

BARRIERS IN ENSURING DIETARY DIVERSITY AMONG THE CHILDREN (6-12 MONTHS) IN BIHAR

(With special reference to Narhat and Pakribarma Block in Nawada Districts)

A STUDY REPORT UNDER STUDENT INTERNSHIP SCHEME

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TABLE OF CONTENTS

TOPICS

<i>Acknowledgement</i>	2
<i>Table of contents</i>	3
CHAPTER 1: INTRODUCTION	4
1. INTRODUCTION OF THE TOPIC OF STUDY	
2. INTRODUCTION OF THE LOCATION OF STUDY	
3. STATEMENT OF PROBLEM	
4. SCOPE OF STUDY	
5. OBJECTIVE OF STUDY	
CHAPTER 2: LITERATURE REVIEW	11
CHAPTER 3: RESEARCH METHODOLOGY	17
1. INTRODUCTION	
2. POPULATION AND SAMPLE	
i. TARGET POPULATION	
ii. SAMPLING TECHNIQUE	
iii. SAMPLE SIZE	
3. QUESTIONNAIRE DESIGN	
4. DATA COLLECTION	
CHAPTER 4: ANALYSIS AND FINDINGS	21
CHAPTER 5: OBSERVATIONS AND RECOMMENDATIONS	33

CHAPTER 6: CONCLUSION.....36

CHAPTER 7: LIMITATION OF STUDY.....37

References.....38

Annexure.....39

CHAPTER 1

INTRODUCTION

1. INTRODUCTION OF THE TOPIC OF STUDY:

The topic of study comes under the purview of Health, Nutrition and Sanitation wing of the Jeevika Organization. The HNS includes in its area of functioning the following programmes: Mobilization for toilet construction and its uses, promoting safe menstrual practices, encouraging dietary diversification and frequent meal consumption etc. The backbone of implementing these programmes is behavioral change communication.

The topic for my research is **“Identifying barriers in achieving dietary diversification in children (6-12 months) in Bihar.”**

Undernutrition and micronutrient malnutrition remain problems of significant magnitude in large parts of the developing world. Improved nutrition requires not only better access to food for poor population segments, but also higher dietary quality and diversity adopting easily available food items. Because many of the poor and undernourished people are smallholder farmers, diversifying production on these smallholder farms is widely perceived as a useful approach to improve dietary diversity.

Undernutrition is estimated to be associated with 2.7 million child deaths annually or **45%** of all child deaths. Infant and young child feeding is a key area to improve child survival and promote healthy growth and development. The first 2 years of a child’s life are particularly important, as optimal nutrition during this period lowers morbidity and mortality, reduces the risk of chronic disease, and fosters better overall development. The vitamins and minerals cannot be synthesized by the human body. They must be provided by the diet. These vitamins and minerals should be consumed in less quantity and hence are popularly known as micronutrients. They are necessary for the regulatory systems in the body for efficient energy metabolism and for other functions as cognition, immune system and reproduction. In their

absence, individuals and families suffer serious consequences including learning disabilities, impaired work capacity, illness and death.

However, for the overall development of the children just consuming micronutrients will not suffice. There need to be a mix of all the nutrients in the diet that a child consumes. The focus should be specifically made between 6-23 months as this is the growth period and will become the base of future development of the child.

Jeevika has taken this initiative to disseminate the knowledge regarding nutrition and has divided its beneficiaries into two types:

1. Expecting women and lactating women
2. Mothers having children of age 6-12 months

WHAT IS DIETARY DIVERSIFICATION?

It is an approach that aims to enhance the availability, access, and utilization of foods with a high content and bioavailability of micronutrients throughout the year. It involves changes in food production practices, food selection patterns, and traditional household methods for preparing and processing indigenous foods. To implement these strategies effectively, knowledge of the local dietary patterns, and food beliefs, preferences and taboos is required, as well as the ability to change attitudes and practices. Dietary diversification may be more sustainable, economically feasible, and culturally acceptable than supplementation or fortification and can be used to alleviate several micronutrient deficiencies simultaneously without risk of antagonistic interactions.

For the intake of necessary nutrients, World Health Organization has prescribed to consume at least 5 food groups out of 10 food groups for pregnant and lactating women. For children having 6-23 months of age, WHO suggests to consume 4 out of 7 food groups. According to the study topic, the researcher has focused on the 7 food groups. The list of 7 food groups includes:

1. Cereals
2. Legumes and dry fruits

3. Meat, fish
4. Eggs
5. Milk and dairy products.
6. Green leafy vegetable/(Iron and vitamin a rich food)
7. Other fruits and vegetables

Adequate infant and young child feeding practices are essential for child survival, growth, and development (physical and mental). The global public health recommendation is to exclusively breastfeed infants for the first six months of life; thereafter, the goal is to meet the additional nutritional needs of growth by providing adequate quality and quantity of foods to children while continuing to breastfeed up to two years and beyond. Special attention and practical support should be provided to caregivers feeding children with exceptional circumstances, such as infants born to HIV positive mothers, low-birth-weight infants, and orphans and vulnerable children in emergency situations

Following these guidelines, Bihar Jeevika has also formulated a plan to make the mothers aware of the nutritional requirement that they and their children need for a healthy future. Bihar Jeevika has designed a campaign in order to spread information about the 10 types of food groups, about the nutrients that each food groups provide, the minimum number of food groups that must be consumed and the quality & frequency of consuming food. Through these campaigns the organization is trying to bring a positive change in the daily diets of people, especially mothers and infants.

The organization focuses on the following:

1. Minimum consumption of 4 food groups out of 7 for children (6-23 months)
2. Adequate quantity: 3 times a day with proper quantity prescribed for children according to age.

2. INTRODUCTION OF THE LOCATION OF STUDY:

The location assigned by the State Office of the Bihar Rural Livelihood Promotion Society, Patna, (Jeevika) was Nawada District. On reaching the District Office we were informed that we would be sent to two different blocks for the duration of ten days each. The two blocks were Narhat and Pakri barawa. These blocks were strategically selected as the focus of Food Dietary Diversification Campaign, an initiative of Jeevika funded by World Bank under Bihar Transformative Development Project (BTDP) especially on these two blocks. As told by the officers at Block level, these blocks might see a visit from the team of World Bank in near future.

Narhat Block:

Narhat Block is administrative division of Nawada District. For the convenience of their functioning, Jeevika has divided the block into three clusters. These clusters are further divided into 10 panchayats which are in turn segregated into villages. As inquired from the officials at the block office the researcher came to know that there are total 3 Cluster Level Federations, 83 Village Organizations and more than 1100 Self Help groups in the block.

Pakri Barawa Block:

There are 15 panchayats within the block. There are total 68 villages. Jeevika has divided the block into 3 CLFs for its administrative convenience.

Below are some of the glimpses from both the blocks:

3. STATEMENT OF THE PROBLEM/ RESEARCH QUESTION:

The Research report focuses on the following aspects:

- Examining the relationship between production diversification and dietary diversification.
- Examining the relation between education of mother/care givers and dietary diversification achieved.
- Observing the role of SHG, VO and CLF level in promoting dietary diversification.
- Observing the functioning at ground level and trying to identify the limitations if any.

4. SCOPE OF THE STUDY:

A dietary imbalance or a disregard for the nutritional needs of children during early childhood can affect their growth. From the age of six months, breast milk is no longer able to meet the energy and micronutrient needs of children; the consumption of adequate complementary foods is therefore essential. Various indicators have been used to assess the quality of children's diets, and the dietary diversity score is a good indicator of children's diets. This study attempts to find out the determinants that are responsible for non achievement of dietary diversification goal.

Many households are unable to provide the required variety in food to their wards due to one or the other reasons. If these reasons are found out effectively, the organization can work on them and can gradually eliminate them. Once they are eliminated there can be no hurdles in achieving the dietary diversification goals for the children in their initial stage of lives. Once the health of children is secured in their initial phase they will turn out to be effective workforce. This is the scope of this study.

5. OBJECTIVE OF THE STUDY:

Jeevika has been extremely successful in reaching out to the people on ground. The community cadres have done their job well of including the people from grassroots into the fold of functioning of Jeevika. On the same line, Food Dietary Diversity Campaign was brought forward for enhancing the health of mothers and the newborns for a secured and healthy future. This study aims to examine how many beneficiaries actually follow that has been told and also aims to find out the reason why the beneficiaries don't conform to the information provided in the campaign. Hence there is a need for this study as it brings forward the reasons that are keeping the people away from achieving the dietary diversification goals. The reasons found can be used in formulating the policies and make them more inclusive and effective. While surveying the females were again briefed about the

CHAPTER 2

LITERATURE REVIEW

1. Hunger and malnutrition are complex global problems. Despite improvements in food and nutrition security over the last few decades, the prevalence of under nutrition remains high, especially in Africa and Asia. Close to 800 million people are still classified as chronically hungry, meaning that they do not have sufficient access to calories. An estimated 2 billion people suffer from micronutrient malnutrition, mostly due to low intakes of vitamins and minerals such as iron and zinc. Nutritional deficiencies are responsible for a large health burden in terms of lost productivity, impaired physical and mental human development, susceptibility to various diseases, and premature deaths. Nutritional deficiencies are not only the result of low food quantities consumed, but also of poor dietary quality and diversity. In fact, the level of dietary diversity was shown to be a good indicator of people's broader nutritional status in many situations. More diverse diets tend to be associated also with lower rates of overweight and obesity—other nutritional problems of rising magnitude in many parts of the world. Increasing dietary diversity is therefore an important strategy to improve nutrition and health. This implies that agricultural production also needs to be diversified, so that a wide range of different types of foods are available and accessible also to poor population segments. Over the last few decades, with the commercialization of agriculture and agricultural modernization has contributed to narrowing global production patterns with a focus on a limited number of major crop plants.

In Africa and Asia, the majority of the undernourished people live in rural areas. Many of them are smallholder farmers. Against this background, further diversifying production on these smallholder farms is often perceived as a useful approach to improve dietary diversity and nutrition. Several recent development initiatives have promoted smallholder diversification through introducing additional crop and livestock species with the

intention to improve household nutrition. Because farm diversity can help to increase agro biodiversity too, this approach is also welcome from environmental perspectives. But is there really such a clear link between production diversity on the farm and consumption diversity in the farm household? What are other factors that influence this relationship and dietary diversity in smallholder farm households more generally? (*Kibrom T. Sibhatu, 2015*). However, as the author has mainly focused on the farms that people use not only for their sustenance but also for selling in the market. The author has kept no scope for kitchen gardens which also contribute in achieving production diversity. The author concludes that a positive relation between dietary diversification and production diversification is not necessary. There are other factors that affect this relationship like market access. But if there is promotion of kitchen gardens, a positive relationship can be built between dietary and production diversification.

2. Nutrition impacts more than health outcomes. A robust evidence-base demonstrates the wide-reaching impact of improved nutrition on overall development. Investing in nutrition:

- Improves productivity and reduces poverty: Improving nutrition can increase productivity and have long-term implications for a person's earning potential. Children in Guatemala who received diets that were higher in energy and protein between 1967 and 1977 had, on average, 46% higher wages as adults compared to those with lower quality diets.
- Contributes to national economic growth: Losses to GDP from undernutrition can be as high as 3%. Achieving nutritional sufficiency would result in \$120 billion per year in benefits as a result of longer, healthier, and more productive lives for hundreds of millions who are undernourished. Micronutrient deficiencies alone cost India \$2.5 billion annually.
- Reduces maternal and child mortality and morbidity: Over 3 million child deaths are attributable to maternal and child undernutrition. Poor nutrition increases

susceptibility to infections and increases the likelihood of death from illnesses that would not otherwise be deadly.

- **Realizes full human potential:** Good nutrition in early childhood improves cognitive development and enables children to learn more effectively and stay in school longer. Increased protein and iron intake in the first two years of life show benefits to intellectual development up to 10 years later.
- **Increases gender equity:** Investments in girls' nutrition can advance the status of women and increase their ability to better care for their families. When assets and income are in the hands of women, evidence shows that agricultural productivity increases, poverty is reduced, and nutrition is improved. Women's education and status in the household is directly correlated to better nutrition outcomes for children. Analyses show that strengthening women's control over agricultural production can increase agricultural output by an average of 10%, and that equalizing gender status in South Asia and Africa would reduce the number of underweight children by at least 15 million.
- **Protects from infectious diseases and improves disease treatment:** Food and nutrition support is a critical component of comprehensive HIV/AIDS care and treatment as well as effective TB treatment. Undernutrition hastens the progression of HIV by further weakening the immune system, increasing susceptibility to opportunistic infections and reducing the effectiveness of treatments. Food and nutrition support helps break this vicious cycle by improving the management of symptoms, nutritional status, response to treatment, and quality of life and productivity. **Reduces adult-onset chronic disease burden:** Children whose early growth is restricted and gain weight rapidly later are more likely to have high blood pressure, diabetes, and both cardiovascular and metabolic diseases later.
- **Reduces conflict and vulnerability to economic, political, and environmental shocks:** When a population's underlying nutrition is poor before a crisis, limited nutritional stores are depleted and the risk of disease and death increase. Conflict

has triggered six of the seven major African famines since 1980, which resulted in millions of deaths from undernutrition. (Kothari, 2010)

3. The above literature has been a part of the Nutrition Update, 2010 conducted by USAID. The report has focused on various aspects related to health and nutrition. They have included expecting women, children, HIV patients, and Tuberculosis and Anemic patients. Dietary Diversification is a part of the report under child health, where the importance of diversity in diet and complementary food is put emphasis on. The concept of dietary diversification is shown in relation with education of mother, type of family child lives in etc. There has been holistic examination of the concept.

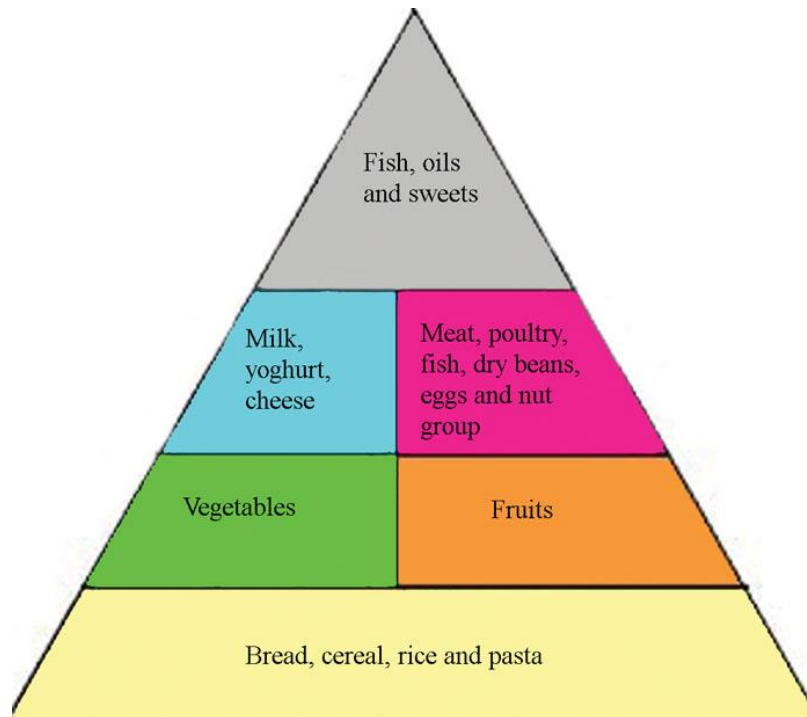
Eating a balanced diet means choosing a wide variety of foods and drinks from all the food groups. It also means eating certain things in small amounts, namely saturated fat, cholesterol, simple sugar, salt and alcohol. The goal is to take in all of the nutrients you need for health at the recommended levels and perhaps restrict those things that are not good for the body. The best way to help individuals in your community prepare a balanced diet is to learn which foods people use, the amount of different foods available, and how they prepare their meals. Then you can decide if people need help or further support or information to improve the balance of things they eat.

Fat and added sugars come mostly from fats, oils and sweets, but can be part of or added to food from the other food groups as well. They:

- i. Provide nutrients that may not be available in the staple food. For example, legumes, peas, beans and lentils add protein, iron and other minerals and fat; green and yellow vegetables and fruits add vitamins A and C, folate, and fibre
- ii. Make the food less bulky
- iii. Make the diet more tasty and interesting to eat.

A diet which is composed of staples, legumes and vegetables or fruits is a good, balanced diet because this combination of foods will provide most of the nutrients that the people in your community need. The problem with the diet above is a lack of animal sources of food. Animal sources are good because they contain plenty of protein, have high energy (due to the fats), and

the iron is easily absorbed compared with the iron sourced from plants. Therefore adding small amounts of animal products like meat, milk and eggs to staples, legumes and vegetables will improve the balanced diet. As well as protein, animal foods will also provide fat (for energy) and vitamins (especially vitamin A and folate), iron and zinc. But these foods may not be easily available and even if they are, they are usually expensive. (*NUTRITION AND ITS SOURCES*)



This article can be summarized as follows:

- i. Carbohydrates, proteins, fats, vitamins, minerals, water and fibre are the main groups of nutrients which together, but in variable amounts, make up a balanced diet.
- ii. Nutrients are grouped into macronutrients and micronutrients. Carbohydrates, proteins, fats and water are macronutrients, and vitamins and minerals are micronutrients.
- iii. Although most foods are mixtures of nutrients, many of them contain a lot of one nutrient and a little of the other nutrients. Foods are often grouped according to the nutrient that they contain in abundance.

- iv. Unsaturated fats are healthy fats; saturated fats are unhealthy fats. Therefore people in your community need to eat more of the unsaturated fats and try to reduce their intake of saturated fats.
- v. Vitamins are substances present in small amounts in foodstuffs and are necessary for the body to function normally. Vitamins are also called protective foods.
- vi. Minerals have a number of functions in the body including developing body tissues and supporting metabolic processes. The minerals that are of most importance are calcium, iron, iodine, zinc and fluorine.
- vii. In order to have a healthy life and good nutritional status, a person needs to eat a balanced diet. You need to know the commonly used food groups in order to advise the people in your community on how to have a balanced diet.

CHAPTER: 3

RESEARCH METHODOLOGY

1. INTRODUCTION:

This chapter deals with the methodology that the researcher followed to carry out her research. It gives blueprint of the study and helps in developing plan to proceed to conduct the research. This chapter gives a detailed discussion on Research Question, Population and Sample to be surveyed, method of data collection and questionnaire design that has been used.

The study was conducted in two blocks of Nawada District, Bihar namely Narhat and Pakribarawan.

For the conduction of the research the researcher designed a questionnaire according to the research question. The questions were related to the food items consumed by the target group. The researcher asked the respondents to recall their 24 hour diet consumption. The researcher also focused on the frequency of the meal and the quantity consumed.

The data collection tools adopted by the researcher were Structured and unstructured interview, Focused group discussion and home visits. The methods used were flexible and the researcher changed the methods according to the convenience of the study and the respondent.

The number of different food groups consumed by households within the previous 24 h preceding the survey was investigated through qualitative 24-h dietary recall. As mothers were mostly responsible for the preparation of meals for the households, they were asked to recall all the foods that the household members had consumed in the house in the past 24 h. Based upon these data, it was recorded whether the household (child) consumed food(s) from one or more of the following food groups: (1) cereals, (2) vegetables, (3) fruits, (4) meat, fish and seafood, (5) eggs, (6) legumes, nuts, and seeds, (7) milk and milk products. Each food group was counted only once irrespective of the number of food items consumed from it. The HDD score could therefore range from 0 to 7 depending upon the number of food groups the family ate from.

2. SAMPLE AND POPULATION:

It would normally be impractical to study a whole population, for example when doing a questionnaire survey. Sampling is a method that allows researchers to infer information about a population based on results from a subset of the population, without having to investigate every individual. Reducing the number of individuals in a study reduces the cost and workload, and may make it easier to obtain high quality information, but this has to be balanced against having a large enough sample size with enough power to detect a true association.

If a sample is to be used, by whatever method it is chosen, it is important that the individuals selected are representative of the whole population. This may involve specifically targeting hard to reach groups. For example, if the electoral roll for a town was used to identify participants, some people, such as the homeless, would not be registered and therefore excluded from the study by default.

There are several different sampling techniques available, and they can be subdivided into two groups: probability sampling and non-probability sampling. In probability (random) sampling, you start with a complete sampling frame of all eligible individuals from which you select your sample. In this way, all eligible individuals have a chance of being chosen for the sample, and you will be more able to generalise the results from your study. Probability sampling methods tend to be more time-consuming and expensive than non-probability sampling. In non-probability (non-random) sampling, you do not start with a complete sampling frame, so some individuals have no chance of being selected. Consequently, you cannot estimate the effect of sampling error and there is a significant risk of ending up with a non-representative sample which produces non-generalisable results.

i. TARGET POPULATION:

The population with which the researcher has dealt with encompasses all the women who are engaged with Jeevika in the given locations and have children within the age group of 6-12 months. Hence the women who were working with Jeevika and had children within the age

group of 6-12 months in Narhat village and nearby villages and those in Dawedha Village and nearby villages became the population for the research.

There were 7 VOs in Narhat Panchayat as told by the CNRP. There were between 3-5 eligible samples in each VO making the total sample size around 33. On cross checking with the list prepared at the Anganwadi Centre, the total eligible sample size in Narhat came out to be 36 women which included both women working with Jeevika and women who are not working in Jeevika.

The target population in Deodha village and Chaibasa village came around 40 women.

The sample was randomly selected for the study from the population. An elaborate list was obtained from the CNRP and CM of the area of study. In this case each individual is chosen entirely by chance and each member of the population has an equal chance, or probability, of being selected. However, if the selected individual was unavailable due to one or the other reason another individual was selected. There were around 4-5 women appropriate to be interviewed for the study topic in each VO.

ii. SAMPLE SIZE:

In Narhat Block, the focus of the research was in Narhat Village. The sample size is 31 out of 34 women in target population.

In Pakribarawa Block, the focus of the research was Deodha Village. Through the CM in Deodha village, the researcher came to know that there are 6 VOs in the area. However, due to unavailability of any sort of list in Deodha Village the researcher couldn't get the idea of sample size. The researcher also visited Chaibasa village. The researcher visited home to home to see if there is any eligible sample. At the end of the home visits the sample size came out to be 34.

Hence the total sample size for the study was 65.

3. QUESTIONNAIRE DESIGN:

Quite often questionnaire is considered as the heart of a survey operation. Hence, it is important to construct it carefully. If it is not properly set up, the survey is bound to fail. The general form, question sequence, question formulation and wording must be especially taken care of in a questionnaire. Here, in the study of finding barriers in achieving dietary diversification a combination of structured and non-structured questions were required to ask. Both open-ended and closed-ended questions were made part of questionnaire. The questions as proceeded moved from general to specific. The questions were designed as such that would make sense and would extract the required information.

The questionnaire was divided into following parts:

- iii. **General Information:** The questions in this section inquired about the name, education, type of family etc. of the respondents.
- iv. **Dietary Awareness:** The questions in this section aimed at asking the level of awareness in respondents regarding the knowledge of balance diet, nutrition etc.
- v. **Detailed Dietary Information:** This section was purely based on the topic of study. It inquires in detail the type of food that the mothers feed to their child in the last 24 hours.
- vi. **Eating Habits and Level of Autonomy with females:** This section inquires about the level of autonomy that the respondent enjoys in regard with cooking of food.

4. DATA COLLECTION:

It involves collection of primary data i.e data collected directly from the respondents for the first time as well as secondary data i.e. data available via various reports, websites, research papers etc.

Secondary data was collected from websites like WHO, UNAID, Ministry of Health, India etc.

CHAPTER:4

ANALYSIS AND FINDINGS:

INTRODUCTION:

After the successful completion of the survey, the researcher was able to identify the prevalent barriers coming in the way of achieving dietary diversification. After the barriers have been identified, the researcher tried to build relation between the response of respondents and their educational background, presence of Nutri-garden, attendance in meetings etc. Although the study was carried out in two block but there were similarities in the finding and hence they have been presented cumulatively.

FINDINGS: BARRIERS IN ACHIEVING DIETARY DIVERSIFICATION

- i. Poor awareness among the respondents:** Majority of the respondents are less aware of the importance of keeping varied food groups in their diet. This unawareness stems out of the fact that they don't know about the benefits of nutrients. Many of the respondents have shared their belief that till now many of the people have survived on potato and rice (mostly consumed in Bihar) and have experienced no problem at all.

The level of awareness regarding the health and dietary habits of child is so bleak that most of the mothers feel that their child will not be able to digest any food other than milk, rice, potato and chapatti. Here, chapatti, rice and potato all three come under same food group. A respondent used to believe that her child can only digest milk, rice and chapatti and hence used to feed only these three items.

- ii. Unavailability and unaffordability:** Some of the respondents cited unavailability of the required food items as they are unable to afford it. Poverty is the reason for some of the respondents. Many of the respondents are easily able to feed their children food items from 3 food groups. However, arranging for the fourth food group, which is usually a green leafy vegetable or a fruit, becomes a daunting task for them.

According to many respondents the pricing of fruits in the market are touching the sky and hence they prefer spending on necessary items rather than fancy items like fruits according to them.

- iii. Attitude of mothers:** This was surprising to note that many mothers give up on introducing their child with any new food on the pretext that child shows tantrums. Many a times children refuse to eat some food item. Taking example of a respondent, she told the researcher that her child only likes to eat dal rice. If she ever tries to feed her child any green vegetable the child just refuses to eat that. The respondent said that she had tried every tactics to make her child eat the vegetables but she was unable to feed. And that is why many mothers only feed what the children like rather than introducing any other nutritious food items.
- iv. Presence of synthetic substitutes in the market:** There are various flavors of cerelac available in the markets. These synthetic substitutes promise to provide complete nutrition to the children, however, to what an extent is still a question. Whether cerelac provides nutrition or not, it definitely makes lives of mothers easier. The mothers just have to mix the powder with water and the food is ready in seconds. Most of the respondents who have large families or 4-5 children resort to giving cerelac or biscuits. According to them it saves time and also satisfies the hunger of child. Then the researcher tried to reason that these synthetic food items are unhealthy for the child, the respondents argued that even the mothers in urban cities feed their children cerelac and their children are absolutely fine. Many of the respondents were using cerelac as an offshoot of demonstration effect.
- v. Going by the face value:** Most of the respondents differentiated between satisfaction of hunger and consuming nutritious food. Many respondents questioned that if their child looks physically healthy with what they are already feeding, why to put efforts in feeding variety of food items in a day. Mothers usually believe that if their child is physically fit, the child is healthy. However, if the proper nutrition don't reach child within the initial years it will definitely lead to some or the other problem. Many parents ignore mental health.

vi. Incomplete knowledge of Dietary Diversification: Respondents connect dietary diversification with eating variety of food items rather than eating variety of food groups. The concept of food groups is not clear to women even after conduction of FDD Campaign. So respondents after feeding rice, potato, dal and milk feel that they have fed their child four food groups.

On attending FDD Campaigns, the researcher realized that even when the women had doubts they felt shy in clearing their doubts. Rather than asking from the officer in charge, the women talk among themselves and hence their doubts remain unclear.

vii. Large no. of family members and pressure of household chores and marriage in early age: Many respondents who were interviewed have cited joint family as the reason for not being able to give required attention to their children. Many families have 7+ members living together and hence it becomes difficult for the mother to look after her child. Most of the times in joint families the child is brought up by the grand parents or other family members. The mothers are usually busy with the work.

The women here not only perform household chores but also look after the farms, cattle etc. they are highly occupied. Many respondents have accepted that they have very little say in deciding what the child will eat. This is usually decided by the elders who have more experience in raising children.

Due to other engagements, respondents have told that they are unable to put extra efforts in cooking food for their children. For example, they give liquid food items like dal, milk to the children and are not able to mash the vegetables for their child. But they have accepted that whenever they get time they feed vegetables and fruits to their child but are unable to do so daily.

viii. Less age gap between two children: The age gap between two children is surprisingly low. The researcher came across some of the respondents where the age gap between two children was 4-6 months. With the children of almost same age it becomes difficult for mothers to pay attention on the diet of children.

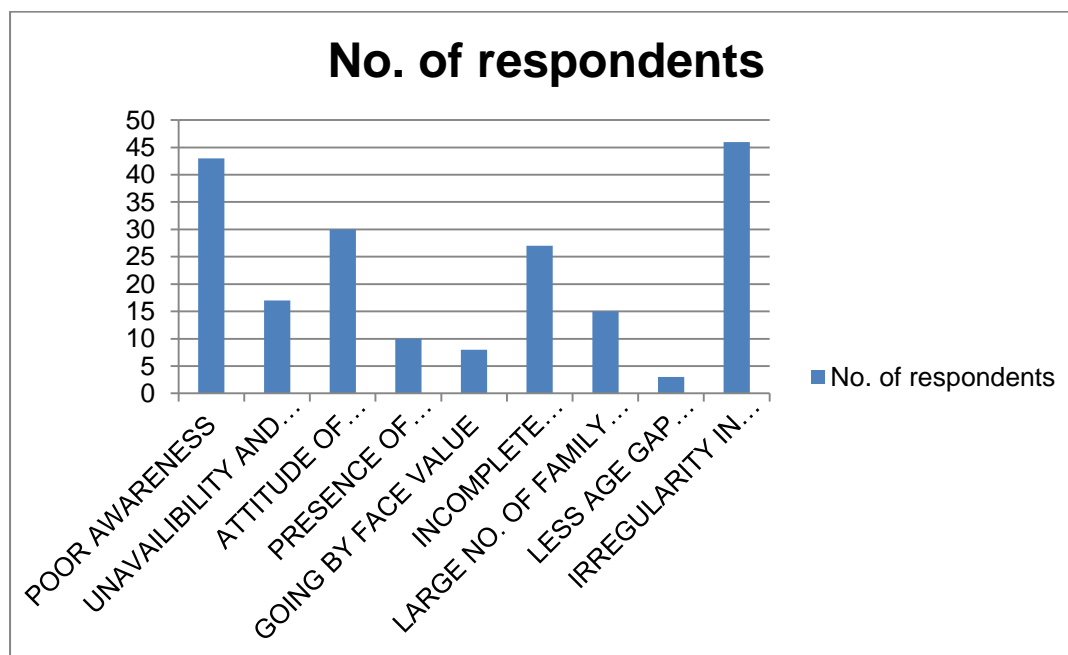
ix. Irregularity in attending SHG meetings: The meetings and campaigns conducted by Jeevika are the easiest medium for women in villages to become aware. The information is disseminated by the officers with whom women are familiar with. Most of the times CM and CNRP, who are among the women only, conduct meetings regarding dietary diversification. Despite of such comfortable environment in the meetings the attendance of women is extremely low. Pregnant women and mothers of 6-23 months children hardly attend meetings. Hence the information doesn't reach the beneficiaries. Moreover, those who attend meetings usually forget what they have been told or don't pay attention in the meetings. There should be a dedicated follow up.

These reasons are not mutually exclusive. Moreover, one respondent faces more than one barrier. These barriers which have been listed are combination of what the respondents have mentioned and what the researcher has observed during surveys.

ANALYSIS:

NO. OF RESPONDENTS AND BARRIERS FACED BY THEM:

How many respondents experience which barrier has been explained in the table as follows:



<u>BARRIERS FACED</u>	<u>No. of respondents</u>
POOR AWARENESS	43
UNAVAILABILITY AND UNAFFORDABILITY	17
ATTITUDE OF MOTHERS AND CAREGIVERS	30
PRESENCE OF SYNTHETIC SUBSTITUTES	10
GOING BY FACE VALUE	8
INCOMPLETE KNOWLEDGE	27
LARGE NO. OF FAMILY MEMBERS	15
LESS AGE GAP BETWEEN TWO CHILDREN	3
IRREGULARITY IN ATTENDING SHG MEETINGS	46

DIETARY DIVERSIFICATION SCORE:

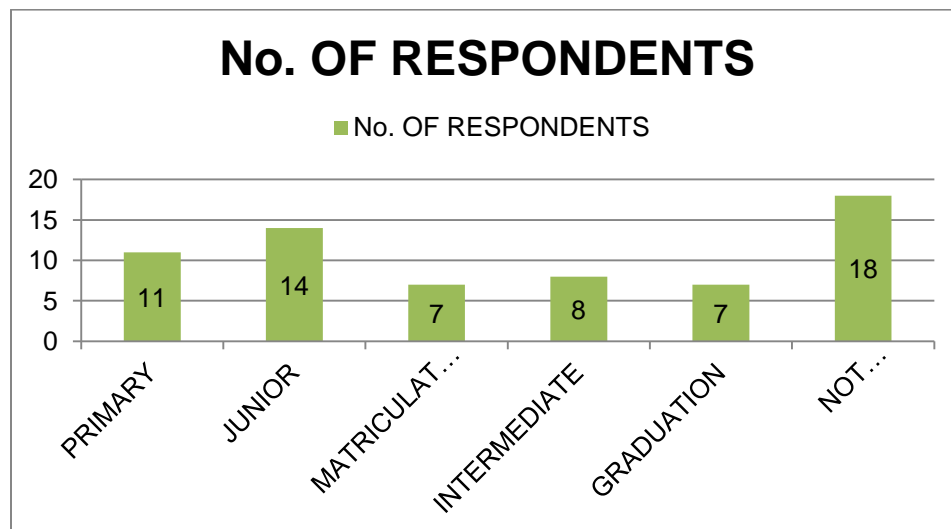
It is the score given according to the no. of food groups that the respondents consume in a day. For the children between 6-23 months of age, it is advised to consume 4 food groups out of 7 food groups. Hence the score will vary from 1 to 7. Following is the distribution of dietary diversification score among the respondents.

DD SCORE	NO. OF RESPONDENTS
0	0
1	0
2	0
3	47
4	16
5	2
6	0

EDUCATIONAL QUALIFICATION OF THE RESPONDENTS:

The questionnaire also examined the educational qualifications of the respondents which is mentioned as follows.

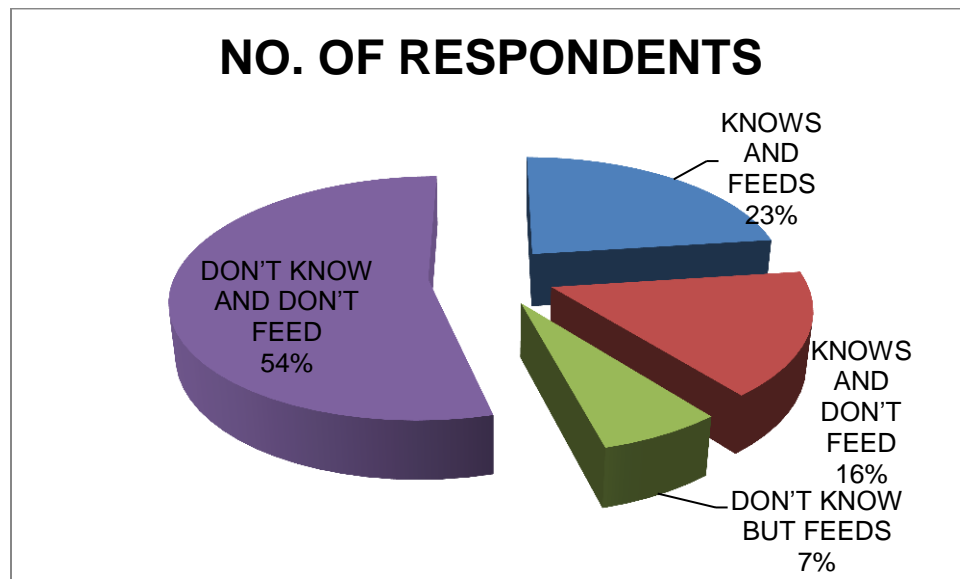
LEVEL OF EDUCATION	No. OF RESPONDENTS
PRIMARY	11
JUNIOR	14
MATRICULATION	7
INTERMEDIATE	8
GRADUATION	7
NOT EDUCATED	18



INTERPRETATION: The respondent had earlier thought that there can be a positive relationship between the level of education and following of diversification in diet. However, no such relationship was discovered. Many respondents had even completed their bachelors in biology and botany still they were unaware of the important role that nutrition plays.

AWARENESS REGARDING DIETARY DIVERSIFICATION AND ITS IMPACT:

There have been many respondents who were somewhat aware what the concept of dietary diversification and were feeding their children variety of food items from different food groups. But at the same time there were many respondents who despite being aware of the importance of diversification in diet were unable to feed their children. There were few respondents who were unknowingly providing their children with variety of food groups. That breakage has been shown as follows in the form of a pie chart.



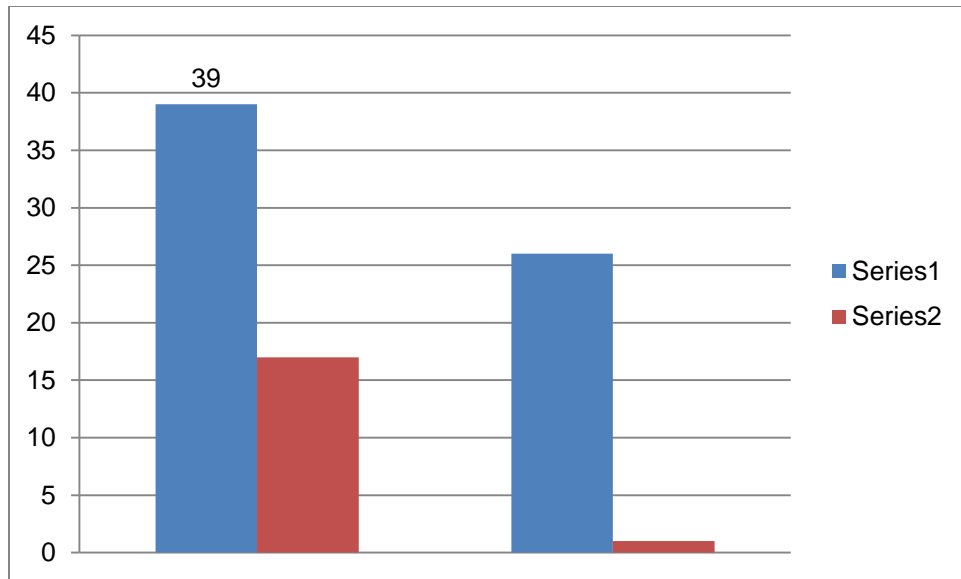
<u>CONDITION</u>	<u>NO. OF RESPONDENTS</u>	<u>PERCENTAGE</u>
------------------	---------------------------	-------------------

KNOWS AND FEEDS	14	23
KNOWS AND DON'T FEED IN RIGHT QUANTITY	10	16
DON'T KNOW BUT FEEDS	4	7
DON'T KNOW AND DON'T FEED	33	54

RELATION BETWEEN DIETARY DIVERSIFICATION AND PRESENCE OF NUTRI GARDEN:

Nutri garden has been an attempt of Jeevika to encourage people to plant locally available nutritious food items in their close vicinity. Through this practice people will be able to consume nutritious food items daily and that too free of cost. The food items which are promoted here depend totally on the location. Like, in both the blocks that the researcher has visited vegetables like brinjal, french beans, green leafy vegetables and papaya, guava in fruits are being promoted. The researcher also tried to notice how presence of Nutri garden at home helps in introducing variety in diet. Following are the findings.

AVAILIBILTY OF NUTRI GARDEN	NO. OF RESPONDENTS	RESPONDENTS FOLLOWING FDD
YES	39	17
NO	26	1



From the above presented data it can be easily concluded that presence of Nutri garden helps in achieving dietary diversification. However, one thing to notice that out of 39 respondents having nutria garden, only 17 of them are able to feed their children 4 food groups. This accounts for just 43.58%. Now this is something to make a point that presence of nutri garden alone doesn't guarantee dietary diversification. Various other factors also play a role. There was one respondent who was able to feed her child with 4 food groups through market access.



Figure: vegetables from nutrigarden

ROLE OF JEEVIKA IN PROMOTING DIETARY DIVERSIFICATION:

Jeevika and its community cadres are continuously working towards improving the situations at ground. They see themselves as a medium for spreading awareness and information. The knowledge of beneficiaries is respected and their decision to accept the information or not is welcomed by the officers. What Jeevika is working at seeks a drastic behavioral change, which takes years to achieve. Still the organization has reached homes and is positively affecting lives of many.

The team of Health, Nutrition and Sanitation (HNS) is very regular in carrying out workshops and campaigns. CM at SHG level, CNRP at VO level and MRP at CLF level are all giving their best to achieve their targeted goal.

For instance, The Food Dietary Diversification Campaign has been regularly conducted in every VO with utmost diligence. The content of the campaign has been thoughtfully designed and compiled in the Module 1. The module is complete in every sense and if implemented well it can bring the desired result. The photos from the campaign have been attached. Jeevika adopts interesting ways like making women sing song on the importance of nutrition etc. to bring an impact.

Not only this, Jeevika regularly conducts workshops and training for CM, CNRP, MRP and other concerned officers so that they are updated and can give their 100 percent.



Figure 1: view of FDD Campaign



Figure 2: plate showing diverse food groups



Figure 3: Placards for FDD Campaign

CHAPTER: 5

OBSERVATIONS AND RECOMENDATIONS:

- The researcher observed that most of the women are unwilling to attend the meetings of SHG or any other campaign. Due to this they remain untouched by the benefits. They find meetings boring and useless unless the women see some gain in attending the meetings. Hence, efforts should be made to make the meetings more interesting. There can be movie screening or power point presentations once in a while to make the meetings more exciting.
- As noticed, many women who attended meetings were unable to recall all the food groups and which food items come under which food group. Hence a flow chart should be provided to the target population. If printed flowchart cannot be provided, the women should be made to draw the vegetables and other food items on their own. This activity will also help them in remembering the food groups.
- Most of the women who feed their children at least 4 food groups in a day are also not much sure about what exactly food groups are and what nutrients they provide. They feed the food groups majorly because of the availability and for the variety in diet. Presence of Nutri Garden really helps in this regard.
However presence of Nutri garden is not always helpful. Almost all the houses have nutria garden sat their homes but very less of them were successful in feeding minimum four food groups.
- Many respondents are able to provide minimum four food groups to their children but not in the right amount. Most of the mothers feed their children only once/ twice a day with solid food and feed milk 4-5 times a day. Although measuring bowls are provided by jeevika but they are hardly brought into use.
- No gender discrimination has been noticed by the researcher in feeding practice.
- Those mothers who have less than 3 kids have shown to take more care of their children. Majority of the mothers who have been able to introduce diversity in the diet of their children have around 2 kids.

- Most of the respondents who have been successfully feeding their children four food groups are assisted by their mother in laws who have been regular members of Jeevika and who have been attending meetings. Joint families having less than 7 members have also shown improved Dietary Diversification score than the rest of the families having more family members.
- Looking at the age gap between two children, there should be immediate emphasis on family planning. Age gap of less than 3 years is detrimental to the health of both mother and the child. However, age gap of as less as 12 months has also been noticed during the survey.
- Even male members of the families should also participate in the talk of nutrition. They should also be aware of the importance of variety in diet and what are the benefits of consuming nutrients. Male members should be aware of the diet their pregnant wife/sister/other relative should have and also what their child should be eating.
- The Module followed and designed by Jeevika for carrying out the talks is very impressive and helpful. If followed well it will be definitely successful in bringing a positive change everyone is yearning for.
- In order to get more in depth knowledge of what unavailability of diversity in diet might do to a child, weighing could be done. However, the researcher could not arrange for a weighing machine at the time of doing survey. It was also not feasible for the researcher to carry the machine to every household interviewed. But this activity can be taken up during the meetings where all the females will assemble and children can be weighed.
- As it was seen in many of the meetings, especially in SHG meetings, there were only 1-2 women who were speaking. Rests of the other women were merely passive listeners. More participation in the meetings should be encouraged. The participation can be encouraged by assigning any topic of interest of women to speak on in every meeting. Each woman should speak on a topic of her liking. Topics can be local, religious, cultural, educational etc. Speaking will give the women confidence.

- There are many ponzi SHGs running. The meetings of the SHG is just mentioned on the registers and don't happen in reality. There should be more stringent checking on the ground.
- On speaking with the community cadres one thing that can be concluded is that the target population will ultimately do what they wish. For bringing any positive change behavioral change is required.

CHAPTER: 6

CONCLUSION:

This Research Report tries to initially explain what actually the concept of dietary diversification is and how it is beneficial for an overall development of both women and children. The report tries to include all the possible reasons that act as a barrier in achieving the desired score of dietary diversification. The one thing that can be concluded from the study is that there are combination of barriers that affect the mothers and caregivers. In order to eliminate these barriers the organization is already focusing on behavioral changes. However, influencing behavior of people for good is a daunting task to achieve. It may take decades but improvement is bound to happen if the work is carried out with the same vigor with which it is done presently.

The researcher got immense opportunity to learn and adapt to different situations. The course of study has helped the researcher to work beyond her comfort zone and has helped the researcher to experience the nuances of rural India.

CHAPTER: 7

LIMITATIONS OF THE STUDY:

The researcher suffered the following limitations while carrying out her study:

- Many times the list of target beneficiaries in the community was not complete. Hence the respondent had to cluelessly visit homes in search of target population
- While the company of CM/ CNRP was necessary and helpful. However, in the presence of them unbiased responses from the respondents is difficult to expect.
- Due to the specificity of the topic, many a times it was a tedious task to search the target population in adequate numbers.
- Due to the small sample size, not much generalization can be made.
- Researcher was unable to arrange a weighing machine during the time of conducting survey otherwise more insightful knowledge could have been gathered.

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ANNEXURE:

QUESTIONNAIRE

• **GENERAL INFORMATION:**

1. How old are you?
2. What is the highest level of school you attended?
3. Type of family you live in
4. How many children are there in the family?

• **DIETARY AWARENESS:**

1. Are you aware of balanced diet?
2. Are you aware of micronutrients?
3. What should be the ideal diet given to an infant?
4. What do you feed your infant?

• **DIETARY INFORMATION:**

1. Which food items do you consume daily?
- 2.

SR. NO.	FOOD GROUPS	YES/ NO	REASONS	FROM WHERE DO YOU GET IT?
1.	RICE, MAIZE, POTATO, JWAR ETC (ANAJ AND KAND MUL)			
2.	DAL, DRY FRUITS AND FALIYA			
3.	MEAT AND FISH			
4.	EGG			
5.	GREEN VEGETABLES AND YELLOW/ ORANGE FRUITS			
6.	MILK AND MILK PRODUCTS			
7.	OTHER VEGETABLES AND FRUITS			

1. Do you own a land? What do you produce?

2. How much do you keep for self consumption?

- **EATING HABITS:**

1. Who consumes first in the family?
2. What is the eating capacity of family members?
3. Who usually cooks food?

