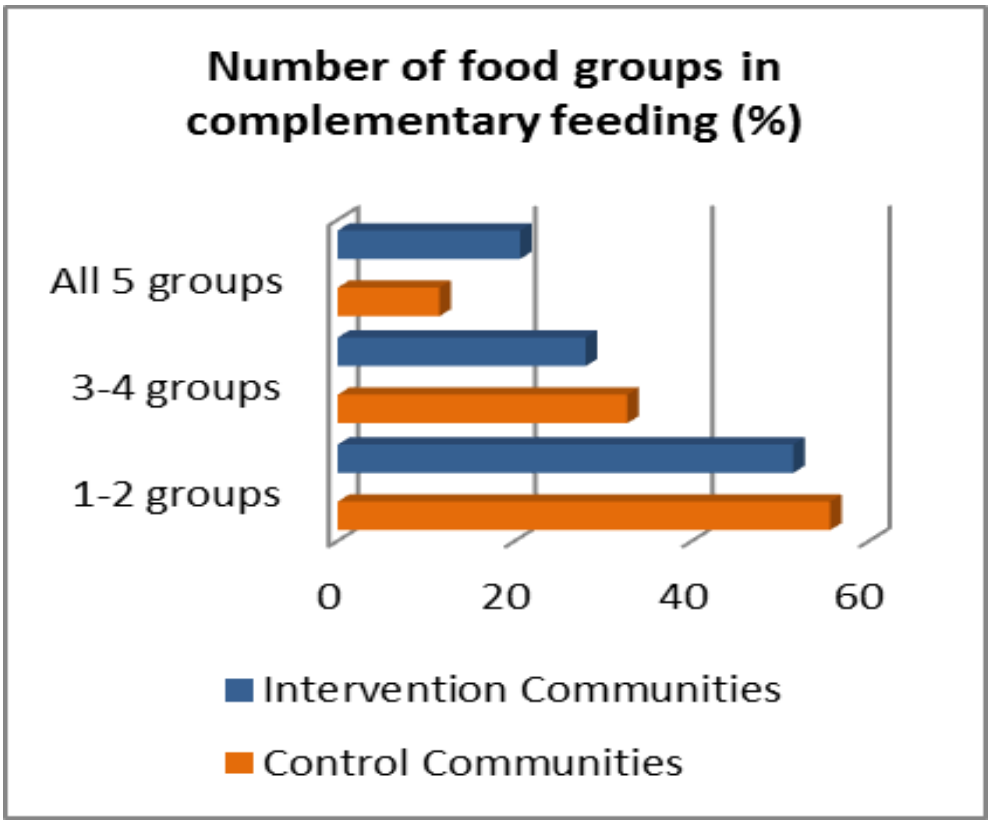


Fig. 4.9 Post intervention use of food groups in complementary feeding

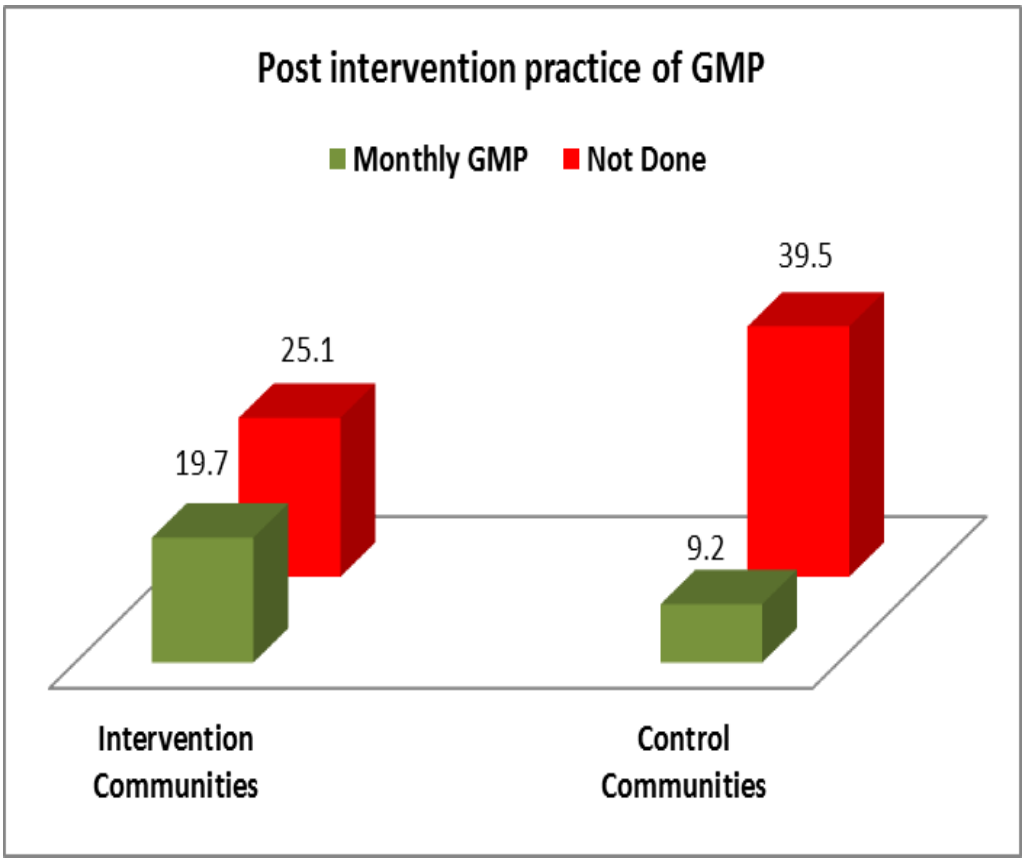


Fig. 4.10 Post intervention practice of growth monitoring and promotion

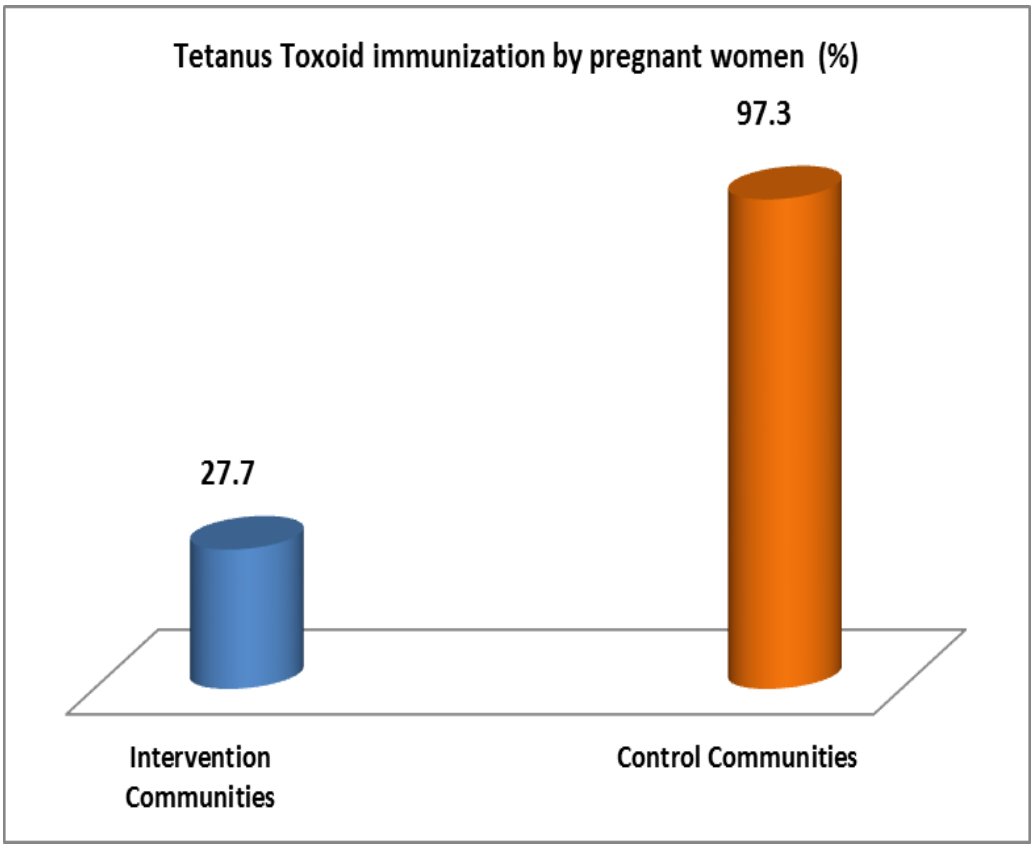


Fig. 4.11 Post intervention practice of immunisation among caregivers

4.3.16 Post intervention practices on care giving and men's involvement reported by caregivers

Post intervention practices on care giving and men's involvement in the control and intervention communities as reported by caregivers are presented in Table 4.27. It shows child care-giving practice and men's involvement with a significant difference between the control and intervention communities ($p < 0.05$). Fathers' rate of practice of care to the well children in playing with, bathing, and feeding the children was higher (36.7%) in the control group than in the intervention group (15.3%). Specifically, more fathers (12.8%) were involved in child's feeding in the intervention group than 11.8% in the control. On the other hand, attending to sick child's treatment was higher (13.6%) in the intervention group than in the control (12.7%).

4.3.17 Post intervention practices on treatment of illnesses among caregivers

As shown in Table 4.28, the source of advice/treatment for children and adults differed significantly ($p < 0.05$) between the two study groups. About 50% of the caregivers sought treatment from hospital/health centre for children, and 51.5% for adults in the intervention communities, compared to significantly higher practices in the control group with 62.3% for children and 58.1% for adults.

Table 4.27 Post intervention practices on care giving and men's involvement

	Intervention Communities (n=541)		Control Communities (n=524)		Total (N=1065)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
What Father does for child in good health								
Plays with child	224	(31.8)	142	(31.6)	366	(31.7)	115.9	< 0.001
Baths child	230	(32.7)	44	(9.8)	274	(23.8)		
Feeds child	90	(12.8)	53	(11.8)	143	(12.4)		
Does all 3 above	108	(15.3)	165	(36.7)	273	(23.7)		
Does none	52	(7.4)	45	(10.0)	97	(8.4)		
Total	704	(100)	307	(100)	1153	(100)		
What Father does for child in sickness								
Feeds child	16	(2.3)	22	(4.2)	38	(3.1)	143.4	< 0.001
Takes child for treatment	93	(13.6)	67	(12.7)	160	(13.2)		
Pays for child's treatment	107	(15.6)	183	(34.7)	290	(23.9)		
Gives medication	108	(15.7)	34	(6.5)	142	(11.7)		
Does all 4 above	346	(50.4)	158	(30.0)	504	(41.5)		
Does none	16	(2.3)	63	(12.0)	79	(6.5)		
Total	686	(100)	527	(100)	1213	(100)		

Table 4.28 Post intervention practices on seeking medical treatment/check-ups

	Intervention Communities (n=541)		Control Communities (n=524)		Total (N=1065)			
Variables	**n**	**(%)**	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Source of advice/treatment for sick child								
Church	17	(5.5)	19	(7.1)	36	(6.3)	26.65	< 0.001
Native doctor	24	(7.8)	10	(3.7)	34	(5.9)		
Self/Patent Medicine Vendor	114	(37.1)	72	(26.9)	186	(32.3)		
Hospital/Health Centre	152	(49.5)	167	(62.3)	319	(55.5)		
Total	307	(100)	268	(100)	575	(100)		
Source of advice/treatment for sick adult								
Church	4	(1.7)	20	(9.5)	24	(5.4)	19.52	< 0.001
Native doctor	6	(2.5)	3	(1.4)	9	(2.0)		
Self/Patent Medicine Vendor	105	(44.3)	65	(31.0)	170	(38.0)		
Hospital/Health Centre	122	(51.5)	122	(58.1)	244	(54.6)		
Total	237	(100)	210	(100)	447	(100)		

4.4. Pre and Post-intervention Comparison of KAP among Intervention Respondents

4.4.1 Pre and post-intervention awareness, knowledge and sources of information on exclusive breastfeeding

Pre and post-intervention awareness, knowledge and sources of information on exclusive breastfeeding in the intervention communities were compared as shown in Table 4.29. Overall, there was a significant difference between pre and post intervention awareness, knowledge and sources of information on exclusive breastfeeding in the intervention communities ($p < 0.05$). The number who heard the message from the church increased from 0% at the pre to 18.5% at the post intervention, leading to an increase in ability of the respondents to define exclusive breastfeeding in the post intervention assessment (from 79.3% to 95%).

4.4.2 Pre and post-intervention awareness, knowledge and sources of information on complementary feeding

The general awareness, knowledge and its source on CF is shown in Table 4.30 with pre-intervention and post intervention results compared. There were significant increase in awareness, knowledge and sources of information from pre-intervention to post intervention in the intervention community groups ($p < 0.05$). The church as source of information (47.1%) brought about the increase in awareness and actual knowledge of complementary feeding practice. Ninety-one percent of the respondents became aware, while 85.7% were able to say what complementary feeding actually means after the intervention, compared to the pre-intervention knowledge level of 27.7%.

Table 4.29 Pre and post-intervention awareness, knowledge and sources of information on EBF

	Pre-intervention (n=256)		Post-intervention (n=120)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of EBF						
Awareness of EBF	256	(100)	120	(100)	49.19	< 0.001
Able to say what it is	203	(79.3)	114	(95)	14.07	< 0.001
Source of information						
Print/Electronic media	23	(9.0)	18	(9.8)	114.3	< 0.001
Friends/Relatives	82	(32.0)	58	(31.5)		
Health Workers	151	(59.0)	74	(40.2)		
Church	0	0.0	34	(18.5)		
Total	256	(100)	184	(100)		

Table 4.30 Pre and post-intervention awareness, knowledge and sources of information on CF

	Pre-intervention (n=386)		Post-intervention (n=421)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of CF						
Awareness of CF	107	(27.7)	384	(91.2)	338.1	<0.001
Correct definition of CF	107	(27.7)	361	(85.7)	5.45	0.020
Source of information						
Print/Electronic media	50	(18.9)	82	(12.8)	189.6	<0.001
Friends/Relatives	107	(40.5)	126	(19.7)		
Health Workers	107	(40.50)	131	(20.4)		
Church	0	(0.00)	302	(47.1)		
Total	264	(100)	641	(100)		

4.4.3 Pre and post-intervention awareness, knowledge and sources of information on micronutrients intake among caregivers

As presented in Table 4.31, there was a significant difference in knowledge of mineral micronutrients between pre-intervention and post-intervention assessment results in intervention communities. Being able to know and mention a vitamin A fortified food was significantly ($p < 0.05$) higher in the post-intervention (41.8%) than at pre-intervention (19.8%). More people received the message on micronutrients intake from the church at the post-intervention (24.7%) compared to 4.6% at pre-intervention.

4.4.4 Pre and post-intervention awareness, knowledge and sources of information on GMP

The awareness, knowledge and sources of information on growth monitoring and promotion is shown on Table 4.32. It shows a significant increase in awareness of growth monitoring and promotion ($p < 0.05$), and slight increase in actual knowledge ($p > 0.05$). Knowledge of appropriate method to monitor growth, and source were significantly different ($p < 0.05$) between the pre-intervention and post-intervention assessment results in the intervention communities. GMP awareness increased to 98.2% at the post-intervention from 63.6% at pre-intervention, with the actual knowledge still below 15%. Knowledge of use of weight/height scales to monitor growth increased from 24.1% at pre-intervention to 43.5% at post-intervention. Majority (48.8%) still depended on just looking at the child to observe for growth. Church as a source of information increased from zero at pre-intervention to 33.6% at post-intervention.

4.4.5 Pre and post-intervention awareness, knowledge and sources of information on immunization

Comparison between pre-intervention and post-intervention awareness, knowledge and sources of information on immunization among caregivers in the intervention communities is presented in Table 4.33. It shows a significant difference in awareness of immunization ($p < 0.05$). Knowledge and source of information were significantly different ($p<0.05$) between the pre-intervention and post-intervention assessment results in the intervention communities. Immunization awareness increased to 100% at the post-intervention from 93.6% at pre-intervention. Women's knowledge of immunization given to them increased from 29.8% at pre-intervention to 32.5% at post-intervention. Neighbourhoods as source of information increased from 15.2% to 18.1%, while church increased from 14% to 29.3% from pre-intervention to post-intervention.

Table 4.31 Pre and post-intervention awareness, knowledge and sources of information on MI

	Pre-intervention (n=642)		Post-intervention (n=541)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of MI						
Awareness of MN	127	(19.8)	143	(26.4)	7.00	0.007
Able to mention Vitamin A	70	(10.9)	116	(21.4)	20.02	<0.001
Able to mention Iron, Iodine, or Zinc	205	(31.9)	153	(28.3)	1.69	0.194
Able to mention Vit. A fortified food	127	(19.8)	226	(41.8)	66.78	<0.001
Able to mention Iodine fortified food	80	(12.5)	120	(22.2)	14.26	<0.001
Source of information						
Print/Electronic media	216	(39.9)	209	(27.1)	108.3	<0.001
Friends/Relatives	99	(18.3)	169	(21.9)		
Health Workers	201	(37.2)	202	(26.2)		
Church	25	(4.6)	190	(24.7)		
Total	541	(100)	770	(100)		

Table 4.32 Pre and post-intervention awareness, knowledge and sources of information on GMP among caregivers

	Pre-intervention (n=642)		Post-intervention (n=541)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of GMP						
Awareness of GMP	408	(63.6)	531	(98.2)	212.6	<0.001
Correct definition of GMP	41	(6.4)	77	(14.2)	3.77	0.052
Knowledge of appropriate method to monitor growth						
By just looking	264	(45.8)	139	(48.8)	65.71	<0.001
By lifting/holding the child	173	(30.0)	22	(7.7)		
By use of weight / height scales	139	(24.1)	124	(43.5)		
Source of information						
Print/Electronic media	18	(31.0)	48	(14.2)	32.32	<0.001
Friends/Relatives	10	(17.2)	62	(18.3)		
Health Workers	30	(51.7)	115	(33.9)		
Church	0	(0.0)	114	(33.6)		
Total	58	(100)	339	(100)		

Table 4.33 Pre and post-intervention awareness, knowledge and sources of information on immunization

	Pre-intervention (n=642)		Post-intervention (n=541)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of Immunization Services						
Awareness of Immunization	601	(93.6)	541	(100)	33.91	<0.001
Able to mention Tetanus Toxoid/T T	191	(29.8)	176	(32.5)	3.3	<0.001
Source of information						
Print/Electronic media	314	(26.9)	202	(14.6)	121.7	<0.001
Friends/Relatives	178	(15.2)	251	(18.1)		
Health Workers	512	(43.8)	529	(38.1)		
Church	164	(14)	406	(29.3)		
Total	1168	(100)	1388	(100)		

4.4.6 Pre and post-intervention knowledge and sources of information on CGMI

The comparison between caregivers in the intervention communities at pre-intervention and post-intervention assessments on knowledge and the source of information on care and men's involvement is shown in Table 4.34. While the difference was not significant for knowledge ($p>0.05$), it was significant in the source of knowledge ($p <0.05$). The knowledge level on care-giving and men's involvement was higher (86.5%) at post-intervention than at pre-intervention (83.5%). More caregivers obtained the information from the church and increased from 14% at pre-intervention to 34.3% at the post-intervention assessment.

4.4.7 Pre and post-intervention knowledge and sources of information on health seeking practices

Comparisons were made between pre-intervention and post intervention (post-intervention) results on knowledge and source of information as shown in Table 4.35. There was significant differences in knowledge and source of information ($p <0.05$). The knowledge level was higher (88.1%) at post-intervention than at pre-intervention (83.5%). Church and neighbourhoods (friends/relatives) as sources of information increased from 14% to 21%, and 15.8% to 22.3%, respectively.

Table 4.34 Pre and post-intervention knowledge and sources of information on CGMI

	Pre-intervention (n=642)		Post-intervention (n=541)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of CGMI						
Yes	536	(83.5)	468	(86.5)	1.85	0.173
No	106	(16.5)	73	(13.5)		
Total	642	(100)	541	(100)		
Source of information						
Print/Electronic media	478	(45.2)	108	(13.1)	256.8	<0.001
Friends/Relatives	267	(25.3)	231	(28.1)		
Health Workers	164	(15.5)	202	(24.5)		
Church	148	(14)	282	(34.3)		
Total	1057	(100)	823	(100)		

Table 4.35 Pre and post-intervention knowledge and sources of information on SMT/C

	Pre-intervention (n=642)		Post-intervention (n=541)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Knowledge of SMT/C						
Yes	536	(83.5)	473	(88.1)	126.2	<0.001
No	106	(16.5)	64	(11.9)		
Total	642	(100)	541	(100)		
Source of information						
Print/Electronic media	478	(45.2)	417	(31.7)	59.26	<0.001
Friends/Relatives	167	(15.8)	294	(22.3)		
Health Workers	264	(25)	324	(24.6)		
Church	148	(14)	282	(21.4)		
Total	1057	(100)	823	(100)		

4.4.8 Intention to introduce water/other foods to children 0-5 months

Attitude on exclusive breastfeeding among caregivers of children 0-6 months on intention to introduce water/other foods in the intervention communities is shown in Figure 4.12 comparing it at pre and post-intervention. The intention to introduce water/other foods at 6 months of child's age improved significantly from the pre-intervention level of 7.8% to 51.7% at the post-intervention assessment ($p < 0.05$).

4.4.9 Acceptance of faith-based message on EBF by respondents

Acceptance of faith-based communication on exclusive breastfeeding (EBF) and its influence on adoption and intention to practice exclusive breastfeeding at post and pre-interventions compared in the intervention communities is shown in Table 4.36. It indicates reasons advanced for the expressed intention to practice exclusive breastfeeding among caregivers of children 0 – 5 months with a significant difference between the pre-intervention and post-intervention assessment results in the intervention communities. The expressed intention to practice the behaviour was less (86.7%) than willingness to accept the message in church (100%) at the post-intervention with a bigger gap difference of 13.3% than at pre-intervention (9.7%). Twenty-two percent of the respondents based their expressed reasons on health benefits, being a good teaching and to express their faith in God's word at the post-intervention, compared to 24.6% at pre-intervention. However, 7% would practice the behaviour as to express their faith in God at the post-intervention compared to pre-intervention's 30.6%, while 47.5% would do so on health benefits of the message at post-intervention compared to pre-intervention's 28.4%.

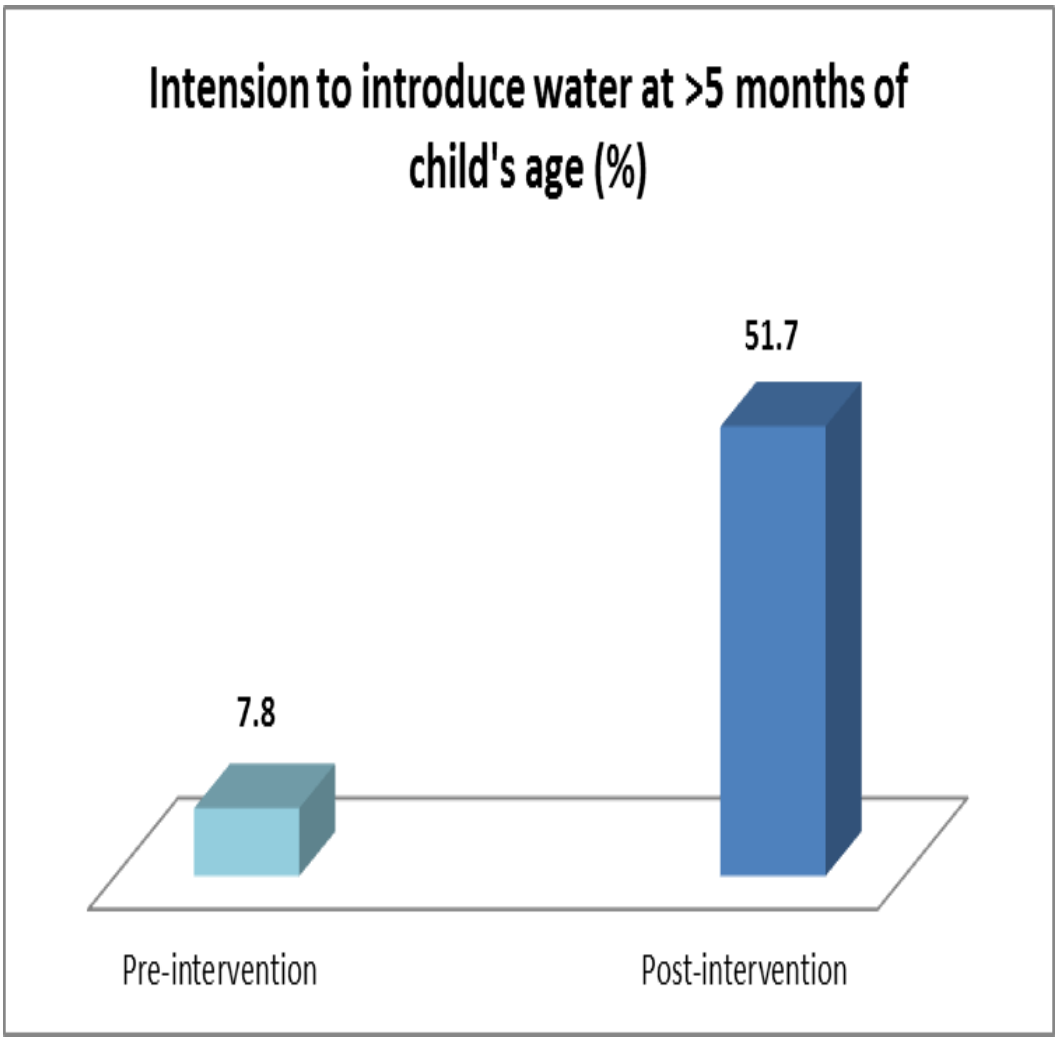


Fig. 4.12 Introduction of food/water to child at 6 months at pre and post-intervention compared ($p<0.05$)

Table 4.36 Pre and post-intervention acceptance of faith-based messages on EBF

	Pre-intervention (n=256)		Post-intervention (n=120)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Perceived Church Influence						
Acceptance of EBF message	210	(82.0)	120	(100)	22.92	< 0.001
Expressed Intention to Practice	185	(72.3)	104	(86.7)	8.74	0.003
Reasons for Intention						
Health Benefits	137	(28.4)	94	(47.5)	54.74	< 0.001
Seen as good teaching	79	(16.4)	48	(24.2)		
To express faith in God	148	(30.6)	13	(6.6)		
All of the above	119	(24.6)	43	(21.7)		
Total	483	(100)	198	(100)		

4.4.10 Pre and post-intervention attitudes on complementary feeding

Generally, the attitude of caregivers on continuing breastfeeding, and to stop after 24 months was low (Figure 4.13). However, there was a significant improvement in attitude from pre-intervention to post-intervention in the intervention community group ($p < 0.05$) from 3.1% to 8.8%. Majority of respondents opted for 12 to 18 months with 63% at pre-intervention, and 69.1% at post-intervention.

4.4.11 Acceptance of faith-based message on CF by respondents

The comparison between pre and post-intervention responses on perceived church influence on acceptance and intention to practice complementary feeding is shown in Table 4.37. Overall, there was no significant difference ($p > 0.05$) in acceptance of complementary feeding message in the church. However, there was a slight increase in the response from 91.5% at before intervention to 94.5% after the intervention. There were differences in the intentions to practice the prescribed behaviour ($p < 0.05$). The teaching increased the intention of the respondents to practice the behaviour. More people (47%) would do so to express their faith in God's word on complementary feeding; while others see it as just a good teaching (29.4%). Health benefits as a reason dropped from 57.6% at pre-intervention to 8.5% at post-intervention.

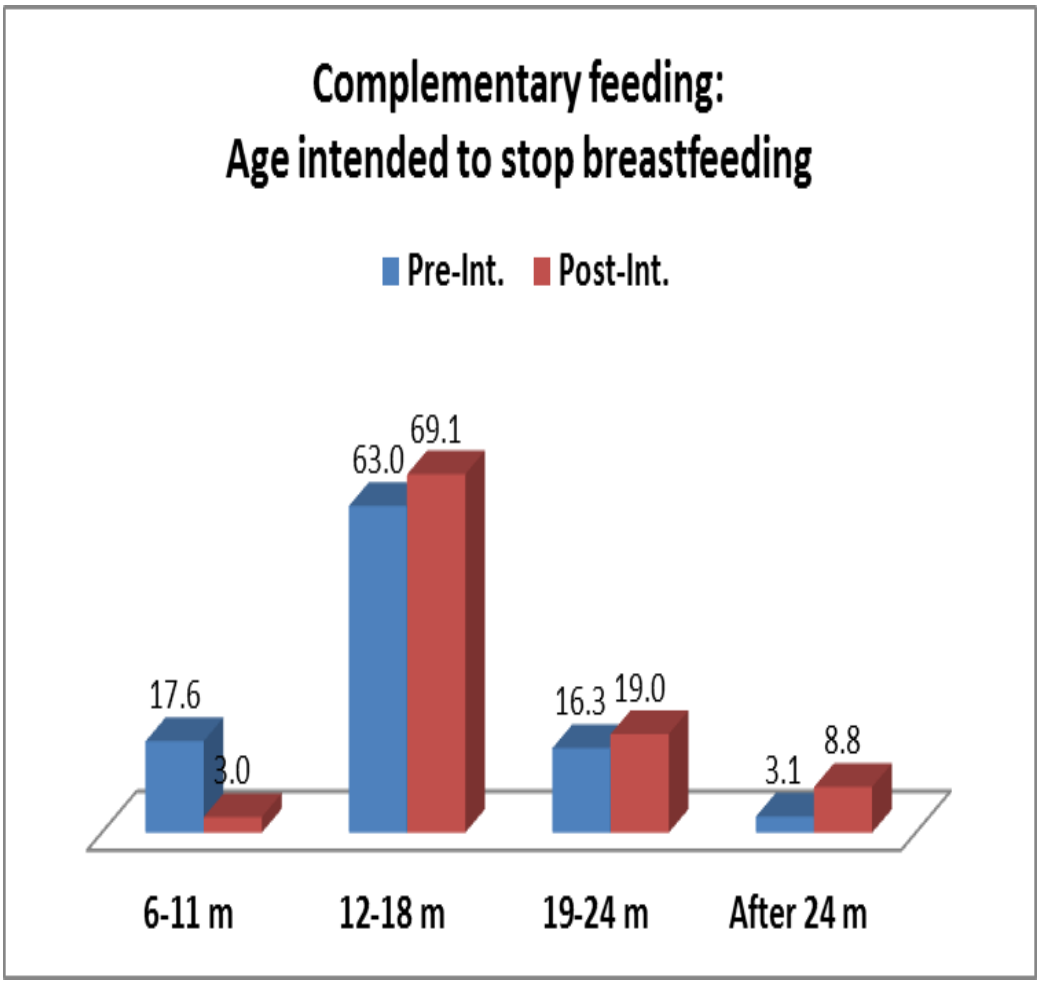


Fig. 4.13 Pre and post-intervention attitude on age to stop breastfeeding among caregivers

Table 4.37 Pre and post-intervention acceptance of faith-based message on CF among caregivers of children 6-24 months

	Pre-intervention (n=386)		Post-intervention (n=421)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Perceived Church Influence						
Acceptance of CF message in church	353	(91.5)	398	(94.5)	2.51	0.113
Expressed Intention to Practice	325	(84.2)	386	(91.7)	10.08	0.002
Reasons for Intention						
Health Benefits	234	(57.6)	61	(8.5)	432.5	<0.001
Seen as good teaching	68	(16.7)	212	(29.4)		
To express faith in God	10	(2.5)	339	(47.0)		
All of the above	94	(23.2)	109	(15.1)		
Total	406	(100)	721	(100)		

4.4.12 Pre and post-intervention attitudes and perceptions on MI

There were significant differences in attitude and perceptions of caregivers on micronutrients intake between pre-intervention and post-intervention in the intervention community groups ($p < 0.05$), as shown in Table 4.38. More than 50% of the caregivers would make efforts to access micronutrient supplements or fortified foods at the post-intervention compared to pre-intervention which was less than 16%. Sixty-eight percent of caregivers at post-intervention could link micronutrient deficiency to growth failure in children, compared to 14.8% at pre-intervention.

4.4.13 Pre and post intervention attitude on immunization services

The responses of caregivers to immunization are shown in Figure 4.14. It shows the attitude of caregivers expressed by intention to get their children immunized at the pre-intervention and post-intervention in the intervention communities. The difference was not statistically significant ($p > 0.05$), but there was an increase from 87.2% at the pre-intervention to 100% at post-intervention.

Table 4.38 Pre and post-intervention attitudes and perceptions on MI among caregivers in the intervention group

	Pre-intervention (n=642)		Post-intervention (n=541)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Attitude toward MI deficiency and growth failure in children						
Strongly Disagree	58	(9.0)	59	(10.9)	475.9	<0.001
Disagree	267	(41.6)	7	(1.3)		
Agree	51	(7.9)	65	(12.1)		
Strongly Agree	95	(14.8)	364	(67.5)		
Don't Know	171	(26.6)	44	(8.2)		
Total	642	(100)	539	(100)		
Willingness of Caregivers towards use of Micronutrients						
Would create time to access Vit. A for child	62	(9.7)	349	(64.5)	387.2	<0.001
Would create time to access Iron tablets by pregnant women	88	(13.7)	318	(58.8)	262.6	<0.001
Would take pains to search for / buy MN fortified foods	99	(15.4)	343	(63.4)	286.76	<0.001

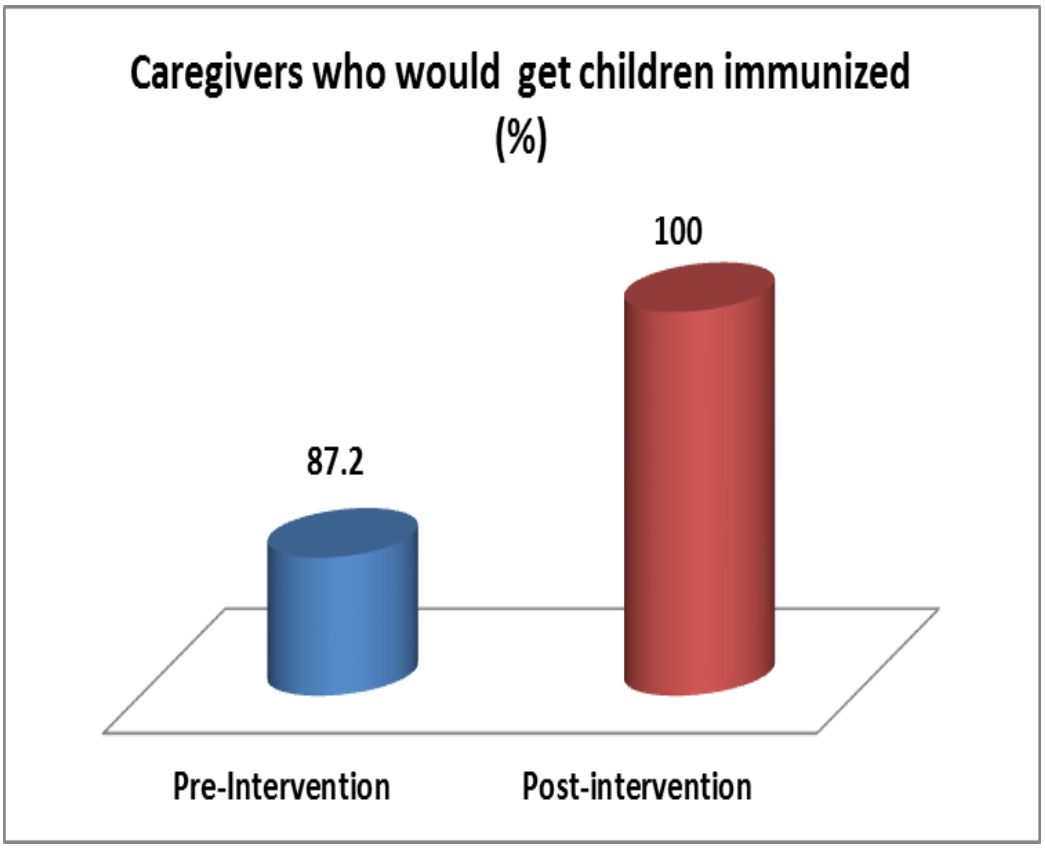


Fig. 4.14 Pre and post intervention attitude on utilization of immunization services among caregivers

4.4.14 Acceptance of faith-based messages on recommended nutrition and health behaviours

Respondents were asked if they would accept messages on nutrition and health to be delivered in church. Acceptance of micronutrient intake, growth monitoring and promotion, immunization, care giving and men's involvement and seeking medical treatment/check-up messages in church are presented in Table 4.39. There was a significant in difference at pre-intervention and post-intervention in support of messages on micronutrient intake and growth monitoring and promotion and seeking medical treatment/check-up ($p<0.05$). However, the acceptance went down at post-intervention at pre-intervention for micronutrient intake and growth monitoring and promotion and care giving and men's involvement. There was no significant difference at pre-intervention and post-intervention in acceptance of immunization and care giving and men's involvement messages in church. However, acceptance of message on immunization, and seeking medical treatment/check-up increased by more than 5%.

4.4.15 Pre and post-intervention intention to practice recommended behaviours as a result of faith-based messages

Respondents' strong intentions to adopt and practice recommended behaviours following the delivery of faith based health messages in church at pre and post interventions are compared and presented in Table 4.40. There was a significant difference ($p<0.05$) in the expressed intention to adopt and practice all recommended behaviours following the delivery of faith based health messages in church at pre and post interventions except on immunization. The expressed intention increased at post intervention on seeking medical treatment/check-up, care giving and men's involvement and immunization, but dropped mostly on micronutrients intake by more than 30%.

Table 4.39 Pre and post-intervention acceptance of faith-based messages on recommended nutrition and health behaviours

Recommended behaviours	Pre-intervention (n=642)		Post-intervention (n=541)			
	n	(%)	n	(%)	x^2	p-value
Micronutrient Intake	618	(96.3)	455	(84.1)	51.46	<0.001
Growth Monitoring and Promotion	638	(99.4)	499	(92.2)	38.17	<0.001
Immunization	596	(92.8)	516	(95.4)	2.93	0.087
Care giving and men's involvement	590	(91.9)	484	(89.5)	1.8	0.179
Seeking medical treatment/check-up	582	(90.7)	518	(95.7)	10.91	<0.001

Table 4.40 Intention of caregivers to practice faith-based recommended behaviours in the intervention group

Recommended behaviours	Pre-intervention (n=642)		Post-intervention (n=541)			
	n	(%)	n	(%)	x^2	p-value
Micronutrient Intake	607	(94.5)	306	(56.6)	238.4	<0.001
Growth Monitoring and Promotion	620	(96.6)	440	(81.3)	71.59	<0.001
Immunization	552	(86.0)	484	(89.5)	2.96	0.085
Care giving and men's involvement	478	(74.5)	438	(81.0)	6.74	0.009
Seeking medical treatment/check-up	549	(85.5)	490	(90.6)	6.56	0.010

4.4.16 Reasons given by caregivers for acceptance of faith-based messages on recommended nutrition and health behaviours

Respondents' answer to why they would adopt and practice recommended behaviours following the delivery of faith based health messages in church at pre and post interventions are compared and presented in Table 4.41. There was a significant difference ($p<0.05$) in the reasons expressed to adopt all except on seeking medical treatment/check-up. The highest support for '*faith in God's word*' (25.1%) at post intervention came from micronutrient intake. The highest support for '*health benefit*' (39.3%) came from immunization, for '*good teaching*' (38.2%) from giving care and men's involvement, and for '*all of the options*' (26.6%) came from micronutrient intake.

Table 4.41 Reasons given for acceptance of faith-based messages on recommended nutrition and health behaviours

	Pre-intervention (n=642)		Post-intervention (n=541)			
Variables	**n**	**(%)**	**n**	**(%)**	**x^2**	**p-value**
Micronutrient Intake						
Health benefits	362	(56.4)	232	(22.2)	252.03	<0.001
Seen as good teaching	125	(19.5)	272	(26.1)		
To express faith in God	24	(3.7)	262	(25.1)		
All of the above	131	(20.4)	277	(26.6)		
Total	642	(100)	1043	(100)		
Growth Monitoring and Promotion						
Health Benefits	214	(20.7)	219	(28.8)	28.78	<0.001
Seen as good teaching	423	(41.0)	239	(31.4)		
To express faith in God	176	(17.1)	163	(21.4)		
All of the above	219	(21.2)	140	(18.4)		
Total	1032	(100)	761	(100)		
Immunization						
Health benefits	328	(35.1)	408	(39.3)	3.624	0.305
Seen as good teaching	328	(35.1)	342	(32.9)		
To express faith in God	128	(13.7)	133	(12.8)		
All of the above	150	(16.1)	156	(15.0)		
Total	934	(100)	1039	(100)		
Care giving and men's involvement						
Health benefits	39	(6.1)	220	(31.9)	222.3	<0.001
Seen as good teaching	453	(70.6)	263	(38.2)		
To express faith in God	13	(2.0)	78	(11.3)		
All of the above	137	(21.3)	128	(18.6)		
Total	642	(100)	689	(100)		
Seeking medical treatment/check-up						
Health Benefits	231	(23.3)	473	(33.5)	113.1	<0.001
Seen as good teaching	441	(44.5)	373	(26.4)		
To express faith in God	230	(23.2)	307	(21.8)		
All of the above	88	(8.9)	258	(18.3)		
Total	990	(100)	1411	(100)		

4.4.17 Food groups used in complementary feeding practices

The number of food groups used for complementary feeding in the intervention communities after the intervention is compared to pre-intervention and shown in Figure 4.15. Foods were grouped into staples (A), legumes (B), animal protein (C), fats and oils (D), vegetables and fruits (E). Twenty-one percent of caregivers prepared meals with all 5 food groups at post-intervention compared to 18.6% at pre-intervention.

4.4.18 Pre and Post Intervention practices on GMP

The practices of GMP in the intervention communities by caregivers at the pre and post intervention phases are presented in Figure 4.16. Caregivers (19.7%) began the practice of getting their children weighed monthly at post intervention compared to non at pre-intervention. Those who never practiced reduced from 34.1% (pre-intervention) to 25.1% (post-intervention) showing an improvement in GMP practice ($x^2 = 32.315$, $p<0.05$).

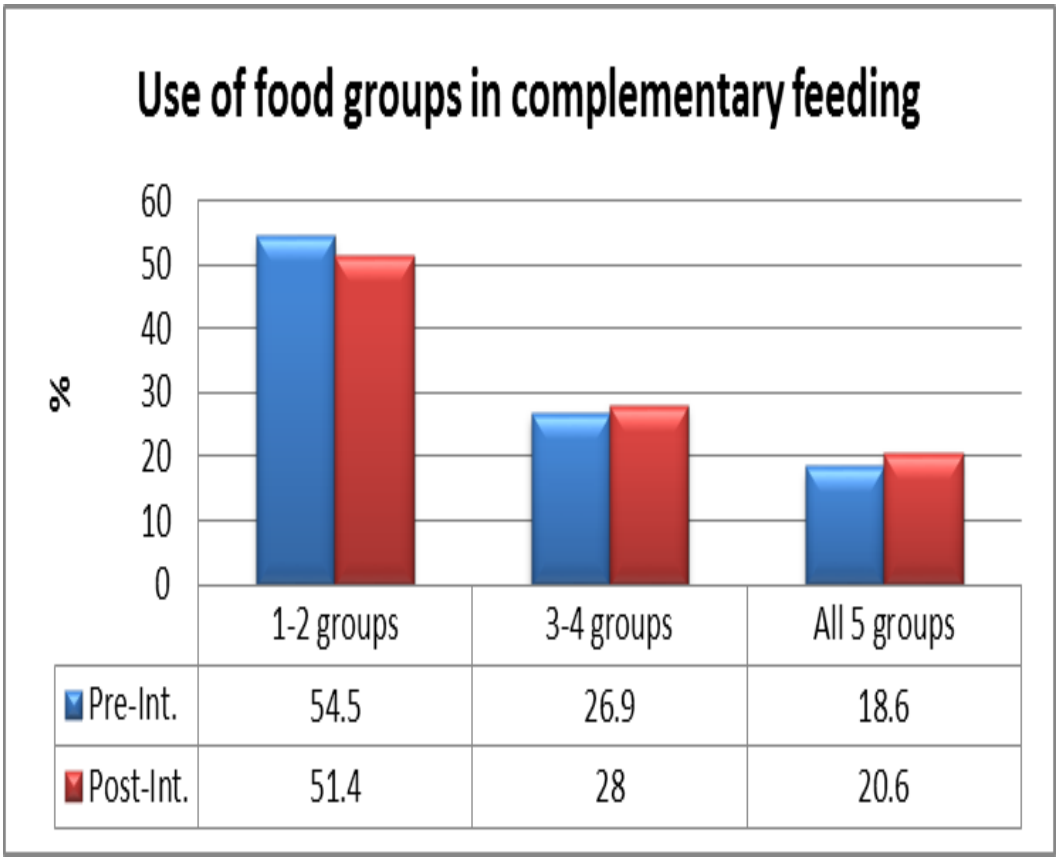


Fig. 4.15 Food groups used in complementary feeding practices

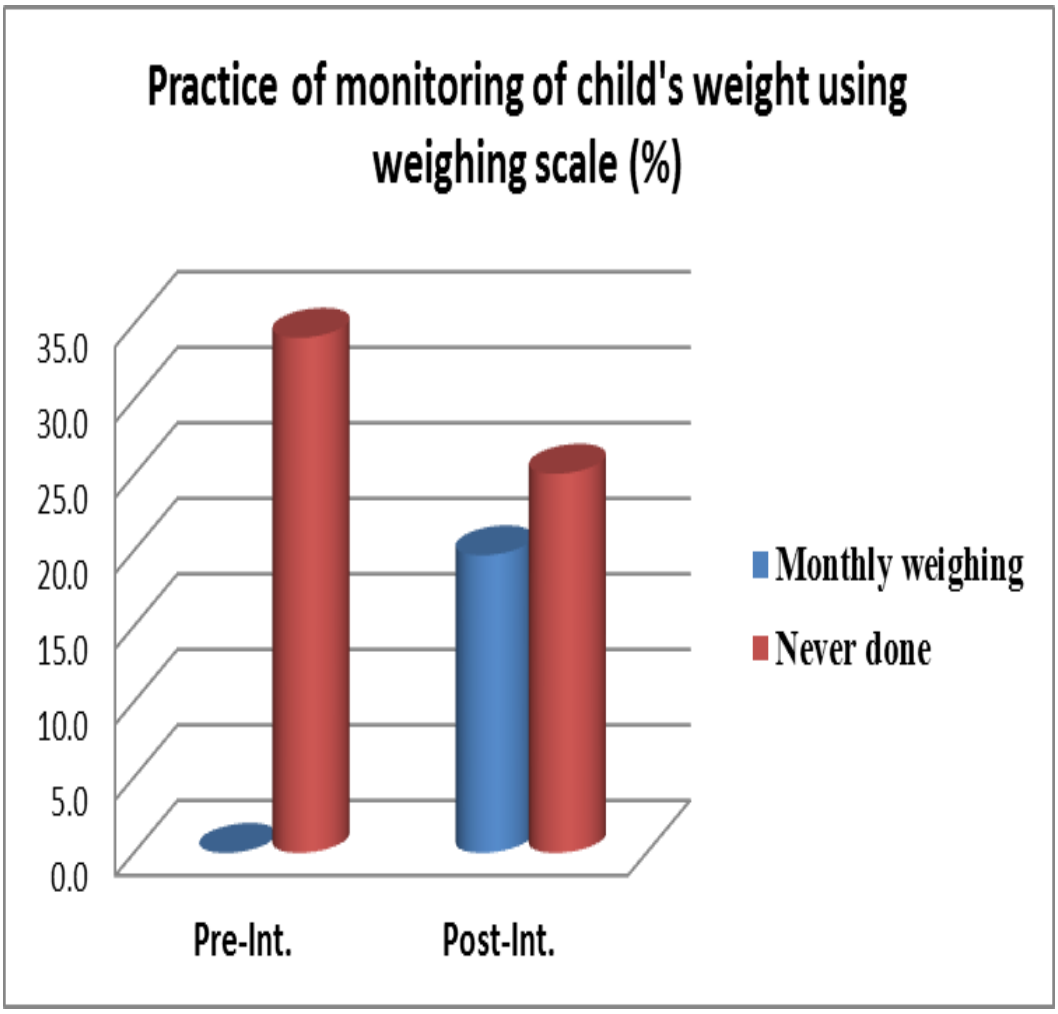


Fig. 4.16 Pre and post intervention practices on growth monitoring and promotion

4.4.19 Pre and Post intervention practices on CGMI

In Figure 4.17 is shown the pre and post intervention behaviour by men toward children in health and in sickness with the differences being significant ($p < 0.05$). It shows that men in the intervention communities were more involved in the care of their sick children (50.4%) compared to 15.3% for the children in good health, compared to 24.3% and 15.5%, respectively, at pre-intervention.

4.4.20 Pre and post intervention practices on SMT/C

The pre and post intervention practices on seeking medical treatment/check-ups in the intervention communities are presented in Figures 4.18 and 4.19. The post-intervention results showed that over 50% of adults sought for treatments in hospital/health centre, and 49.5% treatments for sick children at post-intervention compared to 9.4% and 33%, respectively, at pre-intervention (Figure 4.18). Blood pressure (46.5%) and HIV status (17.2%), and antenatal (26.7%) check-ups were carried out by the caregivers two weeks prior to the post-intervention assessment; while 20.3% never went for any health-check-up. These were observed improvements compared to 18.2%, 7.8%, 18.5% and 18.7%, respectively, at pre-intervention (Figure 4.19).

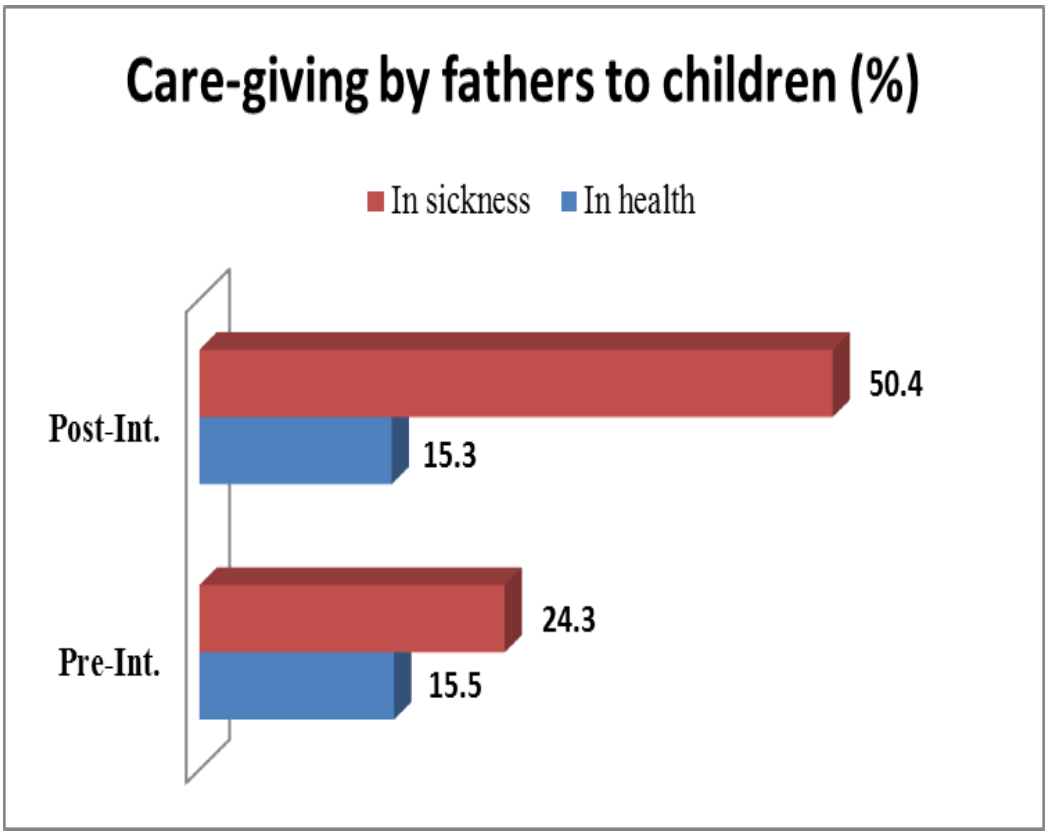


Fig.4.17 Pre and post intervention practices on care giving and men's involvement

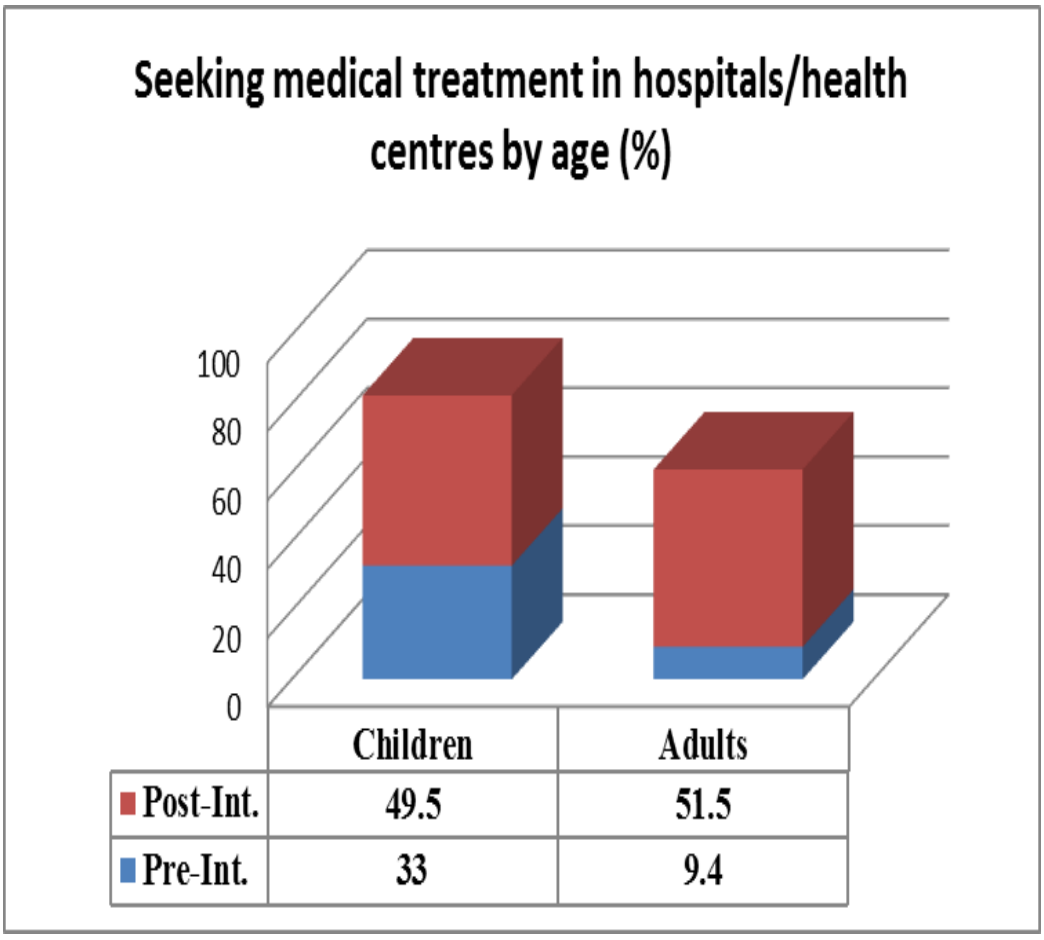


Fig. 4.18 Pre and post intervention practice of seeking medical treatment

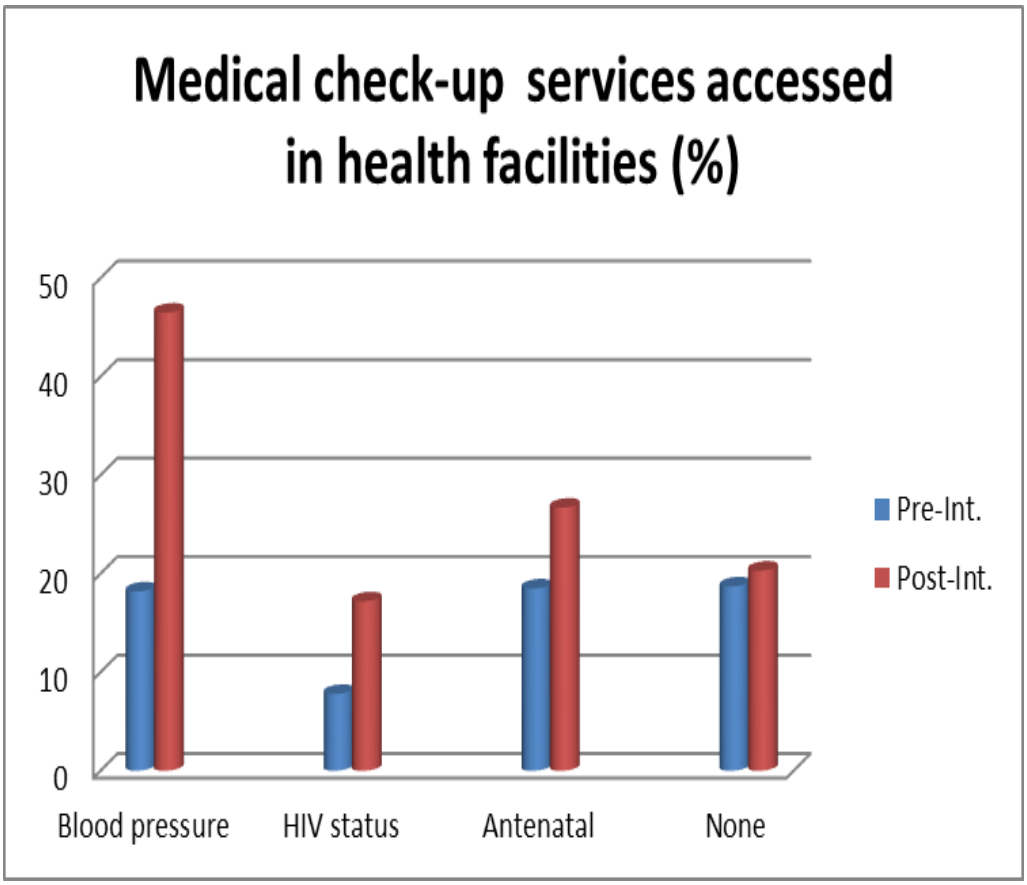


Fig. 4.19 Pre and post intervention practice of seeking medical check-up services

4.5 Pre and Post-intervention Comparison of KAP among Control Respondents

4.5.1 Pre and post-intervention knowledge on nutrition among caregivers

The knowledge of respondents in the control group on nutrtion was assessed on nutrition specific domains including exclusive breastfeeding (EBF), complementary feeding (CF), micronutrients intake (MI), and growth monitoring and promotion (GMP). Comparison made between the pre and post intervention assessment is presented in Figure 4.20. Knowledge decreased significntly in EBF from 42.5% at pre-intervention to 31.4% at post-intervention ($p<0.05$). Increase in knowledge was observed in CF from 6% to 8.2%, in MI from 12.5% to 22.5%, and in GMP from 20.7% to 21.4%. The differences were not significant in CF and GMP ($p>0.05$).

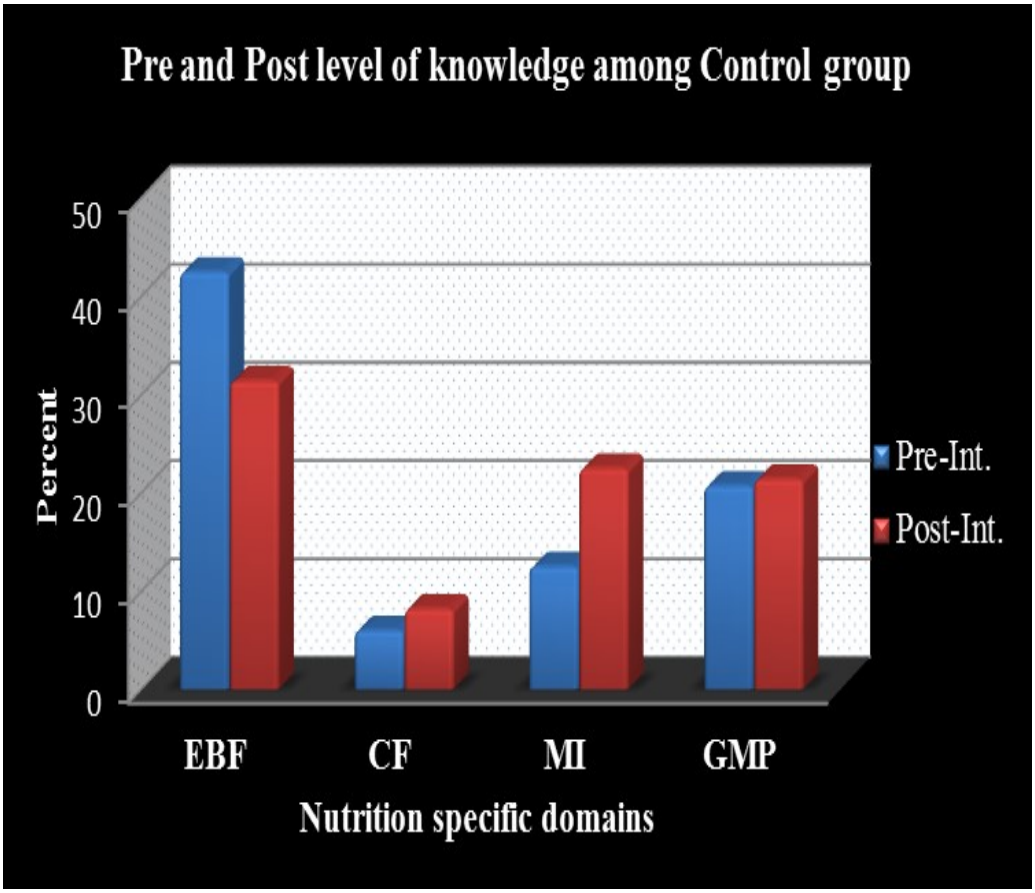


Fig. 4.20 Comparison of pre and post level of nutrition knowledge among control group

4.5.2 Pre and post-intervention attitude exclusive breastfeeding

Attitude on exclusive breastfeeding among caregivers of children 0-6 months based on intention to introduce water/other foods in the control communities is shown in Figure 4.21 comparing it at pre and post-intervention. The intention to introduce water/other foods at 6 months of child's age reduced significantly from the pre-intervention level of 37.5% to 14.9% at the post-intervention assessment ($p < 0.05$).

4.5.3 Pre and post attitude on complementary feeding

The attitude on continuing breastfeeding, and to stop after 24 months was generally low (Figure 4.22). However, there was no significant difference in the attitude between pre-intervention (1.9%) and post-intervention (2.2%) in the control community group ($p > 0.05$).

4.5.4 Pre and post-intervention attitude and perception on MI

There were significant differences in attitude on micronutrients intake among caregivers between at pre-intervention and post-intervention in the control community groups ($p < 0.05$), as shown in Table 4.42. Less respondents (24.4%) would make efforts to access micronutrient supplements or fortified foods at the post-intervention compared to pre-intervention (62.9%). However, more of the caregivers (46.3%) at post-intervention could link (strongly agreed) micronutrient deficiency to growth failure in children, compared to 34.2% at pre-intervention ($p < 0.05$).

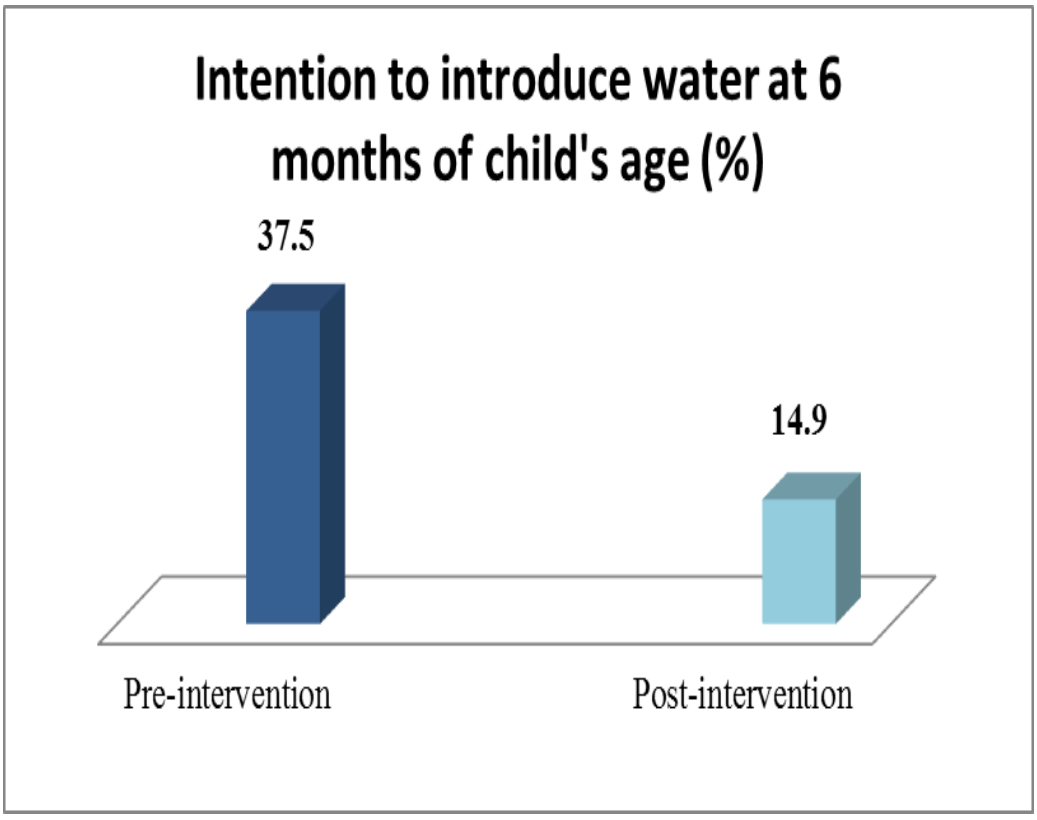


Fig. 4.21 Attitude on exclusive breastfeeding among caregivers in the control group

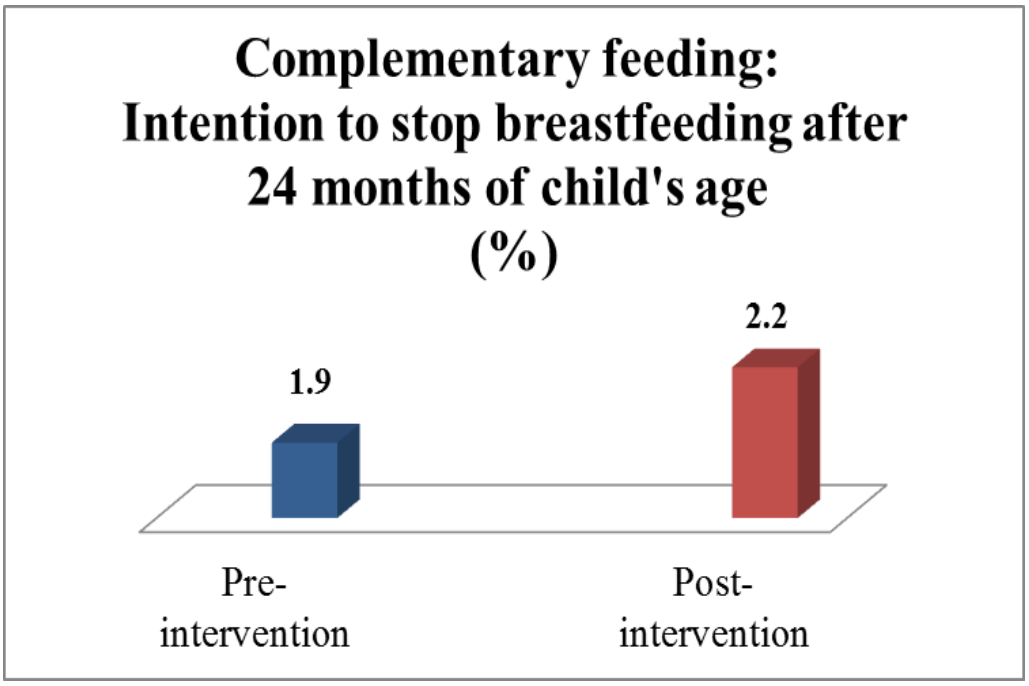


Fig. 4.22 Attitude of caregivers in control group on complementary feeding

Table 4.42 Pre and post-intervention perceptions and attitude on micronutrients intake

Variables	Pre-intervention (n=642)		Post-intervention (n=524)			
	n	(%)	n	(%)	x^2	p-value
Attitude toward MI deficiency and growth failure in children						
Strongly Disagree	4	(0.9)	4	(1.0)	14.95	0.005
Disagree	20	(4.5)	16	(4.2)		
Agree	199	(44.8)	126	(33.0)		
Strongly Agree	152	(34.2)	177	(46.3)		
Don't Know	69	(15.5)	59	(15.4)		
Total	444	(100)	382	(100)		
Willingness of caregivers towards use micronutrients						
Would take pains to search for / buy MN fortified foods	404	(62.9)	128	(24.4)	172.39	<0.001

4.5.5 Pre and Post intervention practices on complementary feeding practices

The number of food groups used for complementary feeding in the control communities after the intervention is shown in Figure 4.23. Foods were grouped into staples (A), legumes (B), animal protein (C), fats and oils (D), vegetables and fruits (E). There was no significant difference ($p>0.05$) seen in the use of all 5 food groups by caregivers to prepare meals between pre-intervention (11.2%) and post-intervention (11.7%).

4.5.6 Pre and Post intervention practices on GMP

The practice of GMP in the control communities by caregivers at the pre and post intervention phases is presented in Figure 4.24. Less caregivers (9.2%) engaged in the practice of getting their children weighed monthly at post intervention compared to 10.3% at pre-intervention. Those who never practiced reduced from 46.5% (pre-intervention) to 39.5% (post-intervention) ($x^2 = 10.67$, $p<0.05$).

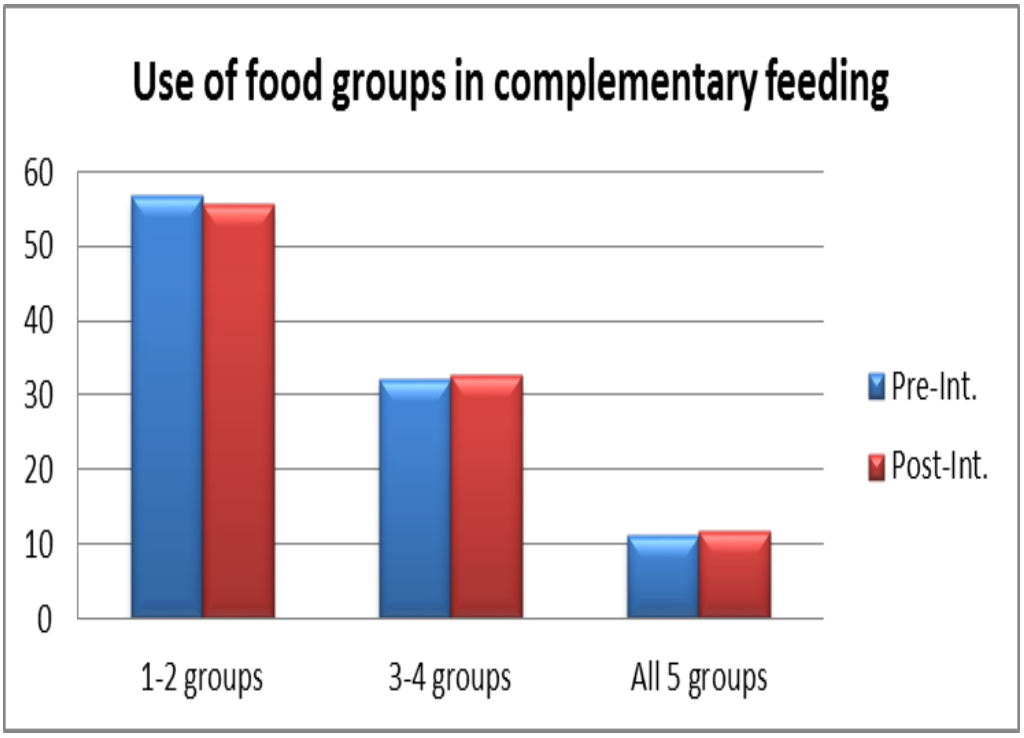


Fig. 4.23 Complementary feeding practices in the control group

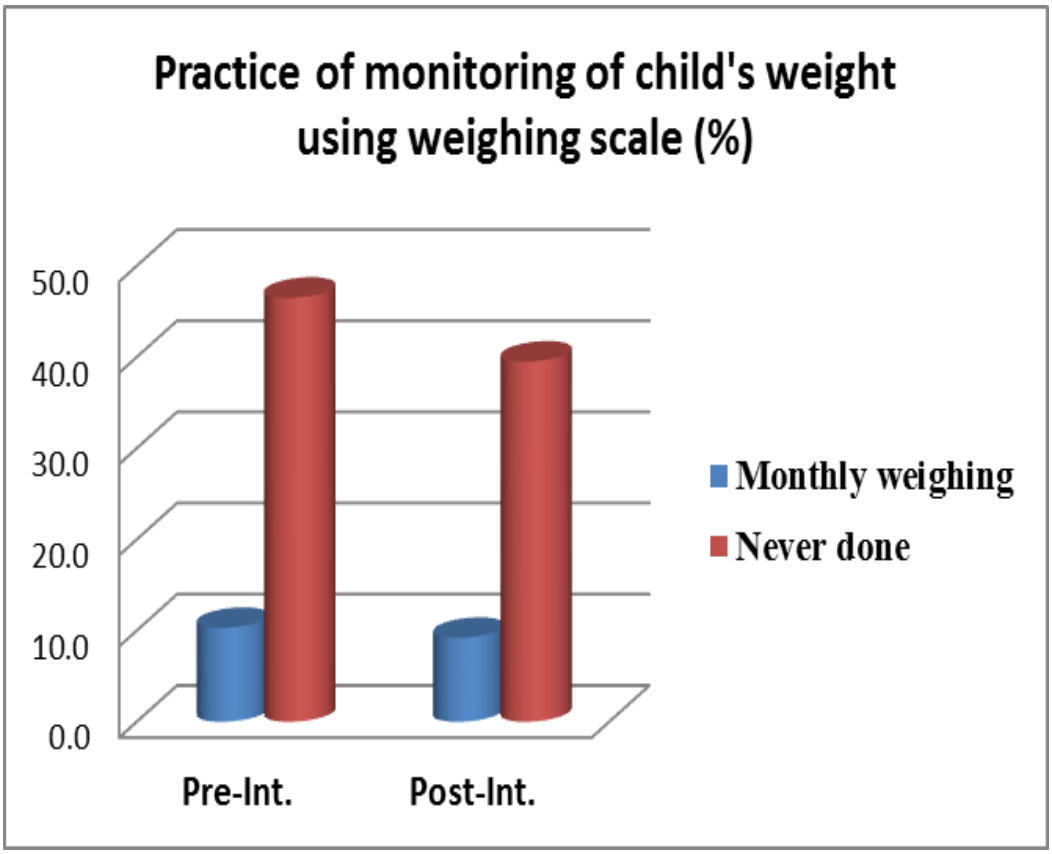


Fig. 4.24 Growth monitoring and promotion practices in the control group

4.6 Evaluation of knowledge of respondents and intention to practice recommended behaviours

The contribution of the faith-based communication approach to enhancement of behavioural change in nutrition and health is presented in Table 4.43, and Table 4.44. The faith-based communication package contributed significantly to increase in knowledge in all seven thematic areas as seen between the pre-intervention and post-intervention results in the intervention communities, with the highest knowledge attainment recorded in exclusive breastfeeding (pre-mean: 3.47±1.11, post-mean: 3.95±0.23; $P<0.05$). Intention to practice behaviour expresses the influence of the faith-based intervention on the nutrition and health themes. Noticeable impact was seen on all but more on micronutrient intakes (pre-mean: 1.55±0.76, post-mean: 2.72±0.72; $P<0.05$).

Change in knowlegde and intention to practice behaviour between pre-intervention and post-intervention in the intervention community group is shown in Figure 4.25. Average scores on knowledge domains increased in intervention group at post-intervention compared to same group at pre-intervention as follows: micronutrient intake (MI) (4.37 vs. 3.95), EBF (3.95 vs. 3.47), CF (2.71 vs. 2.34), and GMP (2.39 vs. 1.77). Intention to practice recommended behaviours improved significantly in the four domains, (2.57 vs. 2.88), CF (2.12 vs. 2.59), GMP (2.42 vs. 2.57) and MI (1.55 vs. 2.72).

Table 4.43 Evaluation of the knowledge of respondents on the thematic areas

		Pre-intervention		Post-intervention			
	Highest Score	**Mean (x)**	**SD**	**Mean (x)**	**SD**	**tcal**	**p-value**
Exclusive Breastfeeding	4	3.47	1.11	3.95	0.23	1.86	0.028*
Complementary Feeding	3	2.34	0.81	2.71	0.7	5.83	<0.001**
Micronutrients Intake	5	3.95	0.7	4.37	0.71	10	<0.001**
Immunization	2	1.96	0.18	1.97	0.37	0.71	0.712
Growth Monitoring and Promotion	3	1.77	0.83	2.39	0.9	11	<0.001**
Men's Involvement in Care	2	1.46	0.5	1.87	0.34	15.9	<0.001**
Seeking Medical Treatment/check-up	2	0.83	0.38	0.95	0.21	6.86	<0.001**

The higher their mean score, the better their knowledge. *Significantly different at 5% ($p<0.05$).
**Significantly different at 1% ($p<0.001$). SD = Standard deviation.

Table 4.44 Evaluation of respondents' intention to practice recommended behaviours

		Pre-intervention		Post-intervention			
	Highest Score	**Mean (x)**	**SD**	**Mean (x)**	**SD**	**tcal**	**p-value**
Exclusive Breastfeeding	3	2.57	0.63	2.88	0.44	2.34	0.004**
Complementary Feeding	3	2.12	0.71	2.59	0.64	7.86	<0.001**
Micronutrients Intake	3	1.55	0.76	2.72	0.72	23.28	<0.001**
Immunization	3	2.31	0.88	2.64	0.59	7.14	<0.001**
Growth Monitoring and Promotion	3	2.42	0.59	2.57	0.59	3.59	<0.001**
Men's Involvement in Care	3	1.81	0.73	1.91	0.93	1.97	0.049*
Seeking Medical Treatment/check-up	3	2.21	0.71	2.5	0.58	7.35	<0.001**

The higher their mean score, the more likely for them to practice the behaviour. *Significantly different at 5% ($p<0.05$). **Significantly different at 5% ($p<0.05$). SD = Standard deviation.

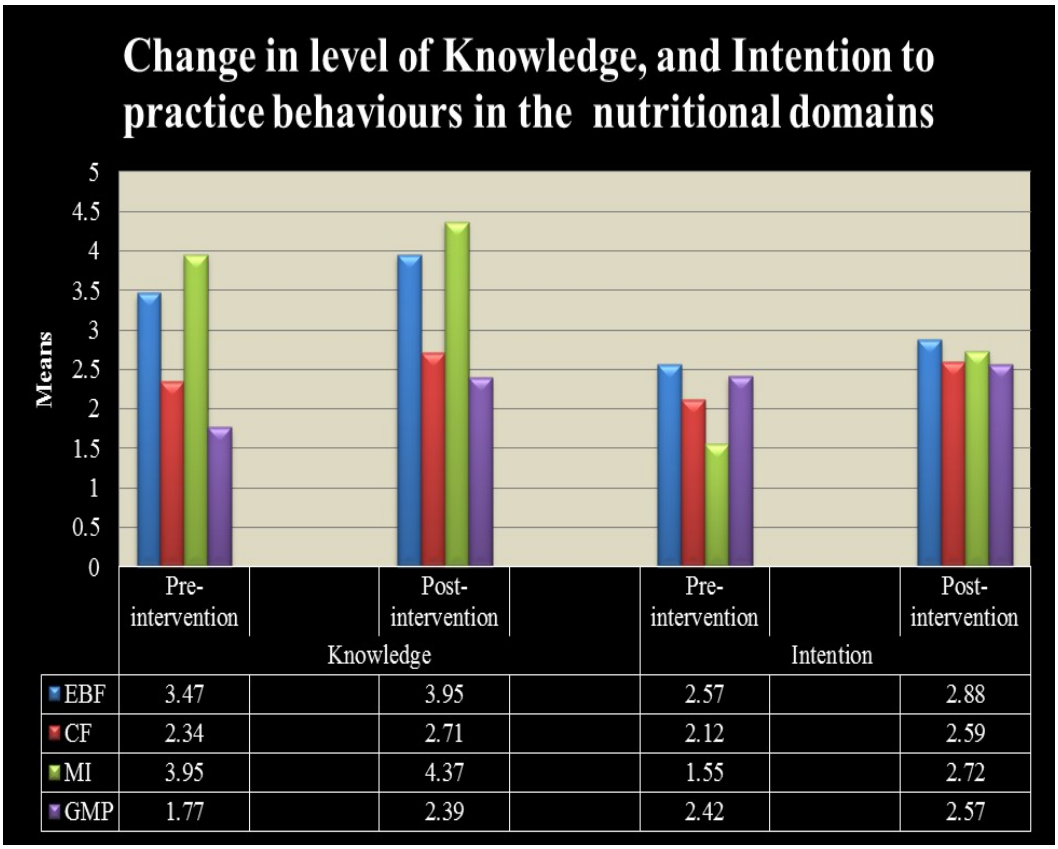


Fig. 4.25 Change in knowlegde and intention to practice recommended behaviours

4.7 Focus Group Discussion

Three focus group discussions were held to assess the impact (acceptability) of the faith-based communication guide and approach. The focus group discussions involved 8 churches from 3 communities selected from 3 LGAs representing the 3 senatorial districts. A total of 21 participants were involved, giving and average of 7 per session. Among the 21, males were 9 and females were 12, while Pastors were 8. The responses of participants at the discussions are presented in Appendix 9.

4.7.1 Issues of malnutrition and the church

The church leaders identified malnutrition as a condition that affects health of children and adults in the communities, and impacts on the church negatively. Comments like *'It has serious effect on parents and the church because it makes them stay away from church'*, and *'It leads to absenteeism from church, and makes people inactive in church services'* were given to express the impact in the church.

4.7.2 Usefulness of the faith-based messages

On the impact of faith-based messages, some claimed they had knowledge of some of the health issues presented in the guide, with comments like, '*We had some knowledge of them before*', and '*They are all old things we knew but we can now apply them*'. Some claimed that they have learnt some new things – '*Knowledge on fortified foods*', '*I learn about kinds of food, their sources and their benefits*', '*That child care is not only for mothers but involves fathers*', '*Ways of good care and feeding of children*', '*That exclusive breastfeeding makes baby free from sicknesses*'.

They also commented on the relevance of the faith-based guide as a useful aid to the minister's work – *'I love the intermarriage between the word of God and medical care*', '*I will use the knowledge for Christian counseling and to deliver the people because it is not only witches that attack people*'. The relevance of the guide in engendering partnership in health care services was highlighted in a comment by a Minister that - '*We will organize seminars on the topic and invite health workers to help*'.

A response from two of the church leaders expressed the strength of the faith messages to influence change in old behaviours, and adoption of the recommended behaviours. Such include comments like – '*It is right to pay medical bills as the Good*

Samaritan did', and '*Knowing that God shall demand an account from us for not doing those things*', that is, the recommended behaviours.

4.7.3 Acceptance of the messages by the church

Responses to the persuasiveness and acceptance of the messages by church members showed that human beings have the right of choice to beliefs. Such expressions include – '*As humans they will be positive and negative responses*', and '*We preach against sins and some people still commit them, so some will hear and do and some may not*'. Yet others had strong optimism that the messages will be accepted because of the source/channel and the benefits of the messages – '*There is hope that members will appreciate*', '*They will be happy about it because it will help them and the children*', '*Being that it is bible related and the ministers are involved, they will appreciate*' '*They will accept the message because they are basic facts and involve life*'.

4.8 Health Services Assessment

4.8.1 Pre-intervention assessment on access and utility of health services

The pre-intervention assessment on access by distance and utility of health facility services by caregivers in the control and intervention communities is presented in Table 4.45. It shows access to health facilities by distance to the caregivers with significant difference between the two community groups ($p < 0.05$). There was no difference in utility (attendance) of services ($p > 0.05$). Health facilities are situated close to (within 5 km) 72.2% of the caregivers, and far from (more than 5km) 27.8%. Utility of services was high for children (86.2%) and low for others (13.8%).

4.8.2 Availability, affordability of health services, and attitude of health workers

An assessment of access/utility of health facility services by availability and affordability of services is shown in Table 4.46. There was no significant differences between the two community groups in availability and affordability of child health services ($p > 0.05$). Availability of services for adults differed significantly ($p < 0.05$). Required services for adults were low (31.2%) and high for children (92.4%). Child services were affordable to most caregivers (94.1%).

The perception of the attitude of health workers by the respondents was also assessed. As presented in Figure 4.26., attitudes of health workers in the two

community groups differed significantly ($p < 0.05$). However, the perceived attitude of health workers was positively high (97.4%).

Table 4.45 Distance and utility of health facility services

Variables	Intervention Communities		Control Communities		Total		x^2	p-value
	n	(%)	n	(%)	N	(%)		
Access to Health Facility								
>10km	28	(4.6)	34	(5.6)	62	(5.1)	93.02	< 0.001
>5km	182	(29.8)	94	(15.5)	276	(22.7)		
5km	336	(55.1)	290	(47.9)	626	(51.5)		
<5km	64	(10.5)	188	(31.0)	252	(20.7)		
Total	610	(100)	606	(100)	1216	(100)		
Utility of services in the last 3 months by family members								
Self	47	(12.2)	39	(15.4)	86	(13.5)	4.39	0.111
Child	337	(87.8)	213	(83.9)	550	(86.2)		
Others	0	(0.0)	2	(0.8)	2	(0.3)		
Total	384	(100)	254	(100)	638	(100)		

Table 4.46 Availability, affordability of services, and attitude of health workers

	Intervention Communities		Control Communities		Total			
Variables	**n**	**(%)**	**n**	**(%)**	**N**	**(%)**	**x^2**	**p-value**
***Availability of required services for adults**								
None available	0	(0.0)	0	(0.0)	0	(0.0)	4.15	0.042
Not all available	10	(58.8)	43	(71.7)	53	(68.8)		
All available	7	(41.2)	17	(28.3)	24	(31.2)		
Total	17	(100)	60	(100)	77	(100)		
****Availability of required services for children**								
None available	0	(0.0)	0	(0.0)	0	(0.0)	0.196	0.658
Not all available	28	(7.1)	24	(8.3)	52	(7.6)		
All available	368	(92.9)	266	(91.7)	634	(92.4)		
Total	396	(100)	290	(100)	686	(100)		
Affordability of required services for children								
Very costly	10	(2.6)	4	(1.4)	14	(2.1)	7.77	0.051
Costly	14	(3.6)	12	(4.1)	26	(3.8)		
Cheap	308	(79.8)	208	(70.7)	516	(75.9)		
Very cheap	54	(14.0)	70	(23.8)	124	(18.2)		
Total	386	(100)	294	(100)	680	(100)		

*Services for adults: Treatment for ailments, check-ups, ANC, delivery
** Services for children: Immunization, growth monitoring,treatment for ailments

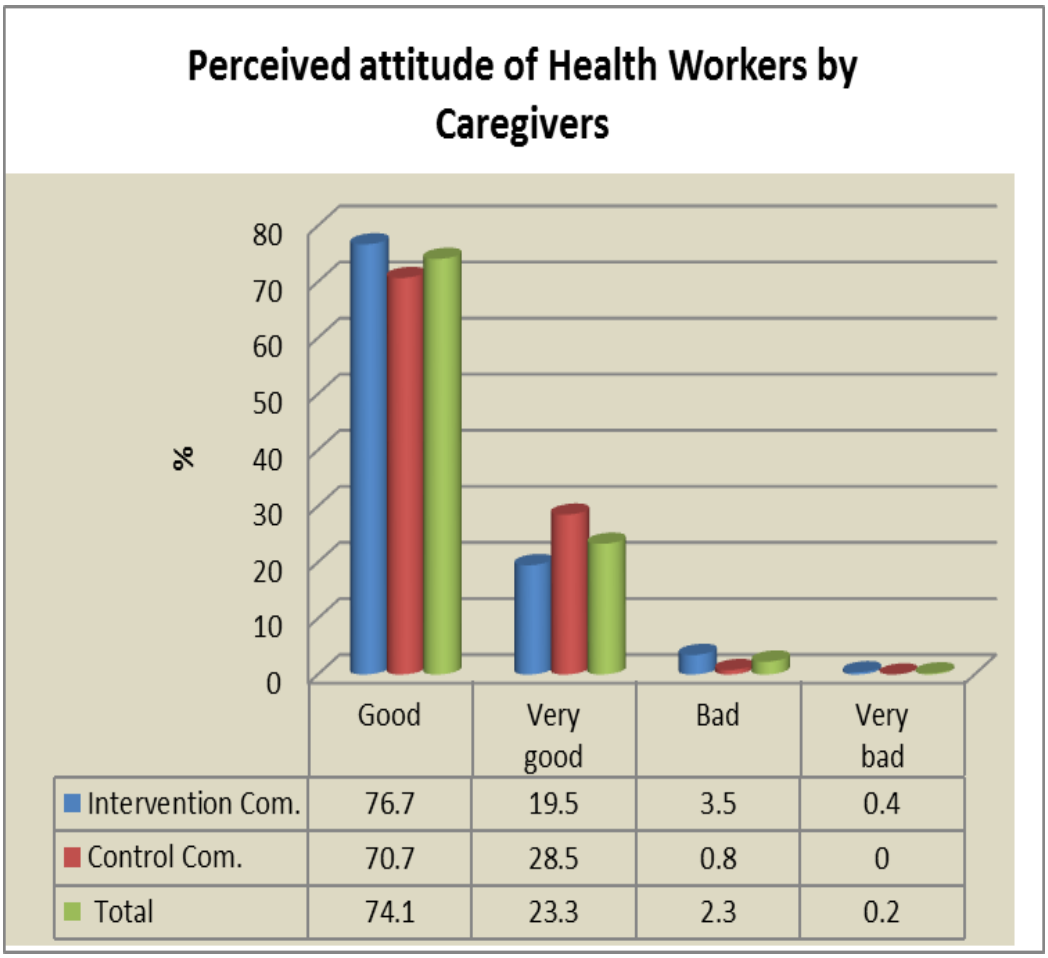


Fig. 4.26 Perception of caregivers on attitudes of health workers ($p<0.05$)

4.8.3 Pre and post-intervention assessment of demand for health facility services

Presented in Table 4.47 is the pre and post-intervention assessment of demand for health facility services by attendance in the intervention communities. There was no difference in demand (by attendance) of services ($p > 0.05$). The difference in demand for services by family members differed significantly ($p < 0.05$). Demand for services was high for children (50.7%) but dropped from the pre-intervention attendance (87.8%). Demand for services by others in the family increased to 49.3% from 12.2% at pre-intervention.

Table 4.47 Pre and post-intervention assessment of demand for health facility services by attendance

	Pre-intervention		Post-intervention			
	n	(%)	n	(%)	x^2	p-value
Attendance in the last 3 months						
Not attended	164	(32.8)	117	(33.1)	0.000	0.998
Has attended	337	(67.2)	237	(66.9)		
Total	501	(100)	354	(100)		
Attendance in the last 3 months by family members						
Self	47	(12.2)	95	(26.3)	144.26	<0.001
Child	337	(87.8)	183	(50.7)		
Others	0	(0.0)	83	(23.0)		
Total	348	(100)	361	(100)		

4.9 Attendance at the health facilities assessed by health facility service records

Records of attendances at the health facilities were obtained for ante-natal registration, tetanus toxoid immunization, child delivery, treatment of adults, Child immunization (BCG and Measles vaccines), growth monitoring and promotion (GMP) for children above 12 months, and child welfare clinics. An average attendance at the 10 health facilities for each service was derived in the control and intervention groups at the pre-intervention and post-intervention phases. The result is presented in Table 4.48.

The post-intervention attendance were higher than pre-intervention in the two community groups but the difference was not significant ($x^2 = 3.07$, $p > 0.05$). Immunization services had the highest average attendance both in the control and intervention community groups with children immunization being above hundred, and tetanus toxoid having more than 40. Other services had below 15. Growth monitoring, a key nutrition component had the least attendance at pre-intervention in the intervention community group, but increased from 0.2 to 6 after the faith-based communication intervention.

Table 4.48 Attendance records at the health facilities

Services	Access to Services By Attendance*		
	Pre-intervention	Post-intervention	Difference
(Intervention Communities)			
Ante-Natal Care (Registered)	4.6	12.8	8.2
Tetanus Toxoid	13.8	43.7	29.9
Delivery	0.3	2.2	1.9
Treatments for Adults	2.5	5.8	3.3
Immunization	40.3	112.2	71.9
Growth Monitoring/Promotion (12-59 months)	0.2	6.2	6
Child Welfare Clinic	3.4	13	9.6
(Control Communities)			
Ante-Natal Care (Registered)	5.7	5.3	-0.4
Tetanus Toxoid	14.1	47	32.9
Delivery	0.9	0.5	-0.4
Treatments for Adults	8.9	6	-2.9
Immunization	58.3	136.5	78.2
Growth Monitoring/Promotion (12-59 months)	1.1	4	2.9
Child Welfare Clinic	6.5	8.2	1.7

*Average attendance from the 10 health facilities in the intervention and control communities

CHAPTER FIVE

DISCUSSIONS

5.1 DISCUSSION

5.1.1 Introduction

This study employed the purpose-designed Christian Holy Scripture-based nutrition and health promoting messages guide developed as an integrated health behaviour change intervention model to enhance nutrition and health services demand. The model was developed as a construct from the Theory of Reasoned Action (TRA), and designed to generate subjective norms from bible texts, and linked them to health knowledge, attitudes and practices expected to prevent health problems and promote healthy lifestyles and living in families and communities. The objective was to assess the effect of the Christian health education intervention approach on caregivers' adoption of key infant and child feeding (breastfeeding and complementary feeding), care and health practices.

The discussions will be based on the two other objectives and guided by the formulated null hypotheses. The objectives included:

- Assessing the outcome of the faith-based communication package on knowledge, attitude and practice (behaviour) of the people in the selected communities,
- Assessing the level of response of community members to service delivery at the primary health facilities following the faith-based behaviour change communication intervention.

5.1.2 Demographic Profile of the Study Population

The study revealed a population of people with relatively moderate literacy level, with just 1.1% without any form of education. However, the income of the people is low viewed with a large family size, and large number (76%) of nutritionally vulnerable children found within the crucial period (0 to 24 month). This period in an individual's life is very critical, a window period when poor health and nutrition can result in irreversible damages and deficits (World Bank, 2013).

5.1.3 Exclusive Breastfeeding

The 64% difference between the knowledge of the respondents in the control and intervention groups at post intervention analysis established the evidence of impact of the faith-based intervention in increasing knowledge of exclusive breastfeeding. Similarly, the 16% knowledge gain in the difference between pre and post intervention results among the intervention group highlights the magnitude of the effect of faith-based messages in the improvement of knowledge of the respondents on exclusive breastfeeding. The 12% decrease in knowledge of the control group respondents from pre to post intervention ruled out the effect of influence of any known factor to the result obtained in the intervention communities. This similar observation is obtained in the analysis of the effectiveness and magnitude of effect of the faith-based intervention in the attitude of the respondents.

The practice of exclusive breastfeeding before the intervention was low. The study shows early initiation (> 1 hour) rate of breastfeeding at 30.4% and a high use of colostrum (94.9%). Rate of early initiation of breastfeeding similar to that obtained in this study has been reported (30% nationally, 41% in Akwa Ibom State) in the Saving Newborn Lives in Nigeria situation analysis report (FMOH, 2009). Pre-lacteal feeds were avoided by 77% of the respondents, whereas, about 70% of them initiated breastfeeding after one hour. Considering the fact that mothers would not willingly watch over their babies cry for more than one hour leaves one in doubt over the seventy-seven percent avoidance of pre-lacteal feeds. Exclusive breastfeeding, assessed by introduction of water/other foods at 6 months, was practiced by just 1.2% of mothers of children 0 to 5months, while mothers whose children were now 6 to 24 months and above had a reported practice rate of 13.2%. This shows a sudden decrease in exclusive breastfeeding rate when comparing the difference between the two mother groups within the same environment. Similar decreasing rate has been noted nationally. The National Demographic and Health Survey (NDHS, 2003) reported a 17% exclusive breastfeeding rate, while the Multiple Indicator Cluster Survey (MICS, 2007) reported 12%. The exclusive breastfeeding rate within six months of age in Akwa Ibom State is 5% as reported by FMOH (2009).

In the pre-intervention assessment of knowledge of the respondents on exclusive breastfeeding this study shows a high level of awareness of exclusive breastfeeding (83.7%) and corroborates Agunbiade and Ogunleye (2012) in their South West Nigeria study. However, real knowledge (ability to mention the components) of what exclusive

breastfeeding entails is lower (65.1%) than the awareness. Ability to define exclusive breastfeeding was found rather high in a study conducted in Enugu as reported by Uchendu et al (2009). Majority of respondents (63.2%) received information about exclusive breastfeeding from the health workers, apparently contributing to the high level of actual knowledge in this study. This finding is similar to Ogunleye's findings that clinic based antenatal care exposes mothers to knowledge and appropriate practice of exclusive breastfeeding. There was a significant difference between pre-intervention and post intervention knowledge and source of knowledge on exclusive breastfeeding in the intervention communities ($p < 0.05$). The number of caregivers who heard the message from the church increased from 0% at the pre-intervention to 18.5% at post-intervention, leading to about 15% increase in ability of the respondents to define exclusive breastfeeding at the end-line assessment. Similar result has been reported on the Vurhonga projects in the Chokwe region of Mozambique where religious leaders were used as a critical link with the community and played an important role in sharing health messages. Seventy-two percent of mothers in that intervention project who attended church during the past month reported that they heard a health message, exceeding the target of 50% (World Relief 2004).

The faith-based communication intervention in this study has shown encouraging outcomes and well appreciated. The acceptance of communicating breastfeeding messages through the church was high at pre-intervention (82%) and increased at post-intervention (100%) in the intervention communities. The expressed intention to practice expected breastfeeding behaviours if prompted by the church increased from 72.9% at pre-intervention to 86.7% at post-intervention. The recommended breastfeeding behaviours conveyed through the faith-based communication package was well perceived and received as exclusive breastfeeding knowledge increased from 79.3% at pre-intervention to 95% at post-intervention in the intervention communities. The attitude (intention) by respondents in the intervention communities towards introducing water/foods after 5 months increased significantly ($p < 0.05$) from 7.8% at pre-intervention to 51.7% at post-intervention. These findings corroborate similar impact of a faith-based organisation in health promotion services in the State as reported by CIFA (2009). In that intervention religious leaders trained by the Nigeria Interfaith Action Association (NIFAA) delivered faith-based malaria prevention messages, including advocating usage of insecticide-treated nets, and more than twice as many children under five (51.6%) slept under a net the night before the survey

compared to a nearby Anambra state (25.1%). The result of this study has therefore shown that the faith-based communication intervention has significantly improved the knowledge of caregivers, and thus, changed their attitude on exclusive breastfeeding in the intervention sites of the study.

5.1.4 Complementary Feeding

The 78% difference between the knowledge of the respondents in the control and intervention groups at post intervention analysis established an evidence of impact of the faith-based intervention in increasing knowledge of complementary feeding. Similarly, the 58% knowledge gain in the difference between pre and post intervention results among the intervention group highlights the magnitude of the effect of faith-based messages in the improvement of knowledge of the respondents on complementary feeding. The slight and insignificant decrease of 2% in knowledge of the control group respondents from pre to post intervention ruled out the effect of influence of any known factor to the result obtained in the intervention communities. Similar observations were obtained in the analysis of the effectiveness and magnitude of effect of the faith-based intervention in the attitude and practice of complementary feeding among the respondents.

The World Health Organisation recommends that complementary feeding should be initiated on the 6th month with continued breastfeeding until the age of two years and beyond (WHO, 1995). However, findings of this study shows that only 13.2% initiated complementary feeding after 5 months, while 22.2% did so at below one month. Fifty-seven percent of respondents continued breastfeeding up to 12 to 24 months, while 70.6% intended to stop at 12 -18 months, 14.8% at 19 -24 months and 2.6% intended to stop after 24 months. This shows a suboptimal level of complementary feeding practices in the state. This suboptimal compliance with international recommendations has also been reported by Matthew, et al (2009) in their study of infant feeding practices and nutritional status of children in North Western Nigeria.

Dietary diversification is one of the key components of complementary feeding practices. In this study foods were grouped into five groups including, staples (A), legumes (B), animal protein (C), fats and oils (D), vegetables and fruits (E). More than half (55.7%) of the caregivers of children 6 to 24 months used 1-2 food groups which traditionally are cereal based. Only 14.6% of caregivers fed their children

complementary foods with all 5 food groups, while 29.7% used 3 to 4 food groups. The low exclusive breastfeeding rate, early introduction of inadequate complementary foods would expose the children in this study area to low energy and micronutrient intakes and therefore malnutrition. Similar observations have been made in previous studies (Onofiok and Nnanyelugo, 1998; Ibeanu and Okeke, 2001).

The pre-intervention assessment of awareness and actual knowledge of the respondents on complementary feeding in this study shows a very low level of 15.7%, and 14.8%, respectively. Majority of respondents (45.1%) received information about complementary feeding from the health workers, 37.1% from friends/relatives (neighbourhood) and church (0.6%). There was a significant difference between the control and intervention communities. The low exclusive breastfeeding rate, early introduction of inadequate complementary foods; and early termination of breastfeeding show suboptimal compliance with International recommendations on infant and young child feeding practices.

Post intervention assessment of respondents in the intervention communities shows a significant increase in church as a source of knowledge (47.1%) with attendant increase in awareness on complementary feeding from 27.7% at pre-intervention to 91.2%, and in actual knowledge to 85.7% from 27%. Communicating the message of complementary feeding practices through the church also increased the intention of caregivers to practice the behaviour significantly ($p < 0.05$), thus leading to the rejection of the null hypothesis which stated that faith-based communication approach will not significantly change caregivers' attitude on complementary feeding practices in the experimented sites of study in Akwa Ibom State.

The attitudinal change was more of subjective norm (church influence – 47%) than on the knowledge of health benefits of the recommended behaviour. The use of all five groups of foods for infant meal preparation increased to 20.6% from the pre-intervention 18.6%, while the use of 1-2 food groups decreased from 54.5% at pre-intervention to 51.4%. Other post intervention improvements observed in the intervention communities included the intention of more mothers (8.8%) to stop breastfeeding after 24 months from the pre-intervention 3.1%.

5.1.5 Micronutrients Intake

The 19% difference between the knowledge of the respondents in the control and intervention groups at post intervention analysis established an evidence of impact of the faith-based intervention in increasing knowledge of micronutrients intake. Similarly, the 22% knowledge gain in the difference between pre and post intervention results among the intervention group highlights the magnitude of the effect of faith-based messages in the improvement of knowledge of the respondents on micronutrients intake. The 10% increase in knowledge of the control group respondents from pre to post intervention suggests a possible effect of other factors such as electronic media activities. A high evidence and magnitude of impact of the intervention was also obtained in the attitude of respondents in the control group on micronutrients intake. There was a wide decreasing difference (39%) from pre to post intervention which ruled out the media effect that was seen in the knowledge of respondents.

The communication of messages on micronutrients came largely (43%) from the print/electronic media. However, awareness on micronutrient as a term was low (14.1%), with the highest mentioned micronutrient being iron (34.2%) at the pre-intervention. There was a significant difference in attitude and perceptions among caregivers between the control and intervention community groups ($p < 0.05$). Less than 40% of the caregivers would make efforts to access micronutrient supplements or fortified foods. This largely was so because of the low knowledge on micronutrients. It was observed that less than 25% could link micronutrient deficiency to growth failure in children.

Acceptance of the message on micronutrients through church, as well as the intention to practice the recommended behaviour and the reasons to do so, was significantly lower at post-intervention than pre-intervention in the intervention communities ($p < 0.05$). The faith-based messages impacted much on the caregivers. The increase in the number of people receiving the message through the church (from 4.6% to 24.7%) also boosted information sharing on micronutrients in the neighbourhoods as more (21.9%) heard the message through friends/relatives than 18.3% at pre-intervention. Twenty-seven percent of the respondents based their expressed intentions on the combined reasons of health benefits, being a good teaching and to express their faith in God's word, compared to 20.4% at pre-intervention. This resulted in improved response by caregivers to make efforts to access micronutrient

supplements or fortified foods at the post-intervention compared to pre-intervention ($p<0.05$). Attitude towards access of iron supplements at health facilities as declared intentions increased from 13.7% at pre-intervention to 58.8% at post-intervention. Similarly, intention to access vitamin A for children increased from 9.7% to 64.5%; and 63.4% against 15.4% of the caregivers would take pains to search for/buy micronutrients fortified foods in the intervention communities. The Multiple Indicator Cluster Surveys (MICS, 2011)which provides up-to-date information on the situation of children and women and measures key indicators that allow countries to monitor progress towards the Millennium Development Goals (MDG) Indicators, has reported a 61.1% national vitamin A supplementation rate for children under 5 years of age in Nigeria. The finding of this study has therefore shown that faith-based communication on nutrition and health issues has significantly changed caregivers' attitude on micronutrients intake in the experimented sites of study, and will help improve the Sustainable Development Goals (SDG) indicators in Nigeria.

5.1.7 Immunization

The 17% difference between the knowledge of the respondents in the control and intervention groups at post intervention analysis established an evidence of impact of the faith-based intervention in increasing knowledge of immunization. Similarly, the 3% knowledge gain in the difference between pre and post intervention results among the intervention group highlights the magnitude, though low, of the effect of faith-based messages in the improvement of knowledge of the respondents on immunization. This was also established in the attitude of the respondents. However, the 2% increase in knowledge, 6% in attitude, and 18% in practice of the control group respondents from pre to post, coupled with a high decreasing difference (69%) in practice between control and intervention groups at post-intervention establishes a strong influence of other factors, and this could be due to concurrent interventions promoting immunization programme in the State.

There was no significant difference in awareness, attitude and practice on immunization among caregivers of children in the control and intervention communities at the pre-intervention ($p<0.05$). Similarly, there was no significant difference in the attitude of caregivers expressed by intention to get children immunized at pre-intervention and post-intervention in the intervention communities.

This suggests a high level of involvement of caregivers in immunization activities over and above other health interventions across the State.

There was a high level of awareness (93.6%) with health workers being the highest source of information (43.8%). Odusanya et al (2008) reported a satisfactory level of knowledge (87.0%) in a study on determinants of vaccination coverage in Sabongidda-Ora, Edo State, a rural community in Nigeria. Similarly, Adeyinka et al (2009) have also reported a 99% awareness of immunization with 65.7% obtaining information at antenatal clinics among mothers of under-five in Southwestern Nigeria. Attitude of caregivers in the present study expressed by intention to get children immunized was high (87.2%) at the pre-intervention, and increased to 100% in the intervention communities at post-intervention. This corroborates similar high level of positive attitudes reported in other studies (Odusanya et al, 2008; Adeyinka et al, 2009; Omotara et al, 2012).

Eighty-one percent of the caregivers presented their children to be immunized, while 51.4% of the mothers received tetanus toxoid during the pregnancy of the children reported on. This difference shows that women in the State believed more on active protection of the born children than the unborn, which carries serious adverse implications. Singh et al (2012) in a study on maternal tetanus toxoid vaccination and neonatal mortality discovered that 16% of the neonatal deaths in rural northern India can be attributed to lack of at least two doses of tetanus toxoid vaccination during pregnancy. This corroborated Blencowe et al (2010) who had earlier reported that immunization of pregnant women or women of childbearing age with two doses of tetanus toxoid reduced mortality from neonatal tetanus by estimated 94%. The Multiple Indicators Cluster Study (2011) has reported low national neonatal tetanus protection by tetanus toxoid at 48.9%, while childhood immunization coverage for diphtheria, pertusis and tetanus (DPT) is 34.9%.

Though the faith-based communication approach did not significantly change caregivers' attitude in the intervention sites ($p<0.05$) as stipulated in the null hypothesis, it however, increased the women's knowledge on the health benefits of immunization which was given as reason for their intention to practice recommended behaviours.

5.1.6 Growth Monitoring and Promotion

The 23% difference between the knowledge of the respondents in the control and intervention groups at post intervention analysis established the evidence of impact of the faith-based intervention in increasing knowledge of growth monitoring and promotion. Similarly, the 20% knowledge gain in the difference between pre and post intervention results among the intervention group highlights the magnitude of the effect of faith-based messages in the improvement of knowledge of the respondents on growth monitoring and promotion. There was no difference in knowledge of the control group respondents from pre to post intervention, and this ruled out the effect of influence of any known factor to the result obtained in the intervention communities. This similar observation is obtained in the analysis of the effectiveness and magnitude of effect of the faith-based intervention in the practice of growth monitoring and promotion among the respondents.

At pre-intervention there was a very low level of knowledge and practice of growth monitoring and promotion (GMP). The most widely used method to monitor children's growth by caregivers in the present study was by 'just looking' (52.7%), while 22.6% claimed they used weighing scales. Health workers were the main source of information (52.3%) on GMP. Only 4.3% of caregivers of children above one year of age presented their children monthly for weighing at health facilities, while 39.3% never did. Similar attitude and practice in Lusaka, Zambia has been reported by Charlton et al (2009), where growth monitoring and promotion program functioned sub-optimally, even in facilities with trained staff. Similarly, Sanusi and Gbadamosi (2009), in a study to assess the knowledge and practice of child survival strategies among nursing mothers in Ibadan, Nigeria reported a low practice level of 7.5%, while knowledge of GMP was 65.8%.

The communication of growth monitoring through the church brought about increased knowledge of weight/height scales as means to monitor growth from 24.1% at pre-intervention to 43.5% at post-intervention in the intervention communities. There was significant difference at pre-intervention and post-intervention in acceptance of growth monitoring and promotion message in church, as well as in intention, and in the reasons expressed to practice the behaviour in the intervention communities ($p < 0.05$). However, the acceptance went down to 92.2% at post-intervention from 99.4% at pre-intervention. The expressed intention to practice the behaviour also came down to 81.3% from the pre-intervention 96.6%.

On the whole, 19.7% practiced monthly GMP following the faith-based intervention, 33.9% did it quarterly, and 31.4% were not regular, while 25.1% never did it. It is also observed that going to the health facility monthly did not appeal much to most of the caregivers compared to the quarterly visits. Srilatha (1986) had earlier concluded on a study in India that monthly weighing was not feasible because of inadequate attendance. It should however be stressed that growth monitoring has been proved to offer great opportunities for improved nutritional status, enhanced primary health care services through increasing contact and attendance, decreasing the prevalence of malnutrition, and establishing better nutritional practice for child rearing (Lofti, 1988). It is, therefore, observed in this study that the faith-based communication on GMP impacted significantly ($p<0.05$, Table 4.40) on the people as the expressed reason to practice the recommended behaviour based on faith in God's word increased from 17.1% to 21.4%, and from 20.7% to 28.8% based on health benefits.

5.1.8 Care Giving and Men's Involvement (CGMI)

The 7% difference in knowledge of the respondents between the control and intervention groups at post intervention analysis, coupled with a low gain in knowledge (3%) did not establish any convincing impact of the faith-based intervention on knowledge of care-giving and men's involvement in child care. This was also observed in the practice of the recommended behaviour on care-giving and men's involvement in child care.

In the conceptual framework of malnutrition lack of care is one of the three underlying causes of malnutrition, and men's involvement in child care is one of the key household practices to improve their health and nutrition. Men's involvement in child care practices showed a significant difference the control and the intervention group of communities at the pre-intervention assessments ($p<0.05$). Overall, 21.9% of the fathers were reported to show care (playing with, bathing and feeding) to well children while 13.7% never showed any care. Twenty-seven percent showed care to children in sickness (feeding, take out for treatment, pay for treatment and give medication), while only 3.8% never showed care.

Though the involvement was low, there was indication that fathers in this study were more involved when children are sick. The finding in this study shows a scenario different from what was obtained in South Africa in a study conducted by Saiqa *et al* in 2000 where male respondents said that "it is unheard of for men to be involved in

the care of their infant children". The present study showed that 14.2% of men took their children out for treatment. This is higher than the findings by Bhatta (2013) in a study in Kathmandu, Nepal, on involvement of males in antenatal care, birth preparedness, exclusive breast feeding and immunizations for children, where 10.9% of men accompanied their wives for child immunization.

The faith-based communication intervention in the intervention communities brought about increase in knowledge and understanding about men's involvement in child care. The key word in the faith message from 2Kings 4:18-20 that '*the non-caring attitude of the father and the delay on mother's knee contributed to that child's death*', seemed to have touched the people as the intention to practice the recommended behaviour increased from 74.5% at pre-intervention to 81% at post-intervention. The reason advanced for the expressed intention based on faith in God's word increased from 2% to 11.3%; and a much higher increase based on health benefits from 6.1% to 31.9%.

The post intervention behaviour by men toward children in health and in sickness differed significantly ($p < 0.05$). It still shows that men are more involved in the care of their sick children (50.4%) compared to 15.3% for the children in good health, thus confirming the pre-intervention findings, and agrees with Aubel, 2011 that 'Modern men' are affectionate with their children and share responsibility for their upbringing. Matinga (in his 2002 'Saving Newborn Lives Formative Study') in Lilongwe, Malawi, posited that, men are not extensively involved in domains where they do not accumulate significant knowledge, observing that men's knowledge of and involvement in maternal and child nutrition and health issues is limited compared to that of women. Women obtain knowledge of health issues mostly during clinic attendance at the health facilities, where men are rarely seen. The effect of increase in knowledge through the faith-based communication intervention in this study seemed to have attempted to fill this gap since churches are commonly and regularly attended by both men and women. This confirms a finding by Aubel (2011) that group education, which can range from single discussions to regular weekly sessions, has been found to effectively communicate concepts, knowledge, and ideas to encourage men's participation in health activities.

Thus, this present study particularly revealed that despite the low involvement of men in child care, fathers are more involved when children are sick. Such exhibition of affection for their children and shared responsibility for their upbringing was

engendered by increased knowledge. It shows that many men could be so involved if group educations, through regular weekly sessions, are used to effectively communicate concepts, knowledge, and ideas to encourage men's participation in health activities thus achieving the expected behavior change.

5.1.9. Seeking Medical Treatment/Check-ups (SMT/C)

At pre-intervention 72% of the respondents sought antenatal care, with 50.5%, 27.8%, 13.4% attending ANC at hospital/private clinic, TBA home and primary health centre, respectively. At delivery, only 39% were attended to in hospital/private clinic, and 8.9% at the primary health centres, while 30.6% and 12.4% delivered in TBA homes and churches, respectively. Findings in this study shows that many women who attended antenatal check-ups in hospitals/private clinic and primary health centres ended up delivering their babies at Traditional birth attendants' homes and churches. This shows a high use of antenatal services but low use of skilled assistance during delivery, and is consistent with the results of previous studies conducted in Nigeria (Adekunle et al, 1990; Etukudo and Inyang, 2014) and elsewhere (Leslie and Gupta, 1989; Mekonnen and Mekonnen, 2003). Similar findings has been reported from a study to assess maternal health services and health-seeking behavior in Ologbo, a rural community in the South–south zone of Nigeria, where Private midwives and TBAs attended to 49.4% and 42.0% of deliveries, respectively (Osubor et al, 2006). They concluded that poor health-seeking behavior is a challenge in rural Nigeria, and interventions are needed to achieve improved maternal health status.

Forty-five percent of the caregivers sought health care from the hospital/health centre for their children and 18.5% for adult members of the family. Majority of adults (63.8%) resorted to self/patent medicine vendors for treatment. Less than 26% of the adults went for blood pressure, body weight and ante-natal check-ups two weeks prior to the pre-intervention assessment, while 29.4% never went for any health-check-up. This finding is in consonance with that obtained by Abdulraheem (2007) study of household survey of health needs assessment and determinants of health-seeking behaviour among elderly Nigerians in Illorin, Kwara State. Health seeking behaviour for children in this study (45%) is slightly higher than reported (36.6%) in Multiple Indicator Cluster Surveys (MICS, 2011).

Faith-based communication on seeking medical treatment/check-ups led to increase in neighbourhoods (friends/relations) and church as sources of knowledge

from the pre-intervention level ($p<0.05$). These accounted for improved health seeking behaviour in the intervention communities. In effect it created community media saturation and the prevalence of the small family and religious norm in the community. Babalola and Fatusi (2009) agreed that these are significant predictors of service utilization. Expectedly, health care seeking for children from hospital/health centres increased from 33% at pre-intervention to 49.5%; and for adults from 9.4% to 51.5%. More than 32% of the adults went for blood pressure checks. Acceptance of the message through the church increased significantly ($p<0.05$) from 90.7% at pre-intervention to 95.7%, and thus influenced the expressed intention to practice the recommended behaviour which increased from 85.5% to 90.6% ($p<0.05$). Thus, the findings in this study reject the null hypothesis that faith-based communication approach will not significantly change caregivers' attitude on seeking medical treatment/check-ups in the experimented sites of study in Akwa Ibom State.

However, the 82% difference between the knowledge of the respondents in the control and intervention groups at post intervention analysis established a high evidence of impact of the faith-based intervention. It led increase knowledge of seeking medical treatment/medical check-up from health facilities. The magnitude of effect was not that high (4%). The 6% difference in practice of the respondents between the control and intervention groups at post intervention analysis, coupled with a 28% increase in practice among the control group from pre-intervention to post-intervention did not establish a clear convincing impact of the faith-based intervention despite the 43% magnitude of impact obtained in the intervention communities.

5.1.10 Health Services Assessment

Access to health facility by distance was not a problem to the caregivers but differed significantly between the two community groups. Distance not being a problem is proved by the fact that there is no difference in utility of services by attendance ($p>0.05$) as attendance was high for children (86.2%). Assessment of utility of service by availability of services and affordability for children did not show any significant difference between the two community groups. These findings show that health facilities, particularly, primary health centres are situated close to the people and services for the children are available and affordable. Evidence from Enugu in Nigeria (Onah et al, 2006), and in Rakai district of Uganda (Amooti-Kaguna and Nuwaha,

2000) have shown that access to services and cost are serious barriers to service utilization among the poor.

A finding in this study however shows that utility of services in attendance by older members of the communities is low (13.8%) and this could be attributed to less available services at the primary health centres for the adults as reported by 31.2% of the respondents. This is corroborated by MICS (2011) report of 45% content of antenatal care in Nigeria. Other reasons reported in previous studies include family care with home remedies (self-treatment) as the most common treatment chosen by the elderly when sick being a reflection of poverty and lack of social security and health insurance for the Nigerian elderly citizens (Abdulraheem, 2009). Traditional belief that illnesses among the elderly are better treated with home remedies, as well as cheap care provided by the health care workers (paramedics) and drug store sellers are other reasons. Perceived attitudes of health workers was positively high (97.4%) in this study and could not be a possible cause of low health seeking behaviour by the adults.

It is however noted that the high utility of services for children dropped at the post-intervention (50.7%) from the pre-intervention attendance of 87.8%. This probably would be as a result of age eligibility drop-out in immunization. Utility of services by others in the family increased to 49.3% from 12.2% at pre-intervention in the intervention communities. The increase in utility by other family members would be attributed to the impact of the faith-based communication intervention. Similar faith-based impact has been reported in Nigeria. The 2010 Lot Quality Assurance Sampling (LQAS) survey, an independent survey commissioned by the Nigeria Malaria Control Programme (NMCP) and World Bank, indicated that in Akwa Ibom state, where the Nigerian Inter-Faith Action Association (NIFAA) trained more than 6,000 religious leaders to deliver faith-based malaria prevention messages, including advocating usage of insecticide-treated nets, more than twice as many children under five slept under a net (51.6%) as in nearby and demographically comparable Anambra state (25.1 percent) the night before the survey (CIFA, 2011).

5.1.11 Facility Service Records

Records of attendances at the health facilities were obtained for Ante-natal registration, Tetanus toxoid, Child delivery, Treatment of adults, Immunization (BCG and Measles vaccines), Growth monitoring and promotion (GMP for children above 12 months), and Child welfare clinics. An average attendance at the 10 health facilities for

each service was derived in the control and intervention groups at the pre-intervention and post-intervention phases. The findings in this study show that utilization of immunization services by children and adults (pregnant) were higher than other health and nutrition services in the State, and were further boosted by the faith-based communication intervention. There is inequity in the support of health services by government and other health partners. While concerted efforts are being concentrated on immunization and maternal reproductive health services, more should be done for nutrition services such as represented in this study. The impact of faith-based communication intervention is seen in all the services assessed for, even in the most poorly utilized services such as growth monitoring and promotion, child delivery, child welfare and adult health clinics.

The Theory of Reasoned Action (TRA) proposes that people are more likely to perform a behavior when they intend to perform that behavior. The level of intention to perform a behavior is higher among those who have a more positive attitude which is a function of the strength of the person's valued beliefs about what will happen as a result of doing the behavior. This is represented in the faith-based communication model as the health benefits of the interventions. The other factor is more of a subjective norm toward the behavior, which is the strength of a person's beliefs about whether specific people want them to do the behavior (or not) and the strength of the person's desire to please or otherwise comply with those people. The faith-based leaders and the church community through the Holy bible scriptures exerted this influence on the members in the faith-based communication intervention model. They agreed to adopt certain behaviours to express their faith and submission to God. Attitudes and subjective norms, therefore, linearly combine to cause intention, and intention predisposes an individual to perform a behavior within the context of other influences. This has been clearly proven in this study as health benefits were highly expressed in this exclusive breastfeeding, growth monitoring and promotion, immunization, caregiving and men's involvement and seeking medical treatment/check-ups. Faith in God's word were highly expressed in complementary feeding, micronutrient intake, growth monitoring and caregiving/men's involvement.

5.2 Summary of Findings

The analyses of the socio-demographic and socio-economic characteristics of respondents from the intervention and control groups showed significant differences in the age, marital status, occupation, income and family size between the two groups. However, there were no significant differences in the educational levels and religion.

There was a high acceptance of the faith-based messages as well as the expressed intention to practice the recommended behaviours. The increase in the number of people receiving the message through the church also boosted information sharing in the neighbourhoods as more people heard the message through friends/relatives within the intervention communities.

A comparison of the knowledge, attitude and practices of the respondents in the two groups at pre-intervention to assess their comparability showed that there were significant differences between the two groups in all the nutrition and health domains in the study. Further comparisons of the two groups at post-intervention; and comparisons of the pre and post intervention results in the intervention and control groups to assess the impact of the intervention with the faith-based communication showed encouraging outcomes in the various nutrition-specific and nutrition-sensitive areas in the study.

There was an established evidence and high magnitude of impact of the faith-based intervention in increasing the knowledge and improving the attitude caregivers thus having the potential to improve the practice of the recommended behaviours on exclusive breastfeeding.

There was also an established evidence and high magnitude of impact of the faith-based intervention in increasing knowledge, improving attitude and practices of the recommended behaviours on complementary feeding by caregivers.

There was an established evidence and high magnitude of impact of the faith-based intervention in increasing knowledge and improving attitude on micronutrients intake. However, other factors such as print and electronic media activities played a major role in increasing the knowledge of caregivers, thus, complementing the impact of the faith-based intervention.

On growth monitoring and promotion, there was an established evidence and high magnitude of impact of the faith-based intervention in increasing the knowledge and practices of the recommended behaviours.

It is equally noted that there was established evidence but low magnitude of impact of the faith-based intervention in increasing knowledge and improving the practices of immunization. There seemed to have been a strong influence of concurrent interventions that promote immunization programme in the State. However, the faith-based intervention served as suitable complementary programme to increase the knowledge and practices of immunization.

The intervention could not establish any convincing impact on knowledge of care-giving and men's involvement in child care. This was also observed in the practice of the recommended behaviour on care-giving and men's involvement in child care.

There was established evidence of effectiveness of the faith-based intervention in increasing knowledge, as well as a fairly established magnitude of impact of the intervention on seeking medical treatment and check-up from hospital and primary health centres. There was, however, no evidence of any other influencing factor on the result obtained. On the other hand, the wide difference in practice among the control group from pre-intervention to post-intervention did not establish a clear convincing impact of the faith-based intervention in the practice of the recommended behaviour, despite the magnitude of impact obtained in the intervention communities.

5.3 CONCLUSION

The findings of this study showed that the developed faith-based messages were effective to increase knowledge, attitude, and practice of recommended nutrition-specific and other nutrition sensitive behaviours. Knowledge significantly increased in all the seven thematic areas promoted by the faith-based communication model in the intervention communities. Attitudes of most caregivers in the communities also improved with a higher intention to perform recommended behaviours in nutrition-specific practices such as, introduction of water/other foods at after 5 months, use of age-appropriate and adequate complementary foods (all 5 food groups) for infant feeding from six months of age, continued breastfeeding to eighteen months, and beyond, and increased care to well and sick children. Intention to make efforts to access micronutrient supplements at health facilities, and fortified food products in the markets also increased. Uptake of nutrition-specific services such as growth monitoring/promotion was achieved with quarterly visits most preferred.

Findings in this study also showed that faith-based communication intervention can as well serve as a suitable complementary programme to other interventions in health promotion and uptake of health services. This is evidenced by the positive response of community members to service delivery at the primary health facilities following the intervention. Furthermore, the faith-based leaders expressed optimism during the focus group discussion that the messages will be accepted because of the benefits of the messages, and their being involved as the source/channel of communication.

The issues bordering on distance to health facility, availability and cost of services and poor attitude of health workers as possible hindrances to accessing health service have been ruled out. It is thus well established that caregivers' attitude is a key problem to health care. Intensifying efforts to communicate the positive health outcomes of the various nutrition specific and sensitive interventions will improve people's behaviour towards the interventions.

5.4 CONTRIBUTION TO KNOWLEDGE

The study sought to promote infant and child nutrition using a Christian Holy Scripture-based approach in Akwa Ibom State. The study has shown that the approach was effective for the promotion of caregivers' knowledge of exclusive breastfeeding, complementary feeding, micronutrient intake, growth monitoring and promotion, and immunization. The faith-based intervention also effectively improved the caregivers' attitudes to the recommended childhood nutrition specific and sensitive strategies. This approach has also improved caregivers' intended practices as well as uptake of growth monitoring and promotion interventions in Akwa Ibom State.

5.5 RECOMMENDATIONS

It has been observed in the findings of this study that the health and nutrition of children and others in the communities are affected by policy, individual and household behaviours, as well as inequities in programme implementation. A platform for behaviour change will go a long way to address these issues towards the realization of the sustainable development goals and good health for all. The religious or faith-based institution provides a common ground for both policy makers and policy recipients to be advocated and sensitized with relevant information since they worship

God together under the same roof, and hear the same voice of the faith leader. Therefore,

- The faith-based behavioural change approach should be adopted and implemented in the urban and rural communities to complement other health policy approach.
- A systematic scaled down, and sustained training of faith leaders using the faith-based behaviour change communication guide produced in the course of this study is recommended.
- The inequity in health intervention policy within the health sector should be addressed by government and partner agencies. While concerted efforts are being exerted on immunization and maternal reproductive health services, similar efforts should be exerted on nutrition, and nutrition related services such as represented in this study.

REFERENCES

Abbi, R., Christian, P., Gujral, S., Gopaldas, T. (1991). The impact of maternal work on the nutrition and health status of children. *Food and Nutrition Bulletin 13*(1):20-24.

Abdulraheem, I. S. (2007). Health needs assessment and determinants of health-seeking behaviour among elderly Nigerians: A house-hold survey. *Annals African Medicine, 2007 June; 6*(2):58-63. < http://goo.gl/SS3CZn>. (Accessed December, 2012).

Addai, I. (1998). Demographic and socio-cultural factors influencing use of maternal health services in Ghana. *African Journal of Reproductive Health, 2*(1):73-80.

Addai, I. (2000). Determinants of use of maternal-child health services in rural Ghana. *Journal of Biosocial Science 32*(1):1-15.

Adeagbo, D. (1998). Provision and Spatial Distribution of Health and Security Facilities. The Case study of Ibadan . *NISER Monograph Series* No. 123.

Adekunle, C., Filippi, V., Graham, W., Onyemunwa, P., and Udjo, E. (1990). Patterns of maternity care among women in Ondo State, Nigeria. In, Determinants of health and mortality in Africa, ed. Allan G. Hill, Demographic and Health Survey Further Analysis Series No. 10, 1-45. New York: The Population Council.

Adetunji, J. A. (1991). Response of parents to five killer diseases among children in a Yoruba community, Nigeria. *Social Science & Medicine 32*(12):1379-1387.

Adeyinka, D. A., Oladimeji, O., Adeyinka, F. E. and Aimakhu, C. (2009). Uptake of childhood immunization among mothers of under-five in Southwestern Nigeria. *The International Journal of Epidemiology; 7*(2):84-90.

Agunbiade, O. M., and Ogunleye, O. V. (2012). Constraints to exclusive breastfeeding practice among breastfeeding mothers in Southwest Nigeria: implications for scaling up. *International Breastfeeding Journal* 2012, 7:5.

Ahmed SM, Tomson G, Petzoid M, Kabir ZN. (2005). Socioeconomic status override age and gender in determining health-seeking behaviour in rural Bangladesh. Bulletin WHO 2005; 83:109-117.

Ajzen, I. and Fishbein, M. (1975). Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research. Addison-Wesley Reading, MA.

Ajzen, I. and Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice- Hall.

Akin, A., and Munevver, B. (1996). Contraception, abortion and maternal health services in Turkey: Results of further analysis of the 1993 Turkish Demographic and Health Survey. Calverton, Maryland: Ministry of Health Turkey and Macro International Inc.

Akinyele, I. O. (2001). *Review of nutrition programs and essential nutrition actions in primary health care in Nigeria*. Health, Nutrition, and Population Unit Study Report. Washington, D.C.: World Bank.

Akinyele, I. O. (2005). *Poverty, Malnutrition and the Public Health Dilemma of Disease*. University of Ibadan Postgraduate School Interdisciplinary Research Discourse.

Anderson, J. W., Johnstone, B. M., & Remley, D. T. (1999). Breast-feeding and cognitive development: a meta-analysis. *The American Journal of Clinical Nutrition*, 70(4), 525-535.

Aregbeyen, J. B. O. (1992) Health Care Utilisation in Nigerian Rural Communities. A Focus on Otuo Community and Environs in Edo State. *NISER Monography Series* No. 3.

Aregbeyen, J. B. O. (1997): National Health Insurance Scheme (NHIS) in Nigeria Benefits Costs and Consequences. *NISER Monograph Series* No. 2.

Armitage, C. J. (2009). Is there utility in the Transtheoretical Model? *British Journal of Health Psychology*; *14*(Pt2):195–210.

Asenso-Okyere W, Anum A, Osei-Akoto I, Adukonu A. (1998). Cost Recovery in Ghana: are there any changes in health seeking behaviour? *Health Policy and Planning* 1998, 13**:**181-188.

Ashworth, A., S. Roger and J. Kazi, (2008). Growth monitoring and promotion: Review of evidence of impact. *Maternal Child Nutrition,* 4: 86-117.

Asika, Nnamdi. (1991). Research Methodology in the Behavioural Sciences, Ikeja: Longman Nigeria Plc.

Aubel, J. (2011). The roles and influence of grandmothers and men: Evidence Supporting a Family- Focused Approach to Optimal Infant and Young Child Nutrition. Washington, DC: United States Agency for International Development.

Australian Institute of Family Studies (2008). Growing up in Australia: The Longitudinal Study of Australian Children, Annual Report 2006–07. Retrieved from < http://goo.gl/v6dkrk >. (Accessed 23 June 2015).

Awusabo-Asare, K, (1999). "Obstacles and challenges to sexual behavior change," in John Caldwell, et. al., eds., *Resistance to Behavioral Change to Reduce HIV/AIDS Infection in Predominantly Heterosexual Epidemics in Third World Countries*, Health Transition Center, Canberra , pp. 235-40; citation p. 239.

Babalola, S., Fatusi, A. (2009). Determinants of use of maternal health services in Nigeria – looking beyond individual and household factors. BMC Pregnancy Childbirth. 2009;9:43.

Bandura, A. (1971). Social Learning Theory. General Learning Corporation. Retrieved from www.cals.ncsu.edu/agexed/leap/528/class7/bandura.html>. (Accessed 25 December 2013).

Bandura, A. (1977). Social Learning Theory. Oxford, England: Prentice-Hall.

Bandura, A. (2002). Growing primacy of human agency in adaptation and change in the electronic era [Journal article]. *European Psychologist, 7(1), 2-16.*

Bandura, A. (2004). Social cognitive theory for personal and social change by enabling media. (Retrieved from < http://goo.gl/qbK2bB >. Accessed 6 May 2015).

Baranowski T, Cullen K W, Nicklas T, Thompson D and Baranowski J. (2003). Are Current Health Behavioral Change Models Helpful in Guiding Prevention of Weight Gain Efforts? *Obesity Research* 11:23S-43S.

Barker, G., Ricardo, C., Nascimento, M. (2007). Engaging men and boys in changing gender-based inequity in health: evidence from programme interventions. Geneva, CH: World Health Organisation.

Bassey, E. B, Moses, A. E., Udo, S. M., Anthony, N., Umo, A. N. (2010). The Impact of Immunization Control Activities on Measles Outbreaks in Akwa Ibom State, South-South, Nigeria. *Online Journal of Health Allied Sciences. 2010;9*(1):3.

Becker, F. (2007). The Virus and the Scriptures: Muslims and AIDS in Tanzania. *Journal of Religion in Africa, vol. 37, no. 1, pp. 16-40*.

Becker, S., Peters, D. H., Gray, R. H., Gultiano, C. and Black, R. E. (1993). The determinants of use of maternal and child health services in Metro Cebu, the Philippines. *Health Transition Review* 3(1):77-89.

Bejon P, Lusingu J, Olotu A, Leach A, Lievens M, Vekemans J, *et al*. (2008). Efficacy of RTS, S/AS01E: vaccine against malaria in 5 to 17 month old children. *New England Journal of Medicine,* 359:2521–2532.

Benson, T. (2008). Improving Nutrition as a Development Priority: Addressing Undernutrition in National Policy Processes in Sub-Saharan Africa. IFPRI Research Report No. 156: Washington, DC.

Bhatta, D. N. (2013). Immunizations for children in Kathmandu, Nepal. *BMC Pregnancy and Childbirth* 2013, 13:14.

Black RE, Allen LH, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, Mathers C, Rivera J. (2008). Maternal and child undernutrition: global and regional exposures and health consequences. *The Lancet*, 371(9608):243–260.

Blench, R, Longtau, S, Hassan, U, Walsh, M. (2006). The Role of Traditional Rulers in Conflict Prevention and Mediation in Nigeria. Interim Report. DFID, Nigeria.

Blencowe, H., Lawn, J., Vandelaer, J., Roper, M., Cousens, S., (2010). Tetanus toxoid immunization to reduce mortality from neonatal tetanus. International Journal of Epidemiology (suppl 1): i102–i109.

Bracht, N. (1990). *Introduction*. In Bracht N, editor: Health promotion at the community level, Newbury Park, Calif, 1990, Sage.

Brody, T. (2004). Vitamin A deficiency. Pages 3512-3513 in J. L. Longe, *The Gale Encyclopedia of Medicine,* 2nd ed. Detroit: Gale Group/Thomson Learning.

Brownlee, A. T. (1990). *Growth monitoring and promotion: The behavioral issues*. Malibu, Calif: International Health and Development Associates.

Burgess, A., Bijlsma, M. and Ismael, C. (2009). Community Nutrition: A handbook for Health and Development Workers. Macmillan. Oxford.

Butte, N.F., Lopez-Alarcon, M.G. and Garza, C. (2002). Nutrient adequacy of exclusive breastfeeding for the term infant during the first six months of life. : World Health Organisation, Geneva. Pp. 1-49.

Cain M. T. (1991). The activities of elderly in rural Bangladesh. *Population Studies*; 45:189-202.

Carpenter, C. J. (2010). A meta-analysis of the effectiveness of health belief model variables in predicting behavior *Health Communication 25* (8): 661–669.

Celik, Y., and Hotchkiss, D. R. (2000). The socio-economic determinants of maternal health care utilization in Turkey. *Social Science and Medicine 50*(12):1797-1806.

Chand, S. and Patterson, J. (2007). Faith-Based Models for Improving Maternal and Newborn Health. ACCESS Program, JHPIEGO, Baltimore, MD.

Charlton, K. E., Kawana, B. M., Hendricks, M. K. (2009). An assessment of the effectiveness of growth monitoring and promotion practices in the Lusaka district of Zambia. *Nutrition*. *25* (10):1035–1046.

Chatters, L.M., Levin, J.S., & Ellison, C.G. (1998). Public health and health education in faith communities. H*ealth Education and Behavior, 25(6),* 689-99.

Chen, L.C. and Dseusa, E.H.(1981). Sex bias in the family allocation of food and health care in rural Bangladesh. *Population Development Review*, 7: 1.

Christensen LA, Reininger BM, Richter DL, McKeown RE, and Jones A. (1999). Aspects of motivation of a volunteer AIDS care team program, *AIDS Education Preview, 11 (*5):427-35.

CIFA (2011). Faiths United for Health Campaign Evaluation Report March 2011. Wise Solutions, LLC. CIFA,Washington, DC. (http://jliflc.com/wp-content/uploads/2014/09/here2. Accessed on 4/12/2014).

Clarke, M., Charnley, S. and Lumbers, J. (2011). Churches, Mosques, and Condoms: Understanding Successful HIV and AIDS Interventions by Faith-based Organisations. Development in Practice, 21(1):3-17.

Cochran, W. G. (1963). Sampling Technique (Second Edition). New York: John Willey and Sons, Inc.

Conner, M. and Norman, P. (2005). Predicting health behaviour. Second Edition. Maitland: Open University Press, McGraw-Hill Education.

Croyle, R.T. (2005). Theory at a Glance: Application to Health Promotion and Health Behavior (Second Edition). U.S. Department of Health and Human Services, National Institutes of Health. Available at www.thecommunitvguide.org. Accessed June 16, 2015.

Cucuzza, L. & Moch, L. (2003). Faith community responses to HIV/AIDS: Integrating reproductive health and HIV/AIDS for non-governmental organisations, faith-based organisations and community-based organisations (vol 2). Washington: The Center for Development and Population Activities (CEDPA).

Dabbagh, A., Gacic-Dobo, M., Simons, E. (2009): Global Measles Mortality, 2000-2008. *MMWR*, 58:1321-1326.

Dahlberg, L. L., and Krug, E. G. (2002). Violence-a global public health problem. In: Krug E, Dahlberg L L, Mercy JA, Zwi AB, Lozano R, eds. World Report on Violence and Health. Geneva, Switzerland: World Health Organisation; 2002:1–56.

Decock, K. M., Fowler, M. G., Mercier, E., de Vincenzi, I., Saba, J. & Hoff, E. (2000). Prevention of Mother-to-Child Transmission in Resource Poor Countries. Translating Research into Policy and Practice. *Journal of the American Medical Association*, Vol. 283, No. 9: 1175-1185

Dewar, T. (1997). A guide to evaluating asset-based community development: lessons, challenges, and opportunities. Evanston, Ill., USA: Institute for Policy Research.

Dòrea, J. G. (2009). Breastfeeding is an essential complement to vaccination. *Acta Paediatrica*, 98(8), 1244-1250.

Drane, D. L., & Logemann, J. A. (2000). A critical evaluation of the evidence on the association between type of infant feeding and cognitive development. *Paediatric and Perinatal Epidemiology*, 14(4), 349-356.

Dube, M. (2003). *Africa praying: A handbook on HIV/AIDS sensitive sermons guidelines and liturgy*. Geneva: World Council of Churches.

Duclos P, Okwo-Bele JM, Gacic-Dobo M, Cherian T. (2009): Global immunization: status, progress, challenges and future. *BMC International Health and Human Rights* 2009, **9** (Suppl 1)**:**e16.

Edmond KM, Zandoh C, Quigley MA, Amenga-Etego S, Owusu-Agyei S, Kirkwood BR. (2006). Delayed breastfeeding initiation increases risk of neonatal mortality. *Pediatrics*: 117(3):e380-6.

Edmond, K.M., Kirkwood, B.R., Amenga-Etego, S., Owusu-Agyei, S., Lisa S Hurt, L.S. (2007). Effect of early infant feeding practices on infection-specific neonatal mortality: an investigation of the causal links with observational data from rural Ghana. *American Journal of Clinical Nutrition*: 86:1126–31.

Edward, A., Ernst, P., Taylor, C., Becker, S., Mazive, E. (2007). Examining the evidence of under-five mortality reduction in a community-based programme in Gaza, Mozambique. *Transactions of the Royal Society of Tropical Medicine and Hygiene 101* (8): 814-822.

Egunjobi, L. (1983). Factors influencing choice of hospitals: a case study of the northern part of Oyo State, Nigeria. *Social Science Medicine; 17*(9):585-9.

Ekanem IA, Ekanem AP, Asuquo A.(2012). Attitude of working mothers to exclusive breastfeeding in Calabar Municipality, Cross Rivers State, Nigeria. *Journal of Food Research 1*(2): 71 –75.

Ene-Obong, H.N., Enugu, G.I., Uwaegbute, A.C. (2001). Determinants of Health and Nutritional Status of Rural Nigerian Women. *Journal of Health Population and Nutrition*, 19(4):320-33.

Engle, P. L., Lhotska, L., Armstrong, H. (1997) The care initiative: assessment, analysis, and action to improve care for nutrition. New York: UNICEF.

Engle, P., Lhotska, L. (1999) The role of care in programmatic actions for nutrition: Designing programs involving care. *Food and Nutrition Bulletin 20*: 121-135.

Etukudo, I. W., and Inyang, A. A. (2014). Determinants of use of Maternal Health Care Services in a Rural Nigerian Community. *Research on Humanities and Social Sciences* Vol.4, No.18, 2.

Faber, M., Schoeman, S., Smuts, C. M., Adams, V., Ford-Ngomane, T. (2009). Evaluation of community-based growth monitoring in rural districts of the Eastern Cape and KwaZulu-Natal provinces of South Africa. *South African Journal of Clinical Nutrition*; 22 (4):185-194.

Fagbule, D. O, Olaosebikan, A., Parakoyi, D. B. (1990) Community awareness and utilization of growth chart in a semi-urban Nigerian community. *East African Medical Journal*; 67:69-74.

FAO/ILSI. (1997). *Preventing Micronutrient Malnutrition: A Guide to Food Based Approaches*. ILSI Press, Washington DC, USA.

Federal Ministry of Health (2007). Integrated Maternal, Newborn and Child Health Strategy. Federal Ministry of Health, Abuja-Nigeria.

Federal Ministry of Health (2010). National Operational Guidelines for Community Management of Acute Malnutrition. Family Health Department, Nutrition Division.

Fiedler J.L. and Macdonald B. (2009). A strategic approach to the unfinished fortification agenda: Feasibility, costs, and cost effectiveness analysis of fortification programs in 48 countries. *Food and Nutrition Bulletin*, vol. 30, no. 4. Pp. 283-311.

Finnegan, J. R., Bracht, N., and Viswanath, K. (1989). *Community power and leadership analysis in lifestyle campaigns.* In salmon C T, editor: Information campaigns: balancing social values and social change, Newbury Park, Calif, Sage.

Fishbein, M. and Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Flour fortification Initiative (FFI) (2008). Summary Report. Second technical workshop on wheat flour fortification: practical recommendations for national application March 30 to April 3, 2008. Stone mountain, Georgia, USA. P. 1 – 24.

Food and Agriculture Organisation of the United Nations (2006). Livestock's long shadow: Environmental issues and options. The livestock, environment and development initiative (LEAD). Rome: FAO.

Francisco, J. E. (2010). Barrier Analysis of Exclusive Breastfeeding in Ruyigi and Cancuzo provinces, Burundi (Doctoral dissertation, The George Washington University Washington, DC USA).

Frankle, R. T. and Owen, A. L. (1993). *Nutrition in the community.* Third edition, St Louis, Missouri. Mosby-Year Book, Inc.

Freij, L. S. (2010) “Safe Age of Marriage" in Yemen: Fostering Change in Social Norms – A Case Study”. USAID, Extending Service Delivery (ESD). http://goo.gl/GU2lXR. Accessed March 28, 2015.

Galal, O. (2003). Evaluation Challenges With Respect To Large Scale Intervention Programme. *Forum of Nutrition*; 56:386-9.

Gallup International (2005). Religiosity around the World. Voice of the People. Available at: http://goo.gl/scDLv2. (Accessed October 1, 2015).

Garner, P., Panpanich, R., Logan, S. (2000). Is routine growth monitoring effective? A systematic review of trials. *Archives of Disease in Childhood*; 82:197–201.

Gillespie, S. (1998) Major issues in the control of iron deficiency. The Micronutrient Initiative and UNICEF. The Micronutrient Initiative, Canada.

Glanz, K., and Rimer, B. K. (1995). Theory at a glance: A guide for health promotion practice (NIH Publication No. 97-3896). Bethesda, MD: National Cancer Institute.

Glanz, K., Rimer, B. K., Viswanath, K. (2008). *Health behavior and health education: theory, research, and practice.* (4th ed.). San Francisco, CA: Jossey-Bass. pp. 45–51.

Gopaldas, T., Christian, P. S., Abbi, R. D., Gujral, S. (1990). Does growth monitoring work as it ought to in countries of low literacy? *Journal of Tropical Pediatrics*; 36:322-7.

Grantham-McGregor, S. M., Fernald, L.C., Sethuraman, K. (1999). Effects of health and nutrition on cognitive and behavioural development in children in the first three years of life. Part 2: Infections and micronutrient deficiencies: iodine, iron, and zinc. *Food and Nutrition Bulletin,*20:76–99.

Grebmer K. V., B. Nestorova A. Quisumbing R. Fertziger H. Fritschel R. Pandya-Lorch Y. Yohannes. (2009). Global Hunger Index . The Challenge of Hunger: Focus on Financial Crisis and Gender Inequality. October.

Green, E (2003) Faith-based Organisations: Contribution to HIV prevention, NewYork, Westview press.

Green, L. W. and Kreuter, M. W. (1991). *Applications of PRECEDE-PROCEDE in community settings*. In Green LW, Kreuter MW, editors: Health promotion planning: an educational and environmental approach, ed 2, Mountain View, Calif, Mayfield.

Greene, G. W., Rossi, S. R., Rossi, J. S., Velicer, W. F., Fava, J. L., Prochaska, J. O. (1999). Dietary applications of the stages of change model. *Journal of American Dietetic Association*; 99(6):673–8.

Greene, M. E., Mehta, M., Pulerwitz, J., Wulf, D., Bankole, A., Singh, S. (2006). *Involving Men in Reproductive Health: Contributions to Development*. Background paper to the report *Public Choices, Private Decisions: Sexual and Reproductive Health and the Millennium Development Goals*. United Nations Millennium Project. 41.

Haddad, S, Fournier, P. (1995). Quality, cost and utilization of health services in developing countries. A longitudinal study in Zaïre. *Social Science and Medicine*; 40(6):743-53.

Hadder, R., Ashworth, A., Kabir, I., Hurty, S. R. (2000). Effect of community-based peer counselors on exclusive breastfeeding practices in Dhaka, Bangladesh: a randomized controlled trial. Lancet 356 (9242): 1643-1647.

Hale, J. L., Householder, B. J., Greene, K. L. (2003). The theory of reasoned action. In J. P. Dillard & M. Pfau (Eds.), *The persuasion handbook: Developments in theory and practice* (pp. 259–286). Thousand Oaks, CA: Sage.

Harris WS, Gowda M, Kolb JW, et al.(1999): A randomized, controlled trial of the effects of remote, intercessory prayer on outcomes in patients admitted to the coronary care unit. *Archives of Internal Medicine;159:2273–2278.*

Hendrata, L. and Rohde, J. E. (1987). Ten Pitfalls of Growth Monitoring and Promotion. *The Indian Journal of Pediatrics* 55(1); January-February 1988 Supplement: S9-815.

High-Level Task Force on the Global Food Crisis.(2008). Comprehensive Framework for Action. Available at <http://goo.gl/ty7fUe>. (Accessed 23 June 2015).

Hoorwag, H.S. (1976). Nutrition, Infection and Immunity. In Nutrition in the Community. Mclaren, O.S. Macmillan Publishers, New York.

Howsen, C. P., Kennedy, E. T., and Horwitz, A. (1998) eds., *Prevention of micronutrient deficiencies. Tools for policymakers and public health workers*, National Academy Press, Washington, DC, 207.

Huffman, S.L. and Marlin, D. (1994). First feeding, optimal feeding of infants and toddlers. *Nutrition Research*, 4:127-159.

Hurrell, R. (2002). How to ensure adequate iron absorption from iron-fortified food. *Nutrition Review,* 60:S7-15.

Hurrell, R., Ranum P., de Pee S., Beibinger R., Hulthein L., Johnson Q., and Lynch S. (2010). Revised recommendations for iron fortification of wheat flour and an evaluation of the expected impact of current national wheat flour fortification programs. *Food and Nutrition Bulletin*, Vol. 31 (1), Pp. S7-S21.

Ibeanu, V., Okeke, E. G. (2001). Development and acceptability test of amylase rich flour (ARF) enriched complementary foods. *Nigerian Journal of Nutrition Science*, 22(1), 13-19.

Ikeokwu, N. (2008). The global food crisis and the challenge to Nigeria. The Nigerian Village Square, Tuesday, 27 May 2008. Available at http: //goo.gl/XTkjD. (Accessed 23 June 2015).

International Conference on Nutrition (ICN). (1992). World declaration and plan of action. Rome.

Jamison, D. T., Breman, J. G., Measham, A. R. (2006). Community Health and Nutrition Programs IN Disease Control Priorities in Developing Countries. 2nd edition. Washington (DC): World Bank.

Janz, N. K., Becker, M. H. (1984).The Health Belief Model: A Decade Later. *Health Education Behavior* 11 (1): 1–47.

Jones, G., Steketee, R. W., Black, R. E., Bhutta, Z. A., Morris, S. S. Bellagio (2003) Child Survival Study Group: How many child deaths can prevent this year? *Lancet*, 362:65-71.

Jonsson U. (1995). Towards an improved strategy for nutrition surveillance. *Food and Nutrition Bulletin*; 16:102-8.

Jonsson, U., Ljungqvist, B. and Yambi, 0. (1993) *Mobilization for Nutrition in Tanzania.* In Rohde J et al. (eds) Reaching Health for All. Oxford University Press, Delhi, pp 185-211.

Kapil, U., Paul, D., Manocha, S., Sood, A. K. (1991). Assessment of knowledge and skills about growth monitoring amongst child development project officers. *Indian Pediatrics*; 28:641-4.

Kaufman, J., Synnot, A., Ryan, R., Hill, S., Horey, D., Willis, N., Lin, V. & Robinson, P. (2013). Face-To-Face Interventions for Informing or Educating Parents about Early Childhood Vaccination. *Cochrane Database of Systematic Reviews*, Issue 5. Art. No.: CD010038. DOI: 10.1002/14651858.CD010038.pub2.

Keke, C. C. (1990). The Ecological Factor of Malnutrition inUmunwado, Imo State of Nigeria. 59. P hd. Thesis, Submitted to University of Ibadan (unpublished), pp:67-69.

Krauss and Mahan, T. (1982). Immunological functions in children. *Food and Nutrition News*, 55: 30.

Kuhn, T. (1962) *The Structure of Scientific Revolutions.* University of Chicago Press.

Kwast, B. E. and Liff, J. M. (1988). Factors associated with maternal mortality in Addis Ababa, Ethiopia. *International Journal of Epidemiology* 17(1):115-121.

Lala, O. L. (2007). The Role of Faith-Based Organisations in Mitigating HIV/AIDS-Related Stigma in Religious Communities: *Examining Religiously-Based Anti-Stigma Messages in Three South African Faith-Based Organisations.* A Dissertation for the Degree of Master of Philosophy in Public Health. Institute of Public Health University of Cambridge, United Kingdom.

Leslie, J. and Gupta, G. R. (1989). Utilization of formal services for maternal nutrition and health care. Washington, D.C.: International Center for Research on Women.

Li, R., Darling, N., Maurice, E., Barker, L., & Grummer-Strawn, L. M. (2005). Breastfeeding rates in the United States by characteristics of the child, mother, or family: the 2002 National Immunization Survey. *Pediatrics*, 115(1), e31-e37.

Lofti, M. (1988). Growth monitoring: a brief literature review of current knowledge. *Food and Nutrition Bulletin* 10, 3–10.

Lom, M. M. (2001). Senegal's Recipe for Success. *Africa Recovery*, 15 (1-2):24.

Lunven (1985). Food and Nutrition: Evolution of Strategies, *Food and Nutrition* 11(1):2-16.19).

Marie, T., Ruel, M. T., and Levin, C. E. (2000). Assessing the potential for food-based strategies to reduce vitamin a and iron deficiencies: A review of recent evidence. FCND Discussion Paper No. 92. Food Consumption and Nutrition Division International Food Policy Research Institute, Washington, D.C.

Marra, A. R., Guastelli, L. R., de Araújo, C. M., dos Santos, J. L., Filho, M. A., Silva, C. V., Kawagoe, J. Y., Neto, M. C., dos Santos, O. F., Edmond, M. B. (2011). Positive deviance: a program for sustained improvement in hand hygiene compliance. *American Journal of Infection Control.* 39(1):1-5.

Marta, Rey-López et al. (2006). A Model for Personalized Learning. In: Adaptive Hypermedia and Adaptive Web-Based Systems. Springer. Berlin.

Matinga, P. U. (2002). Saving Newborn Lives Formative Study: A Study Conducted in Mulanje / Phalombe, Mangochi and Ekwendeni. Lilongwe: Save the Children.

Matthew, A. K., Amodu, A. D., Sani, I, and S. D. (2009). Infant Feeding Practices and Nutritional Status of Children in North Western Nigeria. *Asian Journal of Clinical Nutrition, 1: 12-22.*

Mbonye, A.K., Neema, S. And Magnussen, P. (2006). Preventing malaria in pregnancy: A study of perceptions and policy implications in Mukono district, Uganda. *Health Policy and Planning,* 21(1), pp.17-26.

McCord, C., Premkumar R, Arole S, Arole R. (2001). Averting maternal death and disability: Efficient and effective emergency obstetric care in a rural Indian community where most deliveries are at home; Comprehensive Rural Health Project, Jamkhed, Ahmednagar District, Maharashtra, India. *International Journal of Gynaecology and Obstetrics* 75: 297–307.

Mekonnen, Y. and Asnaketch, M. (2002). Utilization of Maternal Health Care Services in Ethiopia. Calverton, Maryland, USA: ORC Macro.

Mekonnen, Y., and Mekonnen, A. (2003). Factors influencing the use of maternal healthcare services in Ethiopia. *Journal of Health, Population and Nutrition*; 21(4):374-82.

Memon, M., Shaikh, S., Kousar, T., Memon, Y. and Rubina (2010). Assessment of infant feeding practices at a tertiary care hospital. *Journal of Pakistan Medical Association* 60:1010.

Miller, K. (2005). *Communications theories: perspectives, processes, and contexts*. New York: McGraw-Hill.

Ministry of Economic Development (2005). Akwa Ibom State socio-economic study report. MED, Uyo, Akwa Ibom State, Nigeria.

Montano, D. E., and Kasprzyk, D. (2002).*The theory of reasoned action and the theory of planned behavior. In* Glanz, K Lewis, FM Rimer, BK eds. *Health Behavior and Health Education, Theory, Research and Practice* ,85-112 Jossy Bass San Francisco, CA.

Mortensen, E. L., Michaelsen, K. F., Sanders, S. A., & Reinisch, J. M. (2002). The association between duration of breastfeeding and adult intelligence. *Journal of the American Medical Association*, 287(18), 2365-2371.

Mugisha F, Kouyate B, Gbangou A, Sauerborn R. (2002). Examining out of pocket expenditure on health care in Nouna, Burkina Faso: implications for health policy. *Tropical Medicine and International Health*, 7**:**187-196.

Muhangi, D. (2004). Documentation study of the responses by religious organisations to orphans and vulnerable children: Uganda Country Report, Kampala, Uganda: Unicef/World Conference on Religious for Peace, Inter-Religious Council of Uganda.

Mukuria, A. G., Kothari, M.T., Abderrahim, N. (2006). Infant and Young Child Feeding Updates. Calverton, Maryland, USA: ORC Macro. Co.

Muller, O., Garenne, M., Kouyate, B., Becher, H. (2003). The association between protein–energy malnutrition, malaria morbidity and all-cause mortality in West African children. *Tropical Medicine and International Health,* 8(6): 507–511.

Mustard, C. A, Kaufert, P., Kozyrskyj, A. Mayer, T. (1998). Sex Differences in the Use of Health Care Services. *New England Journal of Medicine*; 338:1678-1683.

National Bureau of Statistics, UNICEF, UNFPA (2013): *Nigeria multiple indicator cluster survey 2011*. Abuja, Nigeria: NBS, UNICEF, UNFPA.

Ndure, K.S, Sy, M. N, Ntiru, M & Die`ne, S. M (1999). Best practices and lessons learned for sustainable community nutrition programming. Washington, DC: Academy for Educational Development.

Negerie, M. (1994). The Association of Religious Beliefs with AIDS risk behavior among Kenyan males, Ph.D. Dissertation, Loma Linda University. In Robert

Garner. Safe Sects? Dynamic Religion and AIDS in South Africa. *Journal of Modern African Studies*, 38, 1, pp. 41-69.

Nganda, R.Y., Drakeley, C., Reyburn, H., Marchant, T. (2004). Knowledge of malaria influences the use of insecticide-treated nets but not intermittent presumptive treatment by pregnant women in Tanzania. *BMC Malaria Journal*, 3(42), pp. 1-7.

Nigeria demographic and health survey (2003). National Population Commission and ORC Macro 2004.

Nigeria Demographic and Health Survey. (2008). Available from: http://goo.gl/6Gw9kH. (Accessed on Dec 12, 2010).

Nigeria Demographic and Health Survey (2013). National Population Commission (NPC) (Nigeria) and ICF International. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.

Nnayelugo, D.O.(1992). Assessment of School Milk Consumption-it's relation to Physical Growth of Urban and Rural Pre-School Children. *Nigeria Journal Nutrition Science*, 5: 2-25.

Obayelu, A.E. (2010). Classification of households into food security status in the north-central Nigeria: an application of rasch measurement model. *Journal of Agricultural & Biological Science*: 5(3).

Odusanya, O. O., Alufohai, E. F., Meurice, F. P. and Ahonkhai, V. I. (2008). Determinants of vaccination coverage in rural Nigeria**.** *BMC Public Health*, 8:381.

Ogunlesi, T. A. (2010) Maternal socio-demographic factors influencing the initiation and exclusivity of breastfeeding in a Nigerian semi-urban setting. *Maternal and Child Health Journal*, 14(3):459-465.

Oguta, T. J., Omwega, A. M., Sehmi, J. K. (2001). Maternal knowledge of MTCT of HIV and breast milk alternative for HIV positive mothers in South-Western

Kenya. Applied Nutrition Programme, Dept of Food Technology & Nutrition, University of Nairobi.

Omilola, B, (2010). Patterns and Trends of Child and Maternal Nutrition Inequalities in Nigeria International Food Policy Research discussion paper. < http://goo.gl/u3lRI9 >(Accessed 12 December 2012).

Omotara, B. A., Okujagu, T. F., Etatuvie, S. O., Beida, O., Gbodossou, E. (2012). Assessment of Knowledge, Attitude and Practice of Stakeholders Towards Immunization in Borno State, Nigeria: A Qualitative Approach. *Journal of Community Medicine and Health Education* 2:181.

Omotoso, O. (2010). Health Seeking Behaviour among the Rural Dwellers in Ekiti State, Nigeria. *African Research Review: An International Multi-Disciplinary Journal, Ethiopia* 4:125-138.

Onah, H. E., Ikeako, L. C., Iloabachie, G. C. (2006). Factors associated with the use of maternity services in Enugu, southeastern Nigeria. *Social Science and Medicine; 63(7):1870-78.*

Onimawo, I.A., Amangbangwu, K.E., Eluwa, M.A. (2006).Nutritional Status of school aged children assessed by anthropometric methods. *Nigerian Journal of Nutrition Science*, 1(2): 27-34.

Onofiok, O. N., Nnanyelugo, D. O. (1998). Nigerian weaning foods. *Food and Nutrition Bulletin*, 2, 29 – 33.

Oparaocha UH, Ibadin OM, Muogbo CD (2002). Current practices in infant nutrition in Benin City, Nigeria. *Nigerian Journal of Clinical Practice*; 592: 139-142.

Orubuloye, I. O. (2002): *Disease, Illness and Society*. Centre for Population and Health Resources, Ado-Ekiti , Nigeria.

Osubor, K. M., Adesugun, O., Fatusi, O. and Chiwuzie, J. C. (2006) Maternal Health Seeking Behaviour and Associated Factors in a Rural Nigerian Community. *Maternal and Child Health Journal* 10 (2):159169.

Otolok-Tanga E, Atuyambe L, Murphy CK, Ringheim KE, Woldehanna S. (2007). Examining the actions of faith-based organisations and their influence on HIV/AIDS-related stigma: A case study of Uganda. *African Health Sci*ence, 7(1):55-60.

Owusu, W. B., Lartey, A. (1992). Growth Monitoring : Experience from Ghana. *Food and Nutrition Bulletin,*14 (2): 97-100.

Parlato, R. (1992). *Vitamin A social marketing: a programme guide.* Academy for Educational Development. USA.

Pearl, E., Chand, S, Hafner, C. (2009) 'Training health workers in Africa: documenting faith-based organisations' Contributions', The Capacity Project. Available at < http://goo.gl/MNlaZQ >. (Accessed 1 October, 2015).

Pelletier, D. L. (2002).Toward a Common Understanding of Malnutrition: Assessing the Contributions of the UNICEF Framework. *Background Papers, World Bank/UNICEF Nutrition Assessment*.

Pérez-Escamilla R, Curry L, Minhas D, Taylor L, Bradley E. (2012). Scaling up of breastfeeding promotion programs in low- and middle-income countries: the "breastfeeding gear" model. *Advances in Nutrition.*; 3(6):790-800.

Prochaska, J. O., Velicer, W. F. (1997). The transtheoretical model of health behavior change. *American Journal of Health Promotion,* Sep–Oct; 12(1):38–48.

Rammohan, A., Awofeso, N, Fernandez, R.C. (2012). Paternal education status significantly influences infants' measles vaccination uptake, independent of maternal education status. *BMC Public Health*, 12:336.

Roberfroid, D., Lefèvre, P., Hoerée, T., Kolsteren, P. (2005). Perceptions of Growth Monitoring and Promotion among an International Panel of District Medical Officers. *Journal of Health, Population and Nutrition;23(3):207-214.*

Rogers, E. M. and Storey, J. D. (1987). *Communication campaigns*. In Berger CR and Chaffee SH, editors: Handbook of communication science, Beverly Hills, Calif, 1987, Sage.

Rogers, R. W. (1983). Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In J. Cacioppo & R. Petty (Eds.), *Social Psychophysiology*. New York: Guilford Press.

Saiqa, M., Busi, K., & Wanjiru, M. (2000). Involving men in maternity care: Health delivery issues. Population Council. Available at http://goo.gl/FQePG2 (Accessed 1 October, 2015)

Sanusi, R. A. and Gbadamosi, A. O. (2009). Do Mothers' Knowledge and Practice of 'Child Survival Strategies' Affect the Nutritional Status of Their Children?. *Pakistan Journal of Nutrition, 8: 1506-1511.*

Save the Children (2012). Nutrition in the First 1000 Days: State-of-the- World's - Mothers-Report. United States Agency for International Development. Available at < http://goo.gl/FioLaV > (Accessed 12 July, 2014).

Sheeran, J. (2008). The challenge of hunger. *The Lancet*, 371(9608), 180-181.

Sheppard, B. H., Hartwick, J. & Warshaw, P. R. (1988). The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research*, 15, 325–343.

Singh K, Srivastava P. (1992). The effect of colostrum on infant mortality: Urban rural differentials. *Health and Population*; 15(3&4):94–100.

Singh, A., Pallikadavath, S., Ogollah, R., Stones, W. (2012). Maternal Tetanus Toxoid Vaccination and Neonatal Mortality in Rural North India. *PLoS ONE* 7(11): e48891.

Singhal, A. Cody, Rogers, M. E. and Sabido, M. (2004). Entertainment-Education and Social Change. Mahwah, NJ: Lawrence Erlbaum Associates Inc.

Singhal, A., Rogers, M. E., Brown, W. J. (1993). Harnessing the potential of entertainment-education telenovelas [Journal article]. *Gazene*, 51, 1-18.

Smitasiri, S., Attig, G. and Dhanamitta, S. (1992). Participatory action for nutrition education: social marketing vitamin A-rich foods in Thailand. *Ecology of Food and Nutrition* 28:199-210.

Smith, J. (2004).Youth, sin and sex in Nigeria: Christianity and HIV/AIDS related beliefs and behavior among rural-urban migrants. *Culture, Health & Sexuality, 6,* 425-437.

Sommer, A., and West, K. P. (1996) *Vitamin A deficiency. Health, survival, and vision*. Oxford University Press: New York and Oxford, 1996. *South African Journal of Child Health*, 3(1):14-19.

Srilatha, V. L. (1986). Use of growth charts for promoting child nutrition: experiences and reflections. *Bulletin of the Nutrition Foundation of India*; 7(2):1-3

Steverson FA, Britten N, Barry CA, Bradley CP, Barber N. (2003). Self- treatment and its discussion in medical consultations: how is medical pluralism managed in practice? *Social Science and Medicine*, 57:513-527.

Stipp, H. and Weinman, R. (1990). *The Effects of Mass Media Information and Education Campaigns to Promote Public Health* in Blumenthal, Eichler, and Weissman, eds., Women and AIDS: Promoting Healthy Behaviors, National Institute of Mental Health, Bethesda, MD.

Sua´rez-Herrera, J. C. (2006). Community nutrition programmes, globalization and sustainable development. *British Journal of Nutrition*, 96, Suppl. 1, S23–S27.

Swartz, R. (2012). Positive Deviance Initiative at Tufts University Friedman School of Nutrition. AACC International, Inc., Boston, MA, 02111, U.S.A.

Tagbo, B. N. and Ughasoro, M. D. (2009). Complementary feeding pattern of infants attending the University of Nigeria Teaching Hospital, Ituku Ozalla, Enugu. *Nigerian Journal of Paediatrics; 36:5.*

Tones, B. K. (1986). Health education and the ideology of health promotion: a review of alternative Approaches. In Health Education Research, Oxford University Press. Vol. 1, No. 1, 3-12.

Townsend, P., Davidson, N. and Whitehead, M. (1988) Inequalities in Health (The Black Report and the Health Divide). Pelican, London.

Uchendu, U. O., Ikefuna, A. N., Emodi, I. J. (2009): Factors associated with exclusive breastfeeding among mothers seen at the University of Nigeria Teaching Hospital. *South African Journal of Child Health*, 3(1)**:**14-19.

UN ACC/SCN (1997). *Third report on the world nutrition situation*. United Nations Administrative Committee on Coordination/Subcommittee on Nutrition (ACC/SCN), Geneva.

UNAIDS (2008). Report on the Global HIV/AIDS Epidermic 2008, Joint United Nations Programme on HIV/AIDS (UNAIDS), Geneva.

UNFPA (United Nations Population Fund). (2008). Culture Matters: Lessons from a Legacy of Engaging Faith-Based Organisations. www.unfpa.org/webdav/site/global/ shared/documents /publications/ 2008/Culture_Matter_II.pdf, (Accessed on 1 July 2009).

UNICEF (1990a). *Strategy for improved Nutrition of Children and Women in developing countries.* UNICEF, New York.

UNICEF (1990b). Conceptual framework for nutrition. UNICEF New York.

UNICEF, (1998). The State of the World's Children. Oxford University Press, Oxford.

UNICEF (2005). Strategic Communication: For Behaviour and Social Change in South Asia. Regional Office for South Asia.

UNICEF (2006). Progress for children: A report card on Nutrition. Number 4. <http://goo.gl/H3YZ1r>. (Accessed 31/3/15).

UNICEF and FGN, (2001). The Situation, Assessment and Analysis-Children and Women's Right in Nigeria, a Wake up calls, pp: 72-78.

UNICEF. (2008). ChildInfo - Monitoring the situation of Children and Women. <www.chilifo.org/statistical.tables.html> (Accessed 12 June, 2014).

United Nations Children's Fund (UNICEF) and World Health Organisation (2014). Countdown to 2015: Fulfilling the Health Agenda for Women and Children—2014 Report. < http://goo.gl/daAKF6> (Accessed 19 July, 2014).

United Nations Children's Fund, (2001). The State of the World's Children. UNICEF, New York.

United States Agency for International Development Infant & Young Child Nutrition Project (2011). *Engaging Grandmothers and Men in Infant and Young Child Feeding and Maternal Nutrition: Report of a Formative Assessment in Eastern and Western Kenya*. Washington, DC: PATH.

United States President's Emergency Plan for AIDS Relief (PEPFAR) (2007). President Bush announces five-year, $30 Billion HIV/AIDS plan. Speech by President Bush, May 30, 2007. Washington, DC: PEPFAR. Available at: http://www.pepfar.gov/press/85771.htm. (Accessed 20 June 2015).

UN System Standing Committee on Nutrition. (2004). *5th report on the world nutrition situation: Nutrition for improved development outcomes*. Geneva: SCN.

USAID ACCESS, (2007). Focused antenatal care: Providing integrated care: during Pregnancy Available at: http://goo.gl/Uc6S7G. (Accessed 17 May, 2015).

USAID (2002). Child Survival and Health Programmes. USAID, Washington DC.

Uzochukwua, B.S and Onwujekwe, OE. (2004). Socio-economic differences and health seeking behaviour for the diagnosis and treatment of malaria: a case study of four local government areas operating the Bamako initiative programme in south-east Nigeria. *International Journal for Equity in Health* 2004, **3**:6 < http://www.equityhealthj.com/content/3/1/6> (Accessed 12 December 2012).

Varkey, L. C., Mishra, A., Das, A., Ottolenghi, E., Huntington, D., Adamchak, S., Khan, M. E., Homan, F. (2004). *Involving Men in Maternity Care in India*. FRONTIERS final report. Population Council, Washington, DC.

Ward, H., Mertens T. E, Thomas C. (1997). Health seeking behaviour and the control of sexually transmitted disease. *Health Policy Plan*; 12(1):19-28.

Welbourn, A. (1995). Stepping Stones. United Kingdom: ActionAid; 1995. Available at: http://www.actionaid.org/main.aspx?PageID=137. (Accessed 4/3/2013).

West K. P. Jr., Klemm, O. Dary. Q., Johnson, P. Randel, C. Northrop – Cleves (2008). Vitamin A fortification group. Background document prepared for the second technical workshop on wheat flour fortification Atlanta, G. A. 31st March – 3 April, 2008.

WHO (1986). The growth chart. A tool for use in infant and child health care. Geneva: World Health Organisation, 1986. 33 p.

WHO (1995). *Global prevalence of vitamin A deficiency. Micronutrient deficiency information system.* WHO MDIS Working Paper # 2. WHO, Geneva.

WHO (2008a). Health in Asia and the Pacific, World Health Organisation, Regional Office for Asia, New Delhi.

WHO (2008b). Learning from large-scale community-based programmes to improve breastfeeding practices, World Health Organisation, Geneva.

WHO (2010). Data Bank on Infant and Young Child Feeding on Nigeria. Available at: http://goo.gl/VJ5WaJ. (Accessed 31/3/15).

WHO (2010). The State of Breastfeeding in 33 Countries. Available at: http://goo.gl/xgGgBw. (Accessed 31/3/15).

Wollinka, O., Keeley, E., Burkhalter, B. R., Bashir, N. (1997.) Arlington, Virginia, Partnership for Child Health Care, Basic Support for Institutionalizing Child Survival [BASICS], 1997. xii, 111 p.

World Bank (1994). World development report: Infrastructure for development. New York, New York: Oxford University Press.

World Bank (2006). *Repositioning Nutrition as Central to Development-A Strategy for Large Scale Action.* Washington, DC: World Bank.

World Bank (2008). Rural poverty. World Bank development report: Agriculture for Development (Online). Available from: http://econ.worldbank.org/...EXTWDR2008/ (Accessed 17 May, 2015).

World Health Organisation (2002). Consequences of malaria in pregnancy. In: JHPIEGO, ed. Malaria in Pregnancy. Johns Hopkins University. (Online) Available from: http://www.jhpiego.org/resources/pubs/malalip/malaria_training.htm. (Accessed 17 May, 2015).

World Health Organisation (2003). Community-Based Strategies for Breastfeeding Promotion and Support in Developing Countries. Geneva, CH. (Online) Available from: http://goo.gl/f5rYzv. (Accessed 10 October, 2015).

World Health Organisation (2006). Challenges in global immunization and the Global immunization vision and strategy 2006 – 2015. *Weekly Epidemiological Record*, 81(6), 190-195.

World Health Organisation (2008a). Typhoid vaccines: WHO position paper. *Weekly Epidemiological Record*, 83(6), 49-59.

World Health Organisation (2008b). Progress in global measles control and mortality reduction, 2000-2007. *Weekly Epidemiological Record*, 83(6), 441-448.

World Health Organisation (2010). Millenium Development Goals: progress towards the health-related Millenium Development Goals. Fact Sheet No.290, May Edition.

World Health Organisation (2012). WHO African Countries (Online). Available from: www.int/pmnch/countries/ethiopia/en/index/html. (Accessed 17 October, 2014).

World Health Organisation (WHO) and ACCESS Program. (2006). *Assessment of MIPESA Country Experiences in the Adoption and Implementation of Malaria in Pregnancy Policies: Including Best Practices and Lessons Learned.* WHO and ACCESS. Available from: http://pdf.usaid.gov/pdf_docs/PNADK571.pdf. (Accessed 17 October, 2014).

World Health Organisation and African Religious Health Assets Program (ARHAP) (2006). *Appreciating Assets: The Contribution of Religion to Universal Access in Africa*, Cape Town, South Africa.

World Health Organisation. (2007). *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes. WHO's Framework For Action.* Geneva: WHO.

World Health Organisation. (2008). Micronutrient deficiencies: Vitamin A. *World Health Organisation.* http://www.who.int/nutrition/topics/vad/en/index.html. (Accessed 17 October, 2014).

World Relief (2004). *A Guide to Mobilizing Community-Based Volunteer Health Educators: The Care Group Difference*. World Relief: Baltimore, MD.

Yadamsuren B, Merialdi M, Davaadorj I, Requejo JH, Betrán AP, Ahmad A. (2010). Tracking maternal mortality declines in Mongolia between 1992 and 2007: the importance of collaboration. *Bulletin of the World Health Organisation*; 88(3):192–8.

Yeboah, D. A. (2007). Impact of Population Variables on Health Services Demand and Provision in the United Arab Emirates. *Arab Studies Quarterly (ASQ)*, 29(1): 61-70.

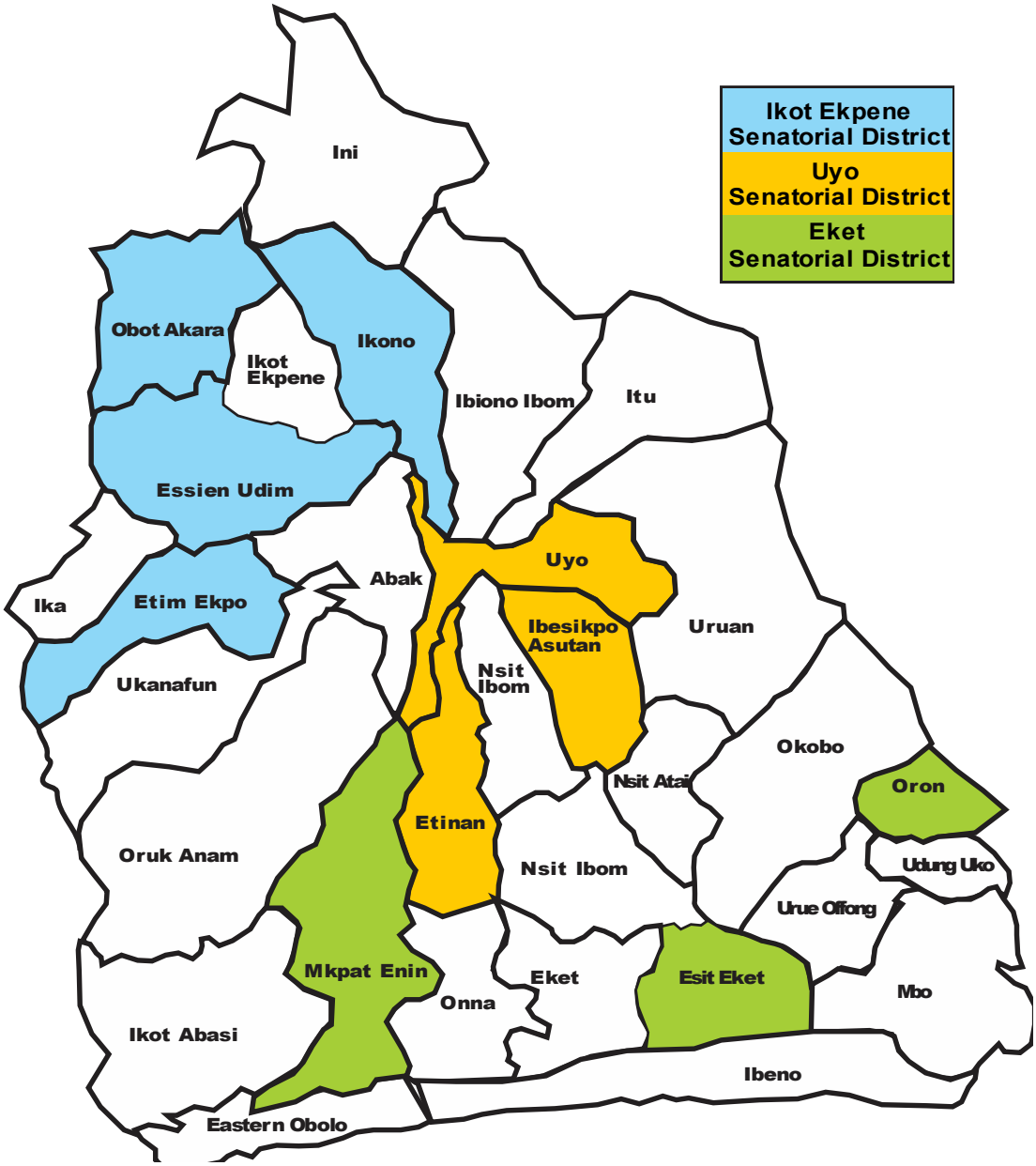
Yee, V. and Zerfas, A. (1987). Issues in Growth Monitoring and Promotion. LTS: International Nutrition Unit. In: Infomation packet: growth monitoring. Washington, DC: American Public Health Association, pp. 1-17.

Zeitlin, M., Ghassemi, H., Mansour, M. (1990). Positive Deviance in Child Nutrition: with Emphasis on Psychosocial and Behavioral Aspects and Implications for Development. The United Nations University. *Food / Nahrung, 35*(10):1077-1078.

Zimmerman M.B; Chouki N., and Hurrell R.F. (2005). Iron deficiency due to consumption of a habitual diet low in bioavailable iron: a longitudinal cohort study in Moroccan children. *American Journal of Clinical Nutrition*, 81:115-21.

APPENDIX 1

MAP OF AKWA IBOM STATE SHOWING SELECTED LOCAL GOVERNMENT AREAS IN THE RESPECTIVE SENATORIAL DISTRICTS



APPENDIX 2

MAP OF NIGERIA SHOWING THE STATE OF STUDY IN RED

APPENDIX 3

ETHICAL CLEARANCE FROM UI/UCH ETHICS COMMITTEE

INSTITUTE FOR ADVANCED MEDICAL RESEARCH AND TRAINING (IAMRAT)
COLLEGE OF MEDICINE, UNIVERSITY OF IBADAN. IBADAN, NIGERIA.
Director: Prof. A. Ogunniyi, B.Sc(Hons), MBChB, FMCP, FWACP, FRCP (Edin), FRCP (Lond)
Tel: 08023038583, 08038094173
E-mail: aogunniyi@comui.edu.ng

UI/UCH EC Registration Number: **NHREC/05/01/2008a**

NOTICE OF FULL APPROVAL AFTER FULL COMMITTEE REVIEW

Re: Faith Based Approach to Behavioural Change Comunication for Improvement on Nutrition in Akwa Ibom State

UI/UCH Ethics Committee assigned number: UI/EC/12/0364

Name of Principal Investigator: **Victor E. Bassey**

Address of Principal Investigator: Department of Human Nutrition,
College of Medicine,
University of Ibadan, Ibadan

Date of receipt of valid application: 29/10/2012

Date of meeting when final determination on ethical approval was made: **18/04/2013**

This is to inform you that the research described in the submitted protocol, the consent forms, and other participant information materials have been reviewed and *given full approval by the UI/UCH Ethics Committee.*

This approval dates from 18/04/2013 to 17/04/2014. If there is delay in starting the research, please inform the UI/UCH Ethics Committee so that the dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. *All informed consent forms used in this study must carry the* UI/UCH EC *assigned number and duration of* UI/UCH EC *approval of the study.* It is expescted that you submit your annual report as well as an annual request for the project renewal to the UI/UCH EC early in order to obtain renewal of your approval to avoid disruption of your research.

The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the UI/UCH EC. *No changes are permitted in the research without prior approval by the* UI/UCH EC *except in circumstances outlined in the Code. The* UI/UCH EC *reserves the right to conduct compliance visit to your research site without previous notification.*

UI/UCH EC APPROVED COLLEGE OF MEDICINE, U.I.

Professor A. Ogunniyi
Director, IAMRAT
Chairman, UI/UCH Ethics Committee
E-mail: uiuchirc@yahoo.com

APPENDIX 4

ETHICAL CLEARANCE FROM AKWA IBOM STATE MINISTRY OF HEALTH

GOVERNMENT OF AKWA IBOM STATE OF NIGERIA

Telephone: 085-204091
Telegram: HEALTH

Our Ref:
Your Ref: MH/PRS/99/V.IV/121

OFFICE OF THE HON. COMMISSIONER
MINISTRY OF HEALTH
IDONGESIT NKANGA SECRETARIAT
BLOCK 8, P. M. B. 1030
UYO

21st February, 2012.

Mr. Victor Effiong Bassey
Department of Human Nutrition,
Faculty of Public Health,
University of Ibaddan.

APPROVAL TO CARRY OUT RESEARCH

I wish to convey to you the Honourable Commissioner's approval for you to carry out your research on **Contextual Analysis of Faith Based Approach to Behavioural Change Communication for Improvement on Nutrition and Health Care Service Demand in Akwa Ibom State.** This is subject to your proposal that the study is not invasive and that you shall obtain the informed consent of the respondents and treat their information with confidentiality.

Congratulations.

Dr. Francis B. Okon
For: Honourable Commissioner

APPENDIX 5

FAITH-BASED BEHAVIOURAL CHANGE COMMUNICATION GUIDE

NUTRITION CONCERN: Exclusive Breastfeeding (0-6 months)		
Bible Texts:	**Faith Lessons to Learn:**	**Key Messages (Action):**
1Peter 2:2 (KJV) V2 'As newborn babes, desire the sincere milk of the word, that ye may grow thereby'.	* Newborn babies (0-6mths) should be given *sincere* (pure) breast milk (undiluted with water, or unadulterated with other substances in their stomach) for them to grow well.	***Begin breastfeeding as soon as a baby is born,** do not give any other food or drink **and breastfeed frequently day and night.** *The thick yellow milk that comes from the breast after childbirth (colostrum) is very nutritious and contains substances that fight infections.
Lamentations 4:3-6(KJV) V3 'Even the sea monsters draw out the breast, they give suck to their young ones: the daughter of my people is become cruel, like the ostriches in the wilderness'. V4 'The tongue of the sucking child cleaveth to the roof of his mouth for thirst'.	*** The animals give their breast to their young to suck, but human mothers refuse to do so to their babies, and God says that is being wicked to the babies.** ***The sucking child is thirsty of the mother's breast milk, and not water as people often think.** *** God is not happy with women /families who refuse to breastfeed their infants properly.**	*Breastfeed exclusively for the six months, and during this time do not give any other food or drink (including water) to the baby. *Continue to breastfeed even if the mother or baby is ill. *Breastmilk is 80% to90% water and therefore contains all the water a baby needs even in very hot weather. *It supplies all necessary nutrients for baby's growth in the first six months in the right proportion and temperature. *It promotes baby's mental development.

NUTRITION CONCERN: Complementary Feeding (6 to 24 months)		
Bible Texts:	**Faith Lessons to Learn:**	**Key Messages (Action):**
Lamentations 4:4(KJV) V4 'The tongue of the *sucking child* cleaveth to the roof of his mouth for thirst: *the young children* ask bread, and no man breaketh it unto them'.	*Bible recognizes, identifies and separates two different age groups here according to their feeding patterns and demands: -Sucking child **(0-6mths),** *thirsty* to drink breast milk. -Young child (**6mths and above**), asking for *bread* (other foods) in addition. *The first needs only breastmilk as we said above, while the second is of age to take water and other foods.	*From six months of age, a baby needs more than breastmilk to continue to grow well. *Complementary feeding is the practice of giving other nutritious feeds to the baby while continuing to breastfeed for up to 24 months. *It should start with semi-solid foods like thick pap or gruel or porridge, and then gradually the child should be introduced to solid mashed foods that are easily digestible. *It is important that each meal includes mixtures comprising staples, with protein sources, fats, vegetables and fruits. *Ensure hygienic preparation and feeding of complementary feeds, wash hands with soap and clean water before feeding the child. *Feed the child from his-her spoon, plate /cup. *Feed patiently until you are sure the child is satisfied.

NUTRITION CONCERN: Micronutrients Intake		
Bible Texts:	**Faith Lessons to Learn:**	**Key Messages (Action):**
Matthew 13:31-32(KJV)	***Magnificent things come in small packages.**	*Our meals (especially children 6 to 59 months) should include foods that are rich in micronutrients.
V32	**- Vitamins and minerals are needed in small amounts in the body, but play a great role in human health.**	*There are several types of micronutrients that are important to the body, the most essential for optimal child growth and development are Vitamin A, Iron, Iodine and Zinc.
'Which indeed is the least of all seeds: but when it is grown, it is the greatest among herbs, and becometh a tree, so that the birds of the air come and lodge in the branches thereof'.		*The commonest sources of micronutrients in the diet include fruits, vegetables and some animal products.
		*In addition to food sources of micronutrients, periodic supplementation should be given to all children, pregnant and lactating women according to national recommendations.
Revelation 22:2(KJV)		*Children 6 to 59 m0nths should made to receive Vitamin A in capsules every six months.
'the tree of life, which bare twelve manner of fruits, and yielded her fruit every month: and the leaves of the tree *were* for the healing of the nations'.		*Women with pregnancy from 4 months old should take Iron-folate tablets daily and be covered up to six months.
(see Daniel 1:12,15)		* There are micronutrient fortified foods that should be included in diet preparations such as, Iodized salt, Vitamin A in flour, vegetable oil, and sugar.
	*Fruits, vegetables and grains contain micronutrients that can support growth and good health. Don't look down on them.	* Vitamin A fortified foods have a design of human eye with capital A in the middle; Iodised salt has a heaped salt in a human palm.
	*Home gardening for vegetables is very important, and is a sure and cheap means of getting micronutrients.	

NUTRITION CONCERN: Growth Monitoring and Promotion (GMP)		
Bible Texts:	**Faith Lessons to Learn:**	**Key Messages (Action):**
Daniel 1:12-15 V12 "Prove thy servants, I beseech thee, ten days; and let them give us pulse to eat, and water to drink. V15 'And at the end of ten days their countenances ***appeared fairer and fatter in flesh than*** all the children which did eat the portion of the king's meat". Luke 2:52 **'And Jesus increased in wisdom and** *stature*'.	*We will not be able to know the exact effect (on health and growth) of what we eat or give to our children, except we take some body measurements, like weight and height. *It was the practice in olden days (as in the days of Daniel and Jesus) to monitor physical growth. *Therefore, we in our days with modern methods should do so to monitor (***by weighing***) and help our children to grow well.	*Frequent and regular weight measurement is a simple way to know whether a child is growing well or not. *Take the child to a Health/Community Centre at least once a month in the first 2 years of life and every 2 months thereafter until the child is 5 years. *Ensure your child's weight is marked in the Child Health Card each time you go to the center. *Ask for the result of the weighing so as to personally monitor your child's growth, and ask for nutrition counseling to know what to do for the child. *Keep the child's Growth Card as an important health record for the child.

HEALTH CONCERN: Immunization (IM)		
Bible Texts: **Numbers 21: 8,9** V8 "And the LORD said unto Moses, Make thee a fiery serpent, and set it upon a pole: and it shall come to pass, that every one that is bitten, when he looketh upon it, shall live'. V9'And Moses made a serpent of brass, and put it upon a pole, and it came to pass, that if a serpent had bitten any man, when he beheld the serpent of brass, he lived".	**Faith Lessons to Learn:** *To escape death from the poison of the fiery serpents, there was need for a brazen serpent to be made to save the lives of the people. **-Vaccines** are artificially produced from microorganisms, to destroy (swallow up) the dangerous effect of the poisons from the natural organisms that may enter the body.	**Key Messages (Action):** *Pregnant woman should go to Health Centre to receive Tetanus Toxoid vaccination to protect her and her unborn child from tetanus. .*When child is born, ensure early commencement, and completion of all child immunization.
Exodus 7: 11,12 V12 'For they cast down every man his rod, and they became serpents: but Aaron's rod swallowed up their rods'.	**-Immunization** works on this Godly theory of using man made vaccines to *'swallow up'* and kill the living natural organisms that enter the body to cause harm. * The people were commanded by God to look up to the brazen serpent, therefore, ***look for the vaccines, go for them, and immunize your child.***	*Every child should complete the immunization schedule by the first birthday *Taking all doses of vaccines as recommended protects the child from illness, disability, and death.
Genesis 1:26,28; Ephesians 6: 10,11, 16- '***the shield of faith***'.	God's given wisdom and knowledge to man enabled production of vaccines as power to subdue unseen creatures that swim in body fluids to attack our health.	*Some babies may have a mild fever after receiving vaccines. Do not worry if this happens, it is expected. Give paracetamol as appropriate. *Keep the child's immunization card as an important health record for the child. * Vaccine is not against faith, rather it supports and promotes faith as a protective/preventive '***shield***' against dangerous disease causing micro-organisms. Therefore get your child protected.

HEALTH CONCERN: Care Giving and Men's Involvement (CGMI)		
Bible Texts:	**Faith Lessons to Learn:**	**Key Messages (Action):**
Job 39:13-16 V13 " *Gavest thou* the goodly… wings and feathers unto the ostrich? V14 Which leaveth her eggs in the earth, and warmeth them in dust, V15 And forgetteth that the foot may crush them, or that the wild beast may break them. V16 She is hardened against her young ones, as though *they were* not hers: her labour is in vain without fear" **2Kings 4:18-20** V19 "And he said unto his father, My head, my head. And he said to a lad, Carry him to his mother. V20 And when he had taken him, and brought him to his mother, he sat on her knees till noon, and *then* died.	*Many parents like the Ostrich, bring forth children and neglect to spend time with them to show love and care. -They leave the children in the hands of maids and others ('***earth and dust to warm***'), risking the danger of their being broken and crushed. *Care for children (in health and sickness) is a dual responsibility of both parents. -The non-caring attitude of the father and the delay on mother's knee contributed to that child's death. *Children need your presence, warmth and care. -No one else can give these to them than you who bore the pains of their birth.	*Children deserve special attention because they cannot take care of themselves as they still lack physical, mental and social maturity. *Extra attention through active feeding, play and communication stimulates the growth of even poorly nourished children. *Keep close watch on the children and ensure that the child does not go near dangerous objects. ***Care for children (in health and sickness) is a dual responsibility of both parents.** *Knowledge of prevention and home management of common childhood illnesses is important. Learn these from health workers close to you. *Continue to feed, offer more food and fluid (and breastmilk if child is still breastfeeding), during and after a sickness. *Fathers are encouraged to be part of this early childcare.

HEALTH CONCERN: Seeking Medical Treatment/Check-ups (SMT/MC)		
Bible Texts:	**Faith Lessons to Learn:**	**Key Messages (Action):**
Jeremiah 8:22 '*Is there* no balm in Gilead; *is there* no physician there? why then is not the health of the daughter of my people recovered?' **Luke 10:33-37** V33 "But a certain Samaritan…V34... went to *him*, and bound up his wounds, pouring in oil and wine, and set him on his own beast, and ***brought him to an inn***, and took care of him. V35... he took out two pence, and gave *them* ***to the host, and said unto him, Take care of him***; and whatsoever thou spendest more, when I come again, I will repay thee. V37 Then said Jesus unto him,. ***Go, and do thou likewise".*** **Luke 17:14** "And when he saw *them*, he said unto them, Go shew yourselves unto the priests. And it came to pass, that, as they went, they were cleansed."	*The problem here may not be lack of balm nor physician, but in the people not going to seek health care. Result is that they find it difficult to recover from the sicknesses. *Jesus recommended therefore that the sick should seek health services from the trained providers (- **Luke 5:31-**'And Jesus answering said unto them, They that are whole need not a physician; but they that are sick.'). *The Good Samaritan did the little he could, and took the sick man to a clinic to be treated, and cared for, and the man recovered. **-Jesus commended that action as GOOD, a title we now give to that Samaritan.** Jesus recommended that the lepers who received the spiritual touch from Him should go to the priest for confirmation of healing through check-up. **In Mark 10:51**, Jesus asked blind Bartimaeus to mention what treatment he needed.	*Recognize when child (or anyone) needs treatment outside home and take to a Health Centre. *A child should be taken immediately to the health center if he/she: -Is not able to breastfeed, eat or drink -Has fever for more than two days -Is convulsing or having fits -Is breathing fast or with difficulty -Has blood in stool -Is not playing well, or has any other worrying condition. *Ensure that medicines are taken in doses and for the number of times/days prescribed. *Return to the clinic if the child (or any sick) is not getting better, or if instructed to do so. *Antenatal care should start as soon as a woman has missed two menstrual periods. *When in labour, the pregnant woman should go to the health center for delivery. Go to the hospital for regular check-up to know if your body system is functioning properly, to know what treatment to take, or even what prayer request to make.

APPENDIX 6

QUESTIONNAIRES

RESEARCH PROJECT
DEPARTMENT OF HUMAN NUTRITION
UNIVERSITY OF IBADAN, IBADAN, NIGERIA.

CONFIDENTIALITY AND CONSENT

I am going to ask you some questions, some of which may be personal to you. This questionnaire is about community nutrition services, how it is delivered, and it could be better delivered and sustained. It is an academic study and your views will greatly help in the designing of such services. You don't need to write your name as all views expressed by you will be treated with strict confidentiality.

Thanks for your patience, cooperation and contributions.
Date of Interview:
…….

				Code	
SECTION 1: DEMOGRAPHIC & SOCIOECONOMIC STATUS					
SN	**Questions**	**Response**		**Tick**	
1	Age of Respondent (in years)				
2	Marital Status	Single	1		
		Married	2		
		Divorced	3		
		Widowed	4		
3	Religion	Christianity	1		
		Islam	2		
		Others	3		
4	If Christian, name of Church				
5	Education	Primary	1		
		Secondary	2		
		Tertiary	3		
		None	8		
6	Occupation	Trading	1		
		Farming	2		
		Civil Service	3		
		Private	4		
7	Monthly Income	Less than n10,000	1		
		N11,000 - N25,000	2		
		Above N25,000	3		
8	Family size	2	1		
		3-6	2		
		Above 6	3		
9	Age of youngest child (in months)				

SECTION 2: INFANTS FEEDING PRACTICES -EXCLUSIVE BREASTFEEDING						
SN	**Questions**	**Response**		**Tick**		**Variable**
1	How old is this child (*name*)?	months				
2	How long after birth did you first put baby to the breast?	Less than 1 hr	1			ifpkno
		After 1 hour	2			
		2 or more days	3			
3	While waiting for breastmilk to flow, what did you feed baby with?	Plain / Glucose water	1			
		Medicne	2			
		Baby formular	3			
		Nothing	4			
4	What did you do with the first milk (colostrum) that came from the breast?	Expressed out	1			
		Gave to babay	2			
5	Are you still breastfeeding?	No	0		skip to 9	
		Yes	1			
6	If yes, how many times did you breastfeed baby last night?	Less 3 times	1			ifpprac
		3 - 5 times	2			
		More than 5 times	3			
7	How many times did you breastfeed baby yesterday during daylight hours?	Less 3 times	1			ifpprac
		3 - 5 times	2			
		More than 5 times	3			
8	Does breastmilk alone satisfy a baby?	No	0			
		Yes	1		skip to 10	
9	If no, what else do (or did) you give to satisfy baby? (*Names*)	Plain water	1			
		Glucose water	2			
		Baby formular	3			
		Other foods (*specify*)	9			
10	At what month of age did baby start taking water or extra food?	Less than 1 mth	1			ifpprac
		1 - 3 months	2			
		4 - 5 months	3			
		From 6 months	4			
11	When will you start giving baby water or other foods?	1 - 3 months	1			ifpprac
		4 - 5 months	2			
		From 6 months	3			
12	Have you heard about **Exclusive breastfeeding** before?	No	0			ifpkno
		Yes	1			
13	What is Exclusive Breastfeeding?	Giving baby breast only for 6 mths	1			ifpkno
		Giving breast and water.	2			
		Can't remember.	3		Explain	
		Don't know.	8		Explain and skip to 17	
14	From which source of information did you hear about exclusive breastfeeding? (*Tick as many sources mentioned*)	Books /Posters/Radio/Television	1			
		Friends/Relative/ Neighbour	2			
		Health Workers	3			
		Church	4		*skip 17-19*	
15	If you heard it from the church, what was your response to it?	No response	1			ifpattit
		I practiced it, but stopped	2			
		I am practicing it	3			
16	Would you continue in this state of response?	No	0			
		Yes	1			
		Don't know	8			
17	Should you hear about exclusive breastfeeding from the church, what would your response to it be?	No response	1			ifpattit bl
		Will try practicing it	2			
		Will strongly practice it	3			
18	Why would you practice them?	For the health benefits	1			ifpattit bl
		Because the teaching is right	2			
		To express my faith in God	3			
		For all reasons above	4			
19	Would you support such and other health messages to be emphasized in churches?	No	0			ifpattit
		Yes	1			
20	What is your reason?	For the health benefits	1			ifpattit
		Because the teaching is right	2			
		To express faith in God	3			
		For all reasons above	4			

SECTION 3: COMPLEMENTARY FEEDING						
SN	**Questions (*for children 6 months and above*)**	**Response**		**Tick**		**Variable**
1	What foods did baby eat yesterday?	Breastmilk	1			cpl prac
		Plain water	2			
		Glucose water	3			
		Baby formular	4			
		Other foods	5			
2	In the other foods child ate yesterday, tick the group that has any food that was in the meals:					
	Group A: (*Yam, Cassava, Wateryam, Cocoyam, Bannana, Plantain, Maize, Rice, Guinea corn, Indomie, Bread, Biscuit*)	**Group A**	1			
	Group B: (*Beans, Groundnut, Melon, Soyabean*)	**Group B**	2			
	Group C: (*Meat, Chicken, Crayfish, Egg, Sachet/Tin milk*)	**Group C**	3			
	Group D: (*Palm oil, Vegetable oil, Butter, Magarine*)	**Group D**	4			
	Group E: (*Green leaves, Okro, Tomato, Orange, Mango, other fruits*)	**Group E**	5			
3	When will you finally stop breastfeeding this child (name)?	6 -11 months	1			cplprac
		12 -18 months	2			
		19 -24 months	3			
		After 24 months	4			
4	If you had stopped breastfeeding what was your reason?	Baby refused	1			cplattit
		Was adviced so	2			
		Sickness	3			
		Child was over 2 yrs	4			
5	Have you heard about Coplementary feeding before?	No	0		Explain and skip to 10	cplkno
		Yes	1			
6	What is Complementary feeding? (*Feeding the child from 6 months old with rich home foods, while still breastfeeding up to 2 years of age*). Tick Yes if said correctly.	Yes	1			cplkno
		Can't remember	2		Explain	
		Don't know	3		Explain	
7	From which source of information did you hear about Complementary feeding? (*Tick as many sources mentioned*)	Books /Posters/Radio/Television	1			
		Friends/Relative/ Neighbour	2			
		Health Workers	3			
		Church	5		*skip 10 - 12*	
8	If you heard it from the church, what was your response to it?	No response	1			cplattit
		I practiced it, but stopped	2			
		I am practicing it	3			
9	Would you continue in this state of response?	No	0			
		Yes	1			
		Don't know	8			
10	Should you hear about **Complementary feeding** from the church, what would your response to it be?	No response	1			cplattit bl
		Will try practicing it	2			
		Will strongly practice it	3			
11	Why would you practice them?	For the health benefits	1			cplattit bl
		Because the teaching is right	2			
		To express my faith in God	3			
		For all reasons above	4			
12	Would you support such and other health messages to be emphasized in churches?	No	0			cplattit
		Yes	1			
13	If yes, what is your reason?	For the health benefits	1			cplattit
		Because the teaching is right	2			
		To express faith in God	3			
		For all reasons above	4			

SECTION 4: MICRONUTRIENT NUTRITION						
SN	Questions (*for children 6 months and above*)	Response		Tick		Variable
1	Have you heard of Micronutrients before?	No	0		Explain as vitamins & minerals	mnkno
		Yes	1			
2	Which of the Vitamin and Minerals have you heard of before?	Vitamin A	1		Probe/Guide	
		Iron	2			
		Iodine	3			
		Zinc	4			
		None/Don't now	8			
3	Lack of vitamins and minerals can cause growth failure in children?	Strongly Disagree	1			
		Disagree	2			
		Agree	3			
		Strongly Agree	4			
		Don't know	8			
4	Lack of vitamins and minerals can lead to illnesses and death?	Strongly Disagree	1			
		Disagree	2			
		Agree	3			
		Strongly Agree	4			
		Don't know	8			
5	Would you have the time to take your child to any centre to receive a dose of vitamin A?	No	0			mnattit
		Yes	1			
6	Would you have the time to go to any centre to receive a dose of iron folate as a pregnant woman?	No	0			mnattit
		Yes	1			
7	Are you aware of any foods sold in the market that contain Vitamin A?	No	0			
		Yes	1			
		Don't know	8			
8	If yes, which of these foods?	Sugar	1		Probe/Guide	mnkno
		Flour	2			
		Vegetable oil	3			
		Don't know	8			
9	Are you aware of any foods sold in the market that contain Iodine?	No	0			
		Yes	1			
		Don't know	8			
10	If yes, which food?	Salt	1		Probe/Guide	
		Don't know	8			
11	Would you take the pains to go asking for them to buy?	No	0			mnattit
		Yes	1			
13	From which source of information did you hear about these Micronutrients? (*Tick as many sources mentioned*)	Books /Posters/Radio/Television	1			mnkno
		Friends/Relative/ Neighbour	2			
		Health Workers	3			
		Church	5		*skip 16-18*	
14	If you heard it from the church, what was your response to it?	No response	1			mnattit
		I practiced it, but stopped	2			
		I am practicing it	3			
15	Would you continue in this state of response?	No	0			
		Yes	1			
		Don't know	8			
16	Should you hear about **Micronutrients** from the church, what would your response to it be?	No response	1			mnattit bl
		Will try practicing it	2			
		Will strongly practice it	3			
17	Why would you practice them?	For the health benefits	1			mnattit bl
		Because the teaching is right	2			
		To express my faith in God	3			
		For all reasons above	4			
18	Would you support such and other health messages to be emphasized in churches?	No	0			mnattit
		Yes	1			
19	What is your reason?	For the health benefits	1			mnattit
		Because the teaching is right	2			
		To express faith in God	3			
		For all reasons above	4			

SECTION 5: IMMUNIZATION						
SN	Questions	Response		Tick		Variable
1	Do you know anything about immunization?	No	0		Explain and skip to 9	
		Yes	1			
2	While pregnant (of this child), did you ever receive any immunization injection?	No	0			immprac
		Yes	1			
		Don't know	8			
3	What was the name of the vaccine? (*Tetanus Toxoid or T.T.*)	Answers correctly	1			immkno
		Don't know	8			
4	Would you have the time to take your child to any centre to receive immunization?	No	0			immattit
		Yes	1			
5	Have you ever taken your child to any centre to receive immunization?	No	0			immprac
		Yes	1			
6	From which source of information did you hear about immunization? (*Tick as many sources mentioned*)	Books /Posters/Radio/Television	1			immkno
		Friends/Relative/ Neighbour	2			
		Health Workers	3			
		Church	4		*skip 9-11*	
7	If you heard about immunization from the church, what was your response to it?	No response	1			immattit
		I practiced it, but stopped	2			
		I am practicing it	3			
8	Would you continue in this state of response?	No	0			
		Yes	1			
		Don't know	8			
9	Should you hear about immunization from the church, what would your response to it be?	No response	1			immattit bi
		Will try practicing it	2			
		Will strongly practice it	3			
10	Why would you practice them?	For the health benefits	1			immattit b
		Because the teaching is right	2			
		To express my faith in God	3			
		For all reasons above	4			
11	Would you support such and other health messages to be emphasized in churches?	No	0			immattit
		Yes	1			
12	What is your reason?	For the health benefits	1			immattit
		Because the teaching is right	2			
		To express faith in God	3			
		For all reasons above	4			

SECTION 6: GROWTH MONITORING & PROMOTION						
SN	Questions	Response		Tick		Variable
1	How do you know if your child is growing properly?	Child is active/playing / not sick	1			gmpkno
		Child is growing taller	3			
		Child is gaining weight	4			
		Don't know	8		skip to 4	
2	If by 3 or 4 above, how do you know the weight or height?	By just looking	1			gmpkno
		By lifting or holding the child	2			
		By using weight or height scale	3			
3	If by scales, at where do use the scale?	At home	1			gmpprac
		From weight vendors	2			
		At health centre	3			
		At community centre	4			
4	How regular do you monitor your child's growth by weighing?	I do not weigh the child	1			gmpattit
		Not regular	2			
		Quarterly	3			
		Monthly	4			
5	Have you heard about Growth Monitoring and Promotion (GMP) before?	No	0		skip to 10	gmpkno
		Yes	1			
6	What is it about? (*Getting your child measured for growth and making efforts to ensure his proper growth*)	Answers correctly	1			gmpkno
		Don't know	8		skip to 10	
7	From which source of information did you hear about Growth Monitoring? (*Tick as many sources mentioned*)	Books /Posters/Radio/Television	1			gmpkno
		Friends/Relative/ Neighbour	2			
		Health Workers	3			
		Church	4		*skip 10-12*	
8	If you heard it from the church, what was your response to it?	No response	1			gmpattit
		I practiced it, but stopped	2			
		I am practicing it	3			
9	Would you continue in this state of response?	No	0			
		Yes	1			
		Don't know	8			
10	Should you hear about **Growth Monitoring** from the church, what would your response to it be?	No response	1			gmpattit bi
		Will try practicing it	2			
		Will strongly practice it	3			
11	Why would you practice them?	For the health benefits	1			gmpattit bi
		Because the teaching is right	2			
		To express my faith in God	3			
		For all reasons above	4			
12	Would you support such and other health messages to be emphasized in churches?	No	0			gmpattit
		Yes	1			
13	What is your reason?	For the health benefits	1			gmpattit
		Because the teaching is right	2			
		To express faith in God	3			
		For all reasons above	4			

SECTION 7: CARE-GIVING AND MEN'S INVOLVEMENT						
SN	Questions	Response		Tick		Variable
1	Who does the feeding of this child?	Self	1			cgmprac
		Mother	2			
		Father	3			
		Others	9			
2	Who stays with child if he/she feeds self?	Nobody	1			cgmprac
		Mother	2			
		Father	3			
		Others	9			
3	In a day how long do you work outside home?	Over 12 hours	1			cgmprac
		6 - 12 hours	2			
		1 - 5 hours	3			
		Always at home	4			
4	When do you really have time to spend with your child(ren)?	During leave periods	1			
		Week-ends	2			
		Only in the nights	3			
		All days	4			
5	Which of these does father do at home for the child?	Plays with child	1			cgmattit
		Baths child	2			
		Feeds child	3			
		Does all 1-3	4			
		Does none	8			
6	Which of these does father do when child is sick?	Feeds child	1			cgmattit
		Takes child out for treatment	2			
		Pays for treatment	3			
		Gives medicine to child	4			
		Does all 1 - 4	5			
		Does none	8			
7	Have you ever known that when both parents create time to care for a child, he grows well and healthy?	No	0		skip to 11	cgmkno
		Yes	1			
8	From which source of information did you hear about **Care-giving and Men's Involvement**? (*Tick as many sources mentioned*)	Books /Posters/Radio/Television	1			cgmkno
		Friends/Relative/ Neighbour	2			
		Health Workers	3			
		Church	4		skip 11-13	
9	If you heard it from the church, what was your response to it?	No response	1			cgmattit
		I practiced it, but stopped	2			
		I am practicing it	3			
10	Would you continue in this state of response?	No	0			
		Yes	1			
		Don't know	8			
11	Should you hear about **Care and Men's Involvement** from the church, what would your response to it be?	No response	1			cgmattit bi
		Will try practicing it	2			
		Will strongly practice it	3			
12	Why would you practice them?	For the health benefits	1			cgmattit bi
		Because the teaching is right	2			
		To express my faith in God	3			
		For all reasons above	4			
13	Would you support such and other health messages to be emphasized in churches?	No	0			cgmattit
		Yes	1			
14	What is your reason?	For the health benefits	1			cgmattit
		Because the teaching is right	2			
		To express faith in God	3			
		For all reasons above	4			

SECTION 8: HEALTH SEEKING BEHAVIOUR						
SN	**Questions**	**Response**		**Tick**		**Variable**
1	Where did you deliver your last child?	At home	1			hsattit/prac
		Church	2			
		TBA home	3			
		Hospital/Private clinic	4			
		Health centre	5			
		Others	9			
2	Did you attend any antenatal check-up?	No	0		skip to 5	hsattit
		Yes	1			
3	Where, if yes?	Church	1			hsattit/prac
		TBA home	2			
		Hospital/Private clinic	3			
		Health centre	4			
4	How many months pregnant were you when you first received antenatal care (ANC)?	First month	1			hsattit/prac
		2 - 3months	2			
		4 -7 months	3			
		8 -9 months	4			
5	Did anybody ever advice/instruct you to to go for ANC?	No	0		skip to 7	
		Yes	1			
6	If yes, who did so?	Friend	1			
		Husband	2			
		Health Worker	3			
		Pastor/Church member	4			
		Others	9			
7	Which of these illnesses did your child have in the last 2 weeks?	None	0		skip to 9	
		Fever	1			
		Cough	2			
		Diarrhea	3			
		Rashes/Boils	4			
		Others	9			
8	Where did you seek advice/treatment for the child?	Church	1			hsattit/prac
		Native Doctor	2			
		Self/Patent Medicine Vendor	3			
		Hospital/Health centre	4			
9	Which of these problems did you as an adult have in the last 2 weeks?	Fever	1			
		Cough	2			
		Diarrhea	3			
		Severe heache	4			
		Frequent urination	5			
		Inability to sleep	6			
		None	8		skip to 11	
10	Where did you seek advice/treatment?	Church	1			hsattit/prac
		Native Doctor	2			
		Self/Patent Medicine Vendor	3			
		Hospital/Health centre	4			
11	Which of these checks have you got done in the last 2 months?	Blood pressure	1			hs attit
		Body weight	2			
		Blood sugar	3			
		HIV status	4			
		Antenal	5			
		None	8			
12	Does seeking medical treatment/check-ups help in good health and long life?	No	0		skip to 16	
		Yes	1			
13	If yes, where did you learn this from?	Books /Posters/Radio/Television	1			hslcno
		Friends/Relative/ Neighbour	2			
		Health Workers	3			
		Church	4		*skip 16-18*	
14	If you heard of **Seeking Health Services** from the church, what was your response to it? (***skip 17, if church was not mentioned in 12 above***)	No response	1			hsattit
		I practiced it, but stopped	2			
		I am practicing it	3			
15	Would you continue in this state of response?	No	0			
		Yes	1			
		Don't know	8			
16	Should you hear about **Seeking Health Services** from the church, what would your response to it be?	No response	1			hsattit bi
		Will try practicing it	2			
		Will strongly practice it	3			
17	Why would you practice them?	For the health benefits	1			hsattit bi
		Because the teaching is right	2			
		To express my faith in God	3			
		For all reasons above	4			
18	Would you support such and other health messages to be emphasized in churches?	No	0			hsattit
		Yes	1			
19	What is your reason?	For the health benefits	1			hsattit
		Because the teaching is right	2			
		To express faith in God	3			
		For all reasons above	4			

SECTION 9: HEALTH SERVICE ASSESSMENT						
SN	Questions	Response		Tick		Variable
1	Is there a health centre in this community?	No	0			
		Yes	1			
2	What is the distance from your house to the centre?	Very far	1			
		Far	2			
		Near	3			
		Very near	4			
3	Have you ever been to the health centre to receive care or treatment before?	No	0		Skip to 11	
		Yes	1			
4	If yes, have you been there in the last 3 months?	No	0			
		Yes	1			
5	If yes, for whose sake did you go there?	Self	1			
		Child	2		Skip to 8	
		Others	3			
6	If for self sake, was the service you went for available?	No	0		Probe for equipment/drugs	
		Not all available	1			
		All available	2			
7	How was the cost of the service?	Very costly	1			
		Costly	2			
		Cheap	3			
		Very Cheap	4			
8	If for the child, was the service you went for available?	No	0		Probe for equipment/drugs	
		Not all available	1			
		All available	2			
9	How was the cost of the service?	Very costly	1			
		Costly	2			
		Cheap	3			
		Very Cheap	4			
10	How would you assess the workers at the centre?	Very bad	1			
		Bad	2			
		Good	3			
		Very good	4			
11	If you have any need to seek for care/treatment, will go that health centre in the community?	No	0			
		Yes	1			
12	If no, what is the reason?	Distance to health facility	1			
		Unavailable of services	2			
		High cost of services	3			
		Bad attitude of health workers	4			

APPENDIX 7

HEALTH SERVICE ATTENDANCE RECORDING FORM

ACCESS OF SERVICES AT HEALTH FACILITIES			
		LGA:	
	SERVICES	Available (Yes / No)	No. of Accessing services last week
	Primary Health Centre:		
1	Ante-Natal		
2	Tetanus Toxoid		
3	Delivery		
4	Treatments for Adults		
5	Immunization		
6	Growth Monitoring/Promotion (12-59 mths)		
7	Child Welfare Clinic		
	TOTAL		

APPENDIX 8

FOCUS GROUP DISCUSSION GUIDE

LGA: _____ COMMUNITY:

_____ DATE: _____ Attendance: _____

SN	QUESTIONS	DISCUSSIONS/ ANSWERS
1	Do you know anyone who has had nutrition and health problem?	
2	How did this affect you, the family or your church/community?	
3	Did you wish that you could do something to stop malnutrition and other health problems?	
4	Before this intervention, what did you know about **malnutrition and sicknesses**?	
5	What new thing have you learned from these messages?	
6	How did the chosen scriptures relate with the health messages?	
7	Which section do you think should not be discussed in the church setting?	
8	How will you use the lessons from this intervention package to help prevent health problems in this community?	
9	How do you think your members or people in this community will react to these messages?	
10	How and what occasion will you use make use of this package in your church?	
11	Which of these groups will you likely gather to hear this messages (Men, Women, Youths, All)?	

APPENDIX 9

RESPONSES OF PARTICIPANTS AT THE FOCUS GROUP DISCUSSION SESSIONS

	Questions	Responses
1	Before now what did you know about malnutrition and sicknesses?	'When somebody is not able to feed well' 'Nutrition is eating the right proportion of food at the right time'
2	How does this affect you, the family or your church/community?	'It has serious effect on parents and the church because it makes them stay away from church' 'Diverts the attention of people from spiritual needs' 'Costs the church some money to take care of such sick and needy people' 'Reduces membership strength if it leads to deaths' 'It leads to absenteeism from church, and makes people inactive in church services'
3	What new thing have you learned from these messages?	'I love the intermarriage between the word of God and medical care' 'Knowledge on fortified foods' 'It is right to pay medical bills as the good Samaritan did' 'Joint parental care' 'Ways of good care and feeding of children' 'Knowing that God shall demand an account from us for not doing those things' 'I learn about kinds of food, their sources and their benefits' 'I have learned the importance of fruits and its uses' 'That exclusive breastfeeding makes baby free from sicknesses' 'That child care is not only for mothers but involves fathers' 'They are all old things we knew but we can now apply them' 'I have gained knowledge worth more than N10,000' 'We had some knowledge of them before'
4	How did the chosen scriptures relate with the health messages?	'The scriptures are relevant' 'They relate very well' 'There is much relationship between the scripture and the health message'
6	How will you use the lessons from this intervention package to help prevent health problems in this community?	'Teach members during bible studies and Sunday schools' 'Will introduce health talk to the monthly Esit Eket Council of ministers meeting' 'We will organize seminars on the topic and invite health workers to help' 'Will teach the package to different groups of people in church in Sunday school, men and women fellowship' 'Will make photocopies of the material and teach even in village meetings' 'By using the material to teach people in the church because the church is the grassroot' 'Will pass across the messages to none members' 'I will use the knowledge for Christian counseling and to deliver the people because it is not only witches that attack people'
7	How do you think your members or people in this community will react to these messages?	'As humans they will be positive and negative responses' 'We preach against sins and some people still commit them, so some will hear and do and some may not' 'They will be happy about it because it will help them and the children' 'Being that it is bible related and the ministers are involved, they will appreciate' 'They will accept the message because they are basic facts. It involves life' 'There is hope that members will appreciate'