

**Infants and Young Child Feeding Practices
among Under Two Years Children
in Navdurga VDC of Dadeldhura District**



A Dissertation Submitted to the
Central Department of Sociology, Tribhuvan University
in Partial Fulfillments of the requirements for Degree of
Master of Arts in Sociology



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RECOMMENDATION LETTER

This is to certify that **Gobind Raj Joshi** has completed the dissertation on "**Infants and Young Child Feeding Practices among under Two Years Children**" under my guidance and supervision. I therefore recommend this dissertation for final evaluation and approval.

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APPROVAL LETTER

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LETTER OF DECLARATION

I hereby declare that the dissertation entitled that "**Infants and Young Child Feeding Practices among Under Two Years Children: A Cross Sectional Study in Navdurga VDC of Dadeldhura**" Submitted to the Tribhuvan University, Central Department of Sociology, Kitripur, is my original work done in the partial fulfillment of the requirement for the degree of Master's of Arts in Sociology, that it contains no material published. I have not used its materials for the award of any kind and any other degree. This is prepared under the guidance and supervision of Madhusudan Subedi, Professor of Central Department of Sociology Kirtipur, Kathmandu.

.....

Gobind Raj Joshi

Date:- May, 2017

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Gobind Raj Joshi

ABBREVIATIONS

BF	Breastfeeding
C/S	Cesarean Section
CF	Complementary Feeding
CI	Confidence Interval
df	Degree of Freedom
DoHS	Department of Health Services
EBF	Exclusive Breastfeeding
IYCF	Infant and Young Child Feeding
MCN	Maternal and Child Nutrition
MDAG	Marginalized and Disadvantaged Group
MICS	Multi Indicator Cluster Survey
MoHP	Ministry of Health and Population
NDHS	Nepal Demographic Health Survey
NGO	Non-Governmental Organization
NHRC	Nepal Health Research Council
ORS	Oral Rehydration Solution
SAIFRN	South Asia Infant Feeding Research Network
UNICEF	United Nations Children's Emergency Fund
VDC	Village Development Committee
WHO	World Health Organization

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CHAPTER I

INTRODUCTION

1.1 Background

Malnutrition has been responsible, directly or indirectly, for 60% of the 10.9 million deaths annually among children under five. Well over two-thirds of these deaths, which are often associated with inappropriate feeding practices, occur during the first year of life. No more than 35% of infants worldwide are exclusively breastfed during the first four months of life; complementary feeding frequently begins too early or too late, and foods are often nutritionally inadequate and unsafe. Malnourished children who survive are more frequently sick and suffer the life-long consequences of impaired development. Rising incidences of overweight and obesity in children are also a matter of serious concern. Because poor feeding practices are a major threat to social and economic development, they are among the most serious obstacles to attaining and maintaining health that face this age group (WHO 2008).

Infant and Young Child Feeding (IYCF) practice includes exclusive breastfeeding up to 6 months and timely initiation of feeding solid/semi-solid foods from 6 months, feeding small amounts and increasing the amount of foods and frequency as the child gets older while maintaining breast feeding (WHO 2008).

Infant and young child feeding practices directly affect the nutritional status of children under two years of age and, ultimately, impact child survival. Improving infant and young child feeding practices in children 0–23 months of age is therefore critical to improved nutrition, health and development of children (WHO 2008).

WHO has recommended that children should be exclusively breastfed during first six months of life as breast milk is sufficient is enough to meet the nutritional requirements of children till then. A child with adequate nutrition could only be healthy public in the future, such healthy persons only have healthy body and healthy mind; this healthy body could only develop the nation in the right way.

Nutrition is a crucial, universally recognized component of the child's right to the enjoyment of the highest attainable standard of health as stated in the Convention on the Rights of the Child. Children have the right to adequate nutrition and access to

safe and nutritious food, and both are essential for fulfilling their right to the highest attainable standard of health.

Food is the most essential substance of human being. The requirement of food initiated from the womb as human life develops there. Human beings do not eat all edible things or objects available in nature. Food is seen by humans through the eyes of beliefs, knowledge, socio-cultural perspectives (Poudel 2011). Therefore, in sociological term food is not only the nutritious things but also a socially and culturally constructed thing. Different socio-cultural groups have defined the foods in different ways.

The food is nothing itself but it becomes edible plants only through a system of culture and cultural understanding of human beings (Poudel 2011). People perception and understanding towards the nutritional food may be varied among different socio-cultural groups within the same community.

Nutritional status of the child is also dependent to the feeding practices existed in the family and community. Different community has their own different ideas attitudes beliefs and assumptions, which determine the breast feeding and supplementary feeding practices. Every community has their own culture and norms upon which people have their own practices towards the food related behavior which seems to be unhealthy and are known to be risk behaviors.

Various groups of people have their own socio-cultural practices, perception and use value about their food item. Different group of people practice different food items according to their culture. Culture plays vital role for adopting their food items. In this sense we can say that culture is one of the determinants to practice foods. In different caste/ethnic groups they practice different food varieties in their different festivals e.g. what food varieties we observe in Newar's festivals that can't be seen in Chhetri and Bahun's festivals, likewise, it differs from community to community (Subedi 2003).

1.2 Statement of the Problem

Adequate nutrition is essential for children's health and development. Globally it is estimated that under nutrition is responsible, directly or indirectly, for at least 35% of deaths in children less than five years of age. Under nutrition is also a major cause of disability preventing children who survive from reaching their full development

potential. An estimated 32%, or 186 million, child below five years of age in developing countries are stunted and about 10%, or 55 million, are wasted (WHO 2010).

Early nutritional deficits are also linked to long-term impairment in growth and health. Malnutrition during the first 2 years of life causes stunting, leading to the adult being several centimeters shorter than his or her potential height. The first two years of life provide a critical window of opportunity for ensuring children's appropriate growth and development through optimal feeding (WHO 2010).

The main reasons for malnutrition are different i.e. poverty, food insecurity, unbalance distribution, illiteracy, lack of health services, regarding different communities and lack of appropriate infant and young child feeding practices. In Nepal, breastfeeding is almost universal, and exclusive breastfeeding for the first six months is widespread. The NDHS 2011 shows that 70 percent of children are exclusively breastfed. This is an improvement from the NDHS 2006 data when the figure was 53 percent. However, the WHO recommended 3 IYCF practices are still very low (24%). Eighty-eight percent of infants age 0-1 months and 74 percent of infant age 2-3 months receive breast milk only, compared with 53 percent of infant age 4-5 months. In addition, 10 percent of children under age 6 months receive plain water in addition to breast milk, and 9 percent receive other milk in addition to breast milk (Population Division 2012).

In general, women are not acknowledged to have special dietary needs during pregnancy. Growth and development of a child will depend so much on his/her mother's nutritional status and her care and practices for the child. Feeding practices vary substantially across caste/ethnic groups and that even with these groups; the pattern of feeding across wealth categories varies (USAID 2011).

1.3 Research Question

Following of the research questions were answered in this study:

1. What are the practices and factors associated with early initiation of breastfeeding?
2. What are the practices and factors associated with exclusive breastfeeding?

3. What are the practices and factors associated with complementary feeding?
4. What are the practices and factors associated with feeding meal diversity?

1.4 Objectives of the Study

1.4.1 General objectives

To explore the practices regarding Infant and Young Child Feeding (IYCF), among mothers with children below 2 years of age in Navdurga VDC of Dadeldhura district.

1.4.2 Specific objectives

- 1) To assess the practices of early initiation of breastfeeding.
- 2) To assess the practices of exclusive breastfeeding.
- 3) To explore the practices of complementary feeding with meal diversity.
- 4) To find out the association of different factors with IYCF practices.

1.5 Rationale/Justification of the Study

- a) Nutritional problems are being major underlying causes of child morbidity and mortality, not only for this nation but for the whole world, which directly depends upon feeding practices.
- b) In order to design and implement effective and appropriate interventions for improving IYCF practices in the diverse regions of Nepal, a sound understanding of local breastfeeding and complementary feeding practices in each setting is essential.
- c) Promotion of optimum breastfeeding and complementary feeding has been recognized as a key priority of Ministry of Health and Population. So there is the need of research studies to explore the existing feeding practices and factors responsible for evidence based program planning and interventions.
- d) Good nutrition during the 1,000-day period between the start of a woman's pregnancy and her child's second birthday is critical to the future health, when children start their lives malnourished it affects their physical and cognitive development; such negative effects are largely irreversible.

1.6 Conceptual Framework

In this research, Conceptual framework helped to analyze the relationship between feeding practices among the children below two years of age and various socio-

demographic and socio-economic characteristics like, caste, mother’s age, education status, type of family, family income, sex of child, birth order, place of birth. So the interrelationship between such characteristics with feeding practices of less than two year children among the people Navdurga VDC of Dadledhura district could be revealed. There are variations in feeding practices with different socio-economic background of the people.

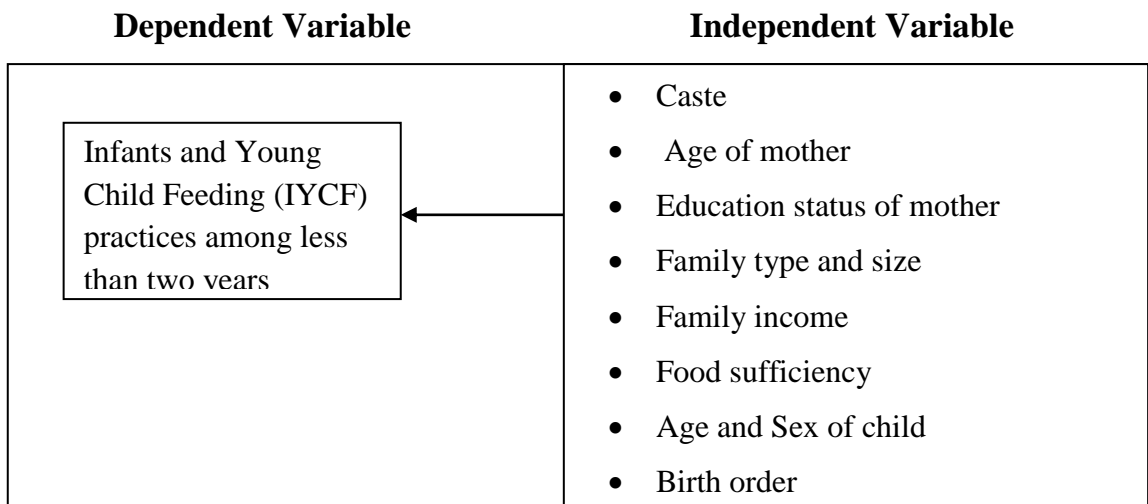


Figure 1:-Conceptual Framework

The conceptual framework shows that Infants and young feeding as dependent variable or outcome variable may be affected by independent variables stated in the framework. Independent variables include the characteristics of respondents and children along with the characteristics of the family.

CHAPTER II LITERATURE REVIEW

Feeding practices play a crucial role in child development. Poor feeding practice practices can adversely impact the health and nutritional status of children, which in turn has direct consequences for their mental and physical development. Breastfeeding saves more lives than any other preventive intervention. IYCF directly affects the nutritional status of children below 2 years of age and ultimately impact child survival.

South Asia carries the highest burden of childhood under nutrition in the world with close to 50% of the world's undernourished children living in this region. A combination of complex biological, behavioral and social factors underpins the high burden of under nutrition in this region. Critical factors related to child under nutrition in South Asia include poor maternal nutrition and early childbearing, low status of women, high levels of poverty and food insecurity, social inequity, a high burden of infections and poor care and feeding practices. Poor infant and young child feeding (IYCF) practices are recognized as a significant contributor to under nutrition globally (Moran & Dewey 2012).

A Report of Assessment of Status of Infant and Young Child Feeding (IYCF) of Afghanistan 2003 states that 'the only source has data at the national level is MICS (Multi Indicator Cluster Survey) conducted by UNICEF and Afghanistan government in the year 2003. The survey has some indicators, such as proportion of exclusive breastfeeding and complementary feeding rate. The difference between MICS and individual NGOs studies is big which could not give the real picture of which study are valid and reliable. As in the NGOs study exclusive BF is very low (the highest is in Kabul City (44%) but in MICS it is 93% that is doubtful and questionable (Safi et.al, 2005).

World Health Organization (WHO) has recommended exclusive breastfeeding for the first six months, addition of nutritionally adequate, age-appropriate complementary feeding at 6 months with continue till at least 2 years. These feeding practices, if followed appropriately can decrease Infant Mortality by 19% and can prevent malnutrition especially in developing countries as ours. (Gareth et.al, 2003)

Suboptimal breastfeeding accounts for death of 1.4 million children every year. (Victoria et.al, 1989) Of all proven preventive health and nutrition interventions, IYCF has the single greatest potential impact on child survival. Optimal infant and young child-feeding practices are crucial for nutritional status, physical and mental growth, development, health, and ultimately the survival of infants and young children. Infants aged 0-5 months who are not breastfed have 7-fold and 5-fold increased risks of death from diarrhea and pneumonia, respectively, compared with infants who are exclusively breastfed.(Victoria et.al, 1989) At the same age, nonexclusive rather than exclusive breastfeeding results in more than 2 fold increased risk of dying from diarrhea or pneumonia (Arifeen et.al, 2001).

Golden thousands days for mother and children is considered as windows of opportunity, more than 80% of growth and development of children occurred at this period. Intervening at this stage positively affects future outcome and development. Feeding practices play a critical role in child development. Poor feeding practices can adversely impact the health and nutritional status of children, which in turn has direct consequences for their mental and physical development. The duration and intensity of breastfeeding also affect a mother's period of postpartum infertility and hence, the length of the birth interval and fertility levels.

Early initiation of breastfeeding is important for both the mother and the child. Early suckling stimulates the release of prolactin, which helps in the production of milk, and oxytocin, which is responsible for the ejection of milk. It also stimulates contraction of the uterus after childbirth and reduces postpartum blood loss. The first liquid to come from the breast, known as colostrum, is produced in the first few days after delivery. Colostrum is highly nutritious and contains antibodies that provide natural immunity to the infant. It is recommended that children be fed colostrum immediately after birth (within one hour) and that they continue to be exclusively breastfed even if the regular breast milk has not yet started to flow.

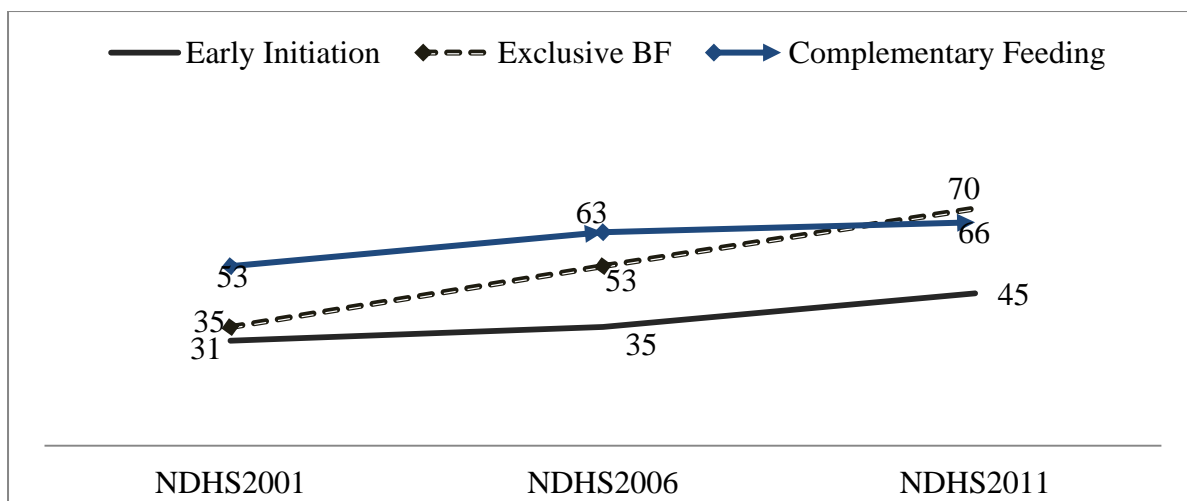


Figure 2:-Child Feeding Trends in Nepal

Breastfeeding in Nepal is almost universal, and exclusive breastfeeding for the first six months is widespread. Initiation of breastfeeding within an hour of delivery improved over the past decade, from 31 percent in the 2001 NDHS to 45 percent in the 2011 NDHS.

Exclusive breastfeeding is recommended in the first few months of life because breast milk is uncontaminated and contains all the nutrients necessary for children. There is significant improvement from the 2001 NDHS, when the figure was 35 percent and last data of NDHS 2011 show that 70 percent of children under 6 months are exclusively breastfed.

The minimum infant and young child feeding (IYCF) practices for children 6-23 months are defined as continued breastfeeding, feeding at least the minimum number of times per day (according to age), and feeding from the minimum number of food groups per day. Complementary feeding practices were also increased from 53% in 2001 NDHS to 66% in 2011 NDHS.

2011 NDHS results on Infant and Young Child Feeding (IYCF) practices shows that 70 percent of children under age 6 months are exclusively breastfed and 66 percent of children 6-8 months (breastfed and non-breastfed) are introduced to complementary foods at an appropriate time. Four of five Nepalese children age 0-23 months breastfed appropriately for their age. This includes exclusive breastfeeding for children age 0-5 months and continued breastfeeding along with complementary

foods for children age 6-23 months. Four-fifths of children under 6 months are predominantly breastfed (Population Division 2012).

Infant and young child feeding practices were found to have positive effects while controlling for the strong relationship between maternal and child nutritional status, thus demonstrating the potential for good practices to further improve child growth. Exploration of IYCF practices among sub-groups of the population by geographic location and ethnic group/caste revealed significant differences in prevalence of those following recommended practices (Crum et.al, 2013).

CHAPTER III METHODOLOGY

3.1 Rationale for Selecting the Study Area

The study site was Navdurga VDC of Dadeldhura district that lies on the far western hill region of country. As per the census report 2011, 695 households with 3395 population are residing in the VDC and as per the VDC source about 50% of the Dalit population residing recently.

Dalit lies under the caste system of Hindu religion. It is considered as the lowest caste among four hierarchical levels of caste. Dalit are religiously suppressed group for thousands years, still they are untouchable and socially deprived group. Their access to the developments sector is not sufficient yet. The group is really disadvantaged and oppressed. So the group was included in Marginalized and Disadvantaged Group (MDAG), as their socio-economic status is not satisfactory. The knowledge and practices exist in this group shows higher vulnerability of different health problems including malnutrition. The need to explore feeding practices among under two years children as compared to non-Dalit is most.

3.2 Study Design

Descriptive cross-sectional study was followed along with the exploration regarding various infants and young child feeding practices existed in the community. The research has been descriptive in this sense the research described the socio-demographic and socio-economic characteristics of mothers and children. Socio-demographic characteristics include age, education status, caste of mothers and age and sex of children along with family status, whereas socio-economic characteristics followed by occupation of mother, family income source, land availability and food sufficiency in the family. Moreover, research was explorative in this sense that it was also explored the relationship between feeding practices and its relationship with socio-demographic and socio-economic determinants. Quantitative methods were carried out to complete the whole activities.

3.3 Study Variables

Dependent Variables

Dependent variables are also known as outcome variables. In this research we are studying to identify the prevailing knowledge and practices regarding child feeding in Navdurga VDC. These outcomes were:

- a) Practice on early initiation of breastfeeding
- b) Practice on exclusive breastfeeding
- c) Practices regarding complementary feeding
- d) Practices regarding meal frequency and diversity

Independent Variables

These variables do not depend upon other variables for the particular purpose. These are also known as determinants for this study.

- a) **Caste:** Caste and religion are socially stated characteristics since the evolution of human society. With the changing trend of society the concept regarding caste and religion are also changing. The concepts existing in the society may have positive or negative impact over the feeding practices.
- b) **Age of mother:** Age of any person particularly affects the level of understanding of person, it may occur through an experience or from self-awareness. We can assume that higher the age, better the knowledge that ultimately affects the practice of mother.
- c) **Educational status of mother:** Education status of a mother shows the level of understanding. Higher the education larger the number of information received. We can assume that mother with higher education status was exposed to larger number of information that may include the messages regarding feeding practices also, which ultimately affects the IYCF practices.
- d) **Family size:** Number of family members in the family shows the distribution of the resources over the family members. Larger the family size scarce the resources. This may mostly affect distribution of food adversely affect the feeding practices. For some instance if the number of productive manpower is higher it may result positive impact over feeding practices.
- e) **Family type:** Composition of family is also taken as an important determinant for IYCF practices. Families along with elder parents have an opportunity to rear the child appropriately, while others have less opportunity. There may be demerit to

have insufficient food in case of composite family with large member. So, here both the positive and negative impact may occur.

- f) **Age of child:** As every child is new for this world. As their age they have to feed the type of food suitable for them and this can fulfill nutritional requirements. The type of food and feeding practices were applied for particular age was assessed.
- g) **Sex of child:** Gender factor is one of the significant determinants as cultural practices have impact over various behaviours and traditions existing in society that may include feeding practices also.
- h) **Food sufficiency:** Food sufficiency in the family assures that the mother and child get adequate and variety diet, so that the appropriate feeding practices may be ensured.
- i) **Income of family:** Family income is one of the most important determinants which show how far a family is able to fulfill scarce resources and so that the child get appropriate feeding.
- j) **Occupation of mother:** Occupation of mother has both the impact. It helps to improve economic status of the family and in other hand it also affects the duration of staying mothers with child, which can inversely affects the feeding practices.

3.4 Study Population and Unit of Analysis

The study population was mothers having children below two years of age while the unit of analysis was the children below 2 years of age.

3.5 Sampling Technique and Sample Size

A cross-sectional study was conducted during Chaitra 2073 in Navdurga VDC of Dadledhura district. The VDC for study was selected purposively. The study area is rural area with diversified caste where majority of population belong to Dalit groups. As per census 2011, it has population of 3395 living in 695 households. The study population was mothers and their children aged 0–23 months.

Total population of the children aged 0–23 months in Dadeldhura district was 6,710. And we have targeted number of 0-23 months children was given by Ministry of Health for health facility purpose. The targeted number of 0-23 months children in

Navdurga for the FY 2073/74 was 167. Assuming the Prevalence of IYCF practices in Navdurga VDC is 50%, (i.e. $p=0.5$).

Sample size was calculated as;

$$n = \frac{N}{1+N(e)^2}$$

Where;

N =Total population of study group= 167,

e = Allowable error= 7% (i.e. 0.07)

Finally n = required sample size= $91.84 \approx 92$

Hence, Sample size for the study was obtained 92.

The list of the children aged 0–23 months was obtained from immunization register maintained by Navdurga Health Post. A total of 92 children were selected from the sampling frame of 167 children using systematic random sampling. The mothers of selected children were interviewed by visiting their home. First mother was selected randomly and then every third (having gap of two) mothers were interviewed.

3.6 Data Collection Tools and Techniques

3.6.1 Tools of Data Collection

- **Structured questionnaires:** Questionnaire for interview was prepared as per the criteria of WHO standards. The questionnaire was developed to reveal quantitative information mostly.

3.6.2 Techniques of Data Collection

- **Interview:** For the collection of data two persons working in health sectors were oriented about the questionnaire along with the researcher.

3.7 Ethical Consideration

- Informed consent was verbally taken from participants prior to collection and the purpose of the data collection was also informed.
- No force was given to participants.

3.8 Validity and Reliability of the Study Tools

- a) Research instruments were developed based on WHO research guideline.

- b) Pretesting was done under similar setting of Masthamandu VDC and necessary manipulation was made accordingly.
- c) Time to time consultation with guide and other experienced personnel.
- d) Reviewing the literature throughout the research.

3.9 Pretesting the Data Collection Tools

In order to maintain the validity and reliability of research instrument, pretesting was conducted among 10 percent population of sample size under same setting as study site to modify the omission and error on the basis of their suggestion.

3.10 Potential Bias

Generally descriptive type of study has less chance of bias although there might be recall bias during interview.

3.11 Data Analysis and Interpretation

After collecting the data, it was coded manually with necessary symbols every day and entry was made accordingly in IBM SPSS Statistics 20. Analysis of data and association between variables was measured in SPSS with the calculation of chi-square value. The observed p-value was only significant at 95% of confidence interval at respective degree of freedom. Fisher's exact test also applied for the associations where chi square test did not meet sufficient criteria.

Though, the study was conducted in small area, it's findings could not be generalized at national level but could be significantly representative for Dadeldhura district.

3.14 Operational Definitions

- i. Infant and young child feeding practices:** The following practices early initiation of breastfeeding, colostrum feeding, use of bottle for feeding, pre-lacteal feeding, exclusive breastfeeding, introduction to complementary feeding, meal frequency, use of oil/ghee in preparing child's food and feeding practice of diverse foods.
- ii. Infant and young children:** Children below 2 years of age (between 0-23 months).
- iii. Early initiation of breastfeeding:** Initiation of breastfeeding within one hour of birth.

- iv. **Exclusive breastfeeding:** Feeding breast milk (including milk expressed or from a wet nurse) only for the child for full six months of age. It allows Oral Rehydration Solution (ORS), drops, syrups (vitamins, minerals, medicines). It will not include the children who received pre-lacteals.
- v. **Complementary feeding:** Feeding breast milk (including milk expressed or from a wet nurse) and solid and semi-solid foods. It allows any food or liquid including non-human milk and formula feeding for the children 6-23 months of age. It will not include non-breastfed children.
- vi. **Bottle feeding:** Feeding any liquid (including breast milk) or semi-solid food from a bottle with a nipple or teat.
- vii. **Family size:** Total number of children that the mother had born.
- viii. **Birth order:** The order of birth of child.
- ix. **Knowledge of mother on IYCF:** Knowledge of mother on;
 - a. Time for early initiation of breastfeeding (within one hour)
 - b. Colostrum feeding (first milk of mother)
 - c. Use of bottle for feeding (not used)
 - d. Pre-lacteal feeding (not fed)
 - e. Age of exclusive breast of child (less than six months)
 - f. Time for introduction of complementary foods-introduction of solid and semi-solid food (at 6 months of age).

The mothers who will able to say the correct answers given in the brackets above on each topic separately were defined as having good knowledge.

- x. **Minimum dietary diversity:** Food items categorized into the following seven groups;
 - a. Grains, roots and tubers
 - b. Legumes and nuts
 - c. Dairy products (milk, yoghurt, cheese)
 - d. Flesh foods (meat, fish, poultry and liver/organ meats)
 - e. Eggs
 - f. Vitamin A rich fruits and vegetables
 - g. Other fruits and vegetables

The cut-off at-least four of the above seven food groups were selected to find out the minimum dietary diversity. Mothers, who fed their child more than equal to four food items in the last 24 hours at the time of the survey, was categorized as feeding adequate diversity of food.

- xi. Meal frequency:** The number of times that the child was fed as per the age requirement in addition to breastfeeding. According to WHO, 2-3 meals per day for 6-8 months old children and 3-4 meals per day for 9-23 months old children.
- xii. Occupation of mother:** Major share of involvement of mother in activities like agriculture paid jobs, small scale business and labor for the earning and livelihood.
- xiii. Income status of the family:** The average monthly income of the family expressed in the monetary term (In NRs/Month).
- xiv. Land ownership:** Only those families in which any member of the family who had ownership certificate (land owned legally according to government rules).
- xv. Duration of food sufficiency:** It means that how many months the food produced from farmland owned by the family is sufficient to eat.
- xvi. Availability of food in family:** It means the sufficiency of food for daily meal.
- xvii. Place of delivery:** Place where the mother had given birth to their children.

CHAPTER IV FINDINGS AND INTERPRETATION

4.1 Background Information of Respondents

4.1.1 Socio-Demographic Characteristics

The findings related to socio-demographic characteristics of the respondents are distributed in Table 1. These socio-demographic characteristics are determinants for the study, as these determinants have direct or indirect impact on feeding practices. All together 92 mothers with the children of 0-23 months of age were participated in the study.

Table 1: Socio-Demographic Characteristics of Respondents

Characteristics	Frequency	Percentage
Religion (n=92)		
Hindu	92	100.0
Caste (n=92)		
Dalit	42	45.7
Chhetri	39	42.4
Brahman	10	10.9
Thakuri	1	1.1
Age of Mother (n=92) (Mean Age-25.15Yrs Min-16 Max-40)		
Below 20Yrs	5	5.4
20-24Yrs	43	46.7
25Yrs or above	44	47.8
Marital Status (n=92)		
Married	91	98.9
Divorced	1	1.1
Education Status of Mother (n=92)		
Illiterate	6	6.5
Simple Literate	23	25.0
Higher Secondary	55	59.7
Higher Education	8	8.7
Occupation of Mother		
Housewife	89	96.7
Teacher	2	2.2
Daily wage employee	1	1.1
No. of Live Births (n=92) (Average live births-2.15, Min-1, Max-6)		
One	34	37.0
Two	29	31.5
Three or more	29	31.5

Source: Field Survey 2017

Caste and religion are socially stated characteristics since the evolution of human society. With the changing trend of society the concept regarding caste and religion

are also changed. The concepts existing in the society may have positive or negative impact over the feeding practices. Avoiding colostrums feeding, feeding prelacteal food are the malpractices whereas weaning at 6th months, feeding *jaulo*, *sattu*, *sutkeri* *khuwaune* are considered as good practices. In the study all of the respondents have faith on Hinduism. Hinduism has created caste system in four categories; namely: Brahman, Chhetri, Baishya and Shudra. Among these, first three are considered as relatively upper castes and last one shudra as Dalit or untouchable caste. As we have diverse caste in the study area, majority of respondents 45.7%(42) were of Dalit Caste; relatively marginalized and disadvantaged group which is followed by 42.4%(39), 10.9%(10) from Chhetri and Brahman respectively.

Age of mother may alter the knowledge and understanding of mother, hence the practice also affected. Age of the mother also affect the health status of child. Lower the age higher the chances of health problems such as, low birth weight, malnutrition, undergrowth and underdevelopment of child. Age of respondents was distributed from 16 to 40 years with the mean age 20.25 years. At the time of study there were 5.4%(5) mothers below the age 20 years; this age is regarded as adolescent a critical period for child bearing and 46.7%(43) mothers lies within the age group 20-24 years, whereas the proportion of mothers above the age 24 years was 47.8%(44). Almost all of the respondents (99%) were married and staying with their husband.

Education status of a mother shows the level of understanding. Higher the education larger the number of information received. We can assume that mother with higher education status was exposed to larger number of information this may include the messages regarding feeding practices also, that ultimately affects the IYCF practices. Among the respondents 6.5%(6) were illiterate, 25%(23) attended non-formal education while 58.5%(63) attended some sort of formal education varying primary to degree education.

Occupation of mother reflects the time provided to rear and cares the children. Most significant proportions of mothers (97%) were engaged in household work as they were more close to their children. And rest 3% of respondents left home for their occupation and may have less time to spend with their children.

Number of live births by a mother reflects how far a mother is experienced in rearing and caring of children. Mother with one child shows less experience and more time to

rear and having more children shows more experience but relatively less time to rear and care children. There were 37%(34) mothers with single live births and more than 60% had 2 or more live births. The number of live children in a family ranged from one to six.

4.1.2 Family and Socio-economic Characteristics

In table 2 family and socio-economic determinants of respondents were presented. Composition of family is also taken as an important determinant for child feeding practices. Families along with elder parents have an opportunity to rear the child appropriately, while nuclear one has less opportunity. There may be insufficiency of food in case of composite family with large member. So, both the positive and negative aspects may exist for feeding children.

Table 2: Family and Socio-economic Characteristics

Characteristics	Frequency	Percentage
Family Type (n=92)		
Nuclear	29	31.5
Joint	63	68.5
Family Size (n=92) (Average size-6.96 ; Min-3, Max-16)		
Up to 6members	43	46.7
More than 6members	49	53.3
Source of income of Family (n=92)		
Foreign Employment	60	65.2
Fulltime Employment	15	16.3
Self Employed Business	12	13.0
Daily wage Employment	4	4.3
Agriculture	1	1.1
Average Monthly Income (n=92) (Mean Income-Rs.11695.00; Min-Rs4000/- ,Max-35000/-)		
Rs.≤10,000	55	59.8
Rs.>10,000	37	40.2
Land Availability (n=92)		
Yes	62	67.4
No	7	7.6
Other (owning land in contract)	23	25.0
Food Sufficiency (n=85) (Average- 6.01months; Min-1month, Max-12months)		
Up to 6months	54	63.5
More than 6months	31	36.5

Source: Field Survey 2017

There were majority of respondents lived in joint families (68.5%) and 31.5%(29) of respondents stayed in nuclear families. Number of family members in the family

shows the distribution of the resources over the family members. Larger the family size scarce the resources; this may mostly affect distribution of food and adversely affect the feeding practices. For some instance if the number of productive manpower is higher it may result positive impact over feeding practices. The average family member found to be 7 and number of family members ranged from 3 to 16. There were 47%(43) households with family members up to 6 and 53%(49) household with family members 7 or more.

Assessing the major source of income in household; vast majority (65%) of families were depending on foreign employment among them most were employed in India as migrant worker. Same as 16.3%(15) had fulltime employment, 13%(12) were self-employed with their small scale business, 4.3% (4) had daily wage employment and least (1%) had agriculture as major source of income in the family. Depending upon the major source of income in the family average monthly income of the family also varied. As per the verbal information of respondents average monthly income was ranged from Rs. 4000/- to 35000/- with the mean income Rs.11695/-. There were majority (60%) of families with monthly income Rs.10000/- or less, and 40%(37) of the families had income more than Rs.10,000/-

Availability of land for crop and food production is also one of the parameter to assess the better availability of food at own effort. Families earning land had better access to food stuffs. As the study area was partially depend upon agriculture. It was observed that most of the families (67.4%) had their own land for cultivation and production, while 25%(23) of families were owning others land in contract, either they were paying crop or cost. Only 7.6%(7) families did not have land for production so, they were purchasing food throughout the year. Upon the basis of availability of land the food sufficiency in the family was also assessed in the study. Food sufficiency may ensure and secure the food diversity. The availability of food in a family ranged from 1 month to 12 months with the average duration 6.01 months. More than 6 out of 10 families had food sufficiency up to 6 months and 36.5%(31) had sufficient more than 6 months.

4.1.3 Characteristics of Index Children

Children under 23months were covered in the study. Culturally, sex preference is one of the most prevailing concepts in the society. Hinduism has more male preference

than female. This concept may directly or indirectly affect the feeding practices. The proportion of female children (52.2%) was found quite higher than male children (47.8%) in study area. Feeding practices and patterns were varied with the age of child, such as exclusive breastfeeding up to 6 months and followed by *paasni* at 6th month of age and then introduction of solid and semisolid food after six months. Age of child was disaggregated to identify feeding practices among different age group of children. The median age was found to be 12 months and mean age 11.53 months with SD 6.2. Proportion of children below 5 completed months was 19.6%(18), children aged between 6-11 months were 27.2%(25) and 53.3%(49) were between the age of 12-23 months.

Table 3: Characteristics of Index Children

Characteristics	Frequency	Percentage
Sex of Child (n=92)		
Female	48	52.2
Male	44	47.8
Age of Child (n=92) (Mean-11.53months, Median-12, SD-6.2; Min-0, Max-23)		
0-5months	18	19.6
6-11months	25	27.2
12-23months	49	53.3
Child Order (n=92)		
Primary	34	37.0
Secondary	28	30.4
Tertiary or more	30	32.6
Place of Delivery (n=92)		
Health Facility	79	85.9
Home	10	10.9
Other	3	3.3

Source: Field Survey 2017

Order of the child is almost similar to the number of live births. Primary order children may have better caring practices than secondary or more as those are first child of family. Among the index children 37%(34) were of primary order children 30.4%(28) were of secondary order and rests 32.6%(30) were of tertiary or more order. Place of delivery is the resemblance of utilization of health care services. Mother delivered at health facility may have more chance to be informed with nutrition education that supports better feeding practices. In this study vast majority of respondents (86%) delivered their child at health institution, while 10.9%(10) of the children delivered at home and 3.3% took birth on the way while going to health facility for delivery.

4.2 Practices Regarding Infant and Young Child Feeding

Breast milk is undoubtedly most nutritious food for every child. Initiation of breastfeeding as soon as possible and no later than an hour is regarded as early initiation, which is the best practice to avoid neonates from hypothermia and other possible threats. It also stimulates the adequate milk production and plays role in good emotional attachment between mother and newborn.

Table 4: Practices Regarding Infant and Young Child Feeding

Practices	Frequency	Percentage
Early Initiation of BF (n=92)		
Within 1hr	71	77.2
After 1hr	21	22.8
Colostrums Feeding (n=92)		
Yes	92	100.0
Prelacteal Feeding (n=92)		
No	92	100.0
Exclusive BF (n=74) (Mean duration-5.23months, SD±1.6)		
Exclusive BF before 6months	16	21.6
Exclusive BF up to 6months	58	78.2
Complementary Feeding (n=74)		
Early Complementary Feeding	5	6.8
Timely Complementary Feeding	66	89.2
Late Complementary Feeding	3	4.1
Meal Diversity (n=72)		
3 or less food	44	61.1
4 or more food	28	38.9
Minimum Meal Frequency (n=72)		
2 or less time	3	4.2
3 or more times	69	95.8
Prepare Separate food for Child (n=74)		
Always	13	17.6
Sometimes	40	54.1
Never	21	28.4
Bottle Feeding Status (n=91)		
Yes	2	2.2
No	89	97.8
Current BF Status (n=92)		
Yes	89	96.7
No	3	3.3
Discontinuation of BF (n=3)		
Gained new pregnancy	2	66.7
No Breast milk produced	1	33.3

Source: Field Survey 2017

About 4 children out of 5 received mother's first breast milk within an hour. Among the respondents who had initiated breastfeeding lately (23%) most of them introduced due to some clinical and medical difficulties to mother (such as; C/S delivery, Retained placenta, Prolonged labour and exhaustion of mother) that accounted for 76.2%(16). Other less common reasons were, Baby unable to suck, Delivered on the way, and No milk produced accounted for 9.5%, 9.5% and 5% respectively.

The practice of early initiation was found comparatively better than most of the previous studies conducted. NDHS 2011 findings were the resemblance of national practice that showed insignificantly lower practice (45%) and findings correspondence to similar geographical territory Far-western hill was 54% (Population Division 2012). Another study carried out in Chepang community showed insignificantly lower practice (37%) which was less than half of current finding (Subedi 2007). The practice in Kailali district was observed among 2/3rd children (Osei et.al 2010) and 43.5% of children were timely initiated breastfeeding in urban area of Nepal (Subba et.al, 2007), while the practice in Tharu community was among 56% of children (Joshi 2013).

Table 5: Reasons for Improper IYCF Practices

Practices	Frequency	Percentage
Late Initiation of Breastfeeding (n=21)		
Clinical and Medical Reasons	16	76
Baby not able to suck	2	9.5
Delivered on the way	2	9.5
No Milk Produced	1	5
Not Exclusive Breastfeeding (n=16)		
No Sufficient Breastmilk	13	81
Busy in Work	3	19
Improper Complementary Feeding (n=8)		
No other Milk Substitute	4	50
Baby Denied to Eat	3	38
Busy in Work	1	12

Source: Field Survey 2017

Feeding colostrums milk also regarded as first vaccine for the newborn was universally practiced in the study area. In same way there was universal avoidance of pre lacteal food prior to the introduction of breast milk. Previous studies conducted nationwide and outside the country did not showed such contrasting results. A study conducted in Tharu community had 94% colostrums and 2% prelacteal feeding

practices (Joshi 2013). Prelacteal feeding practice was observed in significant proportion (28%) in NDHS 2011 report. Prelacteal feeding observed in the study carried out in rural areas of Karnataka India was 27%. (Narayanappa et.al, 2015)

Exclusive breastfeeding up to the age of six months is one of the most indicators for better IYCF practices. Mother's breast milk alone is enough to fulfill nutritional requirements of children for first six months of life. Practice of exclusive breastfeeding was significantly higher in the study area. More than 3/4th(78%) of respondents exclusively breastfed their children for 6 months whereas 22%(16) mothers could not continue breast milk exclusively due to some reasons. Most common reason (81%) stated was unable to produce sufficient milk for their child along with the least common (19%) reason with less enough time to breastfeed their child. The mean duration of exclusive breastfeeding was 5.23 months with SD±1.6.

The practice of exclusive breastfeeding in finding of NDHS 2011 was relatively lower (70%) and the practice was also not better in Tharu community (74%) (Joshi 2013). There was another study conducted in an urban area did not show such a better practice (60%) than current finding (Subba et.al, 2007) but similar study in Chepang community of Makawanpur district revealed significantly better practice (82%) (Subedi 2007).

The nutritional requirement increases with increasing the age. So it's necessary to introduce solid and semisolid food as complementary food to child after completing 6th month. The reason is that, breast milk alone is no more sufficient to maintain child's recommended daily allowances of nutritional requirements to enhance growth (Population Division 2012). This activity is accepted as weaning in the community. Weaning at 6-8th month is regarded as proper practice and accounted for more than 89%(66) while 6.8%(5) children received solid and semisolid food prior to 5 months and 4.1%(3) received after 9 months.

Current finding of complementary feeding was consistent with NDHS 2011 (92%) and findings of Chepang community of Makawanpur district (90%) (Subedi 2007). Practice of timely complementary feeding in Kailali district (62%) (Osei et.al 2010) and Rupandehi district was (57%) (Gautam et.al, 2016) were inconsistent with current finding. Another cross sectional study carried in Satar community of Jhapa district revealed only 51.5% (Ban & Rajbanshi 2016) and Kanti Children's Hospital was

about 57% (Chapagain 2013) for proper complementary feeding; those were inconsistently lower than current practice.

Reasons for improper complementary feeding were presented in Table 5, about half of (4) children were fed due to unavailability of substitute milk and 12.5%(1) did not have enough time to breastfeed and remaining 37.5%(3) lately introduced complementary feeding as children refused to eat.

Along with the introduction of complementary food child should receive diversified food with adequate frequency. This assures adequate growth and development during first 2 years of life. Meal frequency shows frequency of complementary food taken by child during 24 hours. Every child should receive complementary food for at least 3 times in a day. This study showed most significant proportion (96%) of children adequately fed complementary food for 3 or more times in a day, which was the best practice. Meal diversity indicates the adequate nutritious items taken in a meal in a day. Food items from at least 4 food groups as categorized by WHO standard should be combined and introduced to meet the nutritional requirement in a day. The proportion of children who received adequate diversified food in last 24 hours of survey was not satisfactory (39%), this practice needs to be improved to achieve adequate growth and development.

National practice as per NDHS 2011, both the practices were lower, i.e. minimum meal frequency practice was 78% and minimum meal diversity was 29% (Population Division 2012). Study conducted in Rupandehi revealed proportion of dietary diversity 35% and minimum meal frequency 84% (Gautam et.al, 2016). Similarly 27% of children were introduced appropriate meal diversity in Tharu community of Kanchanpur district (Joshi 2013).

Bottle feeding is one of the malpractice existed in the community, that may increase incidence of diarrhea and other infectious diseases. Status of bottle feeding practice in last 24 hours was assessed in the study and only 2%(2) respondents used bottle to feed their child. Breastfeeding for at least for 2 years is necessarily recommended to the child to achieve optimum growth and development. The current breastfeeding status was also assessed, and the most significant proportion 97%(89) of mothers were breastfeeding their child at the time of survey and only 3%(3) discontinued due to gain another pregnancy (67%) and fail to produce breast milk for their baby.

4.3 Socio-Demographic Determinants and Feeding Practices

4.3.1 Caste and IYCF practices

In the table 5, IYCF practices as per caste were analyzed. Caste wise practice showed that significant proportion (84%) of non-Dalit respondents initiated breastfeeding within an hour; whereas the proportion was comparatively lower among Dalit(69%). The better practice among non Dalits may be due to prevailing concept of early initiation and they may have better birth preparedness so the existed reasons for late initiation were reduced. But there was no significance difference observed for early initiation of breastfeeding among Dalit and non-Dalit castes.

Table 6: Caste and IYCF practices

Feeding Practices		Caste		p-value
		Dalit(42)	Non Dalit (50)	
Initiation of Breastfeeding(n=92)	Within an hour (71)	69%(29)	84%(42)	0.089
Exclusive Breastfeeding (n=74)	Exclusive Breastfeeding (56)	84.4%(27)	69.0%(29)	0.128
Complementary Feeding (n=72)	Timely Complementary Feeding (66)	90.6%(29)	88.1%(37)	0.72
Meal Diversity (n=72)	4+ items (28)	16.7%(5)	54.8%(23)	0.001*
Separate Food Preparation (n=72)	Always (13)	12.5%(4)	21.4%(9)	0.59
	Sometimes(40)	56.2%(18)	52.4%(22)	

* significant at $p < 0.05$ (Source: Field Survey 2017)

Exclusive breastfeeding up to the age of six months is one of the most indicators for better IYCF practices. There were about 78% respondents exclusively breastfed their child for 6 months of age. The practice of exclusive breastfeeding was more common among Dalit (84%) than that of non-Dalit respondents (69%). There may be availability of cow or buffalo milk among non Dalit respondents' households enhances early substitution of breast milk. They might prefer to feed their child both animal and mother's milk prior to the 6 months. Statistically, the practice for proper exclusive breastfeeding was similar among both Dalit and non-Dalit Castes.

Initiation of complementary food is also known as weaning and usually done after six months. The practice ensures the fulfillment of nutritional requirements of the child as their age increases. 9 out of 10 children were introduced solid and semisolid foods between 6-8 months of age. The practice of timely complementary feeding was

almost similar among both Dalit(91%) and non-Dalit(88%). The difference of complementary feeding practices in Dalit and non-Dalit children was insignificant.

Complementary food should be formed of adequate diversity and contains at least 4 food groups only then it would be satisfactory for nutrition. This type of practice only assures the adequate growth and development during first two years of life. Feeding diversified food among non-Dalit (55%) was significantly higher than that of Dalit (17%). There may be availability of adequate food items in non-Dalit families or those families may have better economic status. Feeding diversified food was more likely observed among non-Dalit children as there was significant statistical association was existed (p0.001).

Complementary food should be prepared separately as per the ability of child to ingest and digest. The proportion of respondents who always prepared separate food for their child was found relatively higher (21%) among non-Dalit as compared to Dalit (12.5%), but the proportion was relatively higher among Dalit who prepared for sometimes. This might be due to that Dalit families had less time to rear their children as they were busy in household works, so they feed their child what they eat. There was no any difference observed for Dalit and non-Dalit respondents regarding separate preparation of complementary food for their child.

There was no any difference observed regarding all the feeding practices among both the caste groups except meal diversity was more likely practiced among non-Dalit families. Findings of NDHS 2011 reported significant association of caste and ethnicity with early initiation of breastfeeding, minimum meal diversity and meal frequency (Population Division 2012). Another similar study conducted in Rupandehi district revealed that disadvantaged group were equally likely to introduce complementary food in time but the association existed with minimum dietary diversity and meal frequency (Gautam et. al, 2016)

4.3.2 Age of Mother and Feeding Practices

Age of mother denotes her understanding capacity and some sort of exposure with caring and rearing practices. More than 4/5th of mothers with the higher age group initiated breastfeeding within an hour which was comparatively better against lower age group (75%). This may result due to higher chances of being difficulties during delivery among lower age group mothers and some of them may have cesarean

delivery also. Whatever the practice prevailed among both groups, there was no any significance difference existed among both age groups regarding initiation of breastfeeding.

Table 7: Age of Mother and Feeding Practices

Feeding Practices		Age of Mother		p-value
		≤24years(43)	>24years(44)	
Initiation of Breastfeeding(n=92)	Within an hour (71)	75%(42)	80.6%(29)	0.536
Exclusive Breastfeeding (n=74)	Exclusive Breastfeeding (56)	75.6%(31)	75.8%(25)	0.988
Complementary Feeding (n=72)	Timely Complementary Feeding (66)	90.2%(37)	87.9%(29)	0.74
Meal Diversity (n=72)	4+ items (28)	39%(16)	38.7%(12)	0.97
Separate Food Preparation (n=72)	Always (13)	26.8%(11)	6.1%(2)	0.06
	Sometimes(40)	46.3%(19)	63.6%(21)	

Source: Field Survey 2017

The practice of exclusive breastfeeding during 6-8 months was similarly practiced among both the age groups with the proportion more than 75% and statistical relationship also not observed between these two variables. Timely complementary feeding practice was found almost similar among both the groups with the significant proportion more than 88%.

Feeding diverse food with four or more groups was almost similar with the proportion about 39%. It was observed that mother with lower age group showed higher proportion (27%) for preparing separate complementary food always for their children. As it may be due to lower age group mothers have less number of children and also have enough time to care properly. Statistically age of mother and separate food preparation were not significant. There was no any difference observed in preparing separate food for child among the both the age group of mothers.

Age of mother was not found significant with child feeding practices under study. Similar study conducted in Satar community of Jhapa district had shown association mother's age with exclusive breastfeeding (Ban & Rajbanshi 2016). Some of other studies; a study in Chepang community (Subedi 2007), study in urban area of Kaski

district (Subba et.al, 2007) and Chitwan district (Kandel et.al, 2016) did not reveal any association with feeding practices were congruence with current study.

4.3.2 Education Status and Feeding Practices

Education status of respondents was categorized between two groups. Illiterate and non-formally literate mothers were considered as lower education status and formally literate were as higher education status. Mother with lower education status showed significantly better practice regarding early initiation (83%) as compared to formally literate respondents. The practice seemed controversial, but it may be due to that formally educated respondents were from lower age and may have first pregnancy hence might faced difficulties during delivery. But statistically there was no significant relationship observed for education status regarding early initiation.

Table 8: Education Status and Feeding Practices

Feeding Practices		Education Status		p-value
		Illiterate and Non-formal (29)	Formal Literate(63)	
Initiation of Breastfeeding(n=92)	Within an hour (71)	82.8%(24)	74.6%(47)	0.387
Exclusive Breastfeeding (n=74)	Exclusive Breastfeeding (56)	84%(21)	71.4%(35)	0.233
Complementary Feeding (n=72)	Timely Complementary Feeding (66)	84%(21)	91.8%(45)	0.258
Meal Diversity (n=72)	4+ items (28)	31.0%(9)	30.1%(19)	0.86
Separate Food Preparation (n=72)	Always (13)	16%(4)	18.4%(9)	0.88
	Sometimes(40)	52%(13)	55.1%(27)	

Source: Field Survey 2017

Exclusive breastfeeding practice for first 6 months was significantly (84%) practiced by respondents from lower education status as compared to higher education status. The group with formal education may feel that their breast milk was not sufficient for child hence they practiced substitutes earlier. Statistically, there was no difference observed between mothers with lower education status and higher one regarding exclusive breastfeeding. Complementary feeding is another sequel practice after exclusive breastfeeding. Proportionally formally literate mothers showed better practice (92%) for timely complementary feeding as compared to lower educated group of mother (84%). Practice of diverse feeding was poor among both groups and observed in almost similar proportion. In same way preparing separate food for child

was also applied by almost similar proportion of respondents from both groups. In this current study education status of mother was significantly associated with complementary feeding but rests of practices were not associated.

Some of previously conducted studies showed an association of education status of mother with certain feeding practices. Findings of NDHS 2011 regarding education status were associated with early initiation of breastfeeding and feeding diversified food from more than 4 groups (Population Division 2012). A study conducted in Kanti Children's Hospital ruled out significant association of mother's education status with complementary feeding (Chapagain 2013), in same way, educated mothers were more likely to feed complementary food in Chepang community (Subedi 2007) and study conducted in Rupandehi district (Gautam et.al, 2016) were coherent with current study. Similarly a cross sectional study in Satar community of Jhapa district also revealed education status was significantly associated with exclusive breastfeeding and complementary feeding (Ban & Rajbanshi 2016). Some of other study findings did not show any association between mother's education and feeding practices. Studies conducted in Pokhara (Subba et.al, 2007) and Chitwan (Kandel et.al, 2016) did not show any association with any feeding practices. Another study in India showed an inverse relationship with education status and breastfeeding duration but not significantly associated (Yadavannavar & Patil 2011).

4.3.4 Family Type and Feeding Practices

Family composition is also taken as determinant of feeding practices. Both type of families showed diverse feeding practices. Regarding early initiation significant proportion of respondents (86%) from nuclear family had better practice than joint families (73%), but the association was no significant. This may be due to that respondents from joint families usually had first child, so there were chances of occurring difficulties in pregnancy that may lead to delay early initiation.

Exclusive breastfeeding was better practiced by joint families (79%) than nuclear families (69%). This may be due to lack of time of mother to rear child appropriately in nuclear family or they had more workload as compared to joint family. In this study there was no any significance difference observed between nuclear and joint families for both exclusive breastfeeding. Almost similar practice was observed for complementary feeding practices among both the family types with the proportion about 89%.

Table 9: Family type and Feeding Practices

Feeding Practices		Family Type		p-value
		Nuclear(29)	Joint(63)	
Initiation of Breastfeeding(n=92)	Within an hour (71)	86.2%(25)	73%(46)	0.161
Exclusive Breastfeeding (n=74)	Exclusive Breastfeeding (56)	69.2%(18)	79.2%(38)	0.342
Complementary Feeding (n=72)	Timely Complementary Feeding (66)	88.5%(23)	89.2%(43)	0.583
Meal Diversity (n=72)	4+ items (28)	30.8%(8)	43.5%(20)	0.28
Separate Food Preparation (n=72)	Always (13)	19.5%(5)	16.7%(8)	0.95
	Sometimes(40)	53.8%(14)	54.2%(26)	

Source: Field Survey 2017

Feeding diversified food to child did not show contrasting finding among both the family types, but joint families showed relatively better practice (43.5%). The practice was may be due to joint families had better practice of rearing cattle and animals and had production of vegetables and crops on their home. Practice of preparing separate food was not better and almost equal among both types of families and the relationship was also not found statistically significant. There was no difference observed between children among nuclear and joint families regarding various feeding practices.

Some of the previously conducted studies showed association of family type with various feeding practices. A study conducted to find out the affecting factors for complementary feeding practices at Kanti Children's Hospital, ruled out joint family as associates for better complementary feeding (Chapagain 2013) and another study conducted in Bhaktapur showed the association between family type and exclusive breastfeeding, i.e. Mothers not living in joint families had higher odds of practicing EBF (Ulak et.al, 2012). Early initiation of breastfeeding in urban area of Kaski district also revealed the association with family type (Subba et.al, 2007). Some of similar studies; studies in Chepang community (Subedi 2007) and Tharu community (Joshi 2013) were coherent with current findings.

4.3.5 Family Size and Feeding Practices

Findings of family size were almost similar to the findings of family type, as there was higher number of family members observed in joint families. Early initiation of

breast feeding was found almost similar among both groups of family size without any large variation, better practice (79%) observed in smaller family size.

Table 10: Family Size and Feeding Practices

Feeding Practices		Family Size		p-value
		Up to 6 (43)	7 or more (49)	
Initiation of Breastfeeding (n=92)	Within an hour (71)	79.1%(34)	75.5%(37)	0.685
Exclusive Breastfeeding (n=74)	Exclusive Breastfeeding (56)	69.4%(25)	81.6%(31)	0.224
Complementary Feeding (n=72)	Timely Complementary Feeding(66)	86.1%(31)	92.1%(35)	0.407
Meal Diversity (n=72)	4+ items (28)	30.6%(11)	47.2%(17)	0.147
Separate Food Preparation (n=74)	Always (13)	19.4%(7)	15.8%(6)	0.918
	Sometimes (40)	52.8%(19)	55.3%(21)	

Source: Field Survey 2017

Exclusive breastfeeding for 6 months (82%) and timely complementary feeding (92%) were significantly higher and better practiced by larger families. Both of these practices did not have any statistical relationship with family size. The reason may be that, there was insufficient time for mother to rear children among smaller families resulting improper exclusive breastfeeding and complementary feeding.

Feeding diverse food item was finely practiced among larger families (47%), as smaller families may not have enough time to produce diverse food items at home. Statistically minimum meal diversity practice did not differ with the family size. Always preparation of separate food for child was not better among both family size groups with less than 20%, but smaller families had comparatively better practice (19%) against larger families (16%). It was because lower family size may have lower number of children and was less hassle to prepare food. Larger family size showed better practice (55.3%) for preparing separate food for sometimes with small variations. Revealing the association of family size, there was not any significance relationship existed. But exclusive breastfeeding, complementary feeding and diversified feeding were comparatively better among joint families.

The current study did not reveal any association of feeding practices with family size but a study conducted in urban area stated significant association of family size with early initiation (Subba et.al, 2007).

4.3.6 Birth Order and Feeding Practices

Birth order usually shows the how far a mother is experienced regarding child rearing and caring. Child with primary birth order may face more difficulties in child rearing and caring than secondary or more. It is less aggravated if there were other experienced members exist in the family. Birth order is the variable that also reflects the mother not only child. Early initiation of breastfeeding practice was observed comparatively better among primary order children (79.5%) as compared to secondary or more (76%). A priority may be given to the first child to initiate breastfeeding earlier. Statistically there was no any relationship existed between birth order and early initiation of breastfeeding.

The proportion of children with secondary or more order was comparatively higher (78%) for exclusive breastfeeding up to 6 months as compared to primary (72%). It may be due to that some mothers with single child thought their breast milk is insufficient for child and introduced substitutes earlier. In this study area there was no any difference observed for proper exclusive breastfeeding regarding birth order of children.

Table 11: Birth order and Feeding Practices

Feeding Practices		Birth Order		p-value
		Primary(34)	Secondary or more(58)	
Initiation of Breastfeeding (n=92)	Within an hour (71)	79.4%(27)	75.9%(44)	0.695
Exclusive Breast Feeding (n=74)	Exclusive Breastfeeding (56)	72.0%(18)	77.6%(38)	0.599
Complementary Feeding (n=72)	Timely Complementary Feeding(66)	88.0%(22)	89.8%(19)	0.81
Meal Diversity (n=72)	4+ items (28)	58.3%(14)	29.2%(14)	0.01*
Separate Food Preparation (n=74)	Always (13)	12%(3)	20.4%(10)	0.64
	Sometimes (40)	56%(14)	53.1%(26)	

*significant at $p < 0.05$ (Source: Field Survey 2017)

Timely complementary feeding practice was significantly higher among all order children with the proportion more than 88%. About 6 out of 10 children of primary order were fed with adequate diversity of food and the proportion was nearly half among group of secondary or more order children. To feed diverse type of food to primary order children showed a passion and good care for first child than 2 or more. In this study it can be stated that primary order children were more likely to feed diverse type of food items than that of secondary or more (p0.01).

Practice of preparing food was not significantly applied for both group of children but higher proportion of children (20%) with secondary or more order got separate food always than that of primary (12%). Similar proportion of children with both order were fed separately prepared food for sometimes with the proportion more than 50%.

Stating the association, all other variables under the study did not reveal the significant association except feeding diversified food. Study conducted in Satar community stated association of number of children with exclusive breastfeeding and complementary feeding (Ban & Rajbanshi 2016). Some of similar studies previously conducted in Kaski (Subba et.al, 2007), Makwanpur (Subedi 2007), and Chitwan district (Kandel et.al, 2016), did not reveal association of feeding practices with birth order.

4.3.7 Sex of Child and Feeding Practices

Gender aspect is the culturally accepted parameter. Practices existed in the community varied with sex of child. Most of the cultural practices in the community are in favour of male.

Early initiation of breastfeeding is the foremost feeding practice, where the proportion of male children (80%) is higher than female child (75%) with smaller variation. The practice seemed in favour of male child, but the statistical association was not significant. Exclusive breastfeeding practice (86%) and complementary feeding (97%) was significantly higher among male children while the practices of exclusive breastfeeding and complementary feeding were 67% and 82% respectively among female. Exclusive breastfeeding did not show any association with sex of child while male children were more likely to feed complementary food between 6-8 months (p0.03). Feeding diverse food was also observed relatively higher among male (63%)

as compared to female (60%). Receiving separately prepared food was also invariably higher for male children.

Table 12: Sex of Child and Feeding Practices

Feeding Practices		Sex of Child		p-value
		Female(48)	Male(44)	
Initiation of Breastfeeding (n=92)	Within an hour (71)	75.0%(36)	79.5%(35)	0.604
Exclusive Breastfeeding (n=74)	Exclusive Breastfeeding (56)	66.7%(26)	85.7%(30)	0.057
Complementary Feeding (n=72)	Timely CF(66)	82.1%(32)	97.1%(34)	0.03*
Meal Diversity (n=72)	4+ items (28)	59.5%(15)	62.5%(13)	0.76
Separate Food Preparation (n=74)	Always (13)	12.8%(5)	22.9%(8)	0.41
	Sometimes (40)	53.8%(21)	54.3%(19)	

*significant at $p < 0.05$ (Source: Field Survey 2017)

For all feeding practices sex preference existed in the community was revealed but association was only significant with complementary feeding practice. Exclusive breastfeeding was associated with sex of child in the study among Satar community (Ban & Rajbanshi. 2016). Other various studies in Kaski district (Subba et.al, 2007) and Kanti Children's Hospital (Chapagain 2013) showed no any association of gender of child with feeding practices. A gender based study regarding feeding practices conducted in India clearly revealed the association of exclusive breastfeeding with gender of child, where the incidence of male children receiving exclusive breastfeeding was much higher than female neonates (Basu et.al, 2014).

4.3.8 Place of Birth and Feeding Practices

Place of birth of the index child is the indicator for health service utilization. Mother's better practice it service utilization definitely beneficial for the newborn children. Health service utilization only not corresponds to mother but it also depends upon availability of health services. During the utilization of health services customers become aware about various feeding practices.

Early initiation of breastfeeding among institutionally delivered and home delivered had similar proportion about 77%. There was no any difference observed for early initiation of breastfeeding among institutionally delivered and out of institution. Practice of exclusive breastfeeding and complementary feeding was universal (100%)

among the children born other than health facility while exclusive breastfeeding and timely complementary feeding practice among health facility born children were 71% and 88% respectively. The statistical association only existed with exclusive breastfeeding (p0.042). This seemed little bit controversial findings as there were significantly less number (13) of children born out of health facility.

Table 13: Place of Birth and Feeding Practices

Feeding Practices		Place of Birth		p-value
		Health Facility(79)	Other than HF(13)	
Initiation of Breastfeeding (n=92)	Within an hour (71)	77.2%(61)	76.9%(10)	0.981
Exclusive Breast Feeding (n=74)	Exclusive Breastfeeding (56)	71.4%(45)	100%(11)	0.042*
Complementary Feeding (n=72)	Timely Complementary Feeding(66)	87.7%(55)	100%(11)	0.257
Meal Diversity (n=72)	4+ items (28)	60.7%(37)	63.6%(7)	0.852
Separate Food Preparation (n=74)	Always (13)	17.5%(11)	18.2%(2)	0.996
	Sometimes (40)	54%(34)	54.5%(6)	

*Fisher's exact test (Source: Field Survey 2017)

Feeding diverse food was fed to similar proportion of children from both the groups with proportion more than 60%. In same way feeding separately prepared food was also similarly practiced but the proportion of children always fed separately prepared food was insignificantly lower among both groups with the proportion around 17%.

The association of place of birth only stated with exclusive breastfeeding while other practices were not associated. NDHS 2011 report stated that “health facility born children were more likely to introduce breast milk within an hour” (Population Division 2012). Similarly, another study in Chepang community also revealed an association of place of delivery with early initiation of breastfeeding and exclusive breastfeeding (Subedi 2007) while study in Satar community showed an association with exclusive breastfeeding and complementary feeding (Ban & Rajbanshi 2016).

4.3.9 Age of Child and Feeding Practices

As the age grown up feeding practices also changed simultaneously. In this study, practices regarding dietary diversity and preparation of separate food items were observed for age group of child. These two practices only started after introduction of

solid and semisolid foods. Feeding diverse types of food items was finely practiced (43%) among the children above the age of 12 months while the practice was limited to 32% of children aged between 6 to 11 months. The significance difference was not observed for age of child and minimum meal diversity.

Table 14: Age of Child and Feeding Practices

Feeding Practices		Age of child		p-value*
		6-11 months(23)	12-23months(49)	
Meal Diversity (n=72)	4+ items (28)	31.9%(7)	42.9%(21)	0.313
Separate Food Preparation (n=74)	Always (13)	36%(9)	8.2%(4)	0.004
	Sometimes (40)	32%(8)	65.3%(32)	

*significant at $p < 0.05$ (Source: Field Survey 2017)

Though the practice was not satisfactory, there were 36% of children aged 6 to 11 months were always fed separately prepared food while the proportion was only 8% for the children aged 12-23 months. This may be because children with higher age can eat easily than lower age and were given same food what their parents ate. There were one third (32%) of children fed separately prepared food sometimes, and the proportion was double for 12 to 23months children. There was significant association observed between age of child and separate preparation of meal for children ($p < 0.004$). The children with lower age were more like to feed separately food always and 12 to 23 months aged children were more likely to feed separately prepared food for sometimes.

4.4 Socio-economic Determinants and Feeding Practices

Socio-economic indicators are the indicators that determine the quality of life. So every aspect of life is affected by socio-economic characteristics. In this study we tried to reveal the variation of feeding practices as per socio-economic determinants.

4.4.1 Average Monthly Income and Feeding Practices

Breastfeeding initiation as per income status of family, there was similar practice observed with the proportion more than 76% among both the groups. In case of exclusive breastfeeding more than 8 out of 10 children were exclusively breastfed for 6 months among lower income group than while the proportion was 70% among higher one. The higher income group families may not have appropriate exclusive

breastfeeding as they may rely upon other substitutes prior to the six months. There was no any significant association observed between exclusive breastfeeding and monthly income of family.

Table 15: Average monthly income and Feeding Practices

Feeding Practices		Average Monthly Income		p-value
		Rs≤10,000(55)	Rs.>10,000(37)	
Initiation of Breastfeeding (n=92)	Within an hour (71)	76.4%(42)	78.4%(29)	0.821
Exclusive Breast Feeding (n=74)	Exclusive Breastfeeding (56)	80.4%(37)	67.9%(19)	0.221
Complementary Feeding (n=74)	Timely CF(66)	97.8%(45)	75%(21)	0.002*
Meal Diversity (n=72)	4+ items (28)	37%(17)	42.3%(11)	0.655
Separate Food Preparation (n=74)	Always (13)	15.2%(7)	21.4%(6)	0.520
	Sometimes (40)	56.5%(26)	50%(14)	

*Fisher's exact test (Source: Field Survey 2017)

Complementary feeding practice was significantly practiced among lower income group 98% while 3/4th of children from better income status were introduced solid and semisolid food items timely. The proportion was comparatively lower for better income group, it may be due to the higher income groups may have purchasing capacity or easy availability of substitutes or other food items and there was a significant association established (p0.002).

Feeding diversified food was not better observed among higher income group (42%) as against lower income families (37%). As lower income group may have less resource to get diverse food items. Proportion of children who always fed separately prepared food was not significantly practiced but comparatively better practice (21%) was observed among higher income families it may be due to that lower income family have less time to prepare and have to spend time for other works. Preparing separate food sometimes was comparatively better practiced (57%) by lower income group as compared to higher income (50%).

Exclusive breastfeeding, Complementary feeding seemed contrasting result over lower income families but there was association existed between average monthly income and feeding practices. National level study NDHS 2011 report stated that the economic status of family was associated with early introduction of breast milk and

feeding diversified food (Population Division 2012). Similarly, Exclusive breastfeeding and complementary feeding practices of Satar community were significantly associated with family income (Ban & Rajbanshi 2016). A study conducted in India showed an association with duration of breastfeeding. Some of other studies conducted in Rupandehi (Gautam et.al, 2016), Chitwan (Kandel et.al, 2016), Kaski (Subba et.al, 2007) districts and Kanti Children’s Hospital (Chapagain 2013) were not associated with feeding practices.

4.4.2 Food Sufficiency and Feeding Practices

Food sufficiency in the family was determined by the availability of land for farming. There were more than 90% of families earning own land or others land with some sort of contract for production. Sufficiency of food was measured by the amount of crops and food stuffs produced.

Table 16: Food Sufficiency and Feeding Practices

Feeding Practices		Food Sufficiency		p-value
		Up to 6 months(54)	More than 6 months(31)	
Exclusive Breast Feeding (n=74)	Exclusive Breastfeeding (56)	81.8%(36)	68%(17)	0.191
Complementary Feeding (n=72)	Timely CF(66)	90.9%(40)	88%(22)	0.7
Meal Diversity (n=72)	4+ items (28)	33.3%(14)	56%(14)	0.069
Separate Food Preparation (n=69)	Always (12)	15.9%(7)	20%(5)	0.355
	Sometimes (39)	52.3%(23)	64%(16)	

Source: Field Survey 2017

Only with the sufficient availability of the food, proper feeding practice was assured. Sufficiency of food was categorized in two groups, one with up to 6 month, i.e. less sufficient and other sufficient more than 6 months. Practice of Exclusive breastfeeding among less food sufficient families showed significantly better practice (82%) against more sufficient groups (68%). The lower practice among more sufficient group may be due to sufficiency of food items and fed their child prior to the appropriate age. Complementary feeding was also significantly and equally practiced among both the groups but comparatively better (91%) among the families with less sufficiency (88%). Respondents with more food sufficiency may feed their

child earlier, as they think early introduction may be beneficial for the child or they have easy availability of food items.

Minimum meal diversity finely practiced (56%) among more food sufficient families. Only one in three children got diversified food among less food sufficient group as they did not have sufficient variety of food items in their household. One out of five children from more food sufficient group always fed separately prepared food and more than six out of ten children fed sometimes. This practice was comparatively lower among less food sufficient group (52%), it may be due to most of them did not have enough food items to prepare separately or they fed their child what they eat. Revealing the association of food sufficiency with feeding practices, there was not any statistical significance observed. There was no any difference observed for feeding practices among families with less food or more sufficient food.

CHAPTER V

SUMMARY AND CONCLUSIONS

5.1 Summary

Malnutrition has been responsible, directly or indirectly, for 60% of the 10.9 million deaths annually among children under five. Well over two-thirds of these deaths, which are often associated with inappropriate feeding practices, occur during the first year of life. No more than 35% of infants worldwide are exclusively breastfed during the first four months of life; complementary feeding frequently begins too early or too late, and foods are often nutritionally inadequate and unsafe. (WHO 2008)

The minimum infant and young child feeding (IYCF) practices for children 6-23 months are defined as continued breastfeeding, feeding at least the minimum number of times per day (as per age), and feeding from the minimum number of food groups per day (Population Division 2012). The IYCF practices were not satisfactory in contest of Nepal. The malnutrition status is also critical which directly rely upon feeding practices.

Initiation of breastfeeding as early as possible, colostrums feeding, avoidance of prelacteal feeding, exclusive breast feeding upto six months and feeding solid and semisolid food with appropriate frequency and diversity are the most considerable practices of infants and young child feeding.

The descriptive cross sectional study was conducted in Navdurga VDC of Dadeldhura district to explore the feeding practices and associated factors among under 2 years children. 92 mothers having children below 2 years were selected randomly. Structured questionnaire was prepared and interview was done to collect quantitative information. Collected data was entered and analyzed in SPSS. Frequency tables and cross tables were created to present the frequency and association. Chi-square test was applied to identify the association between dependent and independent variables at 95% of CI at respective degree of freedom.

All of the respondents were Hindus and 46% of Dalit respondents along with 54% of non-Dalit comprised of 42% Chhetri, 11% Brahman and 1% Thakuri. Age of the respondents ranged from 16 to 40 years with the mean age 25.15 years. Almost all of the respondents were married. Regarding educational status of respondents only 6.5%

were illiterate and rests have some sort of education. Almost all (97%) of the respondents were engaged in household activities. The average number of live children per respondents was more than two. There were 52.2%(48) female and 47.8%(44) children included in the study. Of them 19.6%(18) were of under 5 months, 27.2%(25) of 6-11 months and rests of 53.3%(49) were of 12-23 months. Each family consists of about 7 members while the number of member ranged from 3 to 16. About 7 out of 10 families were of joint type and two third families economically dependent on foreign employment, where monthly income ranged from Rs.4000 to 35000. More than two third of families had own land for cultivation and production and one fourth were earning other's land in contract.

Feeding practice of child initiated with introduction of breast milk within an hour of birth, this practice was significantly observed (77%), as the breastfeeding practice was universal colostrum and no prelacteal feedings were also universal. Exclusive breastfeeding up to 6 months was more than 78% and timely complementary feeding exceeded more than 89%. Feeding diversified food was not better practiced (39%) but feeding appropriate complementary food was significantly higher (96%). More than 71% children introduced separately prepared food items at least for a time. No bottle feeding in the study area also significantly higher (98%) and 97% children were currently breastfed at the time of survey.

Early initiation of breastfeeding was better practiced among non-Dalit while exclusive breastfeeding for 6 months and timely complementary feeding were better practice observed among Dalit group without any statistical significance. Feeding diverse (4+) food in Dalit family was less likely practiced than non-Dalit family with significant association. Preparation of separate meal for child was better observed among non-Dalit families.

Age group of mothers (<25 yrs & ≥25 yrs) had almost similar finding regarding feeding practices. No significance difference for feeding practices was observed between both age groups of mothers. Educational status of mothers did not show any contrasting results over feeding practices. But there was comparatively better practice of early initiation of breastfeeding observed among higher age group mothers and preparation of separate food was better practiced among lower age group mothers.

Education status of respondents also play vital role in feeding patterns. There were better practices observed for early initiation of breastfeeding, exclusive breastfeeding and diversified feeding among less educated respondents while complementary feeding and preparation of separate food items showed lower against more educated respondents.

Nuclear families had relatively better practice regarding early initiation of breastfeeding and joint families showed relatively better practice for exclusive breastfeeding and complementary feeding. Family size also not have any significance association with feeding practices, but comparatively better practices were observed for exclusive breastfeeding, complementary feeding and feeding diverse food in smaller family size.

Regarding characteristics of index child; Sex of child showed significant association with timely complementary feeding i.e., male children were more likely to feed timely complementary feeding as of female. But male child had contrasting finding regarding other feeding practices. Regarding birth order of child, both the children group with primary and 2+ order did not have significance finding for all the practices except diversified feeding. In this study primary order children were more likely to feed diversified food as compared to secondary or more order. In same way birth place did not have any significance with feeding practices but the practices were quantitatively higher for health facility born children. Age group of children also disaggregated for feeding diversified food and separate food preparation, diversified food better received by higher age children while separate food significantly prepared for lower age children with significance.

Findings regarding socio-economic determinants; Average monthly income had significant association with exclusive breastfeeding and complementary feeding, as children from lower income families more likely to have exclusive breastfeeding and complementary feeding timely than wealthier groups. Exclusive breastfeeding and complementary feeding practices were significantly higher among the families with lower food sufficiency, while feeding diverse food and preparing separate food for child were finely practiced among higher food sufficient groups.

5.2 Conclusions

The study found diverse result on practice of mothers regarding infant and young child feeding and their associates in Navdurga VDC. Feeding breast milk exclusively for 6 months and timely complementary feeding were better practice observed among Dalit group without any significance and feeding diverse (4+) food items in Dalit family was less likely practiced than non-Dalit family.

No significance difference for feeding practices was observed between both age groups of mothers and timely complementary feeding was significantly better observed among both age groups of mothers. Preparation of separate food had also contrasting finding in regards with mother's age. Contrary findings were observed for early initiation and exclusive breastfeeding with education status. Complementary feeding was about 92% among higher educational status of mothers. Nuclear families had relatively better practice regarding early initiation of breastfeeding and joint families showed relatively better practice for exclusive breastfeeding, complementary feeding and meal diversity. Comparatively better practices were observed for exclusive breastfeeding, complementary feeding and feeding diverse food among lower family size.

Male children were more likely to feed timely complementary feeding as of female and feeding practice for male child was found contrasting. The feeding practices of primary order children were more likely to feed diversified food as compared to secondary or more order while no difference observed for other practices. Birth place of child did not have any significance with feeding practices but the practices were quantitatively higher for health facility born children.

Average monthly income had significant association with exclusive breastfeeding and complementary feeding, where children from lower income families more likely to have breastfeeding and complementary feeding timely than higher groups. Breastfeeding and complementary feeding practices were significantly higher among the families with lower food sufficiency, while feeding diverse food and preparing separate food for child were finely practiced among higher food sufficient groups.

Feeding practices in the community were varied with characteristics of respondents, but only few of the feeding practices were significantly associated with certain

determinants. Early initiation of breastfeeding practice was almost satisfactory as the reasons for late initiation were less avoidable, but the succeeding practice; exclusive breastfeeding up to six months need to be improved through improvement of nutritional status of mother that enhances breast milk secretion, awareness activities should be introduced in the community that's why the importance of exclusive breastfeeding is acknowledged and there is also a need to reduce workload of mother so that the time for rearing to child will be increased. Complementary feeding was also significantly practiced along with frequency but there is need of feeding diversified food to children. Another practice should be improved is to prepare separate palatable and digestible diet will be helpful for fulfillment of nutritional requirement as per age.

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