EFFECTIVENESS OF COMMUNICATION STRATEGIES ON RURAL NURSING MOTHERS' BEHAVIOUR TOWARDS VITAMIN A CONSUMPTION IN SOUTH WESTERN NIGERIA

BY

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CERTIFICATION

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DEDICATION

To the Mighty, The Most High. The Strength of the weak. The Voice for the voiceless. The Owner. The All.

To my Mother; Evergreen, Iyaniwurami Atilola, who believed I have what I seek for.

To Alhaja Akanke Sherifat Alawoki, for her special love for me

To Prof Janice Olawoye, who saw what I do not see in myself

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ABSTRACT

Susceptibility to infectious diseases and paediatric blindness is a huge public health burden among children in rural Nigeria. This condition could be linked to Vitamin A (VA) deficiency due to poor nutritional behaviour of Nursing Mothers (NM) in rural areas. Eliciting positive behaviour through the use of appropriate Communication Strategies (CS) could help improve NM behaviour towards VA consumption. However, there is dearth of empirical evidence on suitable CS to elicit positive behaviour towards VA consumption. Therefore, effectiveness of CS on rural NM behaviour towards VA consumption in southwestern Nigeria was investigated.

A four-stage sampling procedure was used. Oyo, Ekiti and Osun States were purposively selected due to the preponderance of child malnutrition. Three, two and three LGAs were proportionately randomly selected from Oyo, Ekiti and Osun States respectively. From the selected LGAs, one community health centre was randomly selected. Using sampling proportionate to size, 277 rural NM were randomly selected. Respondents were exposed to intervention using Entertainment, Education and Entertainment-Education Communication Strategies (CS) in Ekiti, Oyo and Osun States, respectively. Using quasi experimental design, baseline data were collected. After 12 weeks, data were collected on respondents' knowledge, attitude, practice and behaviour towards VA consumption. Also, data were collected on socioeconomic characteristics and sources of information on VA consumption using interview schedule. Indices of knowledge (pre: low 0.0-2.90, high 2.91-15.00; post: low 10.00-18.70, high 18.71-20.00), attitude (pre: unfavourable 69.00–142.91. favourable, 142.92 -173.00; post: unfavourable, 102.00 –151.00, favourable, 151.01-190.0), practice (pre; low 5.00 – 48.57, high 48.58-71.00; post; low 25.00-57.31, high, 57.32- 80.00) and behavioural (pre: low 4.12-8.97, high 8.98-12.88; post: low 7.54-12.35, high 12.36-15.73) were generated. Data were analysed using descriptive statistics, Chi square, Pearson Product Moment Correlation, and ANOVA.at $\alpha_{0.05}$.

Respondents' age, household size, annual income were 28.16±5.33 years, 6.8±3.5 persons, ₦935, 013.73± ₦108, 6291.35, respectively. Respondents were mostly married (91.3%) with 41.3% having secondary education while 74.9% depended on health workers as their major source of information. For entertainment, education and entertainment-education categories, more (92.6%, 77.9% and 92.1%) rural NM had high knowledge of VA consumption in the post intervention compared to 14.8%, 45.1% and 17.8% respectively, who had high knowledge in the pre intervention phase. Attitude towards VA consumption was improved by entertainment, education and entertainment-education CS from 22.2% to 83.3%, 22.2% to 54.1% and 36.6% to 76.2%. Practice of VA consumption among the respondents improved from 29.6% to 75.9%, 69.7% to 73.8 % and 23.8% to 97.0% for entertainment, education and entertainment-education, respectively. More NM in rural areas had positive behaviour in post intervention than pre-intervention from 38.9% to 61.1%, 23.7% to 76.2%, and 27.7% to 72.3% for entertainment, education and entertainment-education CS, respectively. Education (x^2=0.02) and income (r=0.03) were significantly related to behavioural change. At post intervention, entertainment-education (10.64±1.83) had more significant impact on NM's behaviour toward VA consumption than education (9.62±1.18) and entertainment CS (9.45±1.3).

Entertainment, education and entertainment-education communication strategies effectively improved behavioural change towards Vitamin A consumption among nursing mothers in Southwestern Nigeria.

Keyword Communication strategies, Communication intervention, Nursing mothers' nutritional behaviour, paediatric.

Word count 490

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LIST OF ACRONYMS AND ABBREVIATIONS

NM	Nursing mother
VA	Vitamin A
CS	Communication Strategy
FAO	Food and Agriculture Organization
IDRC	International Development Research Centre
UNICEF	United Nations Children's Fund
INPF	International Nutrition Planners Forum
USAID	United States of America International Development
WHO	World Health Organization
USAID	United States of America International Development
HKI	Helen Keller Organization
HCCC	Health Communication Capacity Collaboration
NIH	National Institute of Health

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CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

Communication, key in the development of human just as oxygen is to breathing, structural blocks to construction of building, and as condiments are to cooking. According to FAO (1998), it is the essential thread that binds development, a fabric that is unwoven from the various activities of millions of individuals. Yahaya (2008) opine thatcommunication is the connection of social relationship among people and it is an age-long concept. In addition, it is a phenomenon on which fundamental human interactions depend. It has been recognized as being a proven and trusted method of improving knowledge change, an essential instrument for accomplishing aims, goals, objectives and development nationally (Amuseghan *et al* 2010). ccording to Ogili (2001, 2005), communication is described as a system that transmits and receives symbolic clues both verbally and non-verbally; a process that can be oral or written, formal or informally; and also a social process that uses signs , symbols, languages and other such means to generate an exchange of thoughts and meanings between individuals and groups. Communication with other resources can ultimately bring about certain behavioral changes that lead to development if effectively implemented according to the desired audience.

Problems of development have been related to the dearth of information and knowledge. Consequently, intervention is needed in order to provide people with information which would positively influence their behaviour towards development goals (Yahaya, 2008). Communication is described as essential, as it enables planners to interact with people to understand their needs, attitudes and traditional knowledge when identifying and formulating planning programs (Colin and Jonathan, 1994). Communication strategy is a communication developmental intervention gizmo designed with organized informational messages to create awareness, increase

knowledge, improve attitude and increase practice to bring about behavioural change in a target audience . As an intervention strategy, communication strategies involve various channels of communication which requires taking into consideration the public policy and environmental changes so as to enhhance the behaviour of the target audience to improve their personal, household, community and social well-beings.

Communication strategy is a method to gather ideas and messages as well as receive information. Irrespective of the objectives of the project, defining the communication strategy focuses on the planning, understanding of the situation, the ability to carry out the work and the clear identification of the objectives leading to the communication management of messages, media / channel(s) and audience(s) that influence attitudes and behaviour. (International Development Research Centre, 2011).

Communication strategies aim at dissemination of information through certain medium with use of forms or illustrations that are desirable for the situation. Communication strategies help to spread information in an organized and controlled way.The ideal communication strategy give inside information about the structure of the flow of information, the message, right audience to address, message carrier, materials needed to fill and feedback mechanisms to learn from the entire exercise. It also forms the blueprint to inform as well as to be informed by others (IDRC, 2011). It centers on behavioural change, where communication is a tool for persuasion and educating people to have an increase knowledge, improve attitudes and practice of expected intervention. It is an intervention that features various reinforcing communication channels with the public policy and environmental changes to influence behaviour. It is an audience-centered approach and the process is target population-driven.

A productive communication strategy enhance research value in order to have a desired goal over the target audience (Gauthier and Jacques 2005). Communication strategies have been used for behavioural change in various ways. For instance, communication strategy was used in Hmong on dog vaccination to treat rabies infection (UNICEF, 2005). It has also been used to treat measles and deficiencies of Vitamin A in Afghanistan. Here, communication principles were used to inform the caregivers on the in a importance of vaccines against measles and vitamin A deficiency. Banners and loudspeakers were parts of the materials used (UNICEF, 2005).

Radio, banners and outreach by health workers and community health volunteers in Indonesia reported to increase the rate of young children in test areas receiving vitamin A capsule at a health post from 24 to 51 per cent (Seidel, 1992). Community nutrition education via individual counselling, print and audiovisual materials and the use of mass media was one of the key elements of Thailand's Nutrition and Primary Health Care Programme. This initiative reported to decrease the incidence of extreme malnutrition in rural environs among children under the age of five from 36% in 1982 to 20% by 1989 (International Nutrition Planners Forum, 1989).

A communication strategy was also used in teaching nursing mothers on positioning and attachment for successful breastfeeding in three different Asian countries - Indonesia, Bangladesh and the Philippines. This was done using an image of a woman breastfeeding her child to emphasize the superiority of breast feeding over bottle feeding (USAID, 2007).

As a developmental tool or building block, communication strategies have been found useful in different sectors to solve and address various social and developmental problems (IDRC, 2011). Ogili (2005) noted that communication strategy was also used as educational instruction tools in Nigeria to asertain message transmission from one source to another using different forms or illustrations desirable with the environment via the entire senses.

Considering the above, communication strategies have been found useful in many developmental projects and interventions in different parts of the World and at local levels. They were successful at bringing about the desired behaviours among the target populace. This means that they could go a long way to take care of various issues relating to vitamin A deficiency, which is still increasing in certain regions of the Nation.

Vitamin A deficiency could result from insufficient or lack of eating of foods that are rich in Vitamin A, which thereafter could result into internal or external body defects. This is common among children and mothers in developing countries and should thus, be addressed since it is a known fact that vitamin A is necessary for optimum performance of different activities in the body of nursing mothers and their children.

1.2 Statement of the research problem

Health status as a measure of human development has become globally accepted as reflected in human development index indicating life expectancy at birth, education and Gross Domestic Product (UNDP, 2016). Live expectancy is an index of population health and longevity. Specific health challenges, especially those affecting women and their children, have become of major research interest. Vitamin A deficiency is one of such big concerns in the healthcare development sector.

The World Health Organization (WHO 2008) approximates that up to 140 million children especially in Africa and South-East Asia suffer from vitamin A deficiency (VAD). Nigeria has been on the list among the countries with topmost menace of universal vitamin A deficiency (WHO 2008). In Nigeria, it is estimated that 80,000 children may die yearly as a result of ailments related to Vitamin A deficiency if collaborative efforts are not made to regulate and avert this.

However, VAD has been found to be common in the developing World, especially among mothers who do not adequately consume foods containing Vitamin A substances. It was described as a major public health burden for pre-school children in sub-Saharan Africa and a high degree of vulnerability to infectious diseases and pediatric blindness (Aremu, Lawoko and Dalal, 2010). Eliminating vitamin A deficiency is consequential to improve personal survival, growth and development of women with their children, because health is necessary for individuals' economic development, political stability and social well-being. This would assist in the present and future development of women who are involved in farming, thereby raising children who are interested in agriculture.

It is worth noting that the software kit on Vitamin A may be well planned but its dissemination by planners could be faulty. This is because a programme is successful if it is adequately disseminated and fully accepted and useful to its beneficiaries. For the campaign on Vitamin A to be considered successful, there is the need to ensure nationwide coverage of consistent messages and materials, through the use of appropriate communication strategies.

Effective communication techniques are typically the product of careful choosing of the right medium or combination of available media which would help create awareness, develop interest and favourable attitude that will bring expected

behavioural change in reducing the deficiency of Vitamin A in the target populace. Behavioural change communicators in field of Vitamin A consumption programmes have experimented with the use of different communication strategies and have recorded varying degrees of success. Since the problem has not been totally abated, the search for appropriate communication strategies continues. Hence a mix of existing strategies may have to be experimented with on a small scale before full scale dissemination is embarked upon, particularly, if found to be effective. Therefore, behavioural messages on Vitamin A were packaged using a combination of six commonly used communication channels and presented to the rural nursing mothers to ascertain the relative effectiveness of each channel with the aim of providing empirical answers to the following research questions:

1. What are the socio-economic characteristics of the rural nursing mothers in the study area?
2. Are the rural nursing mothers aware of Vitamin A consumption programme before the communication strategy intervention?
3. What are the preferred source of information on Vitamin A consumption by rural nursing mothers?
4. What are the preferred communication channels on Vitamin A consumption by rural nursing mothers?
5. How knowledgeable are the rural nursing mothers on the importance of vitamin A consumption before and after the intervention?
6. What is the attitude towards Vitamin A consumption by rural nursing mothers before and after intervention?
7. What is the practice towards Vitamin A consumption by rural nursing mothers before and after intervention?
8. What is the behaviour toward Vitamin A consumption by rural nursing mothers before and after intervention?

1.3 Objectives of the study

The General objective of the study was to assess the effectiveness of communication strategies on the behaviour of rural nursing mothers towards Vitamin A consumption in Southwest Nigeria.

The specific objectives were to:

1. identify the socio-economic characteristics of the rural nursing mothers in the study area;
2. ascertain the awareness of Vitamin A consumption programme among rural nursing mothers before intervention ;
3. determine the preferred source of information on Vitamin A consumption among rural nursing mothers;
4. identify the preferred communication channels on Vitamin A consumption among rural nursing mothers;
5. assess rural nursing mothers' knowledge of importance of Vitamin A consumption before and after communication intervention in the study area;
6. determine rural nursing mothers' attitude towards Vitamin A consumption before and after intervention;
7. describe Vitamin A consumption among rural nursing mothers before and after intervention;
8. ascertain the behaviour towards Vitamin A consumption by rural nursing mother before and after intervention.

1.4 Research hypotheses

The following hypotheses were tested:

(i) There is no significant relationship between selected socio-economic characteristics of the nursing mothers and behavioural change in vitamin A consumption.

(ii) There is no significant relationship between awareness of Vitamin A consumption programme and behavioural change in its consumption.

(iii) There is no significant relationship between the preferred communication channels used and behavioural change in Vitamin A consumption.

(iv) There is no significant difference in rural nursing mothers' knowledge on importance of Vitamin A consumption before and after intervention.

(v) There is no significant difference in rural nursing mothers' attitude towards Vitamin A consumption before and after intervention.

(vi) There is no significant difference in rural nursing mothers' Vitamin A consumption before and after intervention.

(vii) There is no significant difference in rural nursing mothers' behaviour before and after intervention.

(viii) There is no significant difference in behavioural change of rural nursing mothers across the communication strategies.

1.5 Justification

Though extension philosophy and principles are clear on the fact that the totality of the farmer's family livelihood should be of concern to effective and sustainable extension intervention, the narrow and sectorial approach was erroneously adopted in the past. So much improvement has been made to the quality of life in rural environments since development experts realized and embraced systematic and integrated approaches to agricultural and rural development. It is in this vein that Communication strategies as development interventions that touch the health and welfare of rural nursing mothers have become quintessential to extension and rural development programming. This research was on the health of rural nursing mothers and children who are indeed the nation's future farmers and is therefore strategically relevant in rural development agenda.

Nigeria does have a ways to go towards the realization of the goals of food sufficiency and nutrition security, which can be achieved by common cause for common interest through communication in efforts at achieving Sustainable Development Goals (SDG) goals of zero hinder and food self-sufficiency. Thus, there is the need to adopt a new communication initiative that ensures behavioural changes in vitamin A consumption by rural women, having in mind the custom, norms, value, needs and interests of the rural nursing mothers. Appropriate communication strategies are multi-strategic community-based campaigns which will bring expected behavioural change in vitamin A consumption, thus solving the problem of vitamin A deficiencies especially among rural nursing mothers.

Extension is known as a process of continuous interchange of useful message with people (the communication dimension) and then helping them to develop the required knowledge , skills and attitude to use this information and technology effectively. Over the years, several methods and principles have emerged through which useful knowledge and information have been shared to assist people to attain higher productivity and better life. Part of this involves communication strategies.

The importance of communication strategies in improving Vitamin A consumption cannot be over emphasized. When rural nursing mothers are better informed and educated on Vitamin A consumption, it will increase their knowledge which will influence their attitude toward better Vitamin A consumption as health is wealth which can enhance productivity of rural nursing mothers, thus foster sustainable development. This study is important to address rural nursing mothers' behaviour toward Vitamin A consumption.

Communication strategies as a tool for behavioural change will assist in providing guidance and support for programme planners on National women activities on nutrition and policy makers. This could help to reduce National morbidity, mortality and related health issues associated with vitamin A in the body. In the end, this will increase and expand the coverage of vitamin A consumption and vitamin A programme among the nursing mothers and their children as well as help the health workers to maintain the update of those involved.

Appropriate and effective communication strategies on vitamin A consumption will add to the existing knowledge of Vitamin A consumption by the rural nursing mothers. The nursing mothers should understand the significance of Vitamin A to their family as well as the colossal effect of its deficiency and help them improve their attitude toward Vitamin A consumption thereby help live healthier lives. This would result in increased growth and productivity physically, economically and politically within their households, neighbourhood and the society.

1.6 Definition of terms

- **Attitude:** is the individual general feeling in making decision over consumption programme as designed in communication channels.
- **Awareness:** is the condition of understanding/perception of certain facts about Vitamin A among the target audience in terms of programme and consumption.
- **Behavioural change** is the expected modification, adoption, consumption, correction, uptake of Vitamin A foods substances by rural nursing mothers.
- **Communication strategy:** is a communication developmental intervention gizmo designed with organized informational messages in local languages within the study areas to interpret and appraise Vitamin A consumption in order to create awareness, increase knowledge, improve attitude, as well as increase practice to bring about desired behavioural change toward Vitamin A consumption in the target populace.
- **Consumption:** is the act and rate of eating, drinking and swallowing Vitamin A food substances.
- **Effectiveness:** is the influence of communication strategies to bring about decisive Vitamin A consumption.
- **Household:** person/individual, persons, group of persons, related or non-related living in the same roof as one family and consuming food in the same cooking utensils as well as providing other needed materials for living of their family.
- **Knowledge:** is the specific information acquired in the study area which serves as fundamental in making firm decisions on the study areas target audience.
- **Nursing mothers:** women that are breastfeeding their babies with or without breast milk and other food items and also who are nursing children of ages between 0-5 years of age.
- **Practice:** is the applied ways and manners of consumption of Vitamin A food substances as expected so as to change or better health and welfare of the target audience.
- **Rural:** areas that is underdeveloped, sparsely populated (less than 20,000 people) and major livelihood is farming using crude implements.

CHAPTER TWO

LITERATURE REVIEW

2.0 Communication

2.1 Concept of Communication

Communication has been recognized as being an integral part of existence of humanbeings (Rogers and Antola 1985) and has been identified as proved process of enhancing change in knowledge, an integral instrument for achieving national goals, objectives, goals and growth (Amuseghan 2008a, Amuseghan 2010). It is a social system which makes use of signs, symbols, languages and other related means to create an interchange of meaning and thought among individuals and communities, to enhance comprehension and relationships. Ogili (2001) defined communication as a process through which symbolic signals are transmitted and received, both verbal and non-verbal; an oral or written, formal or informal process. Oladeji (2008) described communication as an intentional attempt to share information and concepts, factuals, thoughts or impressions in such a way that the meaning, intent and use of the message are commonly understood. It is the articulation of social relation among people, an age long concept, and a phenomenon upon which basic human interactions depend (Yahaya 2008). It is a medium through which message/information in all its form is shared and exchanged between and among people.

Communication is at the core of who we humans are. It is our mode of information exchange; this also reflects our symbolic power. These two roles represent what Carey (1989), defined as the communications transmission and ritual views respectively. Carey (1989) noted that communication plays an instrumental task (for example, it helps one gain knowledge) but also fulfills a sacrificial purpose, one representing human beings as members of a collective culture. Thus, Communication can be described as an exchange of symbol of good sense and all communications activities have both a transmission and a ritualistic portion (Carey 1989).

Communication has six essential elements according to Adebayo and Adedoyin (2005) because it results into something at the end of it all and these are:

1. Source/sender who intends the message
2. Message that is intended
3. Channel/medium through which the intended message is conveyed
4. Receiver for who message is intended
5. Effect which is expected as a result of the intended message
6. Feedback which confirms or denies the understanding of the intended message

Communication is a persuasive instrument that require mastery of its use to achieve a meaningful end in a target audience. It involves exchange of ideas/information within and between/among individuals.

2.2 Level of Communication

It could be at intrapersonal or interpersonal level of communication. The intrapersonal form of communication occurs within an individual after receiving an information. It is the interaction between the brain and sense organs of oneself, which input into brain and related organs and thereafter interprets back to the brain for the receiver to respond. The interpersonal level of communication occurs between two or more individuals while the mass communication occurs among many people at the same time.

According to Yahaya (2003), Communication could be classified into the following levels:

1. **Intrapersonal communication**: It is the communication within the body. It is a dealing occurring within one's self. The definition of intrapersonal communication takes human senses, the nervous system and the brain into consideration. They all allow for communication. Feedback is ad-lib, with natural observation and interpretations customised.
2. **Interpersonal communication**: It is a conversation between two or more individual, face to face. Interpersonal communication facilitates communication with quick feedback, especially in a situation involving each other's presence. The listeners can interrogate, make comments and even show

communication in non-verbal ways by nodding or shaking the head, which the sender can instantly pick up and deal with.

3. **Mass communication**: involves the principle and practice of mass-appeal communication. It involves strategies that spontaneously reach diverse audiences. Messages of mass communication are transmitted to a community of people through mass media. The first medium were books, followed by newspapers, magazines, movies, radios, televisions and the latest addition is the advent of the world web. We now also have mobile and e-mails.

2.3 Channels of Communication

Communication channels are medium or materials through which information passage is done from a sender/source to receiver, Obinne and Demenongu (2012), describe the channels of communication as means by which messages from source get to receiver and the other way around. It can be used to persuade, enlighten, motivate, stimulate and maintain the desires of citizens with a view to introducing new concepts and practices. Many of the channels of communication used to disseminate agricultural information as opined by Age et al (2012) include radio broadcasting, personal contacts, publications, field days, farm displays, demonstrations etc. Age *et al*, (2012) grouped these channels into five different categories:

1. Physical channels: involving direct contact include exhibitions, seminars.
2. Non-physical channels, including, radio, television, telephone calls, magazines, and other print media sources.
3. Technical which can be physical or non-physical.
4. Human discipline channel, for instance puts clothing on professionals like farmers to predict the profession.
5. Token form of channels of communication are networks between physicals and nonphysical, which may include signs and gestures as well as other symbols.

In the agricultural sector, Inagaka (2007) cited an example that, communication for development is presented with many approaches and techniques of communication, which can be adopted to pursue specific objectives. According to Yahaya and Olajide (2000), innovations' dissemination and acceptance stands as the heart of planned agricultural growth. Olowu (1998) reported that creation and production of applicable and effective technologies is among the pre-requisites for sustainability in agricultural

system. Communication strategies work within certain group of communication channels. Some of the communication channels used for intervention include the following:

2.3.1 Print Media

Newspapers and farm magazines are examples of print media. They are widely used to disseminate information on agriculture, particularly among educated farmers. Rising literacy in the country provides promises of increased consumption of print media thus enhancing farming practices for the farming community. The print media broadened the communication's scope (Mohsin, 1997). Print media can be bought and digested at the comfort of the farmers and is a permanent means because this infomation is permanently imprinted with a great storage value making it suited for comparison (Shahzad, Islam, Umber, Khan, Abdal & Raza, 2011). Farmers may also receive relevant professional advice via these channels to resolve emerging issues by submitting their concerns and questions to the editors or writers when they use their knowledge in the magazine.

2.3.2 Mobile Phone Services

Cell phones have many benefits, including their resilience and the ability to transmit audio, sms messages and data at significantly lower cost (Mangstl, 2008). Theyhave ample coverage, portable and instant two-way communications. Studies have found that mobile telephony is considered the most effective ICT implement used for the growth of the global agricultural sector (Mangstl, 2008). Kenya Agricultural Commodity Exchange (KACE) hasSokoniSMS, an SMS-based information service for farmers to get commodity rates in Kenya (KACE, 2011).

2.3.3 Television system

Television as a channel is a powerful mass medium, which very quickly transmits information on agricultural technology among the farmers' community. There is a significant evidence showing that television has a huge effect on the attitudes, values and beliefs of people (Signorielli, Gross, & Morgan, 1982). Another potential explanation is that television can help trigger thinking abilities already present in the audience. For example, Brown (1986) believes television incorporates numerous symbollic systems, like sounds, visualization, music, verbal language, written

language, and simultaneously presents the educational background of viewers (Stokes & Pankowski, 1988). The literacy level of viewers Stauffer, Frost, & Rybolt (1978) seems to make a difference in how well television information will be presented. It was found that more news stories were remembered the higher their educational level and the more literate. Nonetheless, the key reason why television is common with the public is that it simplifies the intent of people to choose the fastest way to receive knowledge and understand. The best way to learn is by television instructional programming on health, employment and growth of agriculture (Buren, 2000).

2.3.4 Radio

According to Kimutai (2011), Radio is the mostly consumed among the media, followed by mobile, television, newspapers and the internet. With regard to radio, many vernacular radios have also emerged which are capable of communicating effectively to the target groups. According to Moemeka (1994), since 1960, the U.N. Educational, Scientific and Cultural Organization (UNESCO) stressed the importance of radio broadcasting in community education, particularly in developing societies' rural areas. This is because radio has the special features. Some of this includes the fact that radio is easy to purchase; it is versatile and there anybody literate and iiterate can learn from it and the signal is all over thhe country. This therefore means there is accessibility to radio. Radio therefore plays a substantial function disseminating culture and informaton. The concept behind radio is to study the world, gather information about daily happenings, and afterwards, turned them into news and entertainment. The role of radio as an information and news channel is granted but the position of education is still not quite clear. Effectiveness of radio depends not only on its inherent quality but, most particularly, on whether and for what reason it is used. It needs to require dialogue, too. In this situation, just to get feedback from the target audience. According to McAnamy (1973), there are five strategies that can be used by radio to educate and for development. One is through open broadcasting which focuses on unorganized target group. The assumption is that a good and relevant is capable of being accepted by the targeted group by itself. It is used for rural information and education. In this case, there is always doubt whether the target group is listening or not. If they are listening, there is doubt whether they are benefiting from it. Another approach to utilise radio for social transformation and development is by instructional radio. It is geared at a structured learning community, with someone who can manage

and lead as well as get feedback. It was effective in the teaching of civic responsibilities, practical skills and cooperative duties (Greenholm, 1975). The concern is that, it will be unsuitable on large scale because of the constraints on financing, logistics and resources. The rural radio forum is used in rural region for discussion and decision-making. It involves the presentation of regular radio shows of about 15-30 minutes of a mixed nature to rural audiences formed into listening groups. The groups will listen, and then have a deliberation. It can be successful as a result of radio messages' follow-ups, which can result into self-commitments leading to acceptance of decisions and subsequent social change. Group membership also helps to expose information to the participants. The other is the goal of the radio school to transform the people's dependent attitude and passive, building a deeper sense of dignity and self-worth and transforming them into new men and women.

2.3.5 Extension workers and Fellow Farmers

The State delivered the majority of extension services to both small-scale farmers and agricultural growers through its Ministry of Agriculture. The conventional method of public extension was viewed as archaic, top-down, paternalistic, rigid (one-size fits-all), inflexible, vulnerable to bureaucratic inefficiencies and therefore incapable of meeting the complex demands of modern agriculture system.

2.4 Communication Strategies

Communication occur due to one reason or the other. We have reached an era of understanding that depends in the ability to communicate to achieve desired goals. Communication strategy could be described as the "what, who, why, when, how and where" of conveying a message. 'What' is the problem, 'who' is the target population, 'why' the justification is, 'when' is the period of the study, 'how' is the methodology and 'where' is the study area. It is also a two-way method, collecting information and obtaining information. Irrespective of the goals of a project, the concept of a communication strategy provides planning consideration, an awareness of the situation, an opportunity to carry out the work, and simple definition of the goal leading to a communication management that brings message(s), media/channel(s) and audience(s) which influences or modifies attitude, opinion or behaviour (IDRC 2011).

Communication strategies are said to be formed when communication is organized, developed and built and it is said to be good when there is better control of the work

(Gauthier and Jacques 2005). The methods of communication express clarify and encourage dreams and collection of well-defined goals. This provides a coherent, cohesive "voice" connecting different practices and goals in a way that is appealing to stakeholders:

1. A policy is required for the immediate recipients and collaborators of a study to ensure the outcomes of the research are perpetuated, that they stand as a guideline and that their effect on the field is expanded.

2. A policy is required for local decision-makers to ascertain that participatory development is well comprehended, adopted in other projects and tailored to their needs.

3. A strategy will be directed at achieving visibility in the study field, exchanging the project findings and creating exchanges on projects executed with the community members for the development sector, researchers, donors and fund agencies.

The significant of defining your target groups can not be overstated. Knowledge, beliefs and customs often vary widely from one group to another, and the way knowledge is acquired is not the same in each community (IDRC 2011).

2.4.1 Steps of a Communication Strategy

The major steps for creating communication strategies are as follows:

1. The Communication Strategy Need: cause identification

The reason for the communication is the initial step in the communication strategy formation. The message to be communicated should be well structured and in addition, clearly state the action of development. The expected outcome of a communication effort should be clearly defined. Should you ask for an answer, provide facts, inspire action, raise awareness, create consensus, and alter habits or something else? (Magnetic Confidence 2008).

Communication strategy helps the target audience, stakeholders, and colleagues to plan communication. Appropriate strategies can enhance communication's interactive nature, and aid in receiving information from the target populace. This is a two-way process, gathering information and receiving information from the target population. It develops vehicles to inform the target audience (Magnetic Confidence 2008).

2. Message: Specifies the message to be delivered

This involves identifying and defining all messages relating to what to be communicated. This could include a brainstorming session in which all relevant concepts for the message are identified. Focussing on with rating key messages of two or more by significance, timeliness or other factors. Messages need to be packaged appropriately to give expected meaning to the receiver as wanted by the sender (Magnetic Confidence 2008).

3. Audience: Identification of the target populace towards Communication

After the communications are established, who are those involved, concerned or interested? What are the detail needed? What is their reactions? Are their concerns? What kind of information do they have? By responding to audience questions, message's effectiveness will be improved, and efficiency delivery mechanism to be developed will increase. There is need for one to find the right time and location to communicate. Certain messages are best received on weekdays while others on weekends. There is need to comprehend the message impact on the setting.

When you have a list of all available message delivery settings, examine how the settings will affect the way your messages are received. Are these situations formal or informal? It relies on the nature of the message (Magnetic Confidence 2008).

4. Determine measures for success

This allows one to know if message was received and well understood. For example, one indicator may be the number of people that participated or the communications results. When you understand this, management of flow of information will be easy (Magnetic Confidence 2008).

5. Identification of modes of delivery towards the communication

Examine the materials to transport and deliver message. How to reach out to the stakeholders? Reaching and influencing a single message would increase if the distribution of the same message is more than one time across multiple vehicles. Many of the vehicles and tools used to convey the message include public notices, presentations, briefings, exhibits, telephone, responsiveness summaries, internet and mailing information. Planning the correct use of available resources will help reduce the cost of building additional communications vehicles (Magnetic Confidence 2008).

2.5 Behaviour Change with Communication

Communication strategies are created to bring about expected behaviour in the societies, communities, homes and individuals. Yahaya (2003) asserted that the aim of development communication based on the view of social marketing and participatory communication scholarship is behavioural change. As defined by Centre for Disease Control and Prevention (2018), Behaviour change communication (BCC) is defined as the systematic use of communication for promotion of positive health outcomes with reference to proven theories and models of behaviour change (Centre for Disease Control 2018). Another definition by different authors was as an interactive method with communities for the development of packaged messages and approaches using various communication channels for developing expected behaviours, promoting and developing individual, community and societal behaviour change and maintaining appropriate behaviours (Family Health International 2002). This is part of the broader health communication sub-disciplines (Adewuyi and Adefemi 2016). According to Kreps & Maibach (2008), the study and implementation of communication strategies are designed to promote positive health outcomes.

The BCC contains community, social mobilization as well as health communication approaches, because it is a product of information, education and communication (IEC) strategies. Understanding that health behaviour and position is an interplay among biological, social and environmental that supports want for intervention of BCC (Koenker *et al*., 2014). It holds a critical position for the promotion of health, as research by Korda & Itani, 2013 has shown that, the key features of successful health promotion programs are theoretically driven and evidence-based BCC interventions. Therefore, the most basic and powerful human interaction-communication-BCC can have a positive impact on the social components of health and well-being (Wakefield, Loken & Hornik, 2010). BCC was found to be effective in certain areas, including nutrition, according to Ruel et al . , 2008.

2.5.1 Factors determining behavioural change

There are factors that determine the way people act. These actions could be positive or negative, barriers or facilitators. They are important factors necessary in determining

behaviour change. This is why individual's behaviour is important in vitamin A consumption. For communication strategies message to be conveyed to the target audience, items that determine behaviour are essential to have effective communication flow among the target audience. Individuals have several reasons for the adoption or resistance of behaviour change. Individual behaviour is important in vitamin A consumption and factors that determine the rural nursing mothers' behaviour are essential to have effective communication flow among the rural nursing mothers. These barriers or facilitators are called behavioural determinants. The power and readiness to influence individual behaviour to have desired change depend on these determinants which are highlighted below:

1. Individuals behave and adopt healthy behaviours due to awareness and knowledge of a health problem or service. They are rarely the only reason and these are called individual determinants (Daniel, Lynch and Reeves 2017), (Van Doorn-Van Atten MN, *et al.*, 2018)

   2. Besides individual determinants, relationships and societies may have an effect on someone's desire and capacity to access health care. Barriers may result from intentional blocking of access to health services, or from a general perception of inappropriate or incorrect services (Daniel, Lynch and Reeves 2017).

   3. Finally, physical or logistical barriers as well as gender and cultural norms can prevent the use of services (Daniel, Lynch and Reeves 2017).

According to Daniel, Lynch and Reeves 2017, Determinants can be classified into three basic groups relating to the environmental, skills and knowledge and ideation.

1. **Environmental group**

a. Services availability
b. Services Location - This is the location preferred by clients
c. A supporting legal and policy environment needed for the services

2. **knowledge and Skills group**

   a. Awareness level of the service and/or the benefit from resulting health.
   a. Awareness level of the skills or stages required for the service accessibility or maintenance of behaviours

b. Beliefs regarding the required skills or behaviour: Are they found too difficult? Does the target audience think that they possess the time to perform the expected behaviours?
c. Does the target populace think that that the behaviour cannot be done by them? Do they require assistance to achieve the behaviour?
d. Is the behaviour a thing the audience can systematically recollect to do, or they forget frequently (for example, keeping of certain appointments, keeping of a particular treatment journal, and taking of a daily pill)?

3. **Ideational group**
   a. What are the common beliefs about the behaviour or intended target audience? Are they positive or derogatory (for example, " those men who have sex with men are unethical" or "adolescents should not be allowed to use family planning")?
   b. How much social support does the target audience possess to carry out services or maintain necessary behaviours?
   c. What are the existing social and gender norms about the area of service or health? Are they supporting or not? (Daniel, Lynch and Reeves 2017).

2.5.2 Functions of communication strategies on behaviour

Communication has spiritual flow of getting into the emotion of individual to have expected behavioural change. It is a participatory process for building bond intra and inter relationship within an individual and among people.

Adewuyi and Adefemi (2016) have described the participatory nature of social media and its potential for broad audience reach; public health professionals are enthusiastic about using it for behavior change communication.

According to Campbell and Craig (2014) , social media is one of the fastest communication, and is the most cost-effective way to connect with any desired audience.

The following are some functions of communication according to Yahaya (2003):

i. **Communication increases knowledge**: The interaction between the source and receiver increase to what the receiver knew before the effort. For instance, giving information on Vitamin A to the rural nursing mothers (Yahaya, 2003).

ii. **Communication influence notion**: Through the introduction of communication to individuals, their notions on issues are mostly changed (Yahaya, 2003).

iii. **Communication as low cut loudspeaker**: Communication is considered as a low cost loud speaker because it is capable of reaching target audience at relatively cheaper cost (Yahaya, 2003).

iv. **Communication is a catalyst**: Communication has been used in various ways to have desired behavioural changes toward something. For instance, communication strategy was used in teaching nursing mothers on positioning and attachment for successful breastfeed in three different Asian countries which was done using an image of a woman breastfeeding her child to emphasize the superiority of breastfeed over bottle feeding (USAID, 2007). Also, Okoye, okolie and Ngwu (2017) used four communication strategies as safety intervention programmes in the construction industry.

v. **Communication improves quality**: The use of communication is capable of upgrading the quality of information output (Yahaya 2003).

vi. **Communication is a feedback and feed forward tool**: Communication assist in collecting information from nursing mothers and packaging it into use for vitamin A consumption. The feedback will assist the government in policy making relating to vitamin A consumption.

2.5.3 Rural Nursing Mothers and Behavioural Change

Behavioural change could prevent vitamin A deficiencies and increase vitamin A consumption among rural nursing mothers in areas where required measures are put in place. This will prevent health problem and or complications due to vitamin A deficiencies in children and their mothers. For effective behavioural change, appropriate communication strategies that will increase knowledge, improve attitude and practice are significantly necessary to put to action as Singhal and Brown (2018) who reported that communication strategy has a strong potential to enlighten the audience but the educational propensity of the entertainment media is not yet extracted systematically in developed and developing countries. Abdulraheem and Parakoyi (2009) posited that improving on mothers' care-seeking behaviour contribute in reducing several child mortality and morbidity in developing countries and added

mothers' education, child gender, income, as part of predictors of care seeking behaviour.

2.6 Importance of Vitamin A in diets

2.6.1 Meaning of Vitamin A

Vitamin A is a light yellow substance that is fat-soluble. This was the first of discovered fat-soluble vitamin. It is an orange pigment known as carotene, derived from plants and changed to vitamin A by animals. Vitamin A is of great importance for the growth of cells, eyesight and immune systems in the body. It assists in skin development as well as helping the body stay healthy. It fosters growth in bones and teeth. It is present in the retina of the eye, helps in vision towards low light, and is essential in scotopic and color vision (Berdanier 1997).

2.6.2 Basic Forms of Vitamin A in Food

In human diet, Vitamin A exists in two different forms: retinol otherwise known as preformed vitamin A and provitamin A carotenoids.

1. Retinol: This could be found in animal-source foods and are always preformed vitamin A. (Ender, Cooper, McGuire, Michaels and Welch 2014). It is a yellow and fat-soluble material in most cases (Berdanier 1997). Vitamin A is found in selected foods. The richest sources in the Nigerian diet are primarily animal-based ones and example includes liver, dairy products, fish oils, and eggs (Ender, *et al* 2014).

2. Provitamin A Carotenes occur in plant-source foods and are metabolized into retinol when absorbed by the body. World Health Organization established the Estimated Average Requirement (EAR) for vitamin A by age group and for children between 4-6years, it is 275μg retinol activity equivalent (μg RAE) units per 100gm. of oil (Stadlmayr, Charrondiere, Enujiugha, Bayili, Fagbohun, Samb and Burlingame 2012).

2.6.3 Functions of Vitamin A

Vitamin A plays certain roles across the body, such as:

2.6.3.1 Eye for seeing

The roles of vitamin A in the visual system are linked to the retinol form needed to see black and white particularly at night. It is as a result of this that deficiency in vitamin A could lead to night blindness. Vitamin A in the form of metabolite is required for low light and colour vision in the eye retina (Tang, Dolnikowski, Rusell and Grusak 2005).

2.6.3.2 Immune System

Vitamin A functions as an immune booster to strengthen the human body's "entry points," such as mucous membranes, eye lining, gastrointestinal, urinary and digestive tracts. This allows the retina to differentiate easily between the light and the dark, thus enhancing night vision. In fact, vitamin A functions as an anti-infection to prevent cataracts, macular degeneration, glaucoma and other age-related ocular diseases. Vitamin A changed to retinoic acid preserves healthy bones and teeth. Dentin found in the teeth contains vitamin A, forms the hard substance coating inside teeth, thereby maintaining its strength. Vitamin A also performs a major role to restore worn-out or old tissue with new tissue to maintain healthy bones and teeth. Vitamin A creates a mineral compound inside the body, called calcium phosphate, which stops solid particles from developing. The urinary calculi is the solid particles in the urinary system, which causes pain, nausea and vomiting when stones are formed. Vitamin A is a strong oxidant that battles oxidative stress, or "cellular rust," inside our bodies, thus shielding us from health issues such as cataracts, atherosclerosis, chronic obstructive pulmonary disease and cancer. Furthermore, it is considered to be important for both males and females reproductive process (Groff 1995).

2.6.3.3 Cancer

Researches have shown that vitamin A substances help in inhibiting the development of tumor been found to inhibit tumor development and its composition lessen the ability for cancer to develop in people (Ross, 1999 and Groff, 1995).

2.6.3.4 Dermatology

Studies indicate that vitamin A is essential for the skin and protects skin diseases that can be caused by some form of body lining. According to Groff (1995), vitamin A tends to work in the maintenance of proper skin health.

Vitamin A plays substantial roles in women's lives before, throughout, and after pregnancy. It also assists a woman's unborn child during the pregnancy period. Usual vitamin A intake allows the unborn body to see (Ross 1999 and Groff 1995).

2.6.3.5 Growth and Development in the body system

Vitamin A deficiency may cause birth defects. Retinol and retinoic acid (RA) are essential for embryonic development. Retinoic acid acts during fetal development in the growth of limbs and in the formation of heart, eyes, and ears. In addition, retinoic acid can controls gene expression for growth hormone (Ross, 1999 and Groff, 1995).

2.6.3.6 The development of red blood cells (haematopoiesis)

Haematopoiesis is the production of components of the blood cells. All components of blood are obtained from the haematopoietic stem cells. Red blood cells are formed by precursor cells, called stem cells. For normal differentiation into red blood cells the stem cells are based on retinoids. Furthermore, vitamin A enhance the mobilization of iron from storage sites to the developing red blood cell for incorporation into hemoglobin, the red blood cell oxygen career (Ross, 1999 and Groff, 1995). Vitamin A reduces the severity of infectious disease, especially measles and chronic diarrhea-reducing rates of infectious disease and chronic diarrhea-lower hospital admission rates and outpatient consultations and lower occurrence of anaemia (Ross, 199 and Gross, 1995).

2.7 Deficiencies of Vitamin A in the body

Vitamin A deficiency occurs with chronic dietary intakes deficient in both vitamin A and beta-carotene. Beta-carotene is a form of pre-vitamin A that is easily converted to vitamin A in the body. In children, lack of vitamin A causes severe visual impairment and blindness, and significantly increases the risk of serious illness and even death from such common childhood infections as diarrhea and measles. In pregnant women in high-risk areas, vitamin A deficiency occurs especially during the last trimester when the demand for both the unborn child and the mother is highest. The deficiency

of the mother is demonstrated by the high prevalence of night blindness during this period. The most vulnerable are children between six months and six years of age, pregnant women and lactating women (Semba 2001). The lives of 670,000 children under the age of five are claimed annually (Black et al., 2008). Approximately 250,000-500,000 children in developing countries become blind every year due to deficiency of vitamin A, with the highest prevalence in Southeast Asia and Africa (National Institute of Health, 2008).

Vitamin A deficiency (VAD) is of substantial public health significance; it is a risk factor in low- and middle-income countries for childhood deaths from diarrhea and measles, and an important source of preventable childhood blindness in higher-income countries. (Duke Aghaji and Duke Aghaji 2019). VAD is of extreme public health concern in Nigeria, affecting children above 20 per cent of pre-school age. VAD prevention strategies include nutritional education to promote dietary diversification and local production of vitamin A-rich foods , food fortification with vitamin A, breastfeeding promotion, use of oral rehydration therapy to treat diarrhea, higher vaccination coverage for measles and vitamin A supplementation. (VAS) (WHO, 2009).

2.8 Control of Vitamin A deficiency using interventions in Nigeria

Various interventions are in practice in Nigeria to reduce vitamin A deficiency. These are:

2.8.1 Oral supplementation: involving capsules and liquid distribution to the target population. It can easily be implemented but difficult to sustain over time.

This includes:

2.8.1.1 Vitamin A supplementation

A vitamin replacement is a nutritional aid used by people who require or want extra supplements that go beyond what their usual everyday intake contains. Mostly called dietary supplements, it may be recommended for people with certain conditions or limited diets. While a vitamin supplement should not be used as a food substitute, they can give many advantages. Such add-ons to vitamins are called multivitamins. These vitamins, in one dose, provide several different vitamins and other minerals. Sometimes, all of the main vitamins and certain other lesser known vitamins would be

given a prescribed value from the daily dosage. A vitamin supplement or mineral supplement can be obtained and only has a particular vitamin or mineral. This is for those people who have a deficiency in one area. Various vitamin supplements include liquid vitamin supplements, mineral vitamin supplements, herbal vitamin supplements, organic vitamin supplements, and vitamin supplements (Black, 2010). The major formulations used as dietary supplements are vitamin A palmitate (retinyl palmitate), and vitamin A acetate (retinyl acetate). Retinyl palmitate is a more stable form of retinol, but since the skin has to break down retinyl palmitate more, even higher doses are required to produce the similar benefits.

Research findings have shown that supplementing vitamin A for children under five at risk of vitamin A deficiency will decrease all-cause mortality by 23% (Beaton et al 1993). The Micronutrient Initiative with funding from the Canadian International Development Agency (MI 2010) provides approximately 75 per cent of the vitamin A needed for supplementation operation by developing countries. Approaches to fortification of food are becoming increasingly possible but still can not guarantee the level of coverage (UNICEF 2007). An additional 1.25 million deaths from vitamin A deficiency in 40 countries have been averted since 1998 (WHO 2008).

2.8.2 Dietary intervention through intake of certain foods items that has vitamin A nutrients. Reseachers uses communication techniques to educate people on how they can improve their diet through eating of vitamin A foods.

2.8.3 Food fortification involving addition of Vitamin A to food transports such as sugar, flour powder, salt and vegetable oil consuming by certain groups like young children, pregnant and nursing mothers, therefore afford them regular intake of vitamin A foods (UNICEF 2007).

2.9 National Intervention Status on Vitamin A Consumption

Insufficient intake of vitamin A foods is a major issues facing the world. This situation affects farmers' productivity as well as societal value. That is why Ogunmola (2014) reported that malnutrition/under nutrition threatens economic development and lower people's productivity towards working their way out of poverty in many of the world's poorest countries. Almost 240 million people in Saharan Africa do not eat well enough for their health and wellbeing. Therefore, Africa is adjudged to have the highest

prevalence of undernourishment in the world, afflicting almost everyone in four people. According to Kuku-Shittu, Onabanjo, Fadare and Oyeyemi (2016), malnutrition in Nigeria is constantly severe and uncontrolled. Over a quarter of all undernourished West Africans are noted to reside in Nigeria while south-west, north central and north-east regions of Nigeria were reported to represent the majority of those affected by malnutrition. All these require nutrition consciousness on the part of the nursing mother as well as the government.

The main ways of dealing with the deficiencies of Vitamin A deficiency are diet improvement through nutrition education (by focusing breastfeeding promotion and enrichment of young chilren's diets with foods rich in vitamin A), supplementation of vitamin A mega-doses in children semi-annually, and vitamin A fortification of certain staple foods. These methods are used to ehanace vitamin A consumption in Nigeria, but no information on implementation or quantitative effect exists (Kuku-Shittu, Mathiassen, Wadwa, Myles, and Ajibola 2013).

In the year 2000, Nigeria decreed law on vitamin A fortification of certain foods items such as maize flour, edible vegetable oil, wheat flour, margarine and sugar with vitamin A (fortification of wheat flour with iron and B vitamins was done). Sanusi and Akinyele found low intake of fortified products (wheat flour, corn flour, sugar and vegetable oil with no knowledge of food fortification). The Standard Organization of Nigerian (SON) vitamin A levels ranged from 25-100% in oil to 50-80% in sugar and 50-80% in bread.(Uchendu, Atinmo and Oyewole (2012), Ogunmoyela, Adekoyemi, Aminu and Umunna (2013).

2.10 Importance of Vitamin A in human Health

Health is a fundamental issue in human development and an essential component of rural development. Extension education does not only concern farmers' field but also homes and includes nutrition, health and the welfare of the household, including women and children. Farming being energy demanding requires sound health. Extension is important for research as well as farmers' home because it is when they are sound in health that they can work on the farm. The roles of children and mothers assisting themselves cannot be underestimated thus diseases related to vitamin A

deficiencies such as blindness in children and mothers due to vitamin A deficiency can be reduced or eliminated.

World Health Organization (2008) confirms that Vitamin A deficiency is widespread in developing countries but rarely seen in developed countries. It is estimated to impact about one third of children under the age of five, this is lives of 670,000 children around the world annually. About 250,000-500,000 children in developed countries are blind every year due to vitamin A deficiencies, with the highest occurrence in Southeast Asia and Africa (WHO 2008).

2.11 Women in Agriculture

Women play historical roles in agriculture development (Das, 2000). Women covers about 70 percent of the agricultural workers, 80 percent of food producers, 10 percent of those who process essential food and 60 to 90 percent of rural marketing. Therefore, make up about two-thirds of the agricultural workers (FAO, 1998). Up to 80 per cent of the labour force in all trade is female in West Africa. While women produce most of the food in the developed world, they also pursue 60-90% of rural marketing, making up more than two-thirds of the agricultural production workforce (FAO, 1998). In West Africa, female work for up to 80 per cent of the labor force in all trade.

Despite the fact that women in the developing world produce much of the food, they still are more malnourished than most men are. Women eat less food in many rural communities than men, particularly when the food is unavailable, such as just before harvest, or when the workload increases without a corresponding increase in the intake of food (FAO 1986). Women have been used as labour in certain parts of the world, e.g. women supply one-half of the labor in Indian rice cultivation (FAO 1998). They account for about 70% of the agricultural labor-power and more than 70% of farm labour. This has resulted in the feminisation of agriculture implying the rising participation of women in the agricultural labor force, whether as autonomous farmers, as unpaid family members, or as agricultural wage earners. Specifically, the feminisation of agriculture involves: increased participation rate of women in the agricultural sector, as self-employed workers or as agricultural wage earners; in other words, an increase in percentage of women who are economically active in rural areas and an increase in percentage of women in the agricultural labor force as compared to men, either because more women are active in rural areas than their men (FAO 1998).

In 2007, 41 percent of women make up total employment in agriculture worlwide. FAO's estimates through 2010 showed that 70 percent of women of the proportion of economically active women in least developed countries work in agriculture. A recent FAO survey showed that women farmers obtain only 5 percent of total agricultural extension services globally.

2.12 Conceptual Orientation

Communication strategies is the basic concept upon which this study is based. In this concept, communication strategies focus on vitamin A consumption among rural nursing mothers to bring about expected behavioural change. Therefore, this study was used to establish how communication strategies can influence vitamin A consumption among rural nursing mothers to improve their health-life and that of their children for higher productivity.

2.13 Theoretical framework

The following theories have been considered relevant for this study:

i. Theory of Planned Behaviour
ii. Social Learning Theory (SLT)
iii. Knowledge Gap Theory
iv. Theory of Exchange

2.13.1 Planned behaviour Theory

This is a theory of adoption (Ndah *et al* 2010). Ajzen (1991) rewrote this theory. He suggested an expasion called perceived behavioural control in the Theory of Planned Behaviour (TPB).

Perceived behavioural control is part of the additional determining factor of intentions and behaviour. It reports instances in which individuals have no total control over their actions. PBC claims that action can be affected by elements other than personal desire to execute the behavior as well as the intention of other individuals to perform the behavior as it occurred in TRA. Part of the components refer to the number of important chances and resources, such as time, money, skills and other people's cooperation (Harrison et al., 1997). The degree at which one has time, expertise and resources will decide the decision to execute a certain action (to use and adopt a certain

service in this case). Therefore, it is the mixture of intention, resource available resources and opportunities that determines whether behavior is performed.

Various studies have shown that value expectancy theory like planned behaviour hinge on communication processes to accelerate health behaviour change. Communication strategies act as a key function in influencing these perceptions. In this theory, the behaviour of individual is affected by intention to change. Intentions are affected by individual's attitudes to a particular behaviour with the perception of what referred groups of people think about the behaviour. Communication played a major function in inducing perceptions on both sides and thereby bring about the likeliness of behaviour change.

Theory of planned behaviour has been put into practice to predict intention and behaviour in a various systems (Ajzen 1991). The theory was used byAjzen & Madden (1986) to anticipate the intention of college students to attend class as well as obtain a good grade. It was also used by Mathieson (1991) to predict a person's intention to use a particular form of information system. This theory provides useful information for development of communication strategies and evaluation studies.

This theory has been carefully selected based on the following reasons:

- The theory helped to understand how rural nursing mothers' behaviour was influenced using the communication channels for training them on vitamin A consumption and their behaviour before and after was observed during these periods.
- It anticipated deliberate behaviour, since behaviour can be intentional and planned, that was why before and after intervention was used.
- This theory believes human behavior can be driven by three factors:
- Behavioral beliefs that is about the likely outcome of behaviour-adoption.
- Normative beliefs, which is about normative contemplation of other individual.
- Control beliefs that is about the presence of factors that speed up or impede behavior-adoption implementation.

2.13.2 Theory of Social learning

Theory of social learning (SLT) explains the reason of the correlative interaction involving behaviour, personal influences and the environment. For others, Albert Bandura is regarded as the foremost adherent of the philosophy (Bandura 1975, 1986). Behavior takes place in the challenge of an empirical environment which is physical and social in nature. The environment can influence the behavior of a person, with or without the awareness of that individual. For eg, a person's intake of vitamin A can be influenced by the physical environment (e.g., pervasive involvement of packaged foods, and activities of peers, families, colleagues).

The SLT model notes many significant considerations for productive achievements of communication strategies for vitamin A consumption. It also provides a process for understanding the impact of such efforts. For instant, SLT states that one has to consider how to shape the environment to increase the likelihood of success. SLT also claims that to have expected behaviou, one need to change the expectant of a person.

Principles of social learning theory involve followings:

1. People may learn by noting people's behaviour with the outcomes of that behaviour. This was done using the different communication channels to pass across the information on the importance of vitamin A to the rural nursing mothers.
2. Learning may happen without a behavioural change. Behaviourists say that learning should be symbolised with a permanent behavioural change; in contrast, social learning theorists say that since individual can learn through observation alone, their learning may be undisplayed by the performance. Learning can or can not result in a behavioural change. The after intervention in the sampled areas showed varying behavioural change among the rural nursing mothers.
3. Cognitive is a key role in learning.
4. Cognitive learning is a bridge or a medium between behaviourist learning and cognitive theories because it contains attention, memory and motivation.

Social learning theory explains human behaviour in terms of continuing reciprocal relationship among cognitive, behavioural and environmental influences

(Bandura 1997). Social learning has been used in education to improve students' behaviours and to treat aggression (Seigel 1992).

2.13.3 Knowledge Gap Theory

Tichenor, Denohue and Olien (1970) postulated the theory. The theory shows that people in the society does not equally get information. People having higher socio-economic status obtain information more than people with lower socio-economic status do. This leads to classes; class of inidividual with better education who know more and those with low education who know less.

The major premise of this theory is that knowledge gap occurs because of an increase gap between certain people of lower and higher socioeconomic status. Tichenor, Donehuee and Olien (1970) present five reasons to justify this about the knowledge gap.

People of higher or better socioeconomic status in the society have better communication skills, education, reading, apprehending and remembering of information.

i. Better socioeconomic status people store information better, or they can recall the subject from background knowledge.
ii. Individuals with a higher socioeconomic status may have a more relevant social context.
iii. Higher socio-economic class individuals are better at selective disclosure, acceptance, and retentivity.
iv. The basic nature of the mass media is that it is directed towards individuals of high socioeconomic status.

This theory implies that as new message pervades an environment by a mass media advertisement, it is likelihood to aggravate fundamental inequalities.

People with a higher educational level are assumed to learn more and apply better than those with low educational level are and the informational gap between the two classes would widen.

The media with the information should recognize that individual with better socioeconomic level got their information from different form than individual from

lower education. Therefore, communication means must be explored in order to reach the lower educated especially those at the rural environment.

2.13.4 Theory of Exchange

In economic terms, this theory is based on social exchange. It suggests intervention involves resource exchange. Individuals, groups, and organizations can exchange resources for perceived benefits. The description in the basis refers to the context of communication strategies where the 'buyers' are the target audience that buys the message in the communication strategies of Vitamin A consumption. The target group pays certain price, like time, cash or effort. Effort related costs associated with the campaign entail discomfort, mental and physical issues, social position and convenience. The planner or the researcher who is also the purchaser must provide significant goods in turns for the cost paid by the target populace. The goods include health counseling on importance of vitamin A, education talk on deficiency symptoms of Vitamin A. An inividual engaging in an exchange believes that the benefits of adopting preventive behaviour surpass the cost of purchasing adoption. The theory of exchange promotes clear acknowledgement of the costs and benefits of practices to be promoted during a campaign and attempts to reduce costs and optimize benefitss.

2.14 Explanation of Conceptual Framework

According to the figure 2.1 presented below, the conceptual framework comprises independent, intervening and dependent variables. The dependent variable is the behavioural change of the rural nursing mothers toward Vitamin A consumption, which was measured by standardized knowledge, attitude and practice of the rural nursing mothers towards vitamin A consumption. The independent variables are socio-economic characteristics of the nursing mothers (age, education, household sizes, position as wife, income generating activities, sources of information of the rural nursing mothers and awareness on vitamin A consumption). The intervening variables consist of government policy, cultural preference and socio-political influence on rural nursing mothers' understanding and use of message. The interplay of the independent variables will determine the rural nursing mothers' reactions to intervening variables which are assumed to determine the effectiveness of communication strategies used and this influenced behavioural change (knowledge, attitude and practice) of the rural

nursing mothers positively or negatively towards Vitamin A consumption in the study area.

Communication strategy was used as an intervention to influence the behavioural change of the rural nursing mothers using entertainment, education and entertainment-education communication strategies. Entertainment strategy contains music, ijala (folktale/Hunter's chant) and drama. Education strategy contains direct lectures, audio recording and video while the entertainment-education strategy contains music, ijala (folktale/Hunter's chant), drama, direct lectures, audio recording and video.

Rural nursing mothers' socioeconomic characteristics are supposed to influence their baseline behaviour (before intervention) in term of knowledge on vitamin A consumption, attitude towards vitamin A consumption and consumption Vitamin A. The rural nursing mothers' socioeconomic characteristics also influence their awareness on vitamin A and Vitamin A programme and source of information on vitamin A used. The rural nursing mothers' socioeconomic characteristics may also relate to their knowledge level, attitudinal display and extent of Vitamin A consumption in the study area. For instance, rural nursing mothers with higher educational qualification could have more access to more source of information like television than rural nursing mothers with low educational qualification who only make use or have access to few sources of information like radio. This access to different sources of information could increase rural nursing mothers' knowledge on Vitamin A foods and thereafter improve their Vitamin A consumption. With high awareness, there will be increase in knowledge of Vitamin A consumption among the rural nursing mothers. Large family could share information on Vitamin A foods among themselves. The type of income generating activities of rural nursing mothers could also affect their source of information on Vitamin A consumption. For instance, a nurse in a health Centre would have more information on vitamin A consumption due to her nature of work than a petty trader. In addition, the ethnic background of individuals could affect access to sources of information/communication channels as well as awareness on Vitamin A consumption. Some tribes believe in myth about foods/drugs/supplements and therefore avoid anything that has to do with them.

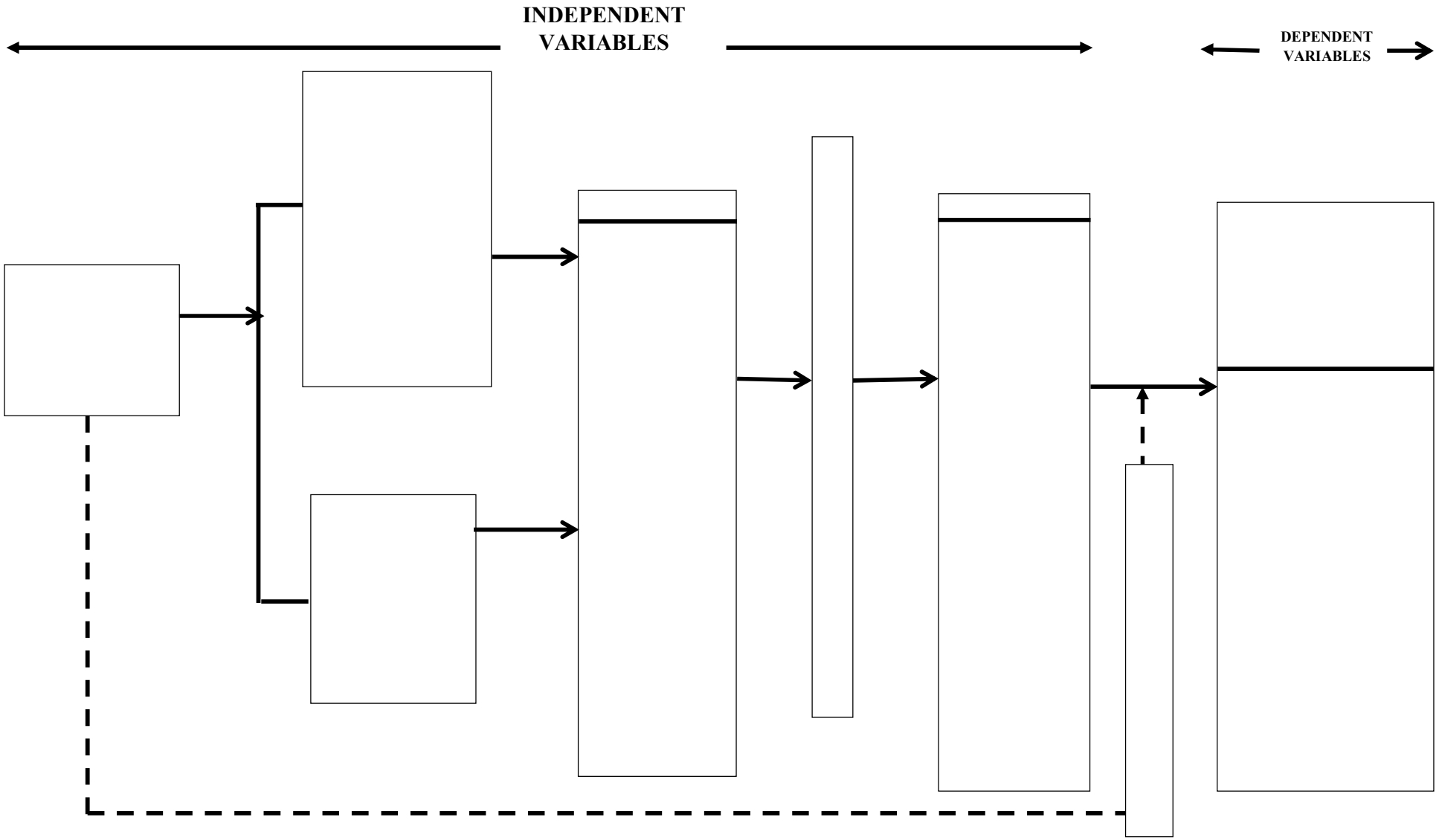

Fig 2.1: Framework of Effectiveness of Communication Strategy on Rural Nursing Mothers Behaviour towards Vitamin A Consumption

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Area of Study

The research took place in South-western Nigeria. It is one of the six geopolitical zones of Nigeria. The Southwestern is between latitudes 5^0N and 9^0N of the equator and longitudes 2.5^0E and 6^0E of the Greenwich meridian with an area of 114, 271 Square kilometers (Online Nigeria 2007). It is bounded by the Republic of Benin in the West, the Atlantic Ocean in the south border, Anambra state in the East and Kwara and Kogi states in the north border (Shaib, Aliyu and Bakshi 1997). The zone comprises six Yoruba States: Oyo, Ogun, Ondo, Osun, Ekiti and Lagos state with different dialects. There are good media culture with the presence of the premier media residences. Due to the homogeneity in language, the language of broadcast is mainly English and Yoruba. It has internationally recognized institutions of higher learning in various fields as well as world-renowned institutes. Southwestern Nigeria is predominantly an agriculture zone with rainforest and derived savanna vegetation. Agricultural activity in small and scattered holdings is the major source of income generating activities of the population of this area. General tree crops in Southwestern include oil palm, cocoa, and cashew and the arable crops such as yam, maize, cassava, and rice also thrive well in the zone. Leafy and fruit vegetables such as Amaranthus, fluted pumpkin, okro, pepper, melon, celosia and eggplant are crops with economic value. The map of South Western Nigeria is as presented in figure 3.1.

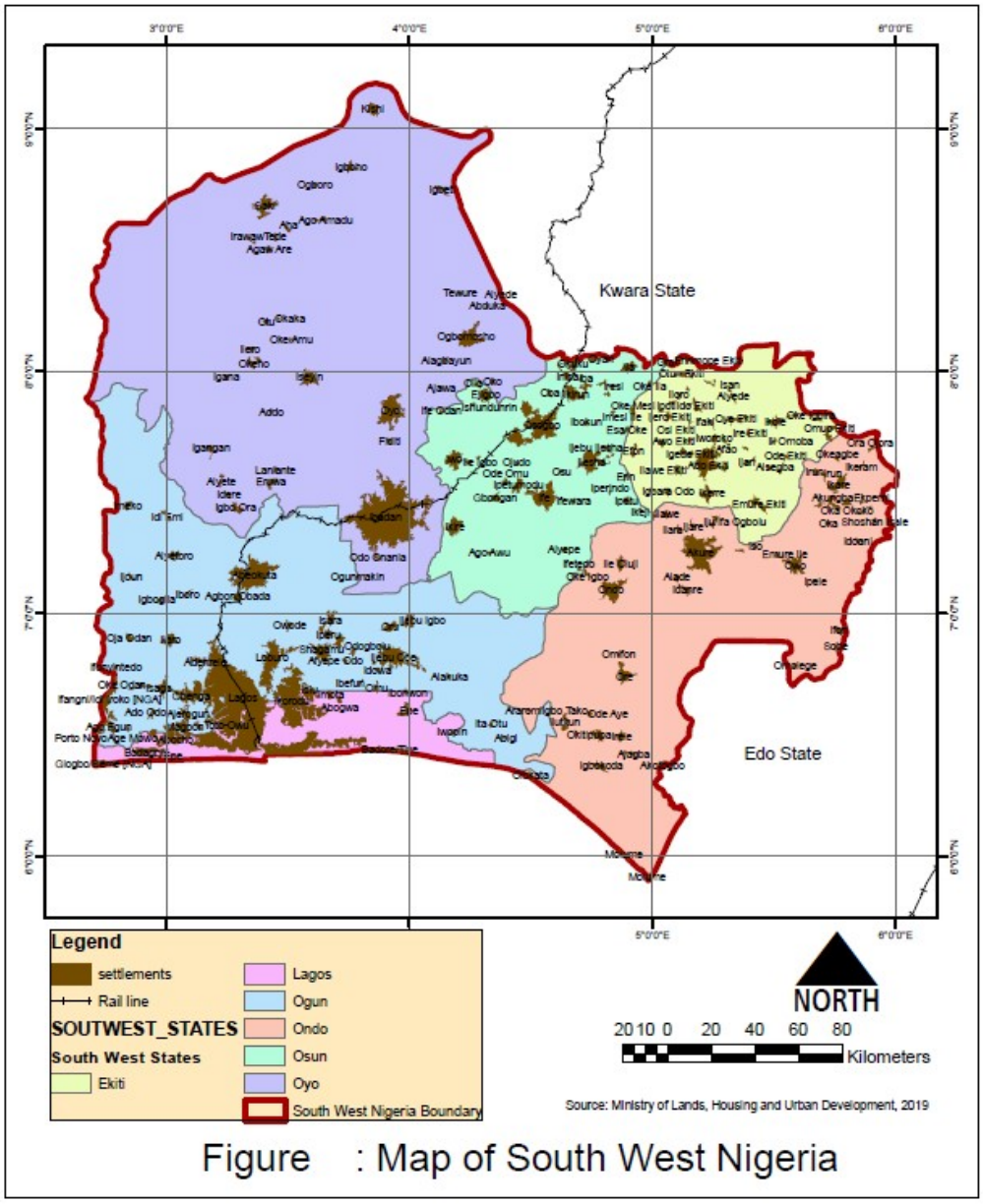

Figure 3.1: Map of South West Nigeria

3.2 Study population

Rural nursing mothers constitute the population for the study. These are women that are breastfeeding their babies with or without breast milk and other food items and who are nursing children of ages between 0-5 years of age. According to UNICEF (2016), the welfare of nursing mothers and children cannot be separated; therefore, women and children's consumption will be treated with close acquitance.

3.3 Sampling method and sample size

Multi-stage sampling technique was used to obtain sample during the reseach study as shown in Table 3.1. From the six states in the southwest zone, three states (Oyo, Ekiti and Osun) that have severe child malnutrition (UNICEF, 2005) were purposively selected. There are 33, 16 and 30 Local Government Areas (LGA) in the states respectively. Ten percent of the Local Government Areas with rural communities were proportionately randomly selected to give a total number of three, two, and three LGA for Oyo, Ekiti and Osun States respectively which gave a total of eight LGAs. In each Local Government Area, a rural community where there is presence of community health centers was purposively selected and total registered nursing mothers were collected for the study. Furthermore, 50% of the total registered nursing mothers at the community health centers were randomly sampled to give a total number of 277 rural nursing mothers for the study. The rural nursing mothers were interviewed at the clinic days at the health centers.

Table 3.1 Sampling procedure and sample size

Communication strategies	States	No of LGA	Sampled LGA (10%)	Rural community with heaalth centers	Total Number of registered rural nursing mothers	50% of registered rural nursing women interviewed
Education strategy	Oyo	33	3 Ido	Ido	112	56
			Ibarapa Central	Igbo-ora	80	40
			Saki East	Tede	52	26
Entertainment	Ekiti	16	2 Ekiti west	Iwaro	32	16
strategy			Efon Alaye	Efon-alaye	76	38
Entertainment-	Osun	30	3 Egbedore	Alate	72	36
educative strategy			Aiyedaade	Gbogan	62	31
			Isokan	Apomu	68	34
	Total					277

3.4 Instrument of data collection

Structured interview schedule and Focus Group Discussion were used to elicit information from the rural nursing mothers. Also, In-depth interview with key informants at the Ministries of Health and Health centers were conducted.

3.5 Validity of instrument

Content and face validity of the instrument were conducted with the help of specialists in the Department of Agricultural Extension and Rural Development of the University of Ibadan.

3.6 Reliability of instrument

The reliability of instrument resulted from addition of relevant items and corrections of defective and irrelevant items to ensure appropriateness and adequacy of the items on the instruments to measure the variables of the study. The reliability of instruments was tested by administering 50 copies of questionnaires to rural nursing mothers of Ayepe health centers of Odeda LGA in Ogun State. Using split- half method, a reliability co-efficient value of 0.79 was obtained for knowledge scale, 0.91 for attitude and 0.68 for practice scale. However, a reliability coefficient of 0.78 was gotten for the whole instrument testifying that the instrument was reliable for the study.

3.7 Research design

Quasi Experimental (before and after) research design was used to know the effectiveness of communication strategies on rural nursing mothers' behaviour towards Vitamin A consumption.

Each of the communication strategies was used in each state. Therefore, entertainment strategy was used in Ekiti State, education strategy was used in Oyo State while entertainment-education was used in Osun State.

In the research design, three phases were employed as follows:

1. Phase one involved the base line data collection process which is referred to as "Before intervention data collection". And the data were collected at this phase to

know the rural nursing mothers in terms of level of knowledge, attitudinal and Vitamin A consumption before the training.

2. The second phase involved the communication intervention stage which could be referred to as the training stage. At this stage, the rural nursing mothers were trained on Vitamin A consumption using different communication strategies.

3. The third phase involved the collection of data again from the rural nursing mothers after three months they received the training with the use of different communication strategies. This phase is referred to as after " After intervention data collection stage"

3.8 Communication strategies used for the intervention

Rural nursing mothers were sectioned into three groups. A group was exposed to education strategies of communication. The other group was exposed to entertainment strategy of communication while the third group was exposed to the both education and entertainment strategies of communication. The channels used for education strategies were direct lectures, audio recording and video. The channels used for entertainment strategies were music, ijala (folktale/Hunter's chant) and drama. The channels for entertainment-education strategies were music, ijala (folktale/Hunter's chant), drama, direct lectures, audio recording and video.

3.8.1 The package of Communication Strategies used

The communication strategies used were:

1. **Entertainment Strategies**

   The rural nursing mothers were provided with fun and amusing vitamin A consumption information. The amusing package involves the use of channels to inform the rural nursing mothers about Vitamin A consumption.

2. **Education strategies**

Education in this study involves the process of enhancing, understanding and/or acquisition of vitamin A consumption information. The process took place in an informal environment. An educational message on vitamin A consumption passed to the rural nursing mothers via communication channels.

3. Entertainment-education strategies

Entertainment Education (EE) is a process that involves learning through a process that educate and entertains at the same time(Ngigi and Busolo 2018). According to Olajide (2002), many scholars of mass communication have referred to the term entertainment-education in several ways such as enter-educate, edutainment an infotainment but that the bottom-line irrespective of the term used, is to combine entertainment and education to obtain certain advantages interchangeably. Therefore Tannenbaum (1980) sees EE as an activity that provides fun, amusement, arousal and pleasure.

EE was coined by Patrick Coleman from Everett Rogers' re-branded title for the longest running Soap opera 'Entertainment with a proven social benefit produced by Miguel Sabido'.

EE is presently used term (Deson 2018). Miguel Sabido (center)

1. **Base line data collection phase** is the first phase which involved baseline data collection on the existing knowledge, attitude and practice of the rural nursing mothers towards Vitamin A consumption using both qualitative and quantitative research tools. It is otherwise known as before intervention data collection. The qualitative research tools involved Focus Group Discussion with selected rural nursing mothers and In-depth Interview with the health workers. The quantitative tools involved was the interview schedule with the rural nursing mothers. The information gathered from both qualitative and quantitative were used in designing the communication intervention training materials on Vitamin A consumption, which were packaged in the local language(Yoruba language) for the study areas and presented to the rural nursing mothers in sequential order using the following :

a. Entertainment strategy

The rural nursing mothers were provided with fun and amusing vitamin A consumption information. The amusing package involves the use of channels to inform the rural nursing mothers about Vitamin A consumption

The various communication channels used in entertainment strategy include:

i. Music: 2.12 minutes composed song on Vitamin A consumption arranged in local language of the rural nursing mothers. It was played to the rural nursing

mothers in a tape recording form. Authors on Nigerian music confirmed that Nigerian music is referred to as the heart of African music because of several popular styles that were unique to it. Finding showed that music is related and linked to agricultural activities and these activities dictate the music to be played.

ii. Ijala (folktale/hunters' chant): 4.44 minutes traditional/local songs of Yoruba people called Ijala. It was played to the rural nursing mothers in a tape recorded format. It is called hunters' song/chant or oral poetry or Yoruba poetry. Ijala is an entertainment channel. In an international Fragnance Association (IFRA) Lecture by Cecile Deletree, she described the specificities of Ijala as notable poem for religious homages, offerings, entertainment and display at stake (IFRA 2019).

iii. Drama: This involved a performed playlet of 2.26 minutes written in local language of the rural nursing mothers on vitamin A consumption and showed to them on television.

b. Education strategy

Education in this study involves the process of enhancing, understanding and/or acquisition of vitamin A consumption information. The process took place in an informal environment. An educational message on vitamin A consumption passed to the rural nursing mothers via communication channels:

The various communication channels used in education strategy include:

i. Direct lectures involved an educational speech of 4.39 minutes, composed in local language of the rural nursing mother and which was played to them face to face.

ii. Video is an educational audiovisual/filmed of 2.11 minutes, composed and arranged in local language of the rural nursing mothers and thereafter show to them on television.

v. Audio recording is a recorded informative lecture of 7.27 minutes, arranged in local language of the rural nursing mothers and which was played to them on a tape, to listen to.

c. The combination of entertainment and education strategy

The combination of entertainment and education strategy involve training of the rural nursing mothers with both entertainment and education strategies which were:

i. Music
ii. Ijala (folktale/Hunter's chant)
iii. Drama
iv. Direct lectures
v. Audio recording
vi. Video

2. **Communication intervention strategy phase**: This is the second phase of the study, in which some rural nursing mothers from the base line survey were exposed to communication packaged session using different communication strategies on intervention programme designed on Vitamin A consumption.
3. **After Communication intervention strategy phase:** Data were collected after three (3) months of completion of the training on communication intervention programme from the same group to assess the effectiveness of the training programme on behaviour of the rural nursing mothers towards Vitamin A Consumption.

3.9 Measurement of variables

Data across and for each of the states were collected using qualitative and quantitative methods.

3.9.1 The independent variables of the study include

1. Socio-Economic characteristics

i. **Age:** Rural nursing mothers stated their age (years). It was recorded as given and measured at interval level of measurement.

ii. **Marital Status**: Rural nursing mothers indicated their marital status from response list of Single, Married, Divorced, Single parent, separated, Widow and measured at nominal level of measurement.

iii. **Position as wife**: Rural nursing mothers stated their position from: 1st, 2nd, 3rd, 4th or 5^{th} wife and this was measured at nominal level of measurement.

iv. a. **Educational Qualification**: Rural nursing mothers stated their educational qualification from the lists of no formal education, did not complete primary school, completed primary school, did not complete Secondary School, Complete Secondary School , tertiary school, Adult education and others to be specified. They were measured at nominal level of measurement.

b. Years of formal Education: Rural nursing mothers stated their exact number of years in formal education where applicable. These were recorded as supplied and measured at nominal level of measurement.

v. **Income generating activities**: Rural nursing mother stated their income generating activities they engaged in from crop production , livestock rearing, trading, selling cooked foods, gathering/selling non tree forest products , tailoring , hair dressing ,food crop processing, work as hired labour, civil service position, crafts and others to be specified and were measured at nominal level of measurement.

vi. Rural nursing mothers were asked to state how long in a year they engage in the income generating activities and were measured at nominal level of measurement.

vii. **Other income generating activities**: Rural nursing mothers were asked to state their other income generating activities, if any from the list given to them and measured at nominal level of measurement.

viii. **Income**: Rural nursing mothers were asked to state their estimated income in Naira from these income-generating activities annually/ seasonally and were measured at interval level of measurement.

ix. **Religion**: Rural nursing mothers were asked to state their religion from Christianity, Islam, Traditional Religion, Others and were measured at nominal level of measurement.

x. **Household size**: Rural nursing mothers were asked to state their household size (i.e. those living under the same house and eating together from same cooking pot) and were measured at interval level of measurement. The highest household size was between 1-5 household members.

xi. **Number of Children**: Rural nursing mothers stated their number of children and measured at nominal level of measurement.

xii. **Position of baby**: Rural nursing mothers were asked to state the position of their present pregnancy/ baby and was measured at nominal level of measurement.

xiii. **Source of information about Vitamin A food substances and Vitamin A programme**: Rural nursing mothers were asked to state their source of information about Vitamin A food substances and Vitamin A programme from

the provided options and were recorded accordingly and measured at nominal level of measurement.

xiv. **Communication Channels about Vitamin A food substances and Vitamin A programme:** Rural nursing mothers were divided and exposed to education, entertainment and entertainment-education strategies of communication to influence their behaviour towards Vitamin A consumption.

xv. **Group Membership**: Rural nursing mothers were asked to state Yes or No if they belong to any social group. The various groups were recorded accordingly and measured at nominal level of measurement.

2. Awareness of Vitamin A food substances and Vitamin A programmes

The rural nursing mothers were asked to state their awareness of vitamin and Vitamin A programme. Fifteen items (15) with dichotomized responses of Yes (1) and No(0) were developed to ascertain awareness on Vitamin A food substances and Vitamin A programme. Scores were generated. A maximum score of 15.0 and minimum score of 11.0 with mean score of 13.6 ± 0.6 was obtained for rural nursing mothers. Scores above the mean represent high awareness level while scores below the mean represent low awareness level on Vitamin A consumption (Vitamin A food substances and Vitamin A programme).

3.9.2 The dependent variable:

The Dependent variable is Behavioural change (knowledge, attitude and practice) on Vitamin A consumption by the rural nursing mothers which were operationalized by measuring rural nursing mothers' knowledge on importance of Vitamin A food substances and Vitamin A programme, their attitude toward vitamin A programme and their practice of vitamin A/Vitamin A consumption. Knowledge, attitude and practice were standardized and pooled to measure the behavioural change in Vitamin A consumption by the rural nursing mothers. The change in the pooled scores before and after intervention was regarded as behavioural change. The minimum and maximum scores before intervention were 4.1 and 12.9 with mean score as 8.9±1.6 while after intervention, the minimum and maximum scores were 7.5 and 15.7 with mean score as 12.4±1.5. The behavioural change had a minimum score of 4.5 and maximum score of 14.4 with mean score of 9.9±1.6

1. Knowledge on Vitamin A food substances and Vitamin A programme

The rural nursing mothers' knowledge on Vitamin A was measured by asking the rural nursing mothers a list of twenty questions relating to Vitamin A food substances and Vitamin A programme. They were asked to indicate True (1) or False(0) as appropriate. The minimum and maximum scores before intervention were 0.0 and 18.0 with mean score as 2.3±3.1 while after intervention, the minimum and maximum scores were 10.0 and 20.0 with mean score as 18.7±1.7. Rural nursing mothers were classified as having high knowledge (19 and above)or low knowledge(0-18) on Vitamin A Consumption.

2. Attitude of the rural nursing mothers towards Vitamin A consumption

The attitude of the rural nursing mothers towards Vitamin A consumption was measured by presenting to the rural nursing mothers forty (40) related attitudinal statements on Vitamin A. The statements were positively and negatively worded. The rural nursing mothers responded appropriately to the statements using five-point Likert-type scale of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD). Strong agreement to a positively worded statement was assigned 5points and strong disagreement 1. Also, a strong disagreement to a negatively worded statement was assigned 5points, while a strong agreement was assigned 1. The minimum and maximum scores before intervention were 69.0 and 173.0 with mean score as 142.9±16.1 while after intervention, the minimum and maximum scores were 102.0 and 190.0 with mean score as 151.0±11.8. Rural nursing mothers were categorized into two: Rural nursing mothers with scores equal to or above the mean (147 -190) as having favourable attitude towards Vitamin A Consumption while those with scores below the mean (0-146) as having unfavourable attitude towards Vitamin A consumption.

3. Vitamin A consumption by the rural nursing mothers

The practice of Vitamin A is Vitamin A consumption by the rural nursing mothers, which was measured by asking the rural nursing mothers to indicate their consumption of Vitamin A foods items/supplements presented to them and to what extent do you consume. Occasionally, weekly, twice a week and daily. The total scores of each rural nursing mother were computed. Mean and above, below mean was used to do the classification into High and Low Vitamin A consumption. The minimum and maximum scores before intervention were 5.0 and 71.0 with mean score as 48.6±11.9 while after intervention, the minimum and maximum scores were 25.0 and 80.0 with

mean score as 57.3±10.6.Rural nursing mothers were categorized into two : Rural nursing mothers with scores equal to or above the mean(57-80) were categorized as having high Vitamin A Consumption while those with scores below the mean(0-56) as having low Vitamin A consumption.

3.9.3 Focus Group Discussion with rural nursing mothers

Rural nursing mothers were grouped into a minimum of 15 and were asked questions relating to the variables measured.

3.9.4 In-depth interview with key relating officers

Selected health Officers were interviewed on related issues on the variables measured.

3.10 Data analysis

Data were analyzed using both descriptive and inferential statistics. Descriptive statistics such as charts, frequency counts and percentages were used.

Hypothesis 1 was tested using Chi-square and Pearson Product Moment Correlation (PPMC).

Hypothesis 2 - 3 were tested using PPMC

Hypotheses 4- 7 was tested using t-test

Hypotheses 8 was tested using Analysis of Variance (ANOVA)

CHAPTER FOUR
RESULTS AND DISCUSSION

This chapter presents the results, interpretation and discussion of data obtained for the study. The results are presented and discussed in seven sections. Section one contains the socio-economic characteristics of the rural mothers; section two contains the sources of information on Vitamin A; section three contains the awareness of Vitamin A food substances and Vitamin A programme; section four contains communication strategies used for the intervention; section five contains the knowledge of Vitamin A; section six contains attitude of the rural nursing mothers to Vitamin A consumption; section seven contains the Vitamin A consumption among the rural nursing mothers, section eight contains the behavioural change of the rural nursing mothers towards Vitamin A consumption, section nine contains the effectiveness of communication strategies while section ten contains the hypotheses of the study.

4.1. Socio – economic characteristics of the rural nursing mothers

Results of each of the socio-economic characteristics of the rural nursing mothers are presented as follows:

4.1.1 Age of the rural nursing mothers

Age distribution of rural nursing mothers as presented in Figure 4.1 shows that majority (86.6%) of the rural nursing mothers were in their reproductive age within the age range of 21` - 35 years with mean age of 28.16 years. This is in line with the findings of Medical News Today (2017) where the best age for childbearing remain 20-35 years and that, delaying having children defies nature and risks heart break. This finding indicates that despite the daily works, financial and other responsibilities, rural women still have time for their domestic sexual responsibilities due to their agility and strength. This active age of the rural nursing mothers is important for the consumption

of Vitamin A rich food substances to prevent Vitamin A deficiencies that could result to blindness

according to Sheth *et al.* (2016). Therefore, there is need to take care of the rural nursing mothers and their children at their early growing ages.

Productivity of women tends to diminish as they grow older in age. This is indicated in the low proportion (9.4%) for the age range of between 36 and above 40years. Child bearing at the appropriate reproductive age of agility and strength helps the rural nursing mothers to have time and energy to take care of their family, time for other activities within and outside their environment and avoid any health problems attributed to late child bearing. This was supported by response during In-depth interview held with one of the nurses at Ago-amodu in Saki East LG:

‘‘*The active reproductive age of women is between 20-35years except where there is delay due to infertility, gynocological complications and other related problem’’.*
(IDI, Saki East LGA, Oyo State, 6th October, 2016)

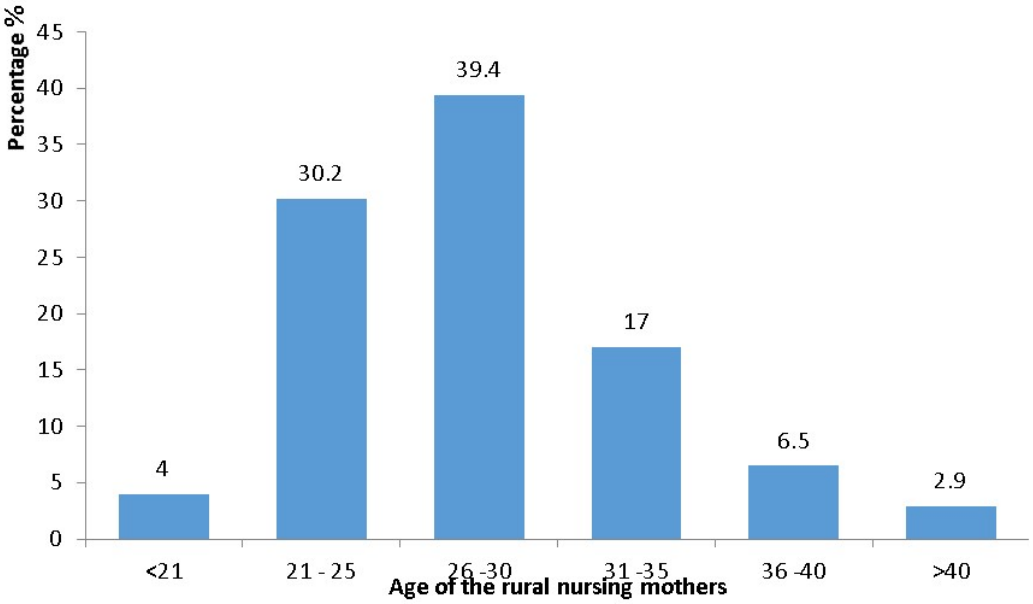

Figure 4.1.: Distribution of the rural nursing mothers according to their age

Source: Reseacher, Field Survey 2016.

4.1.2 Marital status

Figure 4.2 shows that majority (91.3%) of the rural nursing mothers were married while 7.6% and 1.1% were single parent and widowed, respectively. The higher percentage of married rural nursing mothers underscores the importance of spousal support in the timely consumption of foods rich in Vitamin A as well as performing other duties for their husband, children and other members of the household. Married women should avail themselves to other income generating activities that will provide money for them and their children even when their husband provide for their needs. Married women support their husband in ensuring provision of foods and also assist in family labour compared to their unmarried counterpart who will be solely responsible for most of the household activities without assistance. This is consistent with the finding of Chayal (2010) who stated that women give supportive role in agriculture activities as farmers' wives. Akinbile and ikwuakam (2004) posited that married women are more responsible as they show more commitment to the development of their homes and community. Kehinde et al (2014) argued that married women were more engaged in agricultural activities in one way or another and that, as women get married, they are responsible for helping their husbands in order to increase household food security. This is an indication that married women are likely to have more family work at their disposal than their unmarried counterparts who may depend solely on hired labor. Discussants during the FGD revealed that

> ''*Being married help us at homes, on the farms and in other activities. Our husbands give part of the money for house needs and we support each other during farming activities. Our children support us in our farming and household chores''. (FGD, Ido LGA, Oyo State, 2016)*

More light was shed as discussants further revealed that

> '*'most of us are married and engage in different activities so as to take care of our children's needs and assist our husbands if the need arises'' . .(FGD, Ido LGA, Oyo State, 2016).*

The finding buttressed that of Abdullah, AbdulGhani and Dalhatu (2015) that married women should engage themselves in more business activities when they possess husband that can provide their needs.

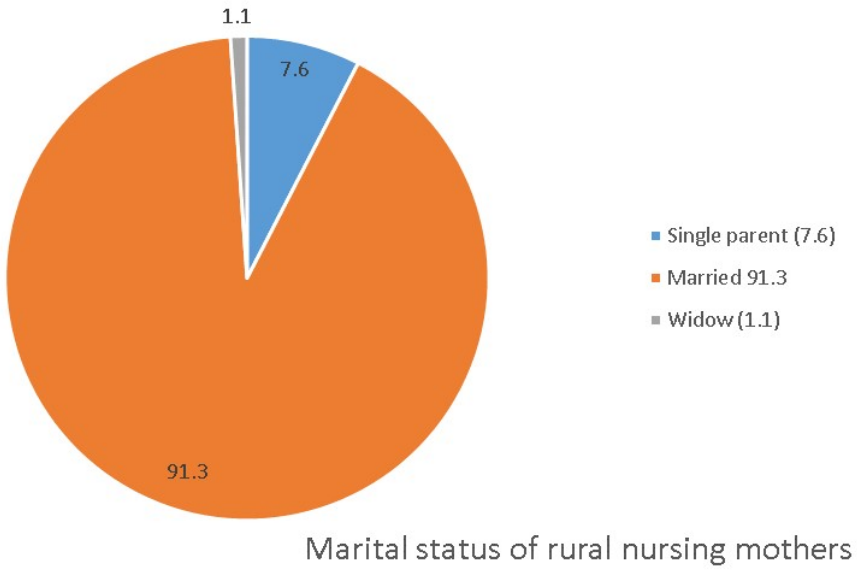

Figure 4.2: Distribution of rural nursing mothers according to their marital status

Source: Reseacher, Field Survey 2016

4.1.3 Religion of rural nursing mothers

Figure 4.3 shows that the rural nursing mothers practiced Christianity (46.9%), Islam (45.8%) and traditional religion (7.2%), respectively. Christianity and Islam were the prevalent religions in the study area, and this confirms the opinion of Akinola (2014) who stated that religious activities were actively practiced among the rural nursing mothers with the believe in the necessity to pray, seek forgiveness needs and blessings from God. However, practicing of these religions do not have any negative influence on their Vitamin A consumption as reported from the in-depth interview with one of the vocal officers from the study area. This denotes that consumption of Vitamin A food substances may not be hindered by any religious doctrines of the rural nursing mothers. Religion could however be an additional knowledge source to the existing belief according to Ekwochi *et al* (2016). During the focus group discussion, it was gathered that rural nursing mothers however combine Christianity and Islam with Traditional beliefs:

> ‘‘*Many of us (rural nursing mothers) still participate in traditional festive periods’’. (FGD, Ido LGA, Oyo State, 2016*). *More so, religion do not have any negative assertion to our consumption of Vitamin A foods*

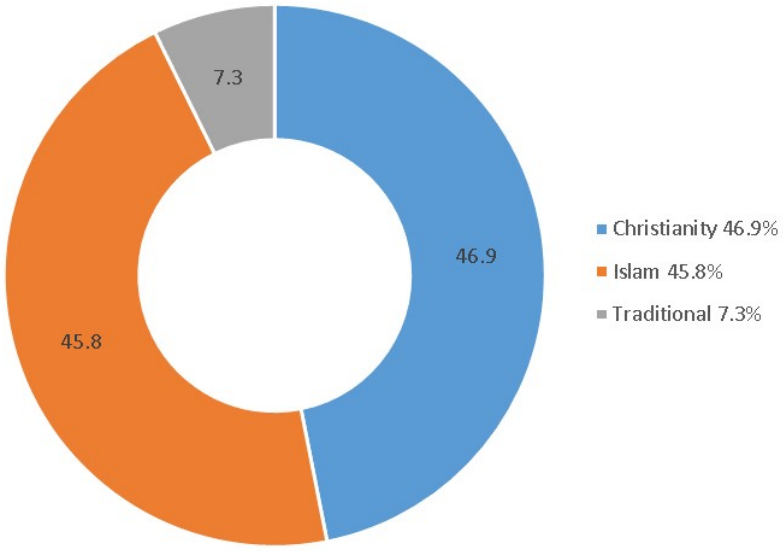

Figure 4.3: Distribution of the rural nursing mothers according to their religion.

Source :Reseacher, Field Survey 2016

4.1.4 Household size of the rural nursing mothers

The researcher's findings in Table 4.1 shows that a larger proportion (48.5%) of the rural nursing mothers had between 1-5 household members, which accord with the finding of Kehinde *et al* (2014) who stated that in a typical Nigeria rural area, the highest proportion of household size contains 1-5 household members. Furthermore, a sizeable proportion (43.7%) of the rural nursing mothers had between 6-10 household members and this large household size is typical of African homes, which according to Sanusi *et al* (2016) can be adduced for other members of the extended family staying with them.

The household size affects the involvement of rural nursing mothers in the household activities as supported by the report of Kehinde *et al* (2014) who stated that higher household size result in higher availability of family labour for agricultural production. This coupled with the fact that the household size affects the household food choices, purchases and consumption decision (pattern) rate. Household sizes also have effect on the rural nursing mothers and their children in the consumption of healthy foods especially those rich in Vitamin A. For households engaged in farming activities, it is believed that, the higher the household size, the higher the family labour engaged in farming activities, the more the production of foods especially vitamin A food substances.

Table 4.1 Distribution of the rural nursing mothers according to their household size

Household size	Frequency	Percentage
1- 5	134	48.5
6-10	121	43.7
11- 20	20	7.2
>21	2	0.7
Total	277	100

Mean=6.9±3.5

Source :Reseacher, Field Survey 2016

4.1.5 Rural nursing mothers' number of children

The figures in Table 4.2 shows that majority (91.7%) of the rural nursing mothers had between 1 - 4 children. The rural nursing mothers give birth to more children with the motive of providing family labour for various activities within and outside the households. Larger number of children serve as proxy for farm labour and as insurance in the future. The number of children affect the Vitamin A consumption rate of the household because the mother determines what the children consume and while doing this, she considers other members of the family in the process. This is in consonance with Mildred (2009) who opined that what and how mothers eat is the most direct influence on toddlers' diet. This was buttressed by Dubowitz *et al* (2007) who reported that "possession of children is a great influence in the mothers' consumption of nutritious foods such as eating more of vegetables and fruits.". Therefore, rural nursing mothers need to ensure provision of healthy food rich in vitamin A for their children to avoid malnutrition defined by Jemide *et al* (2016) as an important public health issue in the Nigeria.

Table 4.2: Distribution of the rural nursing mothers according to their number of children

Number of children	Frequency	Percentage
1-4	254	91.7
5 above	23	8.3
Total	**277**	**100**

Source :Reseacher, Field Survey 2016

4.1.6 Educational Status of the rural nursing mothers

Findings show that the rural nursing mothers had one type of schooling or the other as shown in Table 4.3. Secondary school education ranked the highest educational level attainable by most (40.1%) of the rural nursing mothers. Corroborating this is Adewale (2014) who stated that there is a greater degree of literacy among rural women. This indicates that literacy may influence the awareness, increase knowledge of the rural nursing mothers and hence change their behaviour positively towards Vitamin A consumption.

Furthermore, the ability to understand Vitamin A consumption message and the type of communication strategies used among the rural nursing mothers depends on the varying educational status of the rural nursing mothers. Education is an essential component that allows individual access public information relating to health, nutrition and hygiene. This resonates the assertion by Chalfin (2014) who observed that education is a substance determining the capability of an iniviidual to access and comprehend information and Mukade (2013) who postulated that education represents an essential part that enable individual to have access to general information especially concerning hygiene, nutrition and health.

In addition, higher educational status among rural nursing mothers increased their knowledge. This would be sufficient to increase their earnings irrespective of the nature of their jobs and hence, improve their production resulting into higher income and improved welfare. This is consistent with Oladeji and Oyesola (2000) who reported that education improves the welfare of rural mothers.

Nevertheless, the proportion of the rural nursing mothers with no formal education (18.1%) suggest the need for intervention to achieve the stated universal quality education of the Sustainable Developmental Goals.

Table 4.3: Distribution of the rural nursing mothers according to their educational status

Educational Background	Frequency	Percentage
No formal Education	50	18.0
Primary school education	100	36.
Secondary School education	111	40.1
Tertiary School education	14	5.1
Adult Education	02	0.7
TOTAL	277	100

Source :Reseacher, Field Survey 2016

4.1.7 Rural nursing mothers' membership of association

The result in Figure 4.4 shows that majority (71.1%) of the rural nursing mothers were members of one or more social groups (Esusu, cooperative, social association) and this indicates their level of social participation and bonding of social capital. Rural nursing mothers belong to one or more social groups for companionship and to seek information useful for their household, enhance their income generating activities with the ability to increase their Vitamin A consumption.

The high proportion (71.1%) of the rural nursing mothers belonging to social group was assumed to be due to the benefits derived from the group, which include self-esteem, unity, sense of solidarity, mutual support in time of need for social stand and provision of useful information on social, economic, welfare and political activities. This buttressed the finding of Adebayo and Adekunle (2016) who posited that married women have responsibilities to meet their families' needs, which make them to stay longer in a group or join group in times of need. Furthermore, this is in consonance with the findings of Eze and Eze (2016) who stated that collective or group action is widely recognized as a positive force for rural development and Yekeen (2017) who gave instances of the benefits of group in his report in Daika village of Mangu L.G of Plateau state whereby a local ideology called Yagha Kyen, a village savings and loan association (VSLA) have been helping women of the community to buy land, access farm inputs and pay their children school fees.

During Focus group discussion, discussants revealed that:

> *''we are group members in cooperative societies, to assist ourselves in various activities like paying our children school fees and buying items needed on the farm and at home and for social recognition''.* (FGD, Ibarapa Central LGA, Oyo State, 2016).

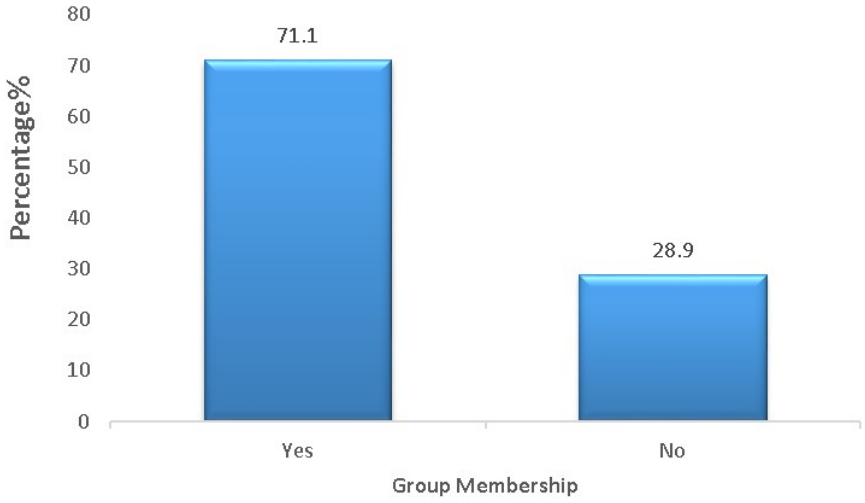

Figure 4.4: Distribution of the rural nursing mothers according to their group membership

Source: Reseacher, Field Survey 2016

4.1.8 Rural nursing mothers' position as wife

Majority (46.9%) of the rural nursing mothers sampled were first wives in their households as indicated in table 4.4. Position of wife in a household has no influence on Vitamin A consumption because women in every household were responsible for their children and meal of other members of the family. Discussants during the Focus Group Discussion in Aiyedaade revealed that

> '*Having husband is like a crown on a woman's head irrespective of the position of the woman and that the number of wives a man keeps is determine by his religion and tribe and furthermore, signifies his wealth and social status in the society. Our children and us serve as family labour on our husband's farms.* (FGD, Aiyedaade LGA, Osun State, 2016)

Table 4.4: Rural nursing mothers' position as wife

Position as wife	Frequency	Percentage
Number 1	130	46.9
Number 2	55	19.9
Number 3	38	13.7
Number 4 and above	54	19.5

Source :Reseacher, Field Survey 2016.

4.1.9 Primary income generating activities of the rural nursing mothers

Table 4.5 shows that 50.5% of the rural nursing mothers engaged in food crop processing as their primary income generating activity. They process crops harvested from their farms, eat from them and sell the remaining. This assisted in their consumption of Vitamin A as self-employment provided more earnings to cater for what to consume. Crop processing as one of the agricultural activities confirms the assertion by World Bank (2016) that Agriculture is the most common income generating activity and as well consistent with the finding of Ilona *et al* (2017) who stated that rural women were responsible for food processing. The finding is also in line with that of Onyebu (2016) who stated that rural women provided 70% of the labour in food production in Nigeria. The importance and gains derived by the rural nursing mothers from their various income generating activities differ with individuals ranging from either sales or consumption or both, but at the end, assist in making ends meet for the maintenance of their family. This finding on the involvement of rural nursing mothers is in line with that of Flann and Oldhan (2007) who stated that women perform many economic activities for the purpose of generating income for their family upkeep and such activities mentioned are in form of production, distribution, trading and food processing.

During the FGD, the discussants in Ekiti State said

> "*We engage in different income generating activities to meet up with our immediate family needs especially our children (tori omo la se n sise) who are still young because what we give them to eat as foods and the care we give them always are seen in them. What they eat and wear are reflection of us as their mothers*". (FGD, Ekiti West LGA, Ekiti State, 2016)

Table 4.5: Primary Income Generating Activities of the rural nursing mothers

Main or Primary Income Generating Activities	Frequency	Percentage
Livestock rearing	96	34.7
Crop Production	123	44.4
Trading	77	27.8
Bee Farming	-	-
Food Crop Processing	140	50.5
Crafting	4	5.1
Selling Cooked Foods	25	9.0
Medicine Store	1	0.4
GNTFPS	69	24.9
Civil Service	7	2.5
Hired labour	34	12.3
Tailoring	20	7.2
Hairdressing	22	7.9

Source :Reseacher, Field Survey 2016 and Multiple responses ≠ 277

4.1.10 Additional income generating activities of the rural nursing mothers

Table 4.6 shows that the main additional income generating activity of the rural nursing mothers was petty trading (45.1%). The age range of the sampled rural nursing mothers in this study shows that they were active, vibrant and agile and could afford to engage in additional activities. They engaged in additional income generating activities in order to acquire additional income so as to meet up with their personal and family needs, maintain household welfare and live decent lives. Additional income should be an enhancement to the rural nursing mothers toward Vitamin A consumption for better living. This confirms the study of Oladeji *et al* (2006) who opined that, in order to meet the immense obligation of caring for their family needs, Women participated in all kinds of off-farm activities to raise family incomes and thus are responsible for the health, nutrition and education of family members. He also added that the women's primary concern is usually the welfare of their families, spending money realized on personal materials only after the family needs are met. This study shows a high literacy level among rural women as shown in Table 4.2 and this may be adduced as their reason for engaging in various income generating activities, as confirmed by Anyanwuyi and Akintonde (2011) in their study where it was stated that literacy among rural women with different educational background and their household size were the basis for their engaging in various income generating activities. Onyebu (2016) reported that people take up other jobs, other than their primary occupation, to take care of their families and to be economically independent, regardless of their ethnic group or background, in order to meet extended family needs and fulfill community social responsibilities. Results from FGD supported this as well as the discussants reported that

> ''*we engage in additional activities to complement what our husbands give and support requests from extended family members as well as meeting up with friends in social activities'' (FGD, Egbedore LGA, Osun State, 2016).*

This observation did not conform with the research work of World Bank (2016) who postulated that engaging in additional income activities is an indication of rising inequalities of income and probably an evidence of increased rural poverty in Nigeria.

Table 4.6: Additional income Generating Activities of the rural nursing mothers

Additional Income Generating Activities	Frequency	Percentage
Bee farming	96	34.7
Teaching	1	0.4
Artisan	33	11.4
Petty Trading	125	45.1
Food crop production	43	15.5
GNTFPs	21	7.6
Livestock	22	7.9
Hired labour	31	11.2
TOTAL	277	100

Source :Reseacher, Field Survey 2016 and Multiple response. N ≠ 277

4.1.11 Estimated income of the rural nursing mothers

Table 4.7 shows that 30% and 23.8% of the rural nursing mothers respectively, realized between N500,001- N750,000 and above N100, 000, 000 with a mean value of ₦93,5013.73±₦108,6291.35 annually/seasonally. These are estimated/approximated income from their various activities because it was difficult to get their actual income. FGD result showed that the rural nursing mothers do not have exact record keeping of their activities and income. The discussants said:

> *''We do not have record book of our activities nor our income because we assume that we don't need it''.*

This conforms with assertion by Olawoye (2005) who stated that rural people do not have tangible records of their income and activities.

Income determines Vitamin A consumption of the rural nursing mothers. With readily available money, rural nursing mothers will be able to provide foods that are rich in Vitamin A to their family and thus make them live a healthy life. Furthermore, income of the husband as the head is also one of the deciding factors in household food purchase, preparation and consumption. According to the rural nursing mothers during the FGDs in Ido, Ekiti West and Aiyedaade LGAs.

> *''. Our consumption of any food in the household firstly depend on our husbands' choice of food as well as the money given for the cooking. We cook what our husbands wished to eat first and consider our little children afterward". (FGD, Aiyedaade LGA, Ekiti LGA, Ido LGA, 2016).*

This is supported by the findings of Ajewole (2006), which argued that in rural households only household income was significant in determining food consumption.''

Table 4.7: Distribution showing rural nursing mothers according to their income per annum/seasonally

Income of the rural nursing mothers (N)	Frequency	Percentage
< 250,000	35	12.6
250,000-500,000	49	17.7
500,001-750,000	83	30.0
750,001-100,000	44	15.9
> 1,000,000	66	23.8
Total	277	100.0

Source :Reseacher, Field Survey 2016.

4.2 Rural Nursing mothers' source of information on Vitamin A and Vitamin Programme and their preference

4.2.1 Rural nursing mothers' source of information on Vitamin A and Vitamin Programme

Table 4.8 shows the various sources of information on consumption of Vitamin A. Majority (74.7 %) of the rural nursing mothers got their information of Vitamin A food substances and Vitamin A programme from health workers during antenatal and post-natal periods. Health workers were regarded by the rural nursing mothers as vital source for passing across useful health information to mothers. According to an In-depth interview with the matron at Egbedore LGA of Osun state:

> *''nurses and midwives work hand in hand with the health officials from the Local Government to reach out to the community people on issues relating to nursing mothers and children below 5years of age on immunization, de-worming, sanitation and other health related matters. We pass information to rural nursing mothers using traditional media like town crier, folktales, church/mosque/local leaders, drummers, pamphlets, interpersonal talking from one house to the other. Along the line, they receive their health care'' (IDI, Egbedore LGA, Osun State, 2nd November 2016)*

The fact that health workers are concerned about the health welfare of people, indicate their strength as a medium of disseminating information on importance of Vitamin A food substances and Vitamin A programme among rural nursing mothers. This is in line with the findings of Oku (2017) who posited that health and health care professionals are the most common, reliable and trusted source for seeking health information. Also, Chew (2016) stated that health care professionals are the most common source for seeking health information. Despite this, Nigeria was reported to lack sufficient health workers and was ranked seventh among countries facing shortage of health workers. Therefore, there is need for National intervention to improve on this insufficiency in the health sector in order to have the best delivery from the health workers.

Radio (62.8 %) was the second among the source of information on vitamin A food substances for rural nursing mothers. It is said to be the most available, accessible and daily used for receiving various information including health and general news even after

the expiration of pre- and post-natal exercise according to the Focus Group Discussion with rural nursing mothers.

> ''*Though we receive our health information from health Centre but after the expiration of the periods, our main source of information is radio. Most of us prefer and gather majority of our information from radio. We are used to radio because it is easily available, accessible and cheap to maintain'' (FGD, Ekiti West, Ekiti State, 2016).*

This is an indication that radio could therefore be used to circulate important health messages on Vitamin A food substances and Vitamin A programme as well as other information to rural nursing mothers. This finding corroborates the earlier finding by Olowu, Anyanwu and Obinne (2004) who reported that majority of rural dwellers usually listen to radio. Yahaya (2008) also found that radio is the most accessible source of information among farmers. Oladeji and Thomas (2010) postulated that easy access to radio as a means of obtaining information aid awareness creation of past successful nutrition intervention, Also, Badiru (2014) posited that radio is the most listened information source by the rural populace in rural areas.

Television ranked the third highest frequency as source of information. This was reported during the FGD in Ibarapa Central where discussants stated that:

> *''Television enables us to view life pictures on food containing Vitamin A though unstable/irregular electricity supply in our environment affect frequent view of television''. (FGD, Ibarapa Central, Oyo State 2016)*

The combination of health workers, radio and television could be a viable means of passing out useful messages to rural nursing mothers on Vitamin A food substances and Vitamin A programmes if appropriately packaged.

These findings reveal that for any intervention on Vitamin A programme to be successful, there should be consideration of the prominently used sources of information among the rural nursing mothers in planning programmes at different levels to have the expected outcomes. As corroborated by Daudu and Mohammed (2013), information is important to the socio-economic empowerment of a Nation in

general and rural communities require that appropriate channels of communication suitable for certain category of communities be identified and used because information is a powerful implement that takes away ignorance and enables an individual to be bold and enlightened, as well as enabling appropriate information to reach its correct destination and make the information useful.

Agricultural extension agents (1.8%) and newspaper (0.4 %) were the least sources of information among the rural nursing mothers. The least percentage of newspaper conforms the findings of Msoffe and Ngulube (2017) that newspaper as a source of information is not popular among rural nursing mothers. The low percentage of agricultural extension probably suggests the non-coverage or inaccessibility of agricultural extension agents in many parts of the rural areas. The In-depth interview carried out with the nurse who is a vocal officer at Tede in Saki-east reported that:

> *''agricultural extension workers are part of health workers with restricted health service delivery at the health centers, though the rural nursing mothers know the agricultural extension workers as nurses''.*

Findings from FGD above require the need to know the health workers in an health center for proper identification, thus an In-depth Interview with an Health worker in Ekiti west reported as follow:

> *''that there are different health workers (Doctor, community Health officer CHO, Community Health Extension Worker CHEW, Public Health Officer PH, Health assistant, Health attendant, record officer) at every health Centre with different uniforms relating to their duties. The all white uniforms represented the Nurses and the Dentists. The white top on grew skirt/trouser colour uniforms are meant for Community Health Extension Worker (CHEW) who does the work of nurses but are restricted to certain duties at the health Centers. The all grey uniforms are for the Chief Health officer (CHO). The White top on lemon skirt/trouser uniforms are for the Health assistant. The all purple uniforms are for the Health attendant. The all Cream uniforms are for the health record officers''.*

Table 4.8b reveals the preference of source of information of the rural nursing mothers. Radio was ranked as the most preferred (1434 points) followed by health workers (1045 points), television (424 points), friends (207 points), agricultural extension (82 points) and newspaper (12 points) as the least. This signifies the extent

to which the rural nursing mothers use radio as their source of information in the research area. This support the findings of Familusi and Owoeye (2014) that identified radio as the most used media, Efficient tool for the rapid dissemination of various forms of information and the most powerful mass media for the dissemination of information. NAFB (2011) also reported that most rural residents listen to radio on a daily basis.

Table 4.8a: Source of information on Vitamin A food substances and Vitamin A programme by the rural nursing mothers

Sources of information	Frequency	Percentage
Radio	174	62.8
Health workers	207	74.7
Agricultural extension agents	05	1.8
Friends	46	16.6
Television	92	33.2
Newspapers	01	0.4

Source :Reseacher, Field Survey 2016 and multiple responses. N≠277

Table 4.8b: Preference of Source of information by the rural nursing mothers

Sources of information	Scores	Ranking
	Score	**Rank**
Radio	1428	1st
Health workers	1045	2nd
Agricultural extension agents	82	5th
Friends	207	4th
Television	864	3rd
Newspapers	12	6th

Reseacher, Field Survey 2016 and multiple response. N≠277

4.3 Awareness of Vitamin A food substances and Vitamin A programme among rural nursing mothers

4.3.1 Awareness of Vitamin A food substances and Vitamin A programme among rural nursing mothers before intervention

The research result in Table 4.9 indicates that 46.9% of the rural nursing mothers were aware of Vitamin A food substances and Vitamin A programme before the intervention. This shows that less than half of the rural nursing mothers were aware of Vitamin A food substances and Vitamin A programme before intervention. There is a need to create more awareness among rural nursing mothers on certain issues relating to Vitamin A consumption such as educating them through health workers on Vitamin A food and their importance because only (9.3%) of the rural nursing mothers knew that Vitamin A consumption combats Vitamin A deficiencies in the study area. Information gathered from FGD with the rural nursing mothers reveal that:

> *The FGD showed that most of the discussants in the reseach study areas*
>
> *refer to Vitamin A as 'fitamin A' pronounced with local language accent. (FGD, Ido LGA, Oyo State, 2016)*

Findings further revealed that 7.6% of the rural nursing mothers were aware about the UNICEF Vitamin A programme and 14.8% were aware about those foods that are rich in Vitamin A. These were indications of lack of information and the reason, which prompted their urge and quest to seek for information and knowledge about Vitamin A food and their importance.

Table 4.9 :Awareness of Vitamin A and Vitamin programme among rural nursing mothers before the intervention

	AWARENESS OF VITAMIN A FOOD SUBSTANCES AND VITAMIN A PROGRAMME	Yes	No
1.	Awareness of Vitamin A food substances and Vitamin A programme is essential for your health and that of the baby	130(46.9)	147(53.1)
2.	Vitamin A is essential for children under 5years old and lactating mothers.	27(9.7)	250(90.3)
3.	Vitamin A combats Vitamin A food deficiency in people.	26(9.3)	251(90.6)
4.	Food items rich in vitamin A are cheap and affordable	33(11.9)	244(88.1)
5.	Millennium Development Goal (MDG) of total eradication of malnutrition?	17(6.1)	260(93.9)
6.	Are you aware of what logo 'A' on some food items such as semolina, salts, sugar, and flours stand for?	29(10.5)	248(89.5)
7.	There is the school feeding system by some government schools in Nigeria?	28(10.1)	249(89.9)
8.	There is UNICEF campaign on Vitamin A in Nigeria	21(7.6)	256(9.4)
9.	There is mineral fortification programme in Nigeria?	15(4.4)	262(94.6)
10.	I am aware about the 'eye' sign on food items like salt, sugar and flours	15(5.4)	262(94.6)
11.	Foods that can supply Vitamin A to the body are carrot, breast milk, fish, maize, milk butter, liver etc.	41(14.8)	236(85.2
12.	There are Vitamin A Supplements given to children under five years old and nursing mothers.	16(4.8)	261(94.2)
13.	Vitamin A deficiency can be reduced by food fortification, vitamin supplementation and food diversification	53(19.1)	224(80.9)
14.	There is Government campaign on Vitamin A in Nigeria	14(4.1)	263(94.9)
15.	There exist a culture against the consumption of certain foods containing Vitamin A	10(3.6)	267(96.4)

Source :Reseacher, Field Survey 2016. Figures in parentheses are perecentages

4.3.2 Awareness of Vitamin A food substances and Vitamin A programme among rural nursing mothers after intervention

Table 4.10 shows that there were drastic changes in the awareness about Vitamin A food substances and Vitamin A programme after intervention with majority of the rural nursing mothers (99.6%) aware that Vitamin A is essential for their health and that of their children. The intervention through various communication strategies that the rural nursing mothers were exposed to raise their awareness. The intervention was able to influence and increase their awareness about UNICEF package on Vitamin A programme (99.6%) and that Vitamin A deficiency can be reduced by food fortification, supplementation and food diversification (99.3%). Discussants during FGD stated that:

"The training made us know many and more about Vitamin A. We collect Vitamin A Supplements during clinic periods for ourselves and our kids without knowing the purpose of collecting it. We were able to know and identify foods that have Vitamin A such as meat, palm oil, vegetable, sweet potato, mango, pea nut, lettuce, pumpkin, carrot, red pepper and so on. However, we also learnt that foods with 'A' signs are fortified with Vitamin A. We thought they were decoration on the foods items". (FGD, Ido LGA, Oyo State, 2016)

This is in line with UNICEF (2016) where Vitamin A awareness was used as impact assessment indicator on a study.

Furthermore, majority (95.7%) of the rural nursing mothers indicated that culture did not affect their consumption of food containing Vitamin A, implying that using of communication strategies to pass across information on Vitamin A consumption will be culturally acceptable among the rural nursing mothers.

Table 4.10: Awareness of Vitamin A food substances and Vitamin A programme among rural nursing mothers after intervention

	AWARENESS OF VITAMIN A FOOD SUBSTANCES AND VITAMIN A PROGRAMME	Yes	No
1.	Awareness of Vitamin A food substances and Vitamin A programme is essential for your health and that of the baby	276(99.6)	1(0.4)
2.	Vitamin A is essential for children under 5years old and lactating mothers.	276(99.6)	1(0.4)
3.	Vitamin A combats Vitamin A food deficiency in people.	277(100.0)	0
4.	Food items rich in vitamin A are cheap and affordable	276(99.6)	1(0.4)
5.	Millennium Development Goal (MDG) of total eradication of malnutrition?	276(99.6)	1(0.4)
6.	Are you aware of what logo 'A' on some food items such as semolina, salts, sugar, and flours stand for?	272(98.2)	5(1.8)
7.	There is the school feeding system by some government schools in Nigeria?	183(66.1)	94(33.9)
8.	There is UNICEF campaign programme on Vitamin A in Nigeria	266(96.0)	11(4.0)
9.	There is mineral fortification programme in Nigeria?	272(98.2)	5(1.8)
10.	I am aware about the 'eye' sign on food items like salt, sugar and flours	274(98.9)	3(1.1)
11.	Foods that can supply Vitamin A to the body are carrot, breast milk, fish, maize, milk butter, liver etc.	276(99.6)	1((0.4)
12.	There are Vitamin A Supplements given to children under five years old and nursing mothers.	275(99.3)	2(0.7)
13.	Vitamin A deficiency can be reduced by food fortification, vitamin supplementation and food diversification	275(99.3)	2(0.7)
14.	There is Government campaign on Vitamin A in Nigeria	275(99.3)	2(0.7)
15.	There exist a culture against the consumption of certain foods containing Vitamin A	12(4.3)	265(95.7)

Source :Reseacher, Field Survey 2016. Figures in parentheses are perecentages

4.3.3 Difference in awareness of Vitamin A food substances and Vitamin A programme among the rural nursing mothers before and after intervention

Table 4.11 shows the mean differences in the awareness statements on Vitamin A food substances and Vitamin A programme before and after intervention. A mean difference of 0.89 occurred in 'Vitamin A is essential for children under 5years old and lactating mothers showing that the intervention had a high way to influence the awareness among the rural nursing mothers. The change in mean of 0.92 for UNICEF campaign programme on Vitamin A in Nigeria implies that developmental programme on mineral fortification, Vitamin A supplements and food diversification would be acceptable by majority in the rural areas. In addition, 'awareness of food rich in Vitamin A' has a mean difference of 0.93 indicating the urge to seek for knowledge on those food items. The intervention was able to improve the rural nursing mothers' awareness except when there is cultural influence against consumption of certain food containing Vitamin A' with mean difference of -0.16.

Table 4.11: Mean Distribution on Awareness of Vitamin A food substances and Vitamin A programme among the rural nursing mothers before and after intervention

	Awareness statements of Vitamin A and Vitamin A programme	$\bar{x}_1$ Mean Before intervention	$\bar{x}_2$ Mean After intervention	$\bar{x}_2 - \bar{x}_1$ Mean Difference
1.	Awareness of **Vitamin A food substances and Vitamin A programme** is essential for your health and that of the baby	0.60	0.99	0.39
2.	Vitamin A is essential for children under 5years old and lactating mothers.	0.10	0.99	0.89
3.	Vitamin A combats Vitamin A food deficiency in people.	0.10	1.00	0.90
4.	Food items rich in vitamin A are cheap and affordable	0.13	1.00	0.87
5.	Millennium Development Goal (MDG) of total eradication of malnutrition?	0.07	0.99	0.87
6.	Are you aware of what logo 'A' on some food items such as semolina, salts, sugar, and flours stand for?	0.11	0.98	0.55
7.	There is the school feeding system by some government schools in Nigeria?	0.11	0.66	0.88
8.	There is UNICEF campaign programme on Vitamin A in Nigeria	0.08	0.96	0.92
9.	There is mineral fortification programme in Nigeria?	0.06	0.98	0.92
10.	I am aware about the 'eye' sign on food items like salt, sugar and flours	0.06	0.99	0.93
11	Foods that can supply Vitamin A to the body are carrot, breast milk, fish, maize, milk butter, liver etc.	0.07	0.99	0.93
12.	There are Vitamin A Supplements given to children under five years old and nursing mothers.	0.06	0.99	0.93
13.	Vitamin A deficiency can be reduced by food fortification, vitamin supplementation and food diversification	0.15	0.99	0.84
14.	There is Government campaign on Vitamin A in Nigeria	0.07	0.99	0.92
15.	There exist a culture against the consumption of certain foods containing Vitamin A	0.20	0.04	-0.16
	TOTAL	1.97	13.54	11.57

Source :Reseacher, Field Survey 2016

4.3.4 Categorization of rural nursing mothers based on their awareness on Vitamin A

Table 4.12 shows that 60.9% of the rural nursing mothers were aware of Vitamin A food substances and Vitamin A programme with a mean value of 13.6±0.61. The high value of awareness is an indication of the outcome of the intervention on the rural nursing mothers. This is in consonance with the finding of Sheth *et al* (2016) on awareness and practice regarding Vitamin A intake and their deficiencies disorders among mothers of preschool children where it was reported that ‘‘ to combat the deficiency of Vitamin A in community, awareness of their importance and their source plays a vital role’’.

Table 4.12: Categorization of rural nursing mothers on their level of awareness on Vitamin A

Awareness	Frequency	%	Minimum	Maximum	Mean	S.D
Low	109	39.1	11.0	30	13.6	0.61
High	168	60.9				

Source :Reseacher, Field Survey 2016

4.4 Preference ranking of communication channels used for the intervention

The Table 4.13 shows that the rural nursing mothers indicate high (99.6%) frequency preference for ijala (folktale/hunter's chant) due to the message content in the channels used. Furthermore, the result showed that there was a slight difference in rural nursing mothers' preferred channels as both music and video ranked second with 98.2% while drama, direct lecture and audio recording ranked fourth with 97.5%.

Table 4.13: Preference of communication channels before and after intervention

Communication Channels	Preference				
	Yes		No		Ranking
	Freq	%	Freq	%	
Music	272	98.2	5	1.8	2nd
Ijala(folktale/hunter's chant)	276	99.6	1	0.4	1st
Drama	270	97.5	7	2.5	4th
Direct lecturers	270	97.5	7	2.5	4th
Audio recording	270	97.5	2	2.5	4th
Video	272	98.2	5	1.8	2nd

Source :Reseacher, Field Survey 2016. Figures in parentheses are perecentages

4.5 Knowledge of Vitamin A food substances and Vitamin A programme among the rural nursing mothers exposed to communication strategies before and after intervention

4.5.1 Knowledge of Vitamin A food substances and Vitamin A programme among the rural nursing mothers exposed to communication strategies

Result in Table 4.14a presents the baseline knowledge of the rural nursing mothers before intervention for the three groups of communication strategies. The rural nursing mothers who were exposed to education strategy before intervention showed a moderately higher knowledge ($\bar{x}$ =3.6) than the rural nursing mothers exposed to entertainment strategy ($\bar{x}$ =1.4) and entertainment-education strategy ($\bar{x}$ =1.3). This implies that the rural nursing mothers in the education strategy group had relatively high knowledge of Vitamin A and Vitamin A programme than their counterparts who were exposed to other communication strategies.

Result on Table 4.14b shows the knowledge of the rural nursing mothers exposed to communication strategies after intervention. The rural nursing mothers who were exposed to entertainment strategy after intervention showed a higher knowledge ($\bar{x}$ =18.9) than the rural nursing mothers exposed to entertainment-education strategy ($\bar{x}$ =18.7) and education strategy ($\bar{x}$ =18.5)

The difference in the knowledge in the communication strategies before and after the intervention showed that the rural nursing mothers were influenced by the communication strategies. This is consistent with Sheth *et al* (2016) who reported that knowledge of Vitamin A was significantly associated with either the working status of the mother or the parity of the mother.

Table 4.14 (a) Distribution of rural nursing mothers exposed to communication strategies according to their knowledge on Vitamin A food substances and Vitamin A Programme before intervention

S/N	Knowledge statements on Vitamin A programme	Entertainment		Education		Entertainment-Education	
		True	False	True	False	True	False
1	Vitamin A keeps the body healthy and strong	28(51.9)	26(48.1)	44(36.1)	76(62.3)	46(45.5)	55(54.5)
2	Breast milk and Vitamin A supplements are highly rich in Vitamin A	2(3.7)	52(96.3)	25(20.5)	94(77.0)	1(1.0)	100(99.0)
3	Vitamin A cannot prevent night blindness and severe diarrhea	2(3.7)	52(96.3)	25(20.5)	95(77.9)	5(5.0)	96(95.0)
4	Vitamin A prevents severe diarrhea and other diseases	2(3.7)	52(96.3)	15(12.3)	105(86.1)	6(5.9)	95(94.1)
5	Vitamin A offers no protection over childhood death	2(3.7)	52(96.3)	20(16.4)	100(82.0)	4(4.0)	97(96.0)
6	Vitamin A prevents respiratory infection	2(3.7)	50(92.6)	17(13.9)	103(84.4)	3(3.0)	98(97.0)
7	Vitamin A prevents measles among children	2(3.7)	52(96.3)	18(14.8)	102(83.6)	4(4.0)	97(96.0)
8	Vitamin A is good for the eyes	2(3.7)	52(6.3)	19(15.6)	101(82.8)	1(1.0)	100(99.0)
9	Vitamin A supplements are good sources of vitamins	3(5.6)	51(94.4)	26(21.3)	94(77.0)	4(4.0)	97(96.0)
10	Cereals such as yellow maize, wheat contain vitamin A and they are good for the body.	2(3.7)	52(96.3)	15(12.3)	105(86.1)	2(2.0)	99(98.0)
11	Carrot does not contain Vitamin A	2(3.7)	52(996.3)	21(17.2)	99(81.1)	10(9.9)	91(90.1)
12	Mothers need more education on Vitamin A	3(5.6)	51(94.4)	18(14.8)	102(83.6)	6(5.9)	93(92.1)
13	Palm oil is not a good source of vitamin A and it is not essential for the body.	1(1.9)	53(98.1)	295(20.5)	95(77.9)	4(4.0)	95(94.1)
14	Fruits such as mango, citrus, guava should be taken to enrich Vitamin A in the body.	1(1.9)	53(98.1)	22(18.0)	98(80.3)	2(2.0)	97(96.0)
15	Leafy vegetables are good source of vitamin A for the body	1(1.9)	53(98.1)	17(13.9)	103(84.4)	4(4.0)	97(96.0)
16	Vitamin A food items are very expensive to buy	1(1.9)	53(98.1)	15(12.3)	105(86.1)	4(4.0)	97(96.0)
17	Vitamin A does not make the body to grow	-	54(100.0)	14(11.5)	106(86.9)	14(11.5)	106(86.9)
18	Vitamin A is not known to be essential for the reproductive process for both males and females	-	54(100.0)	21(17.2)	99(81.1)	10(9.9)	91(90.1)
19	Vitamin A supplements are in capsule forms for nursing mothers and children below 5 years	1(1.90	53(98.1)	15(12.3)	103(84.4)	6(5.9)	94(93.1)
20	There are cultural values and customs that guide against Vitamin A intake and Vitamin A supplements	3(5.6)	51(94.4)	27(22.1)	95(77.9)	3(3.0)	98(97.0)
	Grand Mean	$\bar{x}$=1.2±1.4		$\bar{x}$ =3.6±4.0		$\bar{x}$=1.4±1.3	

Source :Reseacher, Field Survey 2016. Figures in parentheses are perecentages

Table 4.14(b): Distribution of rural nursing mothers exposed to communication strategies according to their knowledge on Vitamin A food substances and Vitamin A Programme after intervention

S/N	Knowledge statements	Education strategy		Entertainment strategy		Entertainment-education Strategy	
		Yes	No	Yes	No	Yes	No
1	Vitamin A keeps the body healthy and strong	54 (100.0)	-	121(99.2)	1(0.8)	101(100.0)	-
2	. Breast milk is highly rich in Vitamin A	54(100.0)	-	121(99.2)	_	101(100.0)	-
3	Vitamin A cannot prevent night blindness and severe diarrhea	-	54(100.0)	7(5.7)	115(94.3)	2(2.0)	99(98.0)
4	Vitamin A prevents severe diarrhea and other diseases	54(100.0)	-	114(93.4)	8(6.6)	101(100.0)	-
5	Vitamin A offers no protection over childhood death	-	54(100.0)	25(20.5)	97(79.5)	4(4.0)	97(96.0)
6	Vitamin prevents respiratory infection	54(100.0)	-	118(96.7)	4(3.3)	99(98.0)	2(2.0)
7	Vitamin A prevents measles among children	54(100.0)	-	117(95.9)	5(4.1)	100(99.0)	1(1.0)
8	Vitamin A is good for the eyes	54(100.0)	-	120(98.4)	2(1.6)	101(100.0)	-
9	Vitamin A supplements are good sources of vitamins	53(98.1)	1(1.9)	116(95.1)	6(4.9)	99(98.0)	2(2.0)
10	Cereals such as yellow maize, wheat contain vitamin A and they are good for the body.	54(100.0)	-	117(95.9)	5(4.1)	99(98.0)	2(2.0)
11	Carrot does not contain Vitamin A	2(3.7)	52(96.3)	11(9.0)	111(91.0)	5(5.0)	96(95.0)
12	Mothers need more education on Vitamin A	53(98.1)	1(1.9)	118(96.7)	4(3.3)	99(98.0)	2(2.0)
13	Palm oil is not a good source of vitamin A and it is not essential for the body.	-	54(100.0)	13(10.7)	109(89.3)	5(5.0)	96(95.0)
14	Fruits such as mango, citrus, guava should be taken to enrich Vitamin A in the body.	54(100.0)	-	116(95.1)	6(4.9)	98(97.0)	3(3.0)
15	Leafy vegetables are good source of vitamin A for the body	54(100.0)	-	119(97.5)	3(2.5)	100(99.0)	1(1.0)
16	Vitamin A food items are very expensive to buy	54(100.0)	-	75(61.5)	47(38.5)	8(7.9)	93(92.1)
17	Vitamin A does not make the body to grow	52(96.3)	2(3.7)	13(10.7)	109(89.3)	2(2.0)	99(98.0)
18	Vitamin A is not known to be essential for the reproductive process for both males and females	-	54(100.0)	10(8.2)	112(91.8)	2(2.0)	99(98.0)
19	Vitamin A supplements are in capsule forms for nursing mothers, pregnant women and children below 5 years	54(100.0)	-	121(99.2)	1(0.8)	101(100.0)	-
20	There are cultural values and customs that guide against Vitamin A intake and Vitamin A supplements	1(1.9)	53(98.1)	9(7.4)	113(92.6)	1(1.0)	100(99.0)
	Grand Mean	$\bar{x}$=18.5±2.2		$\bar{x}$=18.9±0.4		$\bar{x}$=18.7±1.3	

4.5.2 Influence of communication strategies on rural nursing mothers' knowledge of Vitamin A food substances and Vitamin A programme

Table 4.15(a) shows the knowledge of Vitamin A food substances and Vitamin A programme among the rural nursing mothers based on exposure to entertainment strategy, which revealed a positive change in their knowledge. The difference in mean before and after intervention shows a general change in the knowledge of rural nursing mothers. For instance, rural nursing mothers needs more education on Vitamin A ($\bar{x}$=0.06) before intervention and ($\bar{x}$=0.98) after intervention. These results conform with the general finding of Mtega *et al* (2016) that farmers improve their knowledge by skills acquisition on techniques for farming activities to optimize production and sustain the environment.

Table 4.15(b) shows the change in knowledge after intervention of rural nursing mothers exposed to educative strategy. It reveals a general change in the knowledge of rural nursing mothers using educative strategy. The mean difference of 0.78 for Vitamin A keeps the body healthy and strong showed the change in knowledge of the rural nursing mothers due to the intervention.

Table 4.15(c) revealed a general change in the knowledge of rural nursing mothers using entertainment-education strategy.

Table 4.15(a): Distribution of rural nursing mothers exposed to entertainment communication strategy according to their change in knowledge after intervention

	Knowledge statements	$\bar{x}_1$ Mean before intervention	$\bar{x}_2$ Mean after intervention	Mean change $\bar{x}_2 - \bar{x}_1$
1.	Vitamin A keeps the body healthy and strong	0.52	1.00	0.48
2.	Breast milk and Vitamin A supplements are highly rich in Vitamin A	0.04	1.00	0.96
3.	Vitamin A cannot prevent night blindness and severe diarrhea	0.04	1.00	0.96
4.	Vitamin A prevents severe diarrhea and other diseases	0.04	1.00	0.96
5.	Vitamin A offers no protection over childhood death	0.04	1.0	0.96
6.	Vitamin A prevents respiratory infection	0.04	1.00	0.96
7.	Vitamin A prevents measles among children	0.04	1.00	0.96
8.	Vitamin A is good for the eyes	0.04	1.00	0.96
9.	Vitamin A supplements are good sources of vitamins	0.06	0.98	0.96
10	Cereals such as yellow maize, wheat contain vitamin A and they are good for the body.	0.04	1.00	0.85
11	Carrot does not contain Vitamin A	0.04	0.96	0.92
12	Mothers need more education on Vitamin A	0.06	0.98	0.92
13	Palm oil is not a good source of vitamin A and it is not essential for the body.	0.02	1.00	0.98
14	Fruits such as mango, citrus, guava should be taken to enrich Vitamin A in the body.	0.02	1.00	0.98
15	Leafy vegetables are good source of vitamin A for the body	0.02	1.00	0.98
16	Vitamin A food items are very expensive to buy	0.02	1.00	0.98
17	Vitamin A does not make the body to grow	0.00	0.04	0.04
18	Vitamin A is not known to be essential for the reproductive process for both males and females	0.00	1.00	1.00
19	Vitamin A supplements are in capsule forms for nursing mothers, pregnant women and children below 5 years	0.02	1.00	0.98
20	There are cultural values and customs that guide against Vitamin A intake and Vitamin A supplements	0.06	0.98	0.92

Source: Reseacher, Field Survey 2016

Table 4.15(b): Distribution of rural nursing mothers exposed to education strategy according to their change in knowledge after intervention

	Knowledge statements	$\bar{x}_1$ Mean before intervention	$\bar{x}_2$ Mean after intervention	Mean Diff $\bar{x}_2 - \bar{x}_1$
1	Vitamin A keeps the body healthy and strong	0.37	0.99	0.62
2	Breast milk and Vitamin A supplements are highly rich in Vitamin A	0.21	0.99	0.78
3	Vitamin A cannot prevent night blindness and severe diarrhea	0.21	0.94	0.73
4	Vitamin A prevents severe diarrhea and other diseases	0.13	0.93	0.80
5	Vitamin A offers no protection over childhood death	0.17	0.79	0.62
6	Vitamin A prevents respiratory infection	0.14	0.97	0.83
7	Vitamin A prevents measles among children	0.15	0.96	0.81
8	Vitamin A is good for the eyes	0.16	0.98	0.82
9	Vitamin A supplements are good sources of vitamins	0.22	0.95	0.73
10	Cereals such as yellow maize, wheat contain vitamin A and they are good for the body.	0.13	0.96	0.83
11	Carrot does not contain Vitamin A	0.18	0.91	0.73
12	Mothers need more education on Vitamin A	0.15	0.97	0.82
13	Palm oil is not a good source of vitamin A and it is not essential for the body.	0.21	0.89	0.68
14	Fruits such as mango, citrus, guava should be taken to enrich Vitamin A in the body.	0.18	0.95	0.77
15	Leafy vegetables are good source of vitamin A for the body	0.14	0.98	0.84
16	Vitamin A food items are very expensive to buy	0.12	0.61	0.49
17	Vitamin A does not make the body to grow	0.12	0.89	0.77
18	Vitamin A is not known to be essential for the reproductive process for both males and females	0.17	0.92	0.75
19	Vitamin A supplements are in capsule forms for nursing mothers, pregnant women and children below 5 years	0.13	0.99	0.86
20	There are cultural values and customs that guide against Vitamin A intake and Vitamin A supplements	0.22	0.93	0.71

Source :Reseacher, Field Survey 2016

Table 4.15(c): Distribution of rural nursing mothers exposed to entertainment-education strategy according to their change in knowledge after intervention

	Knowledge statements	$\bar{x}_1$ Mean before intervention	$\bar{x}_2$ Mean after intervention	Mean Diff $\bar{x}_2 - \bar{x}_1$
1	Vitamin A keeps the body healthy and strong	0.46	1.00	0.54
2	Breast milk and Vitamin A supplements are highly rich in Vitamin A	0.01	1.00	0.99
3	Vitamin A cannot prevent night blindness and severe diarrhea	0.05	0.98	0.93
4	Vitamin A prevents severe diarrhea and other diseases	0.06	1.00	0.94
5	Vitamin A offers no protection over childhood death	0.04	0.96	0.92
6	Vitamin A prevents respiratory infection	0.03	0.98	0.95
7	Vitamin A prevents measles among children	0.04	0.99	0.95
8	Vitamin A is good for the eyes	0.01	1.00	0.99
9	Vitamin A supplements are good sources of vitamins	0.04	0.98	0.94
10	Cereals such as yellow maize, wheat contain vitamin A and they are good for the body.	0.02	0.98	0.96
11	Carrot does not contain Vitamin A	0.10	0.95	0.85
12	Mothers need more education on Vitamin A	0.06	0.98	0.82
13	Palm oil is not a good source of vitamin A and it is not essential for the body.	0.04	0.95	0.91
14	Fruits such as mango, citrus, guava should be taken to enrich Vitamin A in the body.	0.02	0.97	0.95
15	Leafy vegetables are good source of vitamin A for the body	0.04	0.99	0.95
16	Vitamin A food items are very expensive to buy	0.04	0.08	0.04
17	Vitamin A does not make the body to grow	0.08	0.98	0.90
18	Vitamin A is not known to be essential for the reproductive process for both males and females	0.10	0.98	0.88
19	Vitamin A supplements are in capsule forms for nursing mothers, pregnant women and children below 5 years	0.06	1.00	0.94
20	There are cultural values and customs that guide against Vitamin A intake and Vitamin A supplements	0.03	0.99	0.96

Source :Reseacher, Field Survey 2016

4.5.3 Rural nursing mothers' level of knowledge before and after intervention using the communication strategies

Table 4.16a shows level of knowledge of the rural nursing mothers and it indicated high level of knowledge (85.9%) which was the impact of the intervention on the rural nursing mothers. This implies that the different communication strategies used in the intervention have impact on the rural nursing mothers knowledge of Vitamin A. This agrees with Brown (2017) who opined that intervention had significant improvement in knowledge of immunization and practice.

Table 4.16b reveals that majority (85.2 %) of the rural nursing mothers had low knowledge of Vitamin A before intervention but after the intervention, they all have high knowledge of the intervention.

There was a very high change in the knowledge among the rural nursing mothers who were exposed to entertainment strategy (87.0%). However only more than half (54.9%) of the rural nursing mothers exposed to education strategy had low knowledge while 64.8% had high knowledge of Vitamin A consumption. Majority of the rural nursing mothers (82.2%) had low knowledge of Vitamin A consumption before intervention but with the combined entertainment and education strategies, majority (78.2%) had increased change in knowledge.

Table 4.16a: Categorization of rural nursing mothers according to their knowledge on Vitamin A food substances and Vitamin A programme

Knowledge	Frequency	%	Minimum	Maximum	Mean	S.D
Low(0-18)	39	14.1	10	20	18.7	1.7
High(19 and above)	188	85.9				

Source :Reseacher, Field Survey 2016

Table 4.16b: Categorization of rural nursing mothers' knowledge on Vitamin A food substances and Vitamin A programme before and after intervention by communication strategies used

Communication strategies	Knowledge before		Knowledge after		Knowledge change	
	Low	**High**	**Low**	**High**	**Low**	**High**
Entertainment	46(85.2)	8(14.8)	4(7.4)	50(92.5)	7(13.96)	47(87.04)
Education	67(54.9)	55(45.1)	27((22.1)	95(77.9)	22(18.0)	79(64.8)
Entertainment- education	83(82.2)	18(17.8))	8(7.9)	93(92.08)	22(21.8))	79(78.2)

Figures in paretheses are percentages. Mean = 18.68±1.68. Min =10 . Max=20. Low = 0-18. Max = 19 and above

4.6 Rural nursing mothers' attitude towards Vitamin A consumption

4.6.1 Rural nursing mothers' attitude (baseline attitude) towards Vitamin A consumption before intervention.

Table 4.17 presents the baseline attitude of the rural nursing mothers towards Vitamin A consumption using entertainment strategy. Findings reveal that the 5.6 % of rural nursing mothers strongly agreed that they were eager to increase their knowledge on Vitamin A before the intervention using entertainment strategy. Also, 61.1% of the rural nursing mothers were undecided that communication strategies message on food rich in Vitamin A is both educative and entertainment. However, 53.7% of the rural nursing mothers strongly agreed that men should also be more concern about their children's intake while 63.0% strongly agreed that education should be given to nursing mothers and pregnant women on importance of Vitamin A to the body. And 51.9% strongly disagreed that they do not know food that could prevent Vitamin A deficiency.

Table 4.18 presents the attitude of the rural nursing mothers towards Vitamin A consumption using education strategy. About 36.1 % of the rural nursing mothers agreed and considered Vitamin A foods as one of the affordable food in the market, while 39.3% were undecided that Vitamin A rich food are essential for eyesight for young and old and 37.7 % decided that food diversification was not better than Vitamin A supplementation. Moreover, 43.4% strongly agreed that their livelihood activities made them know food that are rich in Vitamin A and about 51.6% of them strongly agreed that government should improve more on education given to people on Vitamin A will improve household nutrition. This buttress FGD conducted in Saki east where the rural nursing mothers said that:

> *''we enjoy free immunizations from Government but it will be more appreciated if more could be put in place because there was a day that my child was not immunized because the immunization was finished ''(FGD, Saki East, Oyo State, 2016).*

Table 4.17abc present the attitude of the rural nursing mothers towards Vitamin A consumption using entertainment-education strategy. Findings reveal that 60.4% of the rural nursing mothers were undecided to increase their knowledge on Vitamin A while about 3.0% of them strongly agreed that they considered Vitamin A food as one of the affordable food in the market. Also, 14.9% agreed that Vitamin A supplements programme seems not well spread in the society and 50.5% of the rural nursing mothers strongly agreed in learning about essential food nutrient rich in Vitamin A from various sources of information.

Table 4.17(a): Attitude towards Vitamin A Consumption among rural nursing mothers using entertainment strategy before intervention

S/N	Statement	SA	A	U	D	SD
1	I am eager to increase my knowledge on vitamin A	3(5.6)	7(13.0)	43(63.0)	10(18.5)	-
2	The communication strategies message on foods rich in vitamin A and Vitamin A programme is both educative and entertaining	4(7.4)	11(20.4)	33(61.1)	6(11.1)	-
3	I consider Vitamin A foods as one of the affordable foods in the market	6(11.1)	14(25.9)	34(63.0)	-	-
4	I readily would associate poor eyesight, malaria, lack of blood, measles in young and old to vitamin A deficiency	5(9.3)	26(48.1)	23(42.6)	-	-
5	Vitamin A rich food (carrot, vegetable, oil etc.) is essential for eyesight for young and old	5(9.3)	29(53.7)	20(37.0)	-	-
6	I can deliberately go out of my way to source for vitamin A food items or even capsules	14(25.9)	24(44.4)	16(29.6)	-	-
7	I may pursue a backyard garden project to satisfy my family vitamin A's needs	19(35.2)	23(42.6)	12(22.2)	-	-
8	The choice of my clinic for antenatal is influenced by availability of vitamin A capsules/ supplements	22(40.7)	21(38.9)	11(20.4)	-	-
9	My family eat to satisfy our hunger and we rarely bother on nutritional food	-	-	12(22.2)	15(27.8)	27(50.0)
10	Vitamin A deficiency starts with poor antenatal care.	31(57.4)	12(22.2)	11(20.4)	-	-
11	I do not know food items that can prevent deficiency of vitamin A	-	1(1.9)	14(25.9)	11(20.4)	28(51.9)
12	Food diversification is not better than vitamin A supplementation	-	-	13(24.1)	12(22.2)	29(53.7)
13	None of these food supplementation programme is of interest to me	-	-	13(24.1)	14(25.9)	27(50.0)
14	The vitamin A supplements programme seems not be well spread in the society	28(51.9)	12(22.2)	14(25.9)	-	-
15	I will strongly prefer the supplements to be in tablet forms	31(57.4)	5(9.3)	18(33.3)	-	-

Table 4.17(b): Attitude towards Vitamin A Consumption among rural nursing mothers using entertainment strategy before intervention(continued from previous page)

s/n	Statement	SA	A	U	D	SD
16	Women should be given the responsibility of food preparation at home to ensure inclusion of Vitamin A	31(57.4)	6(11.1)	17(31.5)	-	-
17	Men should be taught how to cook meals rich in vitamin A for children	36(66.7)	6(11.1)	12(22.2)	-	-
18	Women should be focused when it comes to nutrition education	36(66.7)	8(14.8)	10(18.5)	-	-
19	The entire household should be involved in nutrition education especially those involving vitamin A	33(61.1)	7(13.0)	14(25.9)	-	-
20	Educating mothers on Vitamin A's importance should go beyond attending Clinic for immunization and antenatal	31(57.4)	7(13.0)	16(29.6)	-	-
21	Nutrition education on vitamin A should be based on the culture of the people	30(55.6)	8(14.8)	15(27.8)	-	-
22	I prefer learning about essential food nutrient from various sources of information especially on Vitamin A	32(59.3)	7(13.0)	15(27.8)	-	-
23	Vitamin A Supplement initiative is one of the best interventions for women and children in recent time	31(57.4)	3(5.6)	20(37.0)	-	-
24	It is important to have good knowledge of nutritional foods rich in Vitamin A as a mother	31(57.4)	2(3.7)	21(38.9)	-	-
25	Every woman should seek information on how to improve nutritional value of their home especially Vitamin A	30(55.6)	6(11.1)	18(33.3)	-	-
26	I believe good nutrition on Vitamin A helps the family which in turn improve agriculture	32(59.3)	6(11.1)	16(29.6)	-	-
27	Nutrition knowledge on Vitamin A could be given to children at home and school	35(64.8)	3(5.6)	16(29.6)	-	-
28	My husband assists our home in ensuring that the children take vitamin A rice meal	35(64.8)	8(14.8)	11(20.4)	-	-
29	My livelihood activities allow me to know foods that are rich in Vitamin A and good for the body	36(66.7)	5(9.3)	13(24.1)	-	-
30	Pregnant and breast-feeding women require Vitamin A for the fetus and breast milk after birth	29(53.7)	8(14.8)	17(31.5)	-	-

Table 4.17(c): Attitude towards Vitamin A Consumption among rural nursing mothers using entertainment strategy before intervention(continued from previous page)

s/n	Statement	SA	A	U	D	SD
31	Growing children need Vitamin A along with other nutrients for the healthy/ normal growth of the whole body	25(46.3)	16(29.6)	13(24.1)	-	-
32	I do not know that ionized salt, sugar, flour and fortified food substances contain Vitamin A	-	-	12(2.2)	12(22.2)	30(55.6)
33	I do not know that Vitamin A deficiency start from poor food intake	-	-	12(22.2)	17(31.5)	25(46.3)
34	I do not know foods that are rich in Vitamin A	-	-	9(16.7)	15(27.8)	30(55.6)
35	I do not know how to prevent Vitamin A deficiency through cooking nutritious meal especially those rich in vitamin A	-	-	9(16.7)	15(27.8)	30(55.6)
36	I believe men should also be more concern about their children's intakes	29(53.7)	13(24.1)	12(22.2)	-	-
37	It is the responsibility of the women and other female children of the house to prepare food at home	32(59.3)	10(18.5)	12(22.2)	-	-
38	The food we prepare at home is based on our culture	29(53.7)	16(29.6)	9(16.7)	-	-
39	Education should be given to nursing and pregnant women on important of Vitamin A to the body	34(63.0)	11(20.4)	9(16.7)	-	-
40	The Government should improve more on the education given to people on Vitamin A and I believe that contribution of the government on Vitamin A will help households nutrition especially on Vitamin A.	39(72.2)	6(11.1)	9(16.7)	-	-

Source: Reseacher, Field Survey 2016. Mean=146.9±14.2. n=54

Table 4.18(a): Attitude towards Vitamin A Consumption among rural nursing mothers exposed to education strategy before intervention

S/N	Statement	SA	A	U	D	SD
1	I am eager to increase my knowledge on vitamin A	16(13.1)	18(14.8)	67(54.9)	12(9.8)	9(7.4)
2	The communication strategies message on foods rich in vitamin A and Vitamin A programme is both educative and entertaining	16(13.1)	32(26.2)	58(47.5)	13(10.7)	3(2.5)
3	I consider Vitamin A foods as one of the affordable foods in the market	18(14.8)	44(36.1)	48(39.3)	10(8.2)	2(1.6)
4	I readily would associate poor eyesight, malaria, lack of blood, measles in young and old to vitamin A deficiency	15(12.3)	51(41.8)	45(36.9)	10(8.2)	1(0.8)
5	Vitamin A rich food (carrot, vegetable, oil etc.) is essential for eyesight for young and old	27(22.1)	40(32.8)	48(39.3)	5(4.1)	2(1.6)
6	I can deliberately go out of my way to source for vitamin A food items or even capsules	30(24.6)	48(39.3)	38(31.1)	6(4.9)	-
7	I may pursue a backyard garden project to satisfy my family vitamin A's needs	43(35.2)	41(33.6)	35(28.7)	3(2.5)	-
8	The choice of my clinic for antenatal is influenced by availability of vitamin A capsules/ supplements	37(30.3)	50(41.0)	32(26.2)	3(2.5)	-
9	My family eat to satisfy our hunger and we rarely bother on nutritional food	-	3(2.5)	26(21.3)	51(41.8)	42(34.4)
10	Vitamin A deficiency starts with poor antenatal care.	43(35.2)	50(41.0)	27(22.1)	2(1.6)	-
11	I do not know food items that can prevent deficiency of vitamin A	-	5(4.1)	24(19.7)	52(42.6)	41(33.6)
12	Food diversification is not better than vitamin A supplementation	-	5(4.1)	26(21.3)	46(37.7)	45(36.9)

Table 4.18(b): Attitude towards Vitamin A Consumption among rural nursing mothers exposed to education strategy before intervention (continued from previous page)

S/N	Statement	SA	A	U	D	SD
13	None of these food supplementation programme is of interest to me	1(0.8)	6(4.9)	20(16.4)	43(35.2)	52(42.6)
14	The vitamin A supplements programme seems not be well spread in the society	49(4.2)	43(35.2)	18(14.8)	10(8.2	1(0.8)
15	I will strongly prefer the supplements to be in tablet forms	44(34)	45(36.9)	26(21.3)	6(4.9)	1(0.8)
16	Women should be given the responsibility of food preparation at home to ensure inclusion of Vitamin A.	45(36.9)	38(31.1)	31(25.4)	7(5.7)	1(0.8)
17	Men should be taught how to cook meals rich in vitamin A for children	59(48.4)	33(27.0)	25(20.5)	4(3.3)	1(0.8)
18	Women should be focused when it comes to nutrition education	56(45.9)	37(30.3)	22(18.0)	6(4.9)	1(0.8)
19	The entire household should be involved in nutrition education especially those involving vitamin A	52(42.6)	36(29.5)	27(22.1)	6(4.9)	1(0.8)
20	Educating mothers on Vitamin A's importance should go beyond attending Clinic for immunization and antenatal	44(36.1)	38(31.1)	35(28.7)	4(3.3)	1(0.8)
21	Nutrition education on vitamin A should be based on the culture of the people	51(41.8)	35(28.7)	32(26.2)	3(2.5)	-
22	I prefer learning about essential food nutrient from various sources of information especially on Vitamin A	44(36.1)	31(25.4)	42(34.4)	3(2.5)	1(0.8)
23	Vitamin A Supplement initiative is one of the best interventions for women and children in recent time	39(32.0)	39(32.0)	34(27.9)	9(7.4)	1(0.8)

Table 4.18(c): Attitude towards Vitamin A Consumption among rural nursing mothers exposed to education strategy before intervention

S/N	Statement	SA	A	U	D	SD
24	It is important to have good knowledge of nutritional foods rich in Vitamin A as a mother	47(38.5)	37(30.3)	24(19.7)	10(8.2)	4(3.3)
25	Every woman should seek information on how to improve nutritional value of their home especially Vitamin A	49(40.2)	32(26.2)	29(23.8)	9(7.4)	2(1.6)
26	I believe good nutrition on Vitamin A helps the family which in turn improve agriculture	48(39.3)	40(32.8)	26(21.3)	4(3.3)	4(3.3)
27	Nutrition knowledge on Vitamin A could be given to children at home and school	53(43.4)	32(26.2)	31(25.4)	3(2.5)	3(2.5)
28	My husband assists our home in ensuring that the children take vitamin A rice meal.	54(44.3)	35(28.7)	25(20.5)	43.3)	4(3.3)
29	My livelihood activities allow me to know foods that are rich in Vitamin A and good for the body	53(43.4)	35(28.7)	28(23.0)	3(2.5)	2(1.6)
30	Pregnant and breast-feeding women require Vitamin A for the fetus and breast milk after birth	44(36.1)	40(32.8)	30(24.6)	5(4.1)	3(2.5)
31	Growing children need Vitamin A along with other nutrients for the healthy/ normal growth of the whole body	43(35.2)	36(29.5)	36(9.5)	3(2.5)	3(2.5)
32	I do not know that ionized salt, sugar, flour and fortified food substances contain Vitamin A	1(0.8)	3(2.5)	42(34.4)	35(28.7)	41(33.6)
33	I do not know that Vitamin A deficiency start from poor food intake	2(1.6)	5(4.1)	36(29.5)	30(24.6)	49(40.2)
34	I do not know foods that are rich in Vitamin A	2(1.6)	2(1.6)	32(26.2)	38(31.1)	46(37.7)

Table 4.18(d): Attitude towards Vitamin A Consumption among rural nursing mothers exposed to education strategy before intervention

S/N	Statement	SA	A	U	D	SD
35	I do not know how to prevent Vitamin A deficiency through cooking nutritious meal especially those rich in vitamin A	1(0.8)	7(5.7)	35(28.7)	35(28.7)	43(35.2)
36	I believe men should also be more concern about their children's intakes	50(41.0)	31(25.4)	31(25.4)	6(4.9)	2(1.6)
37	It is the responsibility of the women and other female children of the house to prepare food at home	52(42.6)	35(28.7)	26(21.3)	6(4.9)	3(2.5)
38	The food we prepare at home is based on our culture	49(40.2)	31(25.4)	32(26.2)	7(5.7)	3(2.5)
39	Education should be given to nursing and pregnant women on important of Vitamin A to the body	47(38.5)	35(28.7)	32(26.2)	5(4.1)	3(2.5)
40	The Government should improve more on the education given to people on Vitamin A and I believe that contribution of the government on Vitamin A will help households nutrition especially on Vitamin A	50(41.0)	38(31.1)	25(2.5)	4(3.3)	5(4.1)

Source :Reseacher, Field Survey 2016 $\bar{x}$**=141.2±18.2. n=122**

Table 4.19(a): Attitude towards Vitamin A Consumption among rural nursing mothers exposed to entertainment-education strategy before intervention (continued from previous page)

s/n	Statement	SA	A	U	D	SD
1	I am eager to increase my knowledge on vitamin A	-	33(32.7)	61(60.4)	7(6.9)	-
2	The communication strategies message on foods rich in vitamin A and Vitamin A programme is both educative and entertaining	-	20(19.8)	77(76.2)	4(4.0)	-
3	I consider Vitamin A foods as one of the affordable foods in the market	3(3.0)	36(35.6)	62(61.4)	-	-
4	I readily would associate poor eyesight, malaria, lack of blood, measles in young and old to vitamin A deficiency	13(12.9)	25(24.8)	63(62.4)	-	-
5	Vitamin A rich food (carrot, vegetable, oil etc.) is essential for eyesight for young and old	17(16.8)	36(35.6)	48(47.5)	-	-
6	I can deliberately go out of my way to source for vitamin A food items or even capsules	35(34.7)	26(25.7)	39(38.6)	1(1.0)	-
7	I may pursue a backyard garden project to satisfy my family vitamin A's needs	43(42.6)	17(16.8)	40(39.6)	1(1.0)	-
8	The choice of my clinic for antenatal is influenced by availability of vitamin A capsules/ supplements	38(37.6)	24(23.8)	39(38.6)	-	-
9	My family eat to satisfy our hunger and we rarely bother on nutritional food	-	-	38(37.6)	24(23.8)	39(38.6)
10	Vitamin A deficiency starts with poor antenatal care.	42(41.6)	17(16.8)	40(39.6)	-	-
11	I do not know food items that can prevent deficiency of vitamin A	-	-	47(46.5)	18(17.8)	36(35.6)
12	Food diversification is not better than vitamin A supplementation	-	-	46(45.5)	16(15.8)	39(38.6)
13	None of these food supplementation programme is of interest to me	-	-	40(39.6)	16(15.8)	45(44.6)
14	The vitamin A supplements programme seems not be well spread in the society	45(44.6)	15(14.9)	41(40.6)	-	-

Table 4.19(b): Attitude towards Vitamin A Consumption among rural nursing mothers exposed to entertainment-education strategy before intervention (continued from previous page)

s/n	Statement	SA	A	U	D	SD
15	I will strongly prefer the supplements to be in tablet forms	46(45.5)	17(16.8)	38(37.6)	-	-
16	Women should be given the responsibility of food preparation at home to ensure inclusion of Vitamin A	46(45.5)	12(11.9)	43(42.6)	-	-
17	Men should be taught how to cook meals rich in vitamin A for children	42(41.6)	17(16.8)	41(40.6)	-	-
18	Women should be focused when it comes to nutrition education	41(40.6)	15(14.9)	43(42.6)	-	-
19	The entire household should be involved in nutrition education especially those involving vitamin A	38(37.6)	19(18.8)	44(43.6)	-	-
20	Educating mothers on Vitamin A's importance should go beyond attending Clinic for immunization and antenatal	41(40.6)	18(17.8)	42(41.6)	-	-
21	Nutrition education on vitamin A should be based on the culture of the people	52(51.5)	13(12.9)	36(35.6)	-	-
22	I prefer learning about essential food nutrient from various sources of information especially on Vitamin A	51(50.5)	12(11.9)	38(37.6)	-	-
23	Vitamin A Supplement initiative is one of the best interventions for women and children in recent time	47(46.5)	15(14.9)	39(38.6)	-	-
24	It is important to have good knowledge of nutritional foods rich in Vitamin A as a mother	44(43.6)	14(13.9)	43(42.6)	-	-
25	Every woman should seek information on how to improve nutritional value of their home especially Vitamin A	43(42.6)	16(15.8)	41(40.6)	1(1.0)	-
26	I believe good nutrition on Vitamin A helps the family which in turn improve agriculture	46(45.5)	21(20.8)	34(33.7)	-	-
27	Nutrition knowledge on Vitamin A could be given to children at home and school	42(41.6)	19(18.8)	40(39.6)	-	-
28	My husband assists our home in ensuring that the children take vitamin A rice meal.	43(42.6)	16(15.8)	42(41.6)	-	-

Table 4.19(c): Attitude towards Vitamin A Consumption among rural nursing mothers exposed to entertainment-education strategy before intervention

s/n	Statement	SA	A	U	D	SD
29	My livelihood activities allow me to know foods that are rich in Vitamin A and good for the body	45(44.6)	22(21.8)	34(33.7)	-	-
30	Pregnant and breast-feeding women require Vitamin A for the fetus and breast milk after birth	46(45.5)	38.37.6)	16(15.8)	1(1.0)	-
31	Growing children need Vitamin A along with other nutrients for the healthy/ normal growth of the whole body	35(34.7)	52(51.5)	12(11.9)	-	-
32	I do not know that ionized salt, sugar, flour and fortified food substances contain Vitamin A	-	-	24(23.4)	43(42.6)	34(33.7)
33	I do not know that Vitamin A deficiency start from poor food intake	-	-	22(21.8)	42(41.6)	37(36.6)
34	I do not know foods that are rich in Vitamin A	-	-	16(15.8)	40(39.6)	43(42.6)
35	I do not know how to prevent Vitamin A deficiency through cooking nutritious meal especially those rich in vitamin A	-	-	18(17.8)	39(38.6)	44(43.6)
36	I believe men should also be more concern about their children's intakes	50(49.5)	33(32.7)	17(16.8)	-	-
37	It is the responsibility of the women and other female children of the house to prepare food at home	51(50.5)	37(36.6)	13(12.9)	-	-
38	The food we prepare at home is based on our culture	50(49.5)	35(34.7)	16(15.8)	-	-
39	Education should be given to nursing and pregnant women on important of Vitamin A to the body	46(45.5)	39(38.6)	16(15.8)	-	-
40	The Government should improve more on the education given to people on Vitamin A and I believe that contribution of the government on Vitamin A will help households nutrition especially on Vitamin A	54(53.5)	34(33.7)	11(10.9)	-	2(2.0)

Source :Reseacher, Field Survey 2016 $\bar{x}$=142.9±14.1
n=101

4.6.2 Influence of communication strategies on attitude of rural nursing mothers towards Vitamin A Consumption.

Table 4.20 shows the influence of entertainment, education and entertainment-education strategies on the attitude of rural nursing mothers towards Vitamin A consumption. The intervention had significant influence on the rural nursing mothers with general improvement from the baseline ($\bar{x}$ =143.2) to more favourable attitudinal disposition (($\bar{x}$ = 154.4) which gave $\Delta\bar{x}$ =11.2. Findings shows that there was change ($\Delta\bar{x}$=2.1) in rural nursing mothers whose family ate to satisfy their hunger and barely consider the nutritional value. More so, there was change ($\Delta\bar{x}$=1.8) in rural nursing mothers who were eager to increase their knowledge on vitamin A. More rural nursing mothers ($\Delta\bar{x}$=1.6) accepted message on Vitamin A to be of interest to them due to the influence of the communication strategies they were exposed to. There was a negative change (Δx=-0.3) of the rural nursing mothers who said that the food they prepare were based on culture. Moreso, there was a negative change ($\Delta\bar{x}$=-0.6) on the rural nursing mothers who believed that their husband should assist them at home in ensuring that their children take nutritional meals, meaning that the communication strategies was unable to influence their attitude towards change. However, the attitudinal change of $\Delta\bar{x}$=0.3 of the rural nursing mothers toward the government improving more on education given to people on Vitamin A which would help the household on Vitamin A consumption. The attitudinal change of ($\Delta\bar{x}$=1.6) of the rural nursing mothers toward the fact that pregnant and breast-feeding women require Vitamin A for the fetus and for breast milk at birth showed the significant of the communication strategies . This supported to the IDI with one of the vocal officers in Saki East who stated that:

> ‘*’the package of our message delivery to pass messages to the rural nursing mothers has been courageous but this Intervention has a greater turnout in their output’’ (IDI, Saki East, Oyo State, 6th October 2016’’.*

Furthermore, the negative attitudinal change ($\bar{x}$=-0.6) of the rural nursing mothers who believed that it is their responsibilities and not their husbands’ to know about their children’s intakes. The FGD buttressed this:

> *‘’we are responsible for cooking at homes and our kids assist in the process. It is not traditionally right for our husbands to cook or assist us in cooking’’.*

Table 4.20a: Attitudinal change of the rural nursing mothers towards Vitamin A consumption using communication strategies

S/N	**Statements**	$\bar{x}_1$ Mean Before intervention	$\bar{x}_2$ Mean after intervention	Mean Difference $\bar{x}_2 - \bar{x}_1$
1	I am eager to increase my knowledge on vitamin A	3.1	4.9	1.8
2	The communication strategies message on foods rich in vitamin A and Vitamin A programme is both educative and entertaining	3.2	4.8	1.6
3	I consider Vitamin A foods as one of the affordable foods in the market	3.5	4.8	1.3
4	I readily would associate poor eyesight, malaria, lack of blood, measles in young and old to vitamin A deficiency	3.7	4.9	1.2
5	Vitamin A rich food (carrot, vegetable, oil etc.) is essential for eyesight for young and old	3.7	4.9	1.2
6	I can deliberately go out of my way to source for vitamin A food items or even capsules	3.9	4.9	1.0
7	I may pursue a backyard garden project to satisfy my family vitamin A's needs	4.1	4.9	0.8
8	The choice of my clinic for antenatal is influenced by availability of vitamin A capsules/ supplements	4.2	4.1	- 0.1
9	My family eat to satisfy our hunger and we rarely bother on nutritional food	1.7	3.8	2.1
10	Vitamin A deficiency start with poor antenatal care.	4.4	2.5	-1.9
11	I do not know food items that can prevent deficiency of vitamin A	1.8	1.4	-0.4
12	Food diversification is not better than vitamin A supplementation	1.7	2.6	0.9
13	None of these food supplementation programme is of interest to me	1.7	1.2	-0.5
14	The vitamin A supplements programme seems not be well spread in the society	4.3	1.1	-3.2
15	I will strongly prefer the supplements to be in tablet forms	4.2	2.4	-1.8
16	Women should be given the responsibility of food preparation at home to ensure inclusion of Vitamin A	4.2	4.7	0.5
17	Men should be taught how to cook meals rich in vitamin A for children	4.4	4.7	0.3
18	men should be focused when it comes to nutrition education	4.5	4.9	0.4
19	The entire household should be involved in nutrition education especially those involving vitamin A	4.4	4.8	0.4
20	Educating mothers on Vitamin A's importance should go beyond attending Clinic for immunization and antenatal	4.3	4.9	0.6
21	Nutrition education on vitamin A should be based on the culture of the people	4.3	4.5	0.2

Table 4.20b: Attitudinal change of the rural nursing mothers towards Vitamin A consumption using communication strategies

S/N	Statements	$\bar{x}_1$ Mean Before intervention	$\bar{x}_2$ Mean after intervention	Mean Difference $\bar{x}_2 - \bar{x}_1$
22	I prefer learning about essential food nutrient from various sources of information especially on Vitamin A	4.3	4.8	0.5
23	Vitamin A Supplement initiative is one of the best interventions for women and children in recent time	4.2	4.9	0.7
24	It is important to have good knowledge of nutritional foods rich in Vitamin A as a mother	4.2	4.9	0.7
25	Every woman should seek information on how to improve nutritional value of their home especially Vitamin A	4.2	4.9	0.7
26	I believe good nutrition on Vitamin A helps the family which in turn improve agriculture	4.3	4.9	0.6
27	Nutrition knowledge on Vitamin A could be given to children at home and school	4.4	4.9	0.5
28	My husband assists our home in ensuring that the children take vitamin A rice meal.	4.4	3.8	-0.6
29	My livelihood activities allow me to know foods that are rich in Vitamin A and good for the body	4.4	2.0	-2.4
30	Pregnant and breast-feeding women require Vitamin A for the fetus and breast milk after birth	4.2	5.0	0.8
31	Growing children need Vitamin A along with other nutrients for the healthy/ normal growth of the whole body	4.2	5.0	0.8
32	I do not know that ionized salt, sugar, flour and fortified food substances contain Vitamin A	1.7	1.1	-0.6
33	I do not know that Vitamin A deficiency start from poor food intake	1.8	1.1	-0.7
34	I do not know foods that are rich in Vitamin A	1.6	1.0	-0.6
35	I do not know how to prevent Vitamin A deficiency through cooking nutritious meal especially those rich in vitamin A	1.6	1.1	-0.5
36	I believe men should also be more concern about their children's intakes	4.3	2.6	-1.7
37	It is the responsibility of the women and other female children of the house to prepare food at home	4.4	4.9	0.5
38	The food we prepare at home is based on our culture	4.5	4.2	-0.3
39	Education should be given to nursing and pregnant women on important of Vitamin A to the body	4.5	4.9	0.4
40	The Government should improve more on the education given to people on Vitamin A and I believe that contribution of the government on Vitamin A will help households nutrition especially on Vitamin A	4.6	4.9	0.3
	GRAND MEAN	**143.21**	**154.44**	**11.23**

Source: Reseacher, Field Survey 2016

4.6.3 Categorization of rural nursing mothers based on the influence of communication strategies on their attitude toward vitamin A consumption

Attitudinal categorization in Table 4.21(a) shows that 56.7 % of the rural nursing mothers had a favourable attitude toward Vitamin A consumption with mean value of 151.01±11.81. This was due to better understanding on the importance of vitamin A as a result of the intervention.

Table 4.21(b) revealed that 68.5% of the rural nursing mothers had a favourable attitudinal change due to use of entertainment strategy, 60.7% had a favourable attitudinal change towards Vitamin A consumption when exposed to education strategy and about 53.5% had favourable attitudinal change with exposure to entertainment-education strategy. Therefore, this shows that entertainment strategy will be the most effective in influencing the attitude of the rural nursing mothers toward Vitamin A consumption.

Table 4.21(a): Categorization of rural nursing mothers' Attitude toward vitamin A consumption

Attitude	**Frequency**	**%**	**Minimum**	**Maximum**	**Mean**	**S.D**
unfavourable(0-146)	120	43.3	102.0	190.0	151.0	11.8
High(147-190)	157	56.7				

Source :Reseacher, Field Survey 2016. Figures in parentheses are percentages

Table 4.21(b): Categorization of rural nursing mothers based on the influence of communication strategies on their attitude toward vitamin A consumption

Communication strategies	Attitude before		Attitude after		Change in attitude	
	Unfavourable	Favourable	Unfavourable	Favourable	Unfavourable	Favourable
Entertainment	12(22.2)	42(77.8)	4(7.5)	50(92.5)	17(31.5)	37(68.5)
Education	59(22.2)	63(77.8)	66(54.1)	56(45.9)	48(39.3)	74(60.7)
Entertainment-education	37(36.6)	64(63.4))	24(23.8)	77(76.2)	47(46.5))	54(53.5)

Source :Reseacher, Field Survey 2016. Figures in parentheses are percentages

$\bar{x}$=151.01±11.81

4.7 Vitamin A consumption among the rural nursing mothers

4.7.1 Vitamin A consumption among the rural nursing mothers before intervention using entertainment strategy

The Table 4.22 shows the Vitamin A consumption by the rural nursing mothers before intervention. Consumption of Vitamin A food was high (100 % for meat, 90.7% for palm oil, 85.2% for sweet potato) among rural nursing mothers who were exposed to entertainment strategy, although 40.7% of the rural nursing mothers consumed meat daily. 42.6% added palm oil to their meals twice a week, 25.9% ate pumpkin weekly and 11.1% ate carrot and fish occasionally. Increase in knowledge on these foods and the programme will go a long way in influencing the attitude of the rural nursing mothers toward Vitamin A consumption. Attitude as a significant instrument of practice will enhance Vitamin A among rural nursing mothers. Abdul-razaq *et al* (2014) defined Attitude to be a great factor influencing Vitamin A consumption.

Table 4.22 (b) shows that above 90% of the rural nursing mothers breastfed and collected Vitamin A supplements for their children. However, 96.3% of rural nursing mothers collected 100,000 IU Vitamin A supplements for their children, while 92.6% breastfed their children for those exposed to entertainment strategy.

Table 4.23 shows that consumption of Vitamin A food was high (93.4% for meat, 78.7% for palm oil, 87.7% for red-pepper, 75.4% for milk, 93.4% for fish)among rural nursing mothers exposed to education strategy. However, consumption of Vitamin A foods was low for pumpkin (40.2%), lettuce (37.7%) and fortified sugar (37.7%) among the rural nursing mothers exposed to education strategy.

Table 4.23(b) shows that 95.1% of rural nursing mothers collected 100,000 IU Vitamin A supplements for their children. 98.4% breastfed their children for those exposed to education strategy.

Table 4.24 Consumption of Vitamin A sampled food was high (98.0 % for meat, 95% for palm oil, 93.1% for sweet potato) among rural nursing mothers who were exposed to entertainment-education strategy. 38.6% of the rural nursing mothers consumed meat twice a week. 38.6% added palm oil to their meals weekly, 8.9% ate pumpkin weekly and 5.9% ate fish occasionally.

Table 4.24(b) shows that using entertainment-education strategy, 90.7% of the rural nursing mothers collected 200,000 IU, 200,000IU Vitamin A supplements and 100% breast-fed their children always. Focus Group discussions in sampled areas showed that most of the rural nursing mothers go to the health centres with a general notion of taking immunization with little or no knowledge of the significance of each of the immunizations taken.

Furthermore, the FGD with rural nursing mothers in Ibarapa Central LGA showed that:

> *''we do not see any crime in consuming particular foods continuously especially starchy foods like rice, yam and cassava flours more than eating foods-rich in Vitamin A''.*

The Chief Nursing Officers (CNOs) at the LGAs during the IDI reported that:

> *''Vitamin A supplements were given to the mothers and their children. They still cannot identify the immunizations from one another. They generally refer to it as abere ajesara (immunization) even though we educate them on all the immunizations as contained in their immunization card.'' (IDI, Ekiti West LGA, Efon Alaye, LGA, Osun State, 2nd &10th November 2016).*

> *'' We do food demonstrations at the health Centre during ante and post-natal clinics to educate the rural nursing mothers on how to cook and consume nutritious foods. (IDI, Ido LGA, Saki East LGA, Oyo State, 6th October 2016).*
> *The Chief Nursing Officer (CNO) in Ido LGA further stated that*

> *'' supplements were being supplied by the United Nations Children's Fund (UNICEF) in partnership with World Health Organization (WHO) to the Federal Government. The vocal officer collects the supplements at the Ministry of Health at fixed collection days and supply appropriately to different health centers/clinics/hospitals.*

''There are two types of the Vitamin A Supplements:

-Red capsule supplement is 100,000 IU for 6 - 11months old children

- Blue capsule supplement is 200,000 IU for 12-59 months old children and lactating mothers. The 200,000 IU administer to lactating are given to them within 8 weeks of delivery because it is expected that the baby will suck this Vitamin from the mother within this period. Due to scarcity of the supplements, administration to lactating mothers within 8 weeks of delivery had to be stopped.'' (IDI, Saki East LGA, Oyo State,6th October 2016).

''Vitamin A supplements are generally scarce but are made available and surplus during health week for administration. During these periods, we request for excess and keep for later administration at the regular clinic days to the rural nursing mothers and their children.'' (Saki East LGA, Oyo State, 2016).

''we do health talk on balanced nutrition, family planning, personal, food demonstration, follow-up after immunization for nursing mothers to learn. Emphasis are laid on importance of special Vitamins like Vitamin. The special nutrition talk is being done by the Vocal officer on nutrition. The vocal officer is selected trained officer on nutrition and could be nurse or ordinary people. They train other nurses on nutrition at the Centre. They handle programme on nutrition and other related activities at the health Centre. (IDI, Ido LGA, Oyo State, 11th October 2016).''

'' information is being disseminated by the health workers through health talks using health charts, food demonstration, posters, charts, demonstration, criers, and banners. For heath week, awareness information is being disseminated using radio, television, town crier, drumming, leaflets, banners, town announcer, folktales, pamphlets, churches/mosques/traditional heads. All these were said to assist in passing messages to the

nearby communities to benefit from the health week programme (Saki East, LGA, Oyo state, 2016).

'' health week activities are being done with the assistance of nominated health committee members at ward, Local Government, State and Federal levels. These committee members have different names as Facility Health Committee members, Social Mobilization Committee, Ward Health Development Committee and Health Committee depending on the level at which they operate. They work toward health delivery to the rural people '' (Saki East, LGA, Oyo state 2016).

''Health week is also reported to be a special week for nursing mothers, pregnant mothers and children. The health week programme was said to involve programme like deworming, family planning, personal hygiene, administration of immunization for those that missed it, and other useful health programme. (Saki East, LGA, Oyo state, 2016).

'' The king/bale/community head handles rural nursing mothers who refuse to take the immunization for herself or her child. ''. (Saki East, LGA, 2016)

''Children or nursing mother diagnosed to have symptoms of Vitamin A deficiencies are always referred to the Outpatient Department (OPD) for sufficient health care or rather refer to state or Federal hospital'' (Saki East, LGA, Oyo state, 2016)

Table 4.22: Distribution of rural nursing mothers' Vitamin A consumption before the intervention using entertainment strategy

Food Items	Yes	No	Rarely	Weekly	Twice a week	Daily
Meat	54(100.0)	-	-	5(9.3)	27(50.0)	22(40.7)
Palm oil	49(90.7)	5(9.3)	-	19(35.2)	23(42.6)	7(13.0)
Vegetable	44(81.5)	10(18.5)	1(1.9)	15(27.8)	21(38.9)	6(11.1)
Sweet potato	46(85.2)	8(14.8)	4(7.4)	18(33.3)	11(20.4)	13(24.1)
Mango	49(90.7)	5(9.3)	-	12(22.2)	24(44.4)	13(224.1)
Pumpkin	35(64.8)	19(35.2)	2(3.7)	14(25.9)	9(16.7)	9(16.7)
Peanut	38(70.4)	16(29.6)	3(5.6)	13(24.1)	7(13.0)	15(27.8)
Lettuce	32(59.3)	22(40.7)	2(3.7)	9(16.7)	11(20.4)	10(18.5)
Red pepper	48(88.9)	6(11.1)	3(5.6)	13(24.1)	11(20.4)	21(38.9)
Carrot	37(68.5)	17(31.5)	6(11.1)	9(16.7)	7(13.0)	15(7.8)
Liver	42(77.8)	12(22.2)	5(9.3)	19(35.2)	9(16.7)	9(16.7)
Maize	46(85.2)	8(14.8)	5(9.3)	18(33.3)	13(24.1)	10(18.5)
Egg	46(85.2)	8(14.8)	8(14.8)	8(14.8)	15(27.8)	15(27.8)
Butter	49(90.7)	5(9.30	7(13.0)	13(24.1)	20(37.0)	9(16.7)
Milk	51(94.4)	3(5.6)	7(13.0)	13(24.1)	20(37.0)	11(20.4)
Cheese	48(88.9)	6(11.1)	6(11.1)	15(27.8)	13(24.1)	14(25.9)
Fish	54(100.0)	-	4(7.4)	26(48.1)	8(14.8)	16(29.6)
Yellow Cassava (Vitamin A)	46(85.2)	8(14.8)	8(14.8)	8(14.8)	15(27.8)	15(27.8)
Fortified sugar	49(90.7)	5(9.30	7(13.0)	13(24.1)	20(37.0)	9(16.7)
Fortified salt	32(59.3)	22(40.7)	2(3.7)	9(16.7)	11(20.4)	10(18.5)

Source: Reseacher, Field Survey 2016 n=54

Table 4.22(b): Distribution of rural nursing mothers' Practice of Vitamin A supplements and breast-feeding before the intervention using entertainment strategy

Vitamin A Supplements (IU)	Collected		I did not collect	
	Freq	%	Freq	%
100,000 for 6 – 11 months (for children)	52	96.3	2	3.7
200,000 for 12 – 59 months (for children)	49	90.7	5	9.3
Breastmilk feeding/Lactating mothers	50	92.6	4	7.4

Source: Reseacher, Field Survey 2016 n=54

Table 4.23: Distribution of rural nursing mothers to Vitamin A consumption before the intervention using education strategy

Food Items	Yes	No	Rarely	Weekly	Twice a week	Daily
Meat	114(93.4)	8(6.6)	12(9.8)	58(47.5)	26(21.3)	18(14.8)
Palm oil	96(78.7)	26(21.3)	7(5.7)	24(19.7)	35(28.7)	30(24.6)
Vegetable	92(75.4)	30(24.6)	6(4.9)	24(19.7)	38(31.1)	22(18.0)
Sweet potato	89(73.0)	33(27.0)	19(15.6)	25(20.5)	32(26.2)	11(9.0)
Mango	89(73.0)	33(27.0)	-	61(50.0)	15(12.3)	13(10.7)
Pumpkin	49(40.2)	73(59.8)	17(13.9)	15(12.3)	10(8.2)	6(4.9)
Peanut	57(46.7)	65(53.3)	12(9.8)	20(16.4)	12(9.8)	14(11.5)
Lettuce	46(37.7)	76(62.3)	8(6.6)	9(7.4)	20(16.4)	9(7.4)
Red pepper	107(87.7)	15(12.3)	12(9.8)	25(20.5)	32(26.2)	38(31.1)
Carrot	80(65.6)	42(34.4)	16(13.1)	17(13.9)	31(25.4)	16(13.1)
Liver	83(68.0)	39(32.0)	16(13.1)	39(32.0)	16(13.1)	12(9.8)
Maize	104(85.2)	18(14.8)	37(30.3)	35(28.7)	17(13.9)	15(12.3)
Egg	84(68.9)	38(31.1)	13(10.7)	31(25.4)	18(14.8)	22(18.0)
Butter	67(54.9)	55(45.1)	11(9.0)	12(9.8)	30(24.6)	14(11.5)
Milk	92(75.4)	30(24.6)	13(10.7)	22(18.0)	31(25.4)	25(20.5)
Cheese	63(51.6)	59(48.4)	16(13.1)	10(8.2)	21(17.2)	15(12.3)
Fish	114(93.4)	8(6.6)	20(16.4)	44(336.1)	27(22.1)	23(18.9)
Yellow Cassava (Vitamin A)	57(46.7)	65(53.3)	12(9.8)	20(16.4)	12(9.8)	14(11.5)
Fortified sugar	46(37.7)	76(62.3)	8(6.6)	9(7.4)	20(16.4)	9(7.4)
Fortified salt	107(87.7)	15(12.3)	12(9.8)	25(20.5)	32(26.2)	38(31.1)

Source : Reseacher, Field Survey 2016 n-122

Table 4.23(b): Distribution of rural nursing mothers to Practice of Vitamin A supplements and breast-feeding before the intervention using education strategy

Vitamin A Supplements (IU)	Collected		did not collect	
	Freq	%	Freq	%
100,000 for 6 – 11 months (for children)	116	95.1	6	4.9
200,000 for 12 – 59 months (for children)	112	91.8	10	8.2
Breastmilk feeding/Lactating mothers	120	98.4	2	1.6

Table 4.24: Distribution of rural nursing mothers to Vitamin A consumption before the intervention using entertainment-education strategy

Food Items	Yes	No	Rarely/Occasionally	Weekly	Twice a week	Daily
Meat	99(98.0)	2(2.0)	-	32(31.7)	39(38.6)	28(27.7)
Palm oil	96(95.0)	5(5.0)	3(3.0)	39(38.6)	45(44.6)	9(8.9)
Vegetable	92(91.1)	9(8.9)	4(4.0)	38(37.6)	33(32.7)	17(16.8)
Sweet potato	94(93.1)	7(6.9)	8(7.9)	46(45.5)	27(26.7)	13(12.9)
Mango	89(88.1)	12(11.9)	-	28(27.7)	40(39.6)	21(20.8)
Pumpkin	49(48.5)	52(51.5)	17(6.8)	9(8.9)	22(21.8)	12(11.9)
Peanut	74(73.3)	27(26.7)	20(19.8)	18(17.8)	12(11.9)	24(23.8)
Lettuce	69(68.3)	32(31.7)	17(16.8)	11(10.9)	17(16.8)	23(22.8)
Red pepper	98(97.0)	3(3.0)	11(10.9)	29(28.7)	20(19.8)	38(37.6)
Carrot	87(86.1)	14(13.9)	25(24.8)	11(10.9)	27(26.7)	24(23.8)
Liver	94(93.1)	7(6.9)	15(14.9)	38(37.6)	32(31.7)	9(8.9)
Maize	94(93.1)	7(6.9)	24(23.8)	24(23.8)	17(16.8)	29(28.7)
Egg	99(98.0)	2(2.0)	20(19.8)	21(20.8)	40(39.6)	18(17.8)
Butter	84(83.2)	17(16.8)	19(18.8)	27(26.7)	21(20.8)	17(16.8)
Milk	96(95.0)	5(5.0)	12(11.9)	44(43.6)	26(25.7)	14(13.9)
Cheese	70(69.3)	31(30.7)	8(7.9)	38(37.6)	16(15.8)	8(7.9)
Fish	101(100.0)	-	6(5.9)	36(35.6)	29(28.7)	29(28.7)
Yellow Cassava (Vitamin A)	99(98.0)	2(2.0)	20(19.8)	21(20.8)	40(39.6)	18(17.8)
Fortified sugar	84(83.2)	17(16.8)	19(18.8)	27(26.7)	21(20.8)	17(16.8)
Fortified salt	69(68.3)	32(31.7)	17(16.8)	11(10.9)	17(16.8)	23(22.8)

Source : Reseacher, Field Survey n= 101

Table 4.24(b): Distribution of rural nursing mothers according to their Practice of Vitamin A supplements and breast-feeding before the intervention using entertainment-education strategy

Vitamin A Supplements (IU)	collected		did not collect	
	Freq	%	Freq	%
100,000 for 6 – 11 months (for children)	93	92.1	8	7.9
200,000 for 12 –59 months (for children)	88	90.7	5	9.3
Breastmilk feeding/Lactating mothers	101	100	-	-

Source; Reseacher, Field Survey 2016 n=101

4.7.3 Vitamin A consumption among the rural nursing mothers after intervention

The Table 4.25 shows the rate of Vitamin A consumption by the rural nursing mothers after intervention. Nearly all the rural nursing mothers consumed all the foods containing Vitamin A.This indicate the impact of the communication strategies over the rural nursing mothers. . Increased knowledge had influenced the attitude toward consumption among rural nursing mothers. During FGDs, Discussants stated that:

> *''we were ignorant of the benefits of certain foods items until we were educated about it through the communication channels. I never linked cheese and carrot to Vitamin A but now, I eat them now due to the nutritional benefits we heard from the communication channels.'' (FGD, Ibarapa Central, Oyo State, 2016)*

4.7.4 Influence of communication strategy on Vitamin A consumption among rural nursing mothers

Table 4.25(a) shows that there is change in consumption of Vitamin A foods among rural nursing mothers. Findings show that the foods with negative changes show that the rural nursing mothers were not used to the consumption of those food substances: (meat$\bar{x}$ = -0.3), (sweet potato $\bar{x}$ =-1.6), (mango $\bar{x}$ =- 0.9), (pumpkin $\bar{x}$ = -1.8), (peanut $\bar{x}$= -1.9), (lettuce $\bar{x}$ =-1.5). This can be due to economic reasons because of the low-income status of some of the rural nursing mothers.

Also, in Table 4.25b, Result shows that meat ($\bar{x}$ =-0.3), mango ($\bar{x}$ =-1.6), pumpkin ($\bar{x}$ =-0.9), peanut ($\bar{x}$ =-1.9), lettuce ($\bar{x}$ =-1.5) were the food items not consumed by the rural nursing mothers.

In addition, Table 4.25c shows that rual nursing mothers consumed meat ($\bar{x}$ = 0.1), red pepper (($\bar{x}$ =0.6), fortified sugar (($\bar{x}$ =1.7), fish (0.1) and added palm oil to their meals (($\bar{x}$ = 0.4). Nevertheless, they consumed less of mango ($\bar{x}$ =-1.4), carrot (($\bar{x}$ =-1.2), cheese (($\bar{x}$ =-1.1) which might be due to lack of personal interest to consume the food items.

Furthermore, the grand mean difference of educative strategy (9.8) was higher than entertainment (-0.4) and entertainment-educative strategy (-4.5) implying the influence of education on the rural nursing mothers as indicated in the tables.

Table 4.25a: Distribution of rural nursing mothers exposed to entertainment strategy according to their change toward Vitamin A consumption after intervention

Food items	Mean Before intervention $\bar{x}_1$	Mean After intervention $\bar{x}_2$	Mean Difference(change) $\bar{x}_2 - \bar{x}_1$
Meat	2.9	2.6	-0.3
Palm oil	2.7	3.0	0.3
Vegetable	2.6	3.9	1.3
Sweet potato	2.9	1.3	-1.6
Mango	2.8	1.9	-0.9
Pumpkin	2.9	1.1	-1.8
Peanut	3.1	1.2	-1.9
Lettuce	2.8	1.3	-1.5
Red pepper	3.1	3.6	0.5
Carrot	2.9	1.2	-1.7
Liver	2.8	2.2	-0.6
Maize	2.7	1.1	-1.6
Egg	2.7	1.9	-0.8
Butter	2.5	1.7	-0.8
Milk	2.6	1.4	-1.2
Cheese	2.8	2.8	0
Fish	3.0	1.5	-2.5
Vitamin A Cassava	1.0	3.2	2.2
Fortified sugar	1.2	3.8	2.6
Fortified salt with Vitamin A	1.4	3.8	2.4
100,000IU	1.6	3.6	2.0
200,000IU	2.3	2.9	0.6
Breastmilk	1.9	3.2	1.3
Grand	**53.8**	**53.4**	**-0.4**

Source :Reseacher, Field Survey 2016

Table 4.25b: Distribution of rural nursing mothers exposed to education strategy according to their change toward Vitamin A consumption after intervention

Food items	Mean Before intervention x_1	Mean After intervention x_2	Mean Difference(change) $x_2 - x_1$
Meat	3.0	2.8	-0.3
Palm oil	2.5	3.2	0.3
Vegetable	2.6	2.9	1.3
Sweet potato	2.6	1.3	-1.6
Mango	2.6	2.9	-0.9
Pumpkin	1.1	1.1	-1.8
Peanut	1.4	1.2	-1.9
Lettuce	1.6	1.3	-1.5
Red pepper	2.8	3.9	0.5
Carrot	2.0	1.9	-1.7
Liver	2.6	3.0	-0.6
Maize	2.3	3.3	-1.6
Egg	2.1	1.4	-0.8
Butter	2.6	2.8	-0.8
Milk	2.7	1.1	-1.2
Cheese	2.5	3.8	0
Fish	3.0	3.9	-2.5
Vitamin A Cassava	1.0	2.2	2.2
Fortified sugar	1.5	3.7	2.6
Fortified salt with Vitamin A	1.9	2.7	2.4
100,000IU	1.6	3.6	2.0
200,000IU	2.3	2.6	0.6
Breastmilk	1.8	3.3	1.3
Grand	**50.1**	**59.9**	**9.8**

Source :Reseacher, Field Survey 2016

Table 4.25c: Distribution of rural nursing mothers exposed to entertainment-education strategy according to their change toward Vitamin A consumption after intervention

Food items	Mean Before intervention $\bar{x}_1$	Mean After intervention $\bar{x}_2$	Mean Difference(change) $\bar{x}_2 - \bar{x}_1$
Meat	2.9	3.0	0.1
Palm oil	2.6	3.0	0.4
Vegetable	2.7	3.0	0.3
Sweet potato	2.7	1.3	-1.4
Mango	2.8	2.8	0.0
Pumpkin	2.3	1.1	-1.2
Peanut	2.6	1.2	-1.4
Lettuce	2.6	1.3	-1.3
Red pepper	3.0.	3.6	0.6
Carrot	2.4	1.2	-1.2
Liver	2.4	2.8	0.4
Maize	2.6	2.8	0.2
Egg	2.4	2.0	-0.4
Butter	2.6	1.7	-0.9
Milk	2.4	1.7	-0.9
Cheese	2.5	1.4	-1.1
Fish	2.7	2.8	0.1
Vitamin A Cassava	2.9	1.5	-1.4
Fortified sugar	2.4	3.2	0.8
Fortified salt with Vitamin A	2.4	3.8	1.7
100,000IU	2.9	3.6	0.7
200,000IU	3.0	3.2	0.2
Breastmilk	1.9	3.2	1.3
Grand	**59.7**	**55.2**	**-4.5**

Source :Reseacher, Field Survey 2016

4.7.5 Distribution of the rural nursing mothers toward vitamin A consumption

Table 4.26a shows that majority (51.6%) of rural nursing mothers had high Vitamin A consumption with mean value 57.3± 10.6.

Table 4.26b shows that, majority of the rural nursing mothers have low change in the consumption of Vitamin A (70.4%) using entertainment strategy. This is an indication that entertainment strategy is not an effective method to impact skill among the rural nursing mothers. Findings further show that majority of the rural nursing mother (51.6%) had a change in Vitamin A consumption when exposed to education strategy and 62.4% when exposed to entertainment-education strategy, implying the influence of these strategies among the rural nursing mothers.

Table 4.26a: Distribution of rural nursing mothers according to their Practice toward vitamin A consumption.

Practice	Frequency	%	Minimum	Maximum	Mean	S.D
Low(0-56)	134	48.4	25.0	80.0	57.3	10.6
High(57-80)	143	51.6				

Source :Reseacher, Field Survey 2016 N=227

Table 4.26b: Categorization of rural nursing mothers based on the influence of communication strategies on their attitude toward vitamin A consumption

Communication strategies	Practice before		Practice after		Change in Practice	
	Low	**High**	**Low**	**High**	**Low**	**High**
Entertainment	16(29.6)	38(70.4)	41(75.9)	13(24.1)	38(70.4)	16(29.6)
Education	85(69.7)	37(30.3)	90((73.8)	32(26.2)	59(48.4)	63(51.6)
Entertainment-education	24(23.8)	77(76.2)	3(3.0)	98(97.0)	38(37.6)	63(62.4)

Source :Reseacher, Field Survey 2016. Figures in parentheses are percentages

$\bar{x}$=57.32±10.60

4.8 Behavioural change of rural nursing mothers toward Vitamin A Consumption

4.8.1 Mean Distribution of rural nursing mothers according to their behaviour

The behaviour of rural nursing mothers in the study area was measured by summing the standard scores(z) of knowledge, attitude and practice (Vitamin A consumption) of Vitamin A food substances & Vitamin A programme. Table 4.27 shows an increase in knowledge from $\bar{x}$=2.3 to $\bar{x}$=18.7, favourable attitude from $\bar{x}$=142.9 to $\bar{x}$=151.0, improved practice (Vitamin A consumption) from $\bar{x}$=48.6 to $\bar{x}$= 57.3 and change in behaviour from $\bar{x}$=8.9 to $\bar{x}$= 12.4. This was because of the communication strategies that the rural nursing mothers were exposed to.

Table 4.27: Distribution of rural nursing mothers according to their behaviour.

	Mean Before intervention ($\bar{x}_{1)}$	Mean after intervention($\bar{x}_{2)}$	Mean Difference (change) ($x_{2} - x_{1)}$
Knowledge	2.3	18.7	16.4
Attitude	142.9	151.0	8.1
Practice	8.6	57.3	8.8
Behaviour	8.9	12.4	3.4

Source :Reseacher, Field Survey 2016

4.8.2 Behavioural change of rural nursing mothers according to the communication strategies

Behaviour denotes a composite determining the actions and reaction of knowledge, attitude and practice of rural nursing mothers toward Vitamin A consumption in the study area. According to Heimlick and Ardoin (2008), behaviour represents the intermingling of affective and cognitive processes that guides decision in the short and long term. Therefore, comprehension of behavior depends on the relationship among the components of knowledge, attitude and practice. At the end, behaviour could be either favourable or unfavourable among the rural nursing mothers.

Results in table 4.28 shows that 38.9% of rural nursing mothers had favourable behavioural toward Vitamin A consumption using entertainment education, 76.2% had favourable behaviour using education strategy while 72.3% had favourable behaviour using entertainment-education strategy.

Table 4.28: Categorization of rural nursing mothers based on their change in behaviour according to communication strategies used for intervention

Communication strategies	Behaviour before		Behaviour after		Change in Behaviour	
	Unfavourable	Favourable	Unfavourable	Favourable	Unfavourable	Favourable
Entertainment	20(37.0)	34(63.0)	26(48.2)	28(51.9)	33(61.1)	21(38.9)
Education	57(46.7)	65(53.3)	91((74.6)	31(25.4)	29(23.8)	93(76.2)
Entertainment-education	45(44.6)	56(55.5)	7(6.9)	94(93.1)	28(27.7)	73(72.3)

Source :Reseacher, Field Survey 2016. Figures in parentheses are percentages

$\bar{x}$=12.36±1.55

4.8.3 Distribution of rural nursing mothers according to their behavioural change towards Vitamin A consumption

The study revealed that the communication strategy had greater influence on the rural nursing mothers toward Vitamin A consumption. There was change in knowledge among rural nursing mothers in mean score before and after intervention from $\bar{x}$=2.3 to$\bar{x}$= 18.7. Also, the mean score for attitude of the rural nursing mothers changed from $\bar{x}$=142.9 to $\bar{x}$=151.0 and practice from $\bar{x}$= 48.6 to $\bar{x}$=57.3 as shown in Table 4.29. Findings thus, revealed that introduction of communication strategy created appropriate awareness, better knowledge, improved attitude and changed behaviour toward Vitamin A consumption among the rural nursing mothers.

4.29: Distribution of rural nursing mothers according to their behavioural change towards Vitamin A consumption n= 277

	Before intervention			After intervention		
Behavioural component	**Mean**	**Unfavourable (Below mean)**	**Favourable (Mean& above)**	**Mean**	**Unfavourable (Below mean)**	**Favourable (Mean & above)**
Knowledge	2.3	70.8	29.2	18.7	14.1	85.9
Attitude	142.9	39.0	61.0	151.0	35.7	64.3
Practice (Vitamin A consumption)	48.6	45.1	54.9	57.3	48.4	51.6

Source :Reseacher, Field Survey 2016

4.8.4 Percentage Distribution of rural nursing mothers according to their behavioural change towards Vitamin A consumption

The higher knowledge with improved attitude and better Vitamin A consumption implies that the intervention had gone a long way to positively influence the behavioural change towards Vitamin A consumption among the rural nursing mothers in the study area. Findings show in Table 4.30 indicated that 55.6% of the rural nursing mothers had high behavioural change, with a mean score of 12.4 and standard deviation of 1.55.

Table 4.30: Percentage Distribution of rural nursing mothers according to their behavioural change towards Vitamin A consumption. (n=277)

Behaviour	Frequency	%	Minimum	Maximum	Mean	S.D
Low	123	44.4	4.1	15.7	12.4	1.6
High	154	55.6				

Source :Reseacher, Field Survey 2016 N=227

4.8.5 Rural nursing mothers' standardization of KAP scores into behavioural change score

Rural nursing mothers' behavioural change toward Vitamin A consumption was measured by summing the standard scores (z) of knowledge on Vitamin A programme, measures of attitude towards Vitamin A consumption and practice towards Vitamin A consumption. This is as presented in Table 4.31 below:

$$\mathbf{BC=zK+zA+zP}$$

BC= Behaviuoral change towards Vitamin A consumption

zK = Standard score of Knowledge on Vitamin A food substances &Vitamin A programme

zA = Standard score of Attitude towards Vitamin A consumption

zP = Standard score of Practice toward Vitamin A consumption

4.31: Rural Nursing Mothers' Behavioural Change toward Vitamin A Consumption

	N	Standardized score	Std. Deviation
Knowledge (zK)		5.16	
Attitude (zA)		4.15	
Practice (zP)		3.05	
Behavioural change (BC)	277	12.36	1.55

Source :Reseacher, Field Survey 2016

4.8.6 Change in Behaviour as a Result of Communication Intervention

There was a tremendous high knowledge change among the rural nursing mothers using entertainment strategy (87.04%) followed by entertainment-education strategy (78.22%) and education (64.75%) strategies. However, the change in attitude of rural nursing mothers using entertainment-education strategy was 45.40% and was higher than that of entertainment (31.48%) and education strategies (39.34%). This reveals that combined entertainment and education strategies together will have a great influence on attitude among the rural nursing mothers. There were also changes in practice of rural nursing mothers toward Vitamin A consumption with the use of entertainment-education strategy (62.38%) than education (51.64%) and entertainment (29.63%) alone.

In conclusion, using a combination of entertainment-education strategies will go a long way to bring about desired change in behaviour toward Vitamin A consumption among rural nursing mothers. Therefore entertainment-education strategy is more effective than the use either entertainment or education alone.

4.9 Effectiveness of communication strategies

4.9.1 Change in behaviour as a result of communication interventions

The change of all the behavioural components shows the influence of communication strategies on rural nursing mothers. The change in knowledge for entertainment strategy (x=17.8) was higher than education(x=14.9) and both entertainment and education strategies (x=17.4). This implies that using entertainment strategies to influence the knowledge of the rural nursing mothers will yield expected result in increasing their knowledge on Vitamin A consumption.

The combine use of entertainment and education strategies ($\bar{x}$=11.1) to influence attitude change will give a better result than using entertainment ($\bar{x}$=6.8) and education strategies ($\bar{x}$=6.2) alone. However, this implies that the attitude of the rural nursing mothers will improve faster and better using entertainment and education strategies than either of entertainment or education strategies alone.

The change in practice ($\bar{x}$=12.9) of rural nursing mothers for entertainment-education strategy will go a long way in assisting them toward Vitamin A consumption than change in mean practice for either of entertainment strategy ($\bar{x}$=-0.4) and education strategy ($\bar{x}$=9.4) alone.

Overall, using a combination of entertainment and education strategies ($\bar{x}$=10.7) will greatly influence the behaviour of rural nursing mothers toward Vitamin A consumption than using entertainment ($\bar{x}$=9.6) and education strategy ($\bar{x}$=9.5) alone.

Table 4.32 Distribution of change in behaviour as a result of communication interventions

		Before	After	Change
Entertainment strategy	Knowledge	1.2±1.4	18.9±0.4	17.8±1.4
	Attitude	146.9±14.2	153.7±4.9	6.8±13.8
	Practice	53.8±10.9	53.4±6.4	-0.4±13.3
	Behaviour (KAP)	9.3±1.5	12.4±0.9	9.6±1.3
Education strategy	knowledge	3.6 ±4.0	18.5± ±2.2	14.9±4.7
	Attitude	141.2±18.2	147.3±15.5	6.2±20.9
	Practice	41.9±11.1	51.3±9.8	9.4±16.5
	Behaviour (KAP)	8.7±1.9	11.4±1.4	9.5±1.8
Entertainment & Education strategy	knowledge	1.4±1.3	18.74±1.3	17.4±1.7
	Attitude	142.9±14.1	154.01±7.2	11.1±15.8
	Practice	53.8±9.2	66.7±5.7	12.9±11.4
	Behaviour (KAP)	9.1±1.1	13.5±1.2	10.6±1.2

4.9.2 Categorisation of Communication strategies

Table 4.33 reveals that majority (85.2 %) of the rural nursing mothers had low knowledge of Vitamin A before intervention but after the intervention, through the use of entertainment strategy, majority (92.6 %) had high knowledge. There was a tremendous high knowledge change among the rural nursing mothers using entertainment strategy (87.0%). Larger proportion (77.78%) of the rural nursing mothers had favourable attitude before intervention and due to use of entertainment strategy, majority (83.3%) had higher favourable attitude towards Vitamin A consumption after the intervention. Before the intervention, majority of the rural nursing mothers have high practice. However, with the introduction of intervention using entertainment strategies, majority had low practice. This is an indication that entertainment strategy is not an effective method to impact skill on Vitamin A consumption among the rural nursing mothers. Rural nursing mothers had low behaviour (37.0%) before intervention and after the introduction of entertainment strategy, their behaviour toward Vitamin A consumption was higher (38.9%).

Furthermore, the table revealed that more than half (54.9%) of the rural nursing mothers have low knowledge of Vitamin A consumption before intervention and after using the education strategies, there was higher knowledge (64.8%). Majority (77.8%) of the rural nursing mothers have higher attitude before intervention and after being exposed to education strategies of communication, the attitude was lower (39.3%). The use of education strategy influenced the behaviour of the rural nursing mothers from 46.7% to 76.2% implying the great impact of the communication strategy.

Also, the table further revealed that majority of the rural nursing mothers (82.3%) had low knowledge of Vitamin A consumption before intervention but with the introduction of Vitamin A intervention using combined entertainment and education strategies, their knowledge was higher (78.2%). A low proportion of rural nursing mothers (36.6%) have unfavourable attitude before exposure to combined entertainment and education strategy but this was higher (45.4%) due to the influence of the combined strategies. Majority of the rural nursing mother (76.2%) have high Vitamin A consumption before their exposure to combined entertainment and education strategy but afterward, their practice was influenced resulting into higher practice (97.0%). The use of combined entertainment and education strategy shows a better effect after it was introduced to the rural nursing mothers as the majority with

low behaviour (44.5%) before intervention improved to 72.3%, thus implying the better effective of using a method of combining entertainment and education.

There was a tremendous high knowledge change among the rural nursing mothers using entertainment strategy (87.0%) followed by entertainment-education strategy (78.2%) and education (64.8%) strategies respectively. However, the change in attitude of rural nursing mothers with entertainment-education strategy (45.4%) was higher than for entertainment (31.5%) and education strategies (39.3%) thus denoting that combined entertainment and education strategies are great influencer of attitude among the rural nursing mothers. There were changes in practice of rural nursing mothers toward Vitamin A consumption for entertainment-education strategy (62.4%) than education (51.6%) and entertainment (29.6%) alone.

In conclusion, using entertainment-education strategy will go a long way to bring desired change in behaviour toward Vitamin A consumption among rural nursing mothers. Therefore entertainment-education strategy is more effective than the use either entertainment or education alone.

Table 4.33 Categorization of communication strategies before and after interventions

Change due to entertainment strategy												
Change in knowledge due to use of entertainment strategy				**Change in Attitude due to use of entertainment strategies**			**Change in practice due to use of entertainment strategies**			**Change in behaviour due to use of entertainment strategies**		
	Before	After	Change	Before	After	Change	Before	After	Change	Before	After	Change
Low	46 (85.2%)	4 (7.4%)	7 (12.9%)	12 (22.2%)	9 (16.7%)	37 (68.5%)	16 (29.6%)	41 (75.9%)	38 (70.4%)	20 (37.0%)	26 (48.2%)	33 (61.1%)
High	8 (14.8%)	50 (92.6%)	47 (87.0%)	42 (77.8%)	45 (83.3%)	17 (31.5%)	38 (70.4%)	13 (24.1%)	16 (29.6%)	34 (62.6%)	28 (51.9%)	21 (38.9%)
Total	54 (100%)	54 (100%)	54 (100%)				54 (100%)	54 (100%)	54 (100%)	54 (100%)	5 4(100%)	54 (100%)
Change due to education strategy												
Change in knowledge due to use of education strategies				**Change in Attitude due to use of education strategies**			**Change in practice due to use of education strategies**			**Change in behaviour due to use of education strategies**		
	Before	After	Change	Before	After	Change	Before	After	Change	Before	After	Change
Low	67 (54.9%)	27 (22.1%)	22 (18.0%)	59 (22.22%)	66 (54.1%)	74 (60.7%)	85 (69.7%)	90 (73.8%)	59 (48.4%)	57 (46.7%)	91 (74.6%)	29 (23.8%)
High	55 (45.1%)	95 (77.9%)	79 (64.8%)	63 (77.8%)	56 (45.9%)	48 (39.3%)	37 (30.3%)	32 (26.2%)	63 (51.6%)	65 (53.3%)	31 (25.4%)	93 (76.2%)
Total	122 (100%)	122 (100%)	122 (100%)	122 (100%)	122 (100%)	122 (100%)	122 (100%)	122 (100%)	122 (100%)	122 (100%)	122 (100%)	122 (100%)
Change due to combined entertainment and education entertainment strategy												
Change in knowledge due to use of combined entertainment and education entertainment strategy				**Change in attitude due to use of combined entertainment and education entertainment strategy**			**Change in practice due to use of combined entertainment and education entertainment strategy**			**Change in behaviour due to use of combined entertainment and education entertainment strategy**		
	Before	After	Change	Before	After	Change	Before	After	Change	Before	After	Change
Low	83 (82.2%)	8 (7.9%)	22 (21.8%)	37 (36.6%)	24 (23.8%)	47 (46.5%)	2 4(23.8%)	3 (2.9%)	38 (37.6%)	45 (44.5%)	7 (6.9%)	28 (27.7%)
High	18 (17.8%)	93 (92.1%)	79 (78.2%)	64 (63.4%)	77 (76.2%)	54 (45.4%)	77 (76.2%)	98 (97.0%)	63 (62.4%)	56 (55.5%)	94 (93.1%)	73 (72.3%)
Total	101 (100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)	101 (100%)

4.10 TEST OF HYPOTHESES

4.10.1 Hypothesis 1

There is no significant relationship between selected socio-economic characteristics of rural nursing mothers and behavioural change in Vitamin A consumption.

Test of relationship using Chi-square as presented in Table 4.34 show that education (x^2 = 4.79, p=0.02) was significantly associated with the behavioural change in Vitamin A consumption among the rural nursing mothers. Education is a major variable determining the ability to access and understand information according to Oladeji (2011) and Chalf (2014).

Information comprehension greatly facilitate and influence rural nursing mothers' behavioural change toward Vitamin A consumption. This was revealed during the In-depth interview with the health worker who revealed that those educated among the nursing mothers understand better than those that are not educated especially while training them on how to cook nutritious meals. In addition, it could be related to the findings of Prochaska and Sallis (2004) who stated that education has potential to boost behavioural change to increase consumption of fruits and vegetables and reduce salt intake. This indicates that education is one of the major determinants that enable people to access information in various areas like health, nutrition, hygiene and entertainment. Garrett and Ruel (1999) also opined that maternal education has a positive effect on nutritional status and it would make the biggest difference if increased to its desired level.

Primary income generating activities (x^2 =17.65, p=0.000) was significantly associated to the behavioural change in Vitamin A consumption. Primary Income generating activities created the chance to acquire information from rural nursing mothers on Vitamin A food substances and Vitamin A prrogramme. This was due to nature of activities involved in, thereby making it possible for the rural nursing mothers to practice Vitamin A consumption. Income generating activities over certain time results into income.

Furthermore, the result shows that membership of social group (x^2=6.31 , p=0.01) has significant relationship in the behavioural change of the rural nursing mothers toward Vitamin A consumption because supplying and sharing of useful information among

rural nursing mothers yield favourable outcome as findings show that women get most of their information from social group. This is pursuant to the finding of World Bank (2009), Oladeji and Oyesola (2010) and Mgbako *et al* (2014) confirming that social group is one of the major areas where women gather information.

Result of test of relationship using Chi-square in Table 4.34 further show that there is no significant relationship between selected marital status, position of wife, position of present pregnant/baby, religion and behavioural change in Vitamin A consumption.

Test of relationship using PPMC as presented in Table 4.35 was also used to test the relationship between some socio- economic characteristics and behavioural change toward Vitamin A consumption.

Age (r=0.11, p=0.04) was also significantly related with the behavioural change towards Vitamin A consumption. Age is a physiological factor determining consumption of foods according to Obong (2001). Consumption of foods differ with ages as said by the discussants during the FGDs in Ekiti West LGAs. It was reported that, *''our consumption of any foods in the household depend on the ages in the house. Ages in the house determine what we eat as my husband has certain foods, he eats which my children do not eat as little ones".* This support the finding of Ajewole (2006) who posited that in rural household, only the income of the household heads determine food consumption. Also, Krige, Mahomoodally, Subratty and Ramasawmy (2012) found out that the elderly ones abide more to recommendations relating to diets than younger ones. The significant of age with behavioural change in the Vitamin A consumption is compatible with the finding of Mehmet *et al* (2015).

The annual/seasonal income(r=-0.33, p=0.000) was significantly related to the behavioural change towards Vitamin A consumption among rural nursing mothers. Income is a great factor to be reckoned with for positive change according to Idris (2013). It is unmeasurable due to the nature and mode of income generating activities of the rural nursing mothers. Income is a strong apparatus require to meet the household needs including food. Therefore, income affect the behavioural change toward Vitamin A consumption. Higher and more available income, the more the purchase of food rich in Vitamin A for the consumption of the household and the healthier and happier the family to engage in agricultural practice. Household size (r=-0.05, p=0.0001) was also significantly related with the behavioural change towards

Vitamin A consumption. Large household size increases agricultural production in rural areas as most labour used are mainly from within the family. Household members including mothers, their children and relatives living under same roof assist one another in house chores, farming and other activities requiring assistance within and outside the house. This reduced the need and cost of hiring labor for agricultural activities. This conforms to Ayinde and Oyesola (2015) who posited that household size increase agricultural production.

The number of children ($r=-0.59$, $p=0.03$) has a significant relationnship on the behaviuoral change in Vitamin A consumption. Children build the future of every Nation. For this, monitoring of any developmental intervention is important for sustainability over generation as the children of today are leaders of tomorrow in different areas of life including agriculture. As reported by NIRSAL (2018), youth are the successor farming generation and therefore the food security in Nigeria lies on the interest of youth in agriculture. This means that there is need to engage the youth in ways that they can see a promising future in agriculture.

Table 4.34: Relationship between rural nursing mothers' socio-economic characteristic and behavioural change in Vitamin A consumption

Variable	df	x^2	p	D
Marital Status	5	3.8	0.58	NS
Education	6	4.8	0.02	S
Primary income generating activities	15	17.7	0.00	S
Membership of social group	1	6.3	0.01	S
Position as wife	4	4.3	0.4	NS
Position of present pregnancy/baby	5	8.1	0.2	NS
Religion	2	1.1	0.5	NS

Significant at $p < 0.05$

Table 4.35: Relationship between selected rural nursing mothers' socio-economic characteristics and behavioural change

Variable	r	p	D
Age	0.11	0.04	S
Years of Education	-0.01	0.88	NS
Number of generating activities	0.019	0.75	NS
Income seasonally/annually	-0.33	0.027	S
Household size	-0.05	0.0001	S
Number of children	0.59	0.03	S

** Significant at $p< 0.01$. Others are significant at $p<0.05$. N=227

4.10.2 Hypothesis 2

There is no significant relationship between awareness of Vitamin A consumption programme and behavioural change in Vitamin A consumption.

There is significant relationship between awareness and rural nursing mothers' behavioural change in Vitamin A consumption ($r = 0.30$, $p < 0.05$) as presented in the Table 4.36 below. The higher the level of awareness of Vitamin A consumption programme, the higher and more favorably their behaviour toward Vitamin A consumption. Awareness will go a long way to prevent Vitamin A deficiencies in the life of the rural nursing mothers and children, Vitamin A deficiencies as posited by Abedi *et al* (2015) are the major causes of blindness and contributor to morbidity and mortality from infections.

Table 4.36: Testing of Relationship between Awareness on Vitamin A consumption programme and behavioural change in Vitamin A consumption.

Variable	N	r – value	p – value	Decision
Awareness on Vitamin A consumption programme	277	0.30	0.001	S

Source : Reseacher, Field Survey 2016

4.10.3 Hypothesis 3

There is no significant relationship between the preferred communication channels and behavioural change in vitamin A consumption.

The result of PPMC from the Table 4.37 shows that there is a significant relationship between preferred communication channels and behavioural change of vitamin A consumption ($r = 0.16$, $p < 0.05$). This is evident in the rural nursing mothers' ability to interpret the message in the various communication channels they were exposed to correctly, thereby influencing their behavioural change toward vitamin A consumption. In other words, there is need to make up communication channels for intervention by using the most preferred source of information on Vitamin A in order to have expected behavioural change of intended target populace. This is consistent with the study of Thomas (2011) who posited that the use of most preferred communication channels to have expected behavioural change in target audience. Also, for a lasting solution of Vitamin A deficiency, there is need to make coherent use of communication channels in correct ways as suggested by Yahaya (2008) and Umeano-Enemuoh (2015).

Ifukor (2013) concluded that evidence of various developmental programmes is not shown in the lives of rural people despite many programmes and therefore suggested that, for information to achieve the desired result in the rural communities, the source that provide for the flow of information should not be monopolized and politicized, Therefore, Ifukor (2003), recommended indigenous languages to enable rural dwellers understand the message better. Therefore, Theory of planned behaviour was adopted in the study for the development of communication strategies intervention.

Table 4.37: Testing of relationship between communication channels and behavioural change in Vitamin A consumption.

Variable	N	r – value	p – value	Decision
Communication channels	277	0.16	0.009	S

4.10.4 Hypothesis 4

There is no significant difference between rural nursing mothers' knowledge on importance of vitamin A consumption before and after intervention.

Table 4.38a shows a significant and apparent difference in rural nursing mothers' knowledge before (2.29) and after (18.68) exposure to communication strategies intervention ($t = 75.92$; $p = 0.000$) which can be drawn to the training that the rural nursing mothers received from the intervention on importance of vitamin A consumption. This implies that the rural nursing mothers were able to understand the information received from the various communication strategies they were exposed to and were able to interpret it meaningfully. This corroborate Oladeji and Oyesola (2000) in their study which stated that education plays a major role in information communication as it is necessary for coding and decoding of information. Therefore, improving more on education of the rural areas will assist in comprehending the importance of any useful intervention introduced to them.

Table 4.38a: T-test analysis of rural nursing mothers' knowledge toward vitamin A consumption before and after

	Mean	N	t-value	S.D	Df	p	Decision
Knowledge Before	2.29	277	75.92	3.06	276	0.000	Significant
Knowledge After	18.68			1.68			

4.10.4b Test of Difference in knowledge across the communication strategies

Table 4.38b shows that there is a significant difference in rural nursing mothers' knowledge across the communication strategies used (P≤0.0), implying that use of communication strategies will assist in influencing the knowledge of rural nursing mothers toward Vitamin A consumption.

The Post hoc test using Duncan Multiple range in Table 4.38c shows that there is significant difference from the use of entertainment strategy (14.94±1.38) and education strategy (12.9±16.5) and entertainment-education strategy. (17.8±4.7) but there is no significant difference from the use of education strategy (17.8±4.7) and entertainment-education strategy (17.4±1.7). This could be attributed to the individual differences in socioeconomic characteristics, educational background, income generating activities and sources of information.

Table 4.38b: ANOVA showing significant difference in knowledge across the communication strategies used

Variables		Sum of Squares	df	Mean Square	F	Sig
K_Change	Between Groups	459.8	2	229.9	20.3	
	Within Groups	3101.9	274	11.3		0.00
	Total	3561.7	276			

Table 4.38c: Post hoc analysis for rural nursing mothers' knowledge test

Communication strategies	Change in knowledge Subset for alpha = 0.05		
	1	2	3
Entertainment	14.9±1.4		
Education		17.8±4.7	
(Entertainment-Education)		17.4±1.7	

4.10.5 Hypothesis 5

There is no significant difference in rural nursing mothers' attitude towards vitamin A consumption before and after intervention.

A significant difference occurred in attitude of rural nursing mothers toward Vitamin A consumption ($t = -7.5$; $p = 0.000$) before and after exposure to communication strategies intervention as shown in Table 4.39a below. A favourable attitude toward importance of Vitamin A brought influenced behavioural change toward vitamin A consumption. More knowledge on Vitamin A and Vitamin A programme were gathered via communication strategy intervention and has tremendously improve their attitude toward Vitamin A consumption

> *''The In-depth interview with the vocal officer at Ibarapa central confirmed that part of the communication channels had been used in the past to create awareness and educate nursing mothers in their localities about health but that those used by this study were outstandingly distinct as they were entertained as well as educated by the communication channels.''(IDI,Saki East LGA, Oyo State, 6th October, 2016)*

Table 4.39a: T-test analysis of rural nursing mothers' Attitude toward vitamin A consumption before and after

	N	Mean	S.D	t-value	Df	p-value	Decision
Attitude before	277	142.9	16.1	-7.5	276	0.00	S
Attitude after	277	151.0	11.8				

4.10.5.1 Test of difference in attitude across the communication strategies used

Table 4.39b shows that there is significant difference in the attitude of rural nursing mothers using different communication strategies (P≤0.00). This indicates that communication strategies can be used to influence the attitude of rural nursing mothers at different level.

The Post hoc test using Duncan Multiple range in Table 4.39c shows that there is no significant difference in the use of entertainment strategy (6.2±13.8) and entertainment-education strategy (6.8±15.8) but differ from the use of education strategy (11.1±20.9). Also, there is significant difference from the use of education strategy (11.1±20.9) and combining entertainment and education strategies (6.8±15.8) as shown below.

Table 4.39b: Significant difference in attitude across the communication strategies used

Variables		Sum of Squares	Df	Mean Square	F	Sig
A_Change	Between Groups	1473.4	2	736.7	2.3	
	Within Groups	87947.4	274	320.9		0.00
	Total	89420.7	276			

Table 4.39c: Post hoc analysis for rural nursing mothers' attitude test

Communication methods	**Change in attitude Subset for alpha = 0.05**		
	1	2	3
Entertainment	6.2±13.8		
Educative		11.1±20.9	
(Entertainment & Educative)	6.8±15.8		

4.10.6 Hypothesis 6

There is no significant difference in rural nursing mothers' practices towards vitamin consumption before and after intervention.

Table 4.40a shows that there is significant difference in rural nursing mothers' practice towards vitamin A consumption before (48.6) and after (57.3) exposure to communication strategies intervention ($t = 9.7$; $p = 0.00$). This implies that the higher practice might be as a result of exposure of the nursing mothers to communication strategies intervention which increase their knowledge leading to improve attitude. Nevertheless, for sustainability of practice there is need for monitoring and evaluation through follow-up action for the intervention or any developmental programme. This corroborate the finding of Aggarwal *et al* (2013) where the researchers found that as long as importance was attached to good nutrition, there was good diet practice. This applicable to vitamin A food consumption.

Table 4.40a: T-test analysis of rural nursing mothers' Practice toward vitamin A consumption before and after

	N	Mean	S.D	t-value	DF	p-value	Decision
Practice before	277	48.6	11.9	9.7	276	0.00	S
Practice after		57.3	10.6				

4.10.6.1 Test of difference in practice across the communication strategies used

Table 4.40b shows that there is a significant difference in rural nursing mothers' practice of Vitamin A using different communication strategies (P≤0.0)., implying that use of communication strategies will go a long way to bring about Vitamin A consumption among the rural nursing mothers at various level of their lives.

The Post hoc test using Duncan Multiple range in Table 4.40c shows that there is significant difference from the use of entertainment strategy (-.43±13.3) and education strategy (12.9±16.5) and entertainment-education strategy. (9.4±11.4) but differs significantly from the use of education strategy (12.9±16.5) and entertainment-education strategy (9.4±11.4).

Table 4.40b: ANOVA showing significant difference in practice across the communication strategies used

Variables		Sum of Squares	df	Mean Square	F	Sig
P_Changes	Between Groups	6311.4	2	3155.7	15.6	0.0
	Within Groups	55405.4	274	202.2		
	Total	61716.8	276			

Table 4.40c: Post hoc analysis for rural nursing mothers' practice test

Communication strategies	Change in Practice Subset for alpha = 0.05		
	1	2	3
Entertainment	-.43±13.3		
Education		12.9±16.5	
(Entertainment-Education)		9.4±11.4	

4.10.7 Hypothesis 7

There is no significant difference in rural nursing mothers' behavioural knowledge, attitude and practice change before and after intervention.

The research result on Table 4.41 indicates that there is a significant difference in the rural nursing mothers' behavioural change before (8.9) and after (12.4) exposure to communication strategies intervention using six different communication channels. This implies that, media as a form of communication strategies intervention has found and confirmed to be an effective apparatus that aids behavioural change in target audience. Rural dwellers have high access to radio (Yahaya 2002) and listen to radio on daily basis (National Association of Farm Broadcasting 2011). This was why ijala (folktale/Hunter's chant) presented in radio form was ranked as the most preferred and it thus, consequently yielded favourable behavioural change after the communication strategies intervention.

Table 4.41: Analysis of rural nursing mothers' behavioural change before and after intervention

	N	Mean	S.D	t-value	Df	p-value	Decision
KAP before	277	8.9	11.9	-26.6	276	0.00	S
KAP after		12.4	1.6				

4.10.8 Hypothesis 8

There is no significant difference in behavioural change of rural nursing mothers.

The result of Anova test as in Table 4.42 shows a significant difference (F=6.67, p=0.00) in the behavioural change towards Vitamin A consumption among rural nursing mothers. The result implies that the behavioural change of the sampled rural nursing mothers varied from one another. The variance could be attributed to individual differences of the rural nursing mothers in their personal characteristics, information source about Vitamin A food substances and Vitamin A programme and behavioural change.

Table 4.42a: Analysis of variance of the difference in the behavioural change of the rural nursing mothers

		Sum of square	Df	Mean square	F	S
Behavioural change	Between group	22.6	2	11.3	66.7	0.00
	Within group	46.4	274	0.2		
	Total	68.9	276			

4.10.8.1 Test of difference in behaviour across the communication strategies used

Table 4.43a shows that there is a significant difference in the behavioural change of rural nursing mothers using different communication strategies (P≤0.00). This implies that different communication strategies can bring behavioural change in the lives of the rural nursing mothers toward Vitamin A consumption.

The Post hoc test using Duncan Multiple range shows that there is no significant difference in the use of entertainment strategies (9.5±1.3) and entertainment-education strategy (9.6±1.2). However, use of entertainment strategy is significantly different from the use of education (10.6 ±1.8) and education strategy (9.6±1.2) is significantly different from the entertainment-education strategy (10.64 ±1.8) as presented in Table 4.43b.

Table 4.43a: ANOVA showing significant difference in behavioural change components across the communication strategies used

Variables		Sum of Squares	Df	Mean Square	F	Sig
KAP_Change	Between Groups	83.9	2	41.9	18.2	0.00
	Within Groups	631.4	274	2.3		
	Total	715.2	276			

Table 4.43b: Post hoc for rural nursing mothers' behavioural change

Communication strategies	**Change in KAP**		
	Subset for alpha = 0.05		
	1	2	3
Entertainment	9.5±1.3		
Education		10.6 ±1.8	
(Entertainment & Education)	9.6±1.2		

Majority of the rural nursing mothers are in their reproductive age in the range of 21-35 years with mean age 28years. The modal household size was five people (48.4%) while 46.99% were Christian, 45.8% were Muslim and 7.2% were Traditional worshippers. There was a relative high literacy level, an effect of universal basic education in the study area among the rural nursing mothers as education attainable was secondary school (40.1%). Majority (71.1%) of the rural nursing mothers belong to 1 or 2 group for their social participation. Food crop processing is the major income generating activities of the rural nursing mothers while other Income generating activities were petty trading, be farming, and GNTFPs. About 85.9% of the rural nursing mothers had high-level knowledge on Vitamin A consumption.

Source of information on Vitamin A food substances and Vitamin A programme were mainly through health workers (74.9%) though radio (62.8%) is the most frequently listened according to the rural nursing mothers.

The result of high level of awareness after training from 39.1% to 60.0% for categorization of rural nursing mothers based on their level of awareness on Vitamin A shows the impact of the intervention. The rural nursing mothers gave favourable attitude (56.7%) towards consumption of Vitamin A food substances, a sign that the program will be of great benefit to them. There was high level of Vitamin A consumption (51.6%) among the rural nursing mothers.

Education(x^2=4.79, p=0.02), household size(r =--0.05, p=0.0001), primary income generating activities(r=17.76, p=0.00), communication channels (r= 0.16 p= 0.009) of the rural nursing mothers were significantly related to behavioural change of the rural nursing mothers toward consumption of Vitamin A rich foods while no significant relationship occurred between their marital status, year of education, and religion.

The Post-Hoc indicates that there is significant difference (F=66.67, P=0.00) in the behavioural change of rural nursing mothers between and within group and this variance was attributed to their personal characteristics, their information source about Vitamin A and Vitamin A programme.

Entertainment-education strategy (($\bar{x}$=10.68) will greatly influence the behaviour of rural nursing mothers toward Vitamin A consumption than using entertainment ($\bar{x}$=9.63) and education strategy (($\bar{x}$= 9.46) alone.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This research chapter gives summarization of the research findings and their implication on communication strategies for behavioural changes among nursing mothers in the study area. The conclusion obtained with recommendations made from this study was based on the findings, which inferred areas for further studies.

5.1 Summary

Vitamin A deficiency had been identified as one of the major sources of health risk in our society. The Vitamin A consumption remains precarious if Vitamin deficiencies is consistent in the country. Despite beneficial awareness on Vitamin A consumption, majority of the rural nursing mothers in Nigeria exhibited unfavourable behaviour towards Vitamin A consumption. The need for appropriate communication strategies intervention to create awareness and bring about expected behavioural change toward consumption of Vitamin A food substances necessitate this study.

The research study was conducted in three states of the South Western Nigeria. The population of the study comprised of rural nursing mothers in the study area. A multi-stage sampling technique was used to draw 277 rural nursing mothers to constitute sample size for the study. Collection of data were done through the use of pre-test questionnaire, interview schedule, Focus Group Discussion and In-Depth Interview. Data were described and analyzed with both descriptive and inferential statistics.

Majority of the rural nursing mothers are in their reproductive age in the range of 21-35 years with mean age 28years. Rural nursing mothers were mostly married (91.3%) while less than 10% were single, divorced, widow and single parents. The modal household size was five people (48.4%) with an average size of 7 people with about 91.7% of the total population having four children.

The highest education attainable was secondary school as indicated by majority (40.1%) of the rural nursing mothers. The profile for group membership reveals that majority (71.1%) of the rural nursing mothers belong to 1 or 2 group for their social participation. The findings show that 46.99% were Christian, 45.8% were Muslim and 7.2% were Traditional worshippers. Food crop processing is the major income generating activities of the rural nursing mothers and others were crop farming, trading, crafting, gathering non timber forest products (GNTFPs) while other Income generating activities were petty trading, be farming, and GNTFPs.

Source of information on Vitamin A food substances and Vitamin A programme were mainly through health workers (74.9%) according to the rural nursing mothers with 62.8% from radio, 16.6% from friends, while only 0.8% received information from extension agents and Newspapers. The rural nursing mothers prefer radio as source of information according to their ranking.

About 85.9% of the rural nursing mothers had high level knowledge on Vitamin A consumption. Mean and Standard Deviation on Vitamin A consumption was 18.68 ± 1.68. Awareness on Vitamin A food substances and Vitamin A programme shows that there was lesser awareness before the training intervention. This indicates lack of information. The result of high level of awareness after training from 39.1% to 60.0% for categorization of rural nursing mothers based on their level of awareness on Vitamin shows the impact of the intervention.

The rural nursing mothers gave favourable attitude (56.7%) towards consumption of Vitamin A food substances, a sign that the program will be of great benefit to them. Contrastingly unfavourable disposition of 56.6% was recorded in Oyo state signifying attitudinal gap to be filled.

There was high level of Vitamin A consumption (51.6%) among the rural nursing mothers. The categorization of level of practice gave mean value of 57.32 across the state with standard deviation of 10.60.

Further analysis shows that some of the selected socio economic characteristics such as education(x^2=4.79, p=0.02), household size(r =--0.05, p=0.0001), primary income generating activities(r=17.76, p=0.00),annual/season income(r=0.076, p=0.00. r=-0.33,

p=0.000.), communication channels (r= 0.16 p= 0.009) of the rural nursing mothers were significantly related to behavioural change of the rural nursing mothers toward consumption of Vitamin A rich foods. However, no significant relationship occurred between their marital status, year of education, and religion.

The t-test shows that significant difference existed between rural nursing mothers' awareness (r=0.30, p=0.001), knowledge before and after exposure to communication strategies intervention (r=-75.92, p-0.000), attitude before and after exposure to communication strategies intervention (t=-7.48, p-0.000), practice before and after exposure to communication strategies intervention(t=9.73 p=0.000) and behavioural change before and after exposure to communication strategies intervention (t=26.64 p=0.000). This implies that information awareness and knowledge are key players in behavioural change. Awareness on certain Vitamin A consumption information will increase the knowledge which invariably improve attitude and therefore influence practice and bring about behaviuoral change towards Vitamin A consumption among the rural nursing mothers in the study area. This denote that expected anticipated behavioural change in consumption of Vitamin A food substances could greatly influence by communication strategies intervention.

The Post-Hoc shows that there is significant difference (F=66.67, P=0.00) in the behavioural change of rural nursing mothers between and within group and this variance was attributed to their personal characteristics, their information source about Vitamin A and Vitamin A programme.

Entertainment-education strategy (($\bar{x}$=10.68) will greatly influence the behaviour of rural nursing mothers toward Vitamin A consumption than using entertainment ($\bar{x}$=9.63) and education strategy (($\bar{x}$= 9.46) alone. Moreover, using entertainment-education strategy will go a long way to bring desired change in behaviour toward Vitamin A consumption among the rural nursing mothers. An entertainment-education strategy is more effective and better than the use of either entertainment or education strategy alone.

Analysis reveals that there is a significant difference in rural nursing mothers' knowledge of Vitamin A using different communication strategies. Also, it was reveals that there is a significant difference in the attitude of rural nursing mothers using different communication strategies. Further analysis shows that there is a significant

difference in rural nursing mothers' Vitamin A consumption using different communication strategies. However, further analysis reveals that there is a significant difference in rural nursing mothers' behavioural change using different communication strategies. This implies that different communication strategies can be used to bring about behavioural change in the lives of the rural nursing mothers towards Vitamin A consumption.

5.2 Conclusion

The rural nursing mothers were at their reproductive age range of 21 - 35 years and these are the best age for childbearing according to studies. This age range indicated that despite the daily works, financial and other responsibilities, rural women still have time for their domestic sexual responsibilities. Though the productivity of women tends to diminish as they grow older for age between 36- 40 years above.

The more the consumption of Vitamin A food substances, the lesser the risk of Vitamin A deficiencies in children and their children and that is why age is important in the consumption of Vitamin A to prevent Vitamin A deficiencies.

Majority of the rural nursing mothers were married and it is an indication of more responsible women who ensures timely consumption of foods rich in Vitamin A, performing other duties for their husband, children and other members of the household, engage in agricultural activities as well as performing other social activities in their communities. Married rural nursing mothers enjoy support from their husband, children and other members of the household as this is their social responsibility to the rural nursing mothers. Married women help their husband in ensuring provision of foods and in family labour compared to their unmarried counterpart with very low percentage who will be solely responsible for most of the household activities without assistance.

The large household size is a typical ideal from an African home which allows for other members of the extended family to stay with them. This allows the involvement of the rural nursing mothers in the household activities and higher availability of family labour for agricultural production.

The household size affects the household food choices, purchases and consumption decision (pattern) rate and this has effect on the nursing mothers and their children in the consumption of healthy foods especially those rich in Vitamin A.

The mean value of number of children has a relative impact on the consumption of Vitamin A food substances as the mother determines what is consumed by their children.

There was a relative high literacy level, an effect of universal basic education in the study area among the rural nursing mothers' Educational status will determine the channels of information dissemination to the rural nursing mothers. This means that rural nursing mothers with higher educational level can be communicated to with use of both print and broadcast media about Vitamin A consumption while radio/television could be used for those that cannot read nor write.

The rural nursing mothers belong to one or more social group indicating their level of social participation due to the benefits derived from the group. Vitamin A consumption information were gathered from this group and this may assist in the reduction in Vitamin A deficiencies among the rural nursing mothers and their children.

Vitamin A consumption did not affect the position of wife in a household because the woman of every household should be responsible for their children meals.

Generally, most of the rural nursing mothers engaged in food crop processing followed by crop production, livestock rearing, trading and Gathering Non-Timber Forest Products (GNTFPs). The Rural nursing mothers engage in different income generating activities to make ends meet, earn income for the upkeep of their family which includes provision of nutritious food in quality and quantity which could influence behaviour towards consumption of foods rich in Vitamin A.

Rural nursing mothers also involve in other income generating activities to acquire more income and support their family needs up with their personal and family needs by providing quality and quantity of foods especially those rich in Vitamin A for healthy and creative life. These income generating activities helps in complementing their husbands give and support requests from extended family members as well as meeting up with friends in social activities

The rural nursing mothers do not have tangible record of their activities but gave approximate estimates of their varying income accrued on daily, weekly, monthly (for those working and being paid for their wages monthly), seasonally or annually basis as applicable. Majority of the rural nursing mothers realized ₦100, 000 and above per annum/season with the mean value of ₦ 637, 830.62. The rural nursing mothers would not wait to feed their family and so they will need to depend on additional activities for survival as the bulk of the money realized are put back to the farming activities for the continuity, leaving little for the family up-keep.

The rural nursing mothers got their information on Vitamin A from health workers during antenatal and post-natal periods. They preferred radio for general information as it was said to be accessible and mostly available. Radio was ranked as the most preferred source of information among the rural nursing mothers.

Most pronounced Vitamin A as 'fitamin' and less than half of the rural nursing mothers were aware about Vitamin A food substances and Vitamin A programme before intervention. Hardly were they also aware that there is mineral fortification prgramme in Nigeria and same occurred for 'eye' signs on certain food items in the markets.

Rural nursing mothers after the intervention know that Vitamin A consumption prevent night blindness, severe diarrhea, respiratory infection, measles and other related diseases. Also, that Vitamin A keeps the body healthy and strong.

The study revealed that rural nursing mothers were eager to know about Vitamin A and this assisted them to know about the importance ofVitamin which afterward improve their attitutde as well as change their behavioural change in Vitamin A consumption.

Ijala (folktale/Hunter's chant) is the most effective and influenced the most positive change in rural nursing mothers towards Vitamin A consumption after intervention.

High education provides better opportunity and access to resources than those without education.

Different communication strategies can be used to bring about behavioural change in the lives of the rural nursing mothers towards Vitamin A consumption. Using a

combination of entertainment and education strategy were more effective than either of the strategies.

5.3 Recommendations

1. Involvement of rural nursing mothers in the planning and designing of programme and policies should involve their real needs which will be qualitatively and quantitatively tested because they are those with felt needs.
2. Awareness should be created and widely spread on Vitamin A, its importance and consumption, among the rural nursing mothers.
3. There should be National programme for consumption of Vitamin A food substances programme to hoist seminar and conferences for health workers on Vitamin A and other beneficial nutrients.
4. Information on Vitamin A should be intensified on various means of communication in the Country and should not be limited to the clinic period and health week alone.
5. Communication strategies intervention that has favourable relationship and connectivity with their activities be adopted for desired outcome at various developmental programme.
6. Monitoring action should be employed for any intervention to ensure sustainable behavioural change.
7. Nationalization of consumption culture of selected nutrients especially Vitamin A and National body be created to institute rules and guides with designed follow up.
8. Developmental programme should be packaged in the local languages of the target audience for effective results.
9. Use of ijala (folktale/Hunter's chant) will go a long way for the creation of awareness on Vitamin A programme because it was ranked as the most effective.

5.4 Contribution to knowledge

The following contributions have been made by this study to extensive knowledge base on Vitamin A consumption in Nigeria:

1. The study established that communication strategy intervention for grass root behavioural change is significant.

2. The study shows that selected socio-economic characteristics were responsible for behavioural change in the rural areas.
3. It was established that the use of local languages in the designing of communication strategy intervention for developmental programme is crucial.
4. Study would be instrumental in creating more awareness on Vitamin A, Vitamin programme and consumption of Vitamin A food substances.
5. Study serves as data source for research relating to the study on consumption of Vitamin A food substances and Vitamin A programme.
6. Study could help policy makers/developer to adopt the communication strategy intervention package for the development involving rural women.
7. It could serve as monitoring as well as follow-up tools for any introduced developmental programme.
8. Communication strategy intervention could help to predict the before and after outcome of knowledge, attitude and practice people for an introduced intervention package.
9. Entertainment-education is a strong tool for behavioural change in rural nursing mothers towards Vitamin A consumption.

5.5 Areas for further research

In order to ensure Vitamin A consumption among rural nursing mothers in Nigeria, it is essential to put on proper research and development of specialists that will address other important gaps that this study could not fill due to several limitations:

1. There is need for further empirical studies on communication strategy intervention for grass root behavioural change among rural nursing mothers.
2. The study identified entertainment and educative communication strategies as tools for consumption intervention among rural nursing mothers. Therefore, comparative assessment of the effectiveness of different channels towards Vitamin A consumption in Nigeria is necessary.
3. A study should be conducted on selected socio-economic characteristics responsible for behavioural change.
4. A study on consumption security of intake of foods rich in Vitamin A is essential in Nigeria.
5. Factors associated with the consumption of Vitamin A food substances should be studied in both rural and urban areas of Nigeria.
6. There is need to compare rural with urban Nigeria households in terms of influence of communication strategies on behavioural change towards Vitamin

A consumption in promoting the gains of the technology beyond the confines of rural Nigeria.

7. A study to determine appropriate communication strategy for influencing behavioural change among rural nursing mothers' other regions of Nigeria would be necessary to establish similarities and differences across these regions in terms of responses to different modes of communication channels.

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APPENDICES

APPENDIX I

University of Ibadan

Faculty of Agriculture and Forestry

Department of Agriculture Extension and Rural Development

EFFECTIVENESS OF COMMUNICATION STRATEGIES ON RURAL NURSING MOTHERS' BEHAVIOUR TOWARDS VITAMIN A CONSUMPTION IN SOUTHWEST NIGERIA.

SURVEY IDENTIFICATION NUMBER	
PLACE OF INTERVIEW	
STATE	
LOCAL GOVERNMENT AREA	

Dear respondents,

I am a postgraduate research student from the University of Ibadan into a research on the above titled research. The essence is to elicit information about rural nursing mothers' Knowledge, Attitude and Practice (KAP) towards vitamin A consumption in your community. By participating in this exercise, you would have made great contribution toward the improved welfare of nursing mothers and infants in Nigeria. Please, be free to respond to the questions.

The information gathered is for research purpose and will be treated with strict and utmost privacy. Thank you for your cooperation. I am grateful.

OLAJIDE TAIWO S.

SECTION A

1. Socio-Economic Characteristics

TICK ' ' APPROPRIATELY IN THE BOX PROVIDED

1. What is your age (years)? .....

2. What is your marital Status?: Single [ ]. Married [ ]. Divorced [ ], Single parent [ ], separated [ ], Widow[ ],

3. If married, What is your position as wife: 1st[ ], 2nd[ ], 3rd[ ], 4th[ ], 5th[ ]

4.What is your educational Qualification:

No formal Education[ ], Did not complete primary school[], Completed Primary School[ ],

Did not complete Secondary School[ ], Complete Secondary School [ ], Tertiary School[ ],

Adult education [ ] , Others (specify).....`

Years of formal Education ..... (years)

5. Mention the livelihood activities you engaged in?

Crop production [ ] , Livestock rearing [ ], Trading [ ], Selling cooked foods [ ]

Gathering/selling Non tree forest products [ ], Tailoring [ ], Hair dressing [ ],

Food crop processing [ ], Work as hired labour [ ], Civil service position [ ],

Crafts [ ], Others, specify [ ]

6. For how long in a year do you engage in the livelihood activities? .....

7. What is your primary/main livelihood activities?.....

8.What is your other secondary livelihood activities, if any? Civil Service[ ], Teaching[ ], Artisan[ ], Petty Trading[ ], Others(specify).....

9. What is your estimate income in Naira from these livelihood activities per period? N.....

Period ; Daily [ ] , Weekly [ ] , Monthly [ ] , Annually/ seasonally [ ]

10. What is your religion: Christianity[ ], Islam[ ], Traditional Religion[ ], Others [ ]

11. What is your household size (i.e. those living under the same roof and eating from the same pot) : [ ]

12. For how many years have you been nursing baby/ babies?

13. Number of children: [ ]

14. What is the position of present pregnancy/ baby?

15. How did you hear about Vitamin A consumption: Radio [ ], Health workers [ ], Agric Extension agents [ ], Friends [ ], Television [ ],Newspapers[ ], Others (specify).....

16.What are your sources of information. which one do you prefer? Television[ ],Radio [ ], Friends [ ]. Agricultural Extension Agents[ ], Newspaper[ ]. Health worker [ ].Others (specify).....

17.Do you belong to any social group? .....

If yes, what is the name of the group?.....

If no, why not?

.....

.....

.....

2. Awareness on Vitamin A and Vitamin A programmes

Kindly state your level of awareness on vitamin A as Yes or No for the following**:**

Tick the options that applies below

	Yes	No
a. Have you ever heard of vitamin A?.		
b. Vitamin A is essential for children under 5 years old and lactating mothers.		
c. Vitamin A combats food deficiency in people.		
d. Food items rich in vitamin A are cheap and affordable .		
e. Millennium Development Goal (MDG) of total eradication of malnutrition?		
f. Are you aware of what logo 'A' on some food items such as semolina, salts, flours stands for?		
g. There is the school feeding system by some government schools in Nigeria?		
h. There is UNICEF campaign programme on Vitamin A in Nigeria?		
i. There is mineral fortification programme in Nigeria?		
j. I am aware about the 'eye' sign on food items like salt, sugar and flours		
k. Foods that can supply Vitamin A to the body are carrot, fortified cassava, fortified sugar, etc		
l. There are Vitamin A Supplements given to children under five years old and nursing mothers.		
m. Vitamin A deficiency can be reduced by food fortification, vitamin supplementation and food diversification		
n. There is Government campaign on Vitamin A in Nigeria		
o. There is culture against the consumption of certain foods containing Vitamin A		

3. Communication strategies used for Vitamin A programmes

In relation to the communication medium used for the dissemination of information, kindly respond to the following accordingly:

Communication channels		Tick communication channels exposed to	If tick, indicate preference		Rank for preference
			Yes	No	
Entertainment					
I	Music				
II	Folk tales				
III	Drama				
Education methods					
I	Direct Lectures				
II	Audio recording				
III	Video				

SECTION B

1. Knowledge on importance of vitamin A

In relation to the communication medium used for the dissemination of information on Vitamin A, Kindly tick Yes or No for the information below:

Importance of vitamin A	True	False
1.Vitamin A keeps the body healthy and strong		
2. Breast milk is highly rich in Vitamin A		
3. Vitamin A cannot prevent night blindness and severe diarrhea		
4. Vitamin A prevents severe diarrhea and other diseases		
5. Vitamin A offers no protection over childhood death		
6. Vitamin A prevents respiratory infection		
7. Vitamin A prevents measles among children		
8. Vitamin A is good for the eyes		
9. Vitamin A supplements are good sources of vitamins		
10.Cereals such as yellow maize, wheat contain vitamin A and they are good for the body.		
11.Carrot does not contain Vitamin A		
12.Mothers need more education on Vitamin A		
13.Palm oil is not a good source of vitamin A and it is not essential for the body.		
14. Fruits such as mango, citrus, guava should be taken to enrich Vitamin A in the body.		
15. Leafy vegetables are good source of vitamin A for the body		
16. Vitamin A food items are very expensive to buy		
17.Vitamin A does not make the body to grow		
18. Vitamin A is not known to be essential for the reproductive process for both males and females		
19. Vitamin A supplements are in capsule forms for nursing mothers, pregnant women and children below 5 years		
20. There are cultural values and customs that guide against Vitamin A intake and Vitamin A supplements		

1. **Attitudinal Statements towards Vitamin A Consumption.** In relation to the communication strategies used for the dissemination of information on Vitamin A, kindly respond to the following :

S/N	Statements	**SA**	**A**	**U**	**D**	**SD**
1	I am eager to increase my knowledge on vitamin A					
2	The communication strategies message on foods rich in vitamin A and Vitamin A programme is both educative and entertaining.					
3	I consider Vitamin A foods as one of the affordable food in the market					
4	I readily would associate poor eye sight, malaria, lack of blood, measles in young and old to vitamin A deficiency					
5	Vitamin A rich food (carrot, vegetable, oil etc) is essential for eye sight for young and old					
6	I can deliberately go out of my way to source for vitamin A food items or even capsules					
7	I may pursue a backyard garden project to satisfy my family vitamin A's needs					
8	The choice of my clinic for antenatal is influenced by availability of vitamin A capsules/ supplements					
9	My family eat to satisfy our hunger and we rarely bother on nutritional food					
10	Vitamin A deficiency start with poor antenatal care.					
11	I do not know food items that can prevent deficiency of vitamin A					
12	Food diversification is not better than vitamin A supplementation					
13	None of these food supplementation programme is of interest to me					
14	The vitamin A supplements programme seems not be well spread in the society					
15	I will strongly prefer the supplements to be in tablet forms					

16	Women should be given the responsibility of food preparation at home.					
17	Men should be taught how to cook meals rich in vitamin A for children					
18	Women should be focused when it comes to nutrition education					
19	The entire household should be involved in nutrition education especially those involving vitamin A					
20	Educating mothers on Vitamin A's importance should go beyond attending Clinic for immunization and antenatal					
21	Nutrition education on vitamin A should be based on the culture of the people					
22	I prefer learning about essential from various information source especially on Vitamin A					
23	Vitamin A Supplement initiative is one of the best intervention for women and children in recent time					
24	It is important to have good knowledge of nutritional foods rich in Vitamin A as a mother					
25	Every woman should seek information on how to improve nutritional value of their home especially Vitamin A					
26	I believe good nutrition on Vitamin A helps the family which in turn improve agriculture					
27	Nutrition knowledge on Vitamin A could be given to children at home and school					
28	My husband assists our home in ensuring that the children take nutritious meal					
29	My livelihood activities allow me to know foods that are rich in Vitamin A and good for the body					
30	Pregnant and breast feeding women require Vitamin A for the fetus and breast milk after birth					
31	Growing children need Vitamin A along with other nutrients for the healthy/ normal growth of the whole body					

32	I do not know that ionized salt, sugar, flour and fortified food substances contain Vitamin A					
33	I do not know that Vitamin A deficiency start from poor food intake					
34	I do not know foods that are rich in Vitamin A					
35	I do not know how to prevent Vitamin A deficiency through cooking nutritious meal especially those rich in vitamin A					
36	I believe men should also be more concern about their children's intakes					
37	It is the responsibility of the women and other female children of the house to prepare food at home					
38	The food we prepare at home is based on our culture					
39	Education should be given to nursing and pregnant women on important of Vitamin A to the body					
40	The Government should improve more on the education given to people on Vitamin A and i believe that contribution of the government on Vitamin A will help households nutrition especially on Vitamin A					

2. **Practice of vitamin A by the rural nursing mothers.** In relation to the communication medium used for the dissemination of information on Vitamin A, Kindly respond to the following :

A.						
Food items rich in vitamin A	**Do you take it**		**If yes, what is the frequency**			
	Yes	**No**				
			Weekly	**Twice a week**	**Daily**	**Rarely**
Meat						
Palm oil						
Vegetable						
Sweet potato						
Mango						
Pumpkin						
Pea-nut						
Lettuce						
Red pepper						
Carrot						
Liver						
Maize						
Egg						
Butter						
Milk						
Cheese						
Fish						
Yellow cassava(Vit. A Cassava)						
Fortified sugar						
Fortified salt						
			I collect		I do not collect	
Vit A SUPPLEMENTS	100,000 IU for 6- 11 months					
	200,000 IU for 12 - 59 months					
Lactating mothers						

APPENDIX II

COMMUNICATION CHANNELS IN COMMUNICATION STRATEGIES OF THE INTERVENTION

A. EDUCATION STRATEGY

1. Audio recording channel

i. Local language of audio recording

Vitamin A

Ìfáàrà

Fítámìn "A" jé èròjà inú oúnje tí à ń je . A lè rí èròjà yìí lára ohun ò gbìn àti àwo n e ranko. Èròjà Fitamin "A" yìí s e pàtàkì tó ń kó ipa tó jo jú lára àwo n o mo dé àti àwo n obìnrin. Èròjà yìí kò s òro láti rí, kò gbówó lérí, gbogbo ènìyàn ló sì lè rí i ní àró wó tó o wo n.

Èròjà Fitami "A" wà ní orís ìrís ìí lára àwo n ohun ò gbìn àti àwo n e ranko. A lè rí ì je lára àwo n ohun tí à ń je lára oúnje tí a bò , tí a s è, tí a yan tàbí tí a fi omi gbígbóná sè.

Àwo n àpe e re oúnje tó ní èròjà Fitamin "A" nìwò nyí: àgbàdo, káró ó tì, is u ànàmán, ata, tòmátò, mángòrò, èso elégédé, àwo n ewébè , è dò e ran, wàrà, e ja, epo pupa, e yin sèré orí òyìnbó (butter).

Èròjà yí wúlò láti mú ìlera bá àwo n o mo dé, ó sì ń jé kí wó n ní ìdàgbàsókè tó ní ìlera nínú.

Àǹfààní tó wà fún jíje èròjà fítámìn "A"

1. Èròjà yìí s is é fún ojú láti ríran kedere

   Fitamin "A" nínú oúnje tí à ń je yóò jé kí ojú máa ríran kedere pàápàá jùlo ní alé . E ni tí èròjà yìí bá s ò wó n nínú oúnje rè kò ní ríran dáadáa ní alé .

2. Fitamin "A" dúró bí olùdènà àìsàn

   Fitamin "A" dúró gé gé bí àje sára tó ń s e ìrànló wó láti dáàbòbò ènìyàn kúrò nínú orís ìrís ìi àìsàn. Fitamin "A" ń s e eléyìi nípa s ís e ìdíwó fún àìsàn láti ko já sínú ara, ó sì ń ran àwo n orís ìrís ìí ohun tó ń bá àwo n àìsàn wò yá jà.

3. Fitamin "A" ní èròjà kan tí à ń pè ní beta-carotene

   Èròjà inú Fitamin "A" ń mú àdínkù bá bí àìsàn je je re s e ń mú ènìyàn. Irú àìsàn je je re o yàn, jè fun-jè fun àti je je re inú egungun. Je je re è dò -fóró kìí wó pò láàárín àwo n tó ń je oúnje Fitamin "A" tó ní èròjà beta-carotene nínú.

4. Fitamin “A” ń dáàbòbo e ran ara ènìyàn

   Èròjà Fitamin “A” ń dáàbòbo e ran ara ènìyàn àti àwo n is an inú ara nípa pípèsè ohun tí yóò máa mú ara dán, tí kò ní gba àwo n olú alárùn láàyè láti dúró sí ara yálà ní òde tàbí inú.

5. Fitamin “A” máa ń jé kí o lè dàgbà nínú oyún

   Nítorí ìdí èyí, ó s e pàtàkì fún aláboyún láti máa je oúnje tó ní èròjà Fitamin “A” nínú. Eléyìí yóò jé kí wó n ní ìlera nínú oyún. Bákan naà, o mo dé tó wà ní inú oyún sí o dún márùn-ún yóò dàgbà dáadáa pè lú.

6. Fitamin “A” tún ń jé kí ara aláboyún tètè bò sípò dáadáa lé yìn ìbímo

   Lára ìyá tó ń tó jú o mo ló wó , Fitamin “A” máa ń jé kí ojú ríran kekere pàápàá jùlo ní alé . Fitamin “A” máa ń ran èkejì o mo ló wó lásìkò tí oyún ń dàgbà sókè nínú oyún.

7. Fitamin “A” máa ń fún ènìyàn lé jè dáadáa nítorí ó ye kí a máa je oúnje tó bá ní èròjà Fítámìn “A”.

8. Bí ènìyàn bá ń je oúnje tó ní èròjà Fitamin “A” dáradára, yóò mú àdínkù bá àwo n àrùn tí wó n ń kó ran ènìyàn bí i ìgbé gbuuru, àrùn e yi, àìtó è jè lára àti bé è bé è lo .

9. Fitamin “A” ń mú àlàáfíà tó péye bá egungun àti ehín, ó ń jé kí ara tètè padà bò sípò lé yìn àìsàn pè lú.

10. Lára èròjà kan pàtàkì tí Fitamin “A” tún ń s e okùnfà rè ni kásíó mù tí kìí jé kí ojú ara tí ènìyàn ń gbà láti to ó dí. Ìrora, àti èébì máa ń wáyé bí eléyìí bá s e lè .

Àbùkù tí àìpé fitamin ‘a’ nínú ara ń fà

(1) Àìpé Fítamin “A” ń s e lè nígbà tí ènìyàn kò bá je àwo n oúnje tó ní èròjà Fitamin “A” nínú. Àpe re àìpé Fítamin “A” máa ń farahàn lára àwo n o mo de pè lú àìríran dáadáa.

   Yoòbá bò , wó n ní, “OJÚ LO BA ARA”. Ìdí nìyí tó fi s e pàtàkì láti máa je oúnje tó ní èròjà Fítamin “A” dáadáa fún ìtó jú ojú u wa. Ìtó jú ojú yìí s e pàtàkì fún àwo n o mo dé o dún márùn-ún sí o mo o jó kan nítorí is é àko sílè kan gbé e jáde wí pé àwo n o mo wò nyí ni ò rò yìí báwí jùlo .

(2) Àwo n àìsàn bíi ìgbé gbuuru, èyí àti àwo n àìsàn tó lágbára, pè lú ikú o mo dé lè pò sí i bí Fítamin “A” bá s aláì tó lára.

(3) Lára àwo n aláboyún, àti oyún inú, àìtó Fítamin "A" lè fa àìríran dáadáa lásìkò tí ìbímo bá súnmó tòsí.

(4) Àrùn un Éèdì lè pò bí àkóràn láti ara aboyún àti o mo tó bí.

(5) Àìtó Fítamin "A" lè s e okùnfa kí eyín, e nu àti erìgì má fìdí múlè dáadáa.

(6) Ara híhun àti irun tí kò lálàááfià tún jé àpe re àìtó Fítamin "A".

(7) Àìtó Fítamin "A" tún ń farahàn pè lú è è kannáà tí kò hù jáde dáadáa.

ii. Translation of the audio recording

Introduction on vitamin A

Vitamin A is a soluble substance which are found in plants and animals it plays important roles in the body for children and women. It is cheap, always available and affordable for all.

Vitamin A could be taken fresh, raw, boiled, cooked, fried, smoked or parboiled. They are in various shapes forms and sizes in animals and plants.

They include: Maize, carrot, sweet potato, Red pepper, tomato, mango, pumpkin, peas, lettuce, vegetables, liver, breast milk, meat, fish, palm oil, Egg, cheese, Pea-nut, butter, spinach milk, yellow cassava.

It is essential for optimal health, growth and development in children and adults especially women.

Nutrition Benefits of Vitamin A

(1) It is good for sight: Adequate consumption of foods containing vitamin A helps the eyes to see well especially at night. Vitamin A is so important that a deficiency in vitamin A lead to night blindness if not appropriately taken care of. This is because, Vitamin A contain what we call retinol that start the chemical process that signals the brain that light is striking the eye, which allows the eye to adjust from bright to dim light.

(2) Immune System Vitamin A plays a key role in the immune system by helping protect the body from infections. It does this, by functioning as a barrier and form the body's first line of defense against infections. It increases the activity as antibodies.

(3) Vitamin A contain beta-carote-ne which may be associated with decrease risk of certain cancers like breast, colon, esophageal and cervical. People whose diets are naturally high in carotenes have a lower incidence of lung cancer.

(4) Vitamin A helps in protecting the skin and tissues inside and outside the body by producing epithelial cells that lubricate body surfaces and protect against invading micro-organisms or oxidative stress.

(5) It is also help in repair tissues after baby delivery. Adequate intake of vitamin A helps prevent night blindness in the mother, helps the placental and its highly crucial in embryonic development.

(6) It also helps in the development of embryonic development in the womb. Therefore it is important for pregnant woman to take foods rich in vitamin A for the well growth of their unborn babies and growing children especially children between the age of 0 – 5 years.

(7) Vitamin A helps in the red blood cell production.

(8) Adequate intake of vitamin A reduce infectious illness such as chronic diarrhea measles and prevalence anemia.

(9) It helps to maintain A healthy bones and teeth. It helps in repairing worn out or old tissues to ensure healthy bones and teeth.

(10) Vitamin produces a mineral compound within the body called Calcium phosphate that prevents the formation of urinary calculi/solid particles in the urinary system which may cause pain, nausea and vomiting when stones are formed.

Vitamin A deficiency

(1) Someone is said to be deficient in Vitamin A when he/she consumes/eats Vitamin A in low quantity or eat foods that are not rich in Vitamin A. The symptoms of Vitamin A deficiency in children causes serious visual

impairment and blindness. As the general saying 'Oju loba Ara', There is need to have adequate intake of vitamin A to avoid eye problems leading to blindness in children.

(2) Vitamin A deficiency can also increase the risk of severe illness and even death from common childhood infections as diarrheal diseases, anemia and measles.

(3) It can also cause night blindness in pregnant woman during the last trimester when demand by both the unborn child and mother is highest.

(4) It can also be associated with elevated mother to child HIV transmission.

(5) Vitamin A deficiency can cause dentition problem called enamel hypoplasia.

(6) It can also cause dry skin and dry hair leading to itching.

(7) Vitamin Deficiency can also leads to broken fingernails.

2. Direct Lecture channel

Olùwádìí: Ẹkáàárọ̀ ọ

Olùgbọ́: ọ

Olùwádìí: Olúwa á wo àwọn ọmọ wa fún wa ọ

Olùgbọ́: Àmín

Olùwádìí: Pàtàkì ohun tí mo fé bá a yín sọ láàrọ̀ yí ni ọ̀rọ̀ ló rí fitamin A. Fitamin A jé èròjà tí a ma ń rí ní ara ẹranko tàbí ohun ọ̀gbìn. Ó se pàtàkì fún ìyá ọmọ àti ọmọ náà nítorí wí pé ohun oúnjẹ tí ó dára púpọ̀ jù ni.

A lè rí ní ara àgbàdo,epo pupa,kárọ̀ọ̀tì, èso elégédé,, iṣu ànọ̀mọ́, ẹran, ẹ̀fọ́,ẹ̀pà,ata pupa, ẹ̀dọ̀,ẹyin,ntà tí a mọ̀ sí òrí òyìnbó,ẹja,ẹ̀gẹ́ yóò tí wọ́n ṣẹ̀ṣẹ̀ ń ṣe,ṣúgà,àti iyọ̀ jẹ́ olú fitamin A sọ́plímèntì, tí a mọ̀ sí abẹ́rẹ́ àjẹsára tí àwọn ìyá ọlọ́mọ ma ń gbà tí wọ́n bá sẹ́sẹ́ bí mọ.

Orísìírísìí oúnjẹ yìí ṣe pàtàkì fún ara wa.

Ara àwọn ànfààní tí ó wà lára fitamin A ni wí pé:

Ó má a ń jẹ́ kí ọmọ àti ìyá ríran dáadáa. Ẹ̀ ẹ́ ri pé Yòrùbá sọ wí pé "OJÚ LỌBA ARA", kí nì ìdí tí wón se sọ bẹ́ẹ̀? nítorí èyí, nílé tí a bá ń jẹ fitamin A yìí ní àsìkò tí o yẹ kí a jẹ́ àti ní òdiwọ̀n bó bá ṣe yẹ kí a jẹ́,a ó ri pé tí ó bá di lálẹ́ tí gbogbo nǹkan ti dúdú birimùbirimù,ojú wa má ríran dáadáa.

Fitamin A yìí tún jẹ́ èròjà tó jẹ́ wí pé ó má a ń jẹ́ kí ọlẹ̀ ọmọ tó wà nínú aláboyún kó dàgbà dáadáa. Nítorí ìdí èyí, mo rọ̀ wá wí pé kí á jẹ fitamin A.

Fitamin A tún jẹ́ èròjà oúnjẹ tó jẹ́ wí pé ó má ǹ dènà àìsàn. Nígbà mìíràn, ẹ̀ ó ́ri pe elòmíràn ti ò bá jẹun lásìkò tó yẹ kó jẹ é, tí ó sì ní èròjà fitamin A nínú, á dènà awọn àìsàn.

Àwọn àìsàn míìràn tó lè wá lati ara àìjẹ fitamin A yìí ni bí i: ìgbẹ́ gbuuru,tàbí àrun tí a mọ̀ sí àrun bàbá àgbà(ṣànpọ̀nná)

Ta bá ń jẹ fitamin A yìí déédéé, àti ní oṣuwọ̀n bó ṣe yẹ káa jẹ́,ara wa á pé dáadáa á sì dènà àìsàn ní gbogbo ọ̀nà tí àìsàn bá ti lè rí kówà ní ara wa àti ní àrà àwọn ọmọ wa.

Fitamin A yìí tún jẹ́ èròjà tó jẹ́ wí pé ó má a ń mú ara dán. Tí a bá ń jẹ é lásìkò,ara wa á ma dán á sì má a jọ̀lọ̀.

Tí a bá ń jẹ fitamin A yìí náà, ó má a ń mú kí eyín dúró dáadáa tí kò ní jẹ́ pe eyín á wọ́ sẹ́gbê kan tàbí kò dúró àbí kò yọ dáadáa. Sẹ́ ẹ ri, tí a bá ń jẹ àwọn oúnjẹ tí a kà fún yín pé ó ní fitamin A wa, a ó ri pé eyín wa á dúró dáadáa.

Ànfààní tí mo rí lára fitamin A ni wí pé:

Ó ma ń dènà àìsàn tí a ń pè ní àìsàn jẹjẹrẹ. Àìsàn jẹjẹrẹ tí ó lè wá láti àìjẹ fitamin A déèdéé bíi àìsàn jẹjẹrẹ láti ibi oyàn, tàbí èdó fótó, tàbí àìsàn jẹjẹrẹ tí a ń pè ní (cancer of the oesophagus) ìyẹn ti ọ̀nà ọ̀fun. Tí a bá ń jẹ fitamin A déédéé, a ó ri wí pé gbogbo awọn àìsàn yìí á ma dènà wọn, kò nísáyè fún wọn láti wá sínú ara wa.

Nínú fitamin A yìí, àwọn abẹ́rẹ́ kan wà tó jẹ́ pé tí àwa abiyamọ bá a bímọ,wọ́n a nílé,ẹ wá gba bẹ́rẹ́ àjẹsára o, abẹ́rẹ́ àjẹsára yíi ni wọ́ń pè ní fitamin A sọ́pílímẹ̀ntì. Tí a bá gba abẹ́rẹ́ àjẹsára yíi lásìkò, ọmọ má a fàá, tí ọmọ bá ti fa fitamin A sọ́pílímẹ̀ntì yìí nínú oyàn, ó ma jẹ́ kí ọmọ náà ríran déédéé, kò ní sí àrùn kankan tó ma wọlé ṣọmọ náà lára tí òfin ní ríran dáadáa.

Nitori idi eyi, pèlú àwon ànfààní orísìírísìí tí a sọ nípa fitamin A, má à rọ̀ wá wí pé kí a má a jẹ fitamin A dáadáa. Pèlú àwon ǹkan tí a ti kà fún wa, a lè ri ní àrọ́wọ́tó wa, kò sì wọ́n. Bíbọ̀ wà níbẹ̀, sísun wà níbẹ̀, èyí tí a lè fi omi se wà níbè.

Mo rọ̀ wá wí pé kí a má a jẹ fitamin A déédéé nitori Yorùbá sopé ojú l'ọba ara. Ojú awọn ọmọ wa náà kò ní re lé dè wá ọ

Olùgbó: Àmín o

Olùwádìí: À á jẹun ọmọ o

Olùgbọ́: Àmín o

Olùwádìí: Ịsu ọmọ á jiná fún wa ọ

Olùgbọ́: Àmín

Olùwádìí: Ẹsé mo dúpẹ́ o.

3. **Video channel**

FITAMIN A SE PÀTÀKÌ LÁÀGỌ́ ARA, MÁ A JẸ FITAMIN A NÍGBÀ GBOGBO

ORIN....

Ojú ń wò bàìbàì

Ara ń yún ni

Ojú ń wò bàìbàì

Ara ń yún ni

Jẹjẹrẹ inú

Jẹjẹrẹ ọkán

Jẹjẹrẹ ìfun

Jẹjẹrẹ egungun

Àìtó fitamin A rè é o

Àraye ẹgbọ́

Àìtó fitamin A rè é o

Abiyamọ má ṣe sùn

(Èrè ránpẹ́)

Aláboyún kàn gbé ọmọde 'kùnrin dá ní wọ́nú ọgbà ilé ìwòsàn.

Onírúurú ènìyàn ló dúró síbẹ̀ làti rí dókítà.

Orin..... tún bẹ̀rẹ̀

Ìpè: Ojú tó ń wò bàìbàì tó ń sú tí ò jẹ́ ká a ríran bìlẹ̀ bá ti sú pẹ́rẹ́

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Bójú ara obìnrin ti ń síntọ́, tí ń bẹ́tọ́, ọmọ yín ò tètè rìn ẹ má ṣe wòran

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Bọ́mọ bá ń yàgbẹ́ gbuuru, tó ń fìdí mọ́lẹ̀ tàbí oùń họra kùàkùà

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: è é fitamin A ni o kẹgbọ́

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Ẹra ẹ̀fọ́, ẹròfọ́, ẹjẹfọ́, kára ó gbá yágíyágí

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Ojú tó ń sú fitamin A ni o tó é

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: è é fitamin A ni ò tó o e

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Fitamin A is essential in the body, you got to eat fitamin A (kò sè má ń ní ni fitamin A läàgọ́ ara, ogbọ́dọ̀ jẹ fitamin A)

Ìdáhùn: è é fitamin A ni ò tó o e

B. ENTERTAINMENT METHOD

1. Drama channel

Obìnrin kan ń fi ẹ̀hónú sí ọkọ rẹ̀.

Ìyàwó: Ojú mi mà ń sú baálé mi,mi ò sì ríran dáadáa

Ọmọde bìnrin: mummy, mummy my teeth is aching me (màámi, màámi eyín ń ro mí)

Ìyàwó: Ara yínyún yí ni sáá

Ọkọ: O o ara yínyún àti ojú ṣíṣú ti jẹ́, íbo lọfà gań ti wá gbà wọlé báyìí

Ọ̀rẹ́ ọkọ: (ó rẹ́rìń) a tótó a rére o gbogbo abiyamọ ayé tí ń tọ́mọ lọ́wọ́ àbí tó lóyún sínú, ẹ tẹ́tíí bẹ̀lẹ̀jẹ́ kẹ gbọ́ mi.

Èròjà kan ń bẹ nínú oúnjẹ tó j'ọ̀kan gbòógì, ara fitamin tí ń sara lóore ni, fitamin A la ń sọ̀rọ̀ nípa ẹ̀.

Púpọ̀ lára àwọn àrùn tí ń bá ìyá ọlọ́mọ jà, oyún inú àbí àṣẹ̀ṣẹ̀bí,àì - mọ̀kan mọ̀kàn ní ń jẹ́ kí àìsàn sodo sára irúfẹ́ wọn.

Àkọsílẹ̀ kàn gbé jáde wí pé àwọn ọmọ wa lọ̀rọ̀ yi bá wí jùlọ.

Àwọn àìsàn bíi ìgbẹ́ gbuuru, èyí àti àwọn àìsàn tó lágbára, ikú pàápàá ò gbẹ́yìn bí fitamin A ò bá sí lára.

Àwọn aláboyún àti oyún inú, àìtó fitamin A lè fa àì ríran dáadáa nígbà tí àsìkò ìbímọ bá wá n sún mó.

Àìtó fitamin A lè fa keyín ẹni àbí èrìgì má fìdí múlẹ̀ dáadáa.

Ara yínyún àti irun ti kò láàláfíà gan an jẹ́ àpẹẹrẹ àìtó fitamin A.

Àìtó fitamin A tún lè farahàn nípa eekanna tí kò hù jáde dáadáa.

Ìyàwó: Ẹ dákun bàbá ọkọ mi, níbo ni mo ti lè rí fitamin A rà, kí èmi náà lè má a fi sínú oúnje nígbà tẹ ní èròjà oúnjẹ ni?

Ọ̀rẹ́ ọkọ: e e e ìyá Múlíkà, ọ̀rẹ́ ìyàwó ò mi, bó ṣe ń ṣe ọ́ ní ń ṣọ̀rẹ́ è rẹ nígbà kan.

Fitamin A jẹ́ èròjà inú oúnjẹ ló ò tọ́, àmọ́ a lè rí èròjà yí lára ohun ọ̀gbìn àti àwọn ẹranko.

Àwọn èròjà yìí kò ṣòro láti rí, kò gb'ówó lórí, gbogbo ènìyàn ló sì lè ri ní àrọ́wọ́tó wọn.

Àwọn àpẹẹrẹ oúnjẹ tó ní èròjà fitamin A ní wọ̀nyí:

ẹ̀gẹ́ aláwọ̀ òfeefe, àgbàdo, iṣu ànọ̀mọ́, ata, tìmátì, mọ́ngòrò, èso elégédé, àwọn ewebẹ, ẹ̀dọ̀ ẹran, wàrà, ẹja, epo pupa, ẹyin, sèré, òrí òyìnbó ta ń bọ́tà àti bẹ́ẹ̀bẹ́ẹ̀ lọ.

Pàtàkì fitamin A:

Èròjà yìí wúlò láti mú ìlera bá àwọn ọmọdé ó sì ń jẹ́ kí wọ́n ní ìdàgbà sókè tó ní ìlera nínú.

Èròjà yìí ń ṣiṣẹ́ fún ojú láti rí rán kedere

Fitamin A dúró fún olùdènà àìsàn.

Fitamin A ní èròjà kan ti a ń pè ní beta carotene, èyí tí ń dènà àìsàn jẹjẹrẹ lóríṣìíríṣìí

Fitamin A má a dáàbò bo ara ènìyàn.

Fitamin A ń jẹ́ kí ọlẹ́ ó dàgbà nínú aboyún

Fitamin A tún ń jẹ́ kí ara aláboyún tètè bọ́ sípò lẹ́yìn ìbímọ.

Èyí àtàwọn ànfààní tó pọ̀ lọ ṣúa wà dáadáa nínú fitamin A.

2. Folktale

Ìgbóhùn sókè sódò orin

OHÙN OBÌNRIN: Atótó arére gbogbo abiyamọ tí ń bẹẹ lóde ilẹ̀ yi

OHÙN ỌKÙNRIN: Káàbọ̀

OHÙN OBÌNRIN: Ẹ tẹ́tí ẹ gbọ́ winrínwinrìn lẹ́nù mi

OHÙN ỌKÙNRIN: Wí o, jẹ́ á gbọ́

OHÙN OBÌNRIN: Mo mọ̀ pe etí inú yin kò di, bẹ́ẹ̀ ni tó de yín kò ràjò. Ọ̀rọ̀ lóri fitamin A ni mo tún mú wa.

Ó ń kópa púpọ̀ láàárín àwọn ọmọdé wà, pàápàá jùlọ láàárín àwọn aláboyún.

Yorùbá bọ̀ wọ́n ní; bá a bá sá kẹ́kẹ́ ògún, bẹ́ẹ̀ bá babajá ọgbọ̀n, sebí nítorí ìlera wa ni,

OHÙN ỌKÙNRIN: Òwe lọ ọ́ pa ò

OHÙN OBÌNRIN: A lè ri lára iṣu, ó ń bẹ lára tòmátò, iṣu ànàmọ́, mángòrò, èso elégédé, àwọn ewebẹ oko wa

OHÙN ỌKÙNRIN: Ní yuǹ n fitamin A náà?

OHÙN OBÌNRIN: ẹ̀dọ̀ ẹran, wàrà tútù, ẹja ,atepo pupa, ẹyin, bẹ́ẹ̀ni òrí òyìnbó tí gbogbo wa mọ̀ sí bọ́tà .

Fitamin A gbàràdá lọ́wọ́ alárà ó tún fadé dée lórí.

OHÙN ỌKÙNRIN: láái ṣaláàfin

OHÙN OBÌNRIN: Ànfààní tí ń bẹẹ nínú fitamin A ò kéré rárá,

Èròjà yìí ń ṣiṣẹ́ fún ojú láti rí rán kedere. Fitamin A nínú oúnjẹ tí a ń jẹ, yí ó jẹ́ kí ojú ó ma riran kedere, sèbí wọ́n ní ojú ni'mólẹ̀ ara.

OHÙN ỌKÙNRIN: Kò sí'rọ́ ńbẹ̀

OHÙN OBÌNRIN: Ojú wa ò kúkú ní relé dè wá lágbára Elédùmarè

OHÙN ỌKÙNRIN: Àṣẹ

OHÙN OBÌNRIN: A mọ́ ọ ń jẹ́ kójú má a ríran kedere pàápàá jùlọ lásíkò àsaalẹ́.

Ó tún dúró gégé bí olùdènà fún àwọn àìsàn àgọ́ ara wa. A ń ṣe eléyìí nípa ṣíṣe ìdíwọ́ fún àìsàn láti kọjá sínú ara.

Ewá gbọ́ tuntun,èròjà kan ń bẹ nínú fitamin A tí gbogbo wa mọ́ sí beta carotene o,

OHÙN ỌKÙNRIN: O ká re ọmọ mi

OHÙN OBÌNRIN: Bí a bá ń jẹ eléyìí lóòrèkóòrè, a má a mú àdínkù bá àìsàn ara wa.

Àìsàn bíi jẹjẹrẹ omú, bẹ́ẹ̀ni jọ̀funjọ̀fun, jẹjẹrẹ inú egun, jẹjẹrẹ ẹdọ̀ fóró, kò ní ráyè láàrin wa ti a bá ń jẹ oúnjẹ tó ní fitamin A nínú.

Pẹ̀lú èròjà beta carotene , á má a dáàbò bo ẹran ara wa.

Pàtàkì fitamin A:

Bẹ́ ẹ̀ bá rẹ́ni tí ó ń dán, tójú rẹ̀ gún rege, ẹ má wulẹ̀ dàmú rara èròjà fitamin A ló ń jẹ.

Bẹ́ẹ̀, bẹ bá ráláboyún tó ń yí kítí,ẹ má wulẹ̀ dàámú rara èròjà fitamin A ló ń jẹ.

A má a jẹ́ kọlẹ̀ ó dàgbà nínú oyún lái sí ìdíwọ́ rárá bẹ́ẹ̀ lái sí ìdènà.

Bẹ́ẹ̀ ni a máa jẹ́ kì aláboyún tètè padà sípò lẹ́yìn ìbímọ.

Ó ní lágbájá bímọ,lágá ló dìde, nlẹ́ èròjà fitamin A lò ń jẹ.

Èròjà fitamin A a tún má fún ni léjẹ̀ o.

Bí ènìyàn bá ń jẹ èròjà fitamin A dáradára,yí ó ma mú àdínkù bá àwọn àìsàn bíi:

Ìgbé gbuuru, àrùn ẹ̀yìn, àrun títà, bàbá àgbà, àitó ẹ̀jẹ̀ lára àti bẹ́ẹ̀bẹ́ẹ̀ lọ.

Béè ló tún ma ń mú àláfíà tó péye bá gbogbo egungun ẹ̀yìn wa, á sì má a mú kí ara tètè padà sípò lẹ́yìn àìsàn.

Lára èròjà kan pàtàkì tí fitamin A tún ń ṣe òkùnfà rẹ̀ ni kásíọ́mù. Sèbí sányán ni baba aso, àlárì ni baba èwù, kásíọ́mù ń kó ipa pàtàkì láàgọ́ ara wa. Kásíọ́mù tí kìí jẹ́ kí ojú ara ti ènìyàn ń gbà láti tọ́ ó dí, ìrora àti èébì ló ma ń wáyé bí eléyìí bá ń ṣẹlẹ̀ o. Ebi kìí ṣọ̀rẹ́ ara, ìyà kìí ṣọ̀rẹ́ àwọ́, kásíọ́mú ń káṣo lójú eégùn àìsàn. Ó tún fàṣírí àìsàn hàn ní gbangba.

Ewá gbọ́, kò sí ohun tó níwájú tí ò lẹ́yín o,

Àbùkù tí ài pé fitamin A má ń fà nínú ara:

Àí pé fitamin A a má a ṣẹlẹ nígbàtí ènìyàn kò bá jẹ àwọn oúnjẹ tó ní eroja fitamin A nínú.

Àpẹẹrẹ à ì pé fitamin A a má a farahàn láàrin àwọn ọmọdé pẹlu à ì ríran dáadáa pataki jùlọ lásíkò àsaalẹ.

A ṣe ara lóore inú fitamin A ni èròjà wẹ́rẹ́ tí o ma ń fún òpòlọpọ̀ èniyàn ní ìtanijí ní àsìkò ìríran pàápàá jùlọ níbi tí iná ti pọ̀ tàbí iná mọ́lẹ kedere. Yorùbá bọ̀ wọ́n ní ojú l'ọba ara, ìdí nìyí tó fi ṣe pàtàkì láti má a jẹ ounjẹ tó ní èròjà fitamin A nínú.

Tẹ bá wá rí àwọn tó ń ya ìgbẹ́ gbuurugbu, àbí ọmọdé ilé téyiín ń ṣe, àti àwọn àìsàn tó lágbára tó sì lè fa ikú ọmọde lọ́pọ̀lọpọ̀, ẹ bá mi wí fún wọn pe àí tó o fitamin A ló fa èyí.

Bẹ́ẹ̀, bẹ bá ráláboyún tí ò riran kedere, àí tó fitamin A náà ni.

Àrun éèdì lè pọ̀ bí àkóràn láti ara ati ọmọ tó fẹ́ bí torí àí tó fitamin A náà ni.

Àí tó fitamin A lè ṣe òkùnfà kí eyín ẹnu àti erìgì má fìdí múlẹ dáadáa.

Ara yínyún àti irun ti kò láàláfíà tún jẹ́ àpẹẹrẹ àìtó fitamin A.

Àìtó fitamin A a tún farahàn pẹ̀lú èékánná tí kò hù jáde dáadáa.

Sèbí àí gbọ́fá là á wòkè, ifá kan ò kúkú sí ní párá, mélòó la fẹ́ kà nínú eyín adipèlé fitamin A. Ẹwòó, bí a bá fẹ́ sọ̀rọ̀ fitamin A látòní dọ̀la, ó tó bẹ́ẹ̀ ó jù bẹ́ẹ̀ lọ.

Fitamin A gorí ẹṣin ó sọ̀pàkọ̀ sẹ́yìn lẹ́yìn tó tú gbogbo àṣírí àìsàn lè gbogbo ọmọ aráyé lọ́wọ́.

3. **Music channel**

Ojú ń wò bàìbàì

Ara ń yún ni

Ojú ń wò bàìbàì

Ara ń yún ni

Jẹjẹrẹ inú

Jẹjẹrẹ ọkán

Jẹjẹrẹ ìfun

Jẹjẹrẹ egungun

Àìtó fitamin A rè é o

Àraye ẹgbọ́

Àìtó fitamin A rè é o

Abiyamọ má ṣe sùn

(Èrè ránpẹ́)

Aláboyún kàn gbé ọmọde 'kùnrin dá ní wọ́nú ọgbà ilé ìwòsàn.

Onírúurú ènìyàn ló dúró síbẹ̀ làti rí dókítà.

Orin..... tún bẹ̀rẹ̀

Ìpè: Ojú tó ń wò bàìbàì tó ń sú tí ò jẹ́ ká a ríran bìlẹ̀ bá ti sú pẹ́rẹ́

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Bójú ara obìnrin ti ń síntọ́, tí ń bẹ́tọ́, ọmọ yín ò tètè rìn ẹ má ṣe wòran

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Bọ́mọ bá ń yàgbẹ́ gbuuru, tó ń fìdí mọ́lẹ̀ tàbí oùń họra kùàkùà

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: è é fitamin A ni o kẹgbọ́

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Ẹra ẹ̀fọ́, ẹ̀ròfọ́, ẹjẹ́fọ́, kára ó gbá yágíyágí

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Ojú tó ń sú fitamin A ni o tó é

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: è é fitamin A ni ò tó o e

Ìdáhùn: è é fitamin A ni ò tó o e

Ìpè: Fitamin A is essential in the body, you got to eat fitamin A (kò sè má ń ní ni fitamin A lääàgọ́ ara, ogbọ́dọ̀ jẹ fitamin A)

Ìdáhùn: è é fitamin A ni ò tó o e

SOME OF THE PICTURES TAKEN DURING THE RESEARCH PROCESS

PLATE 1: INTERVIEWER WITH ONE OF THE RURAL NURSING MOTHERS AT IDO HEALTH CENTRE

PLATE 2: THE RESEARCHER, NURSES AND THE RURAL NURSING MOTHERS AT IDO HEALTH CENTRE

PLATE 3: RESEARCHER WITH ONE OF THE RURAL NURSING MOTHERS AT IDO HEALTH CENTRE

PLATE 4: RESEARCHER DISCUSSING WITH THE RURAL NURSING MOTHERS AT HEALTH CENTRE

PLATE 5: RESEARCHER DISCUSSINGWITH THE RURAL NURSING MOTHERS AT EFON ALAAYE HEALTH CENTRE

PLATE 6 :A POSTER CONTAINING THE FACILITY HEALTH COMMITTEE MEMBERS (GIVEN BY EFON ALAAYE HEALTH CENTRE)

PLATE 7: RESEARCHER AFTER DISCUSSION WITH THE RURAL ddNURSING MOTHERS AT SAKI EAST LGA

PLATE 8: INTERVIEW SESSION WITH ONE OF THE RURAL NURSING MOTHERS

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