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Attitude and Awareness of Mothers Regarding Child Rearing Practices in Tribal and Non-Tribal Areas of Himachal Pradesh

Dr. Pankaj Gupta[1], Dr. Vijay Kumar Sharma[2]

[1]Course Coordinator, School of Environmental Studies, Himachal Pradesh University, Summer Hill, Shimla-171009

[2]School of Development Studies, Himachal Pradesh University, Summer Hill, Shimla-171009

ABSTRACT: Child rearing refers to nurturing of children by mother and is perhaps the most demanding duty for a mother. Effective child rearing is vital for child's complete development. Socio-economic milieu and cultural beliefs determine the child rearing practices. A cross-sectional study was conducted with a view of evaluating mother's attitude and level of awareness about child rearing practices in selected pockets of tribal and non-tribal areas of Himachal. Mother is an important primary care giver and, thus, she should able to take care of her baby and develop a positive attitude towards child rearing practices, which help the child to be psychologically and socially strong. The study concludes that a few poor infant rearing practices still prevail so healthcare delivery system can play an important role to help the mothers to up bring their children.

KEYWORDS: Child rearing practices, breastfeeding, weaning, awareness, supplementary food.

INTRODUCTION

The health of a society can be easily judged by looking into the health of its young ones. Children are a critical resource whose growth and well-being will determine to a large extent the course of a country's social and economic future. The care and concern, which children receive in a particular society, is clearly indicative of the health of the society as a whole (WHO, 1976; Sidhu, 1995). Parents play a significant role in childcare and thus helping their children become contributing members of society. They accomplish this by nurturing and guiding the children. This is done by adhering to the beliefs, values, and appropriate conduct accepted in their culture. Effective child rearing entails the active and persistent physical, emotional, intellectual, and spiritual company of parents in the lives of their children. Child rearing practices vary across cultures. Although culture is the key constituent, the socioeconomic condition and lifestyle also have an impact on parenting. Leninger (1991) stated that it is essential for health care givers to "discover human care diversities and universalities in relation to world view, social structure, and other dimensions". According to Wolf, (1970) it is reasonable to expect that child-rearing practices will be slower to change than other aspects of culture. Hackett and Hackett (1994) in their study compared child-rearing practices of Gujarati mothers from East Manchester with white British-born mothers. Noticeable differences were found in child-rearing practices in the areas of discipline, feeding, sleeping arrangements and toilet training. Kelley and Tseng (1992) examined differences in parenting techniques and goals in immigrant Chinese and Caucasian-American mothers.

Breast-milk, like all other animal milks, is species-specific and has been adapted throughout human existence to meet nutritional and anti-infective requirements of the human infant to ensure optimal growth, development and survival. Human milk is not only species-specific, but is child specific as mother's milk changes as her infant grows. In addition to its richness in nutrient proteins, non-protein nitrogen compounds, breast-milk contains hormones, enzymes, growth factors, and many types of protective agents. The agents like lysozyme (a germ killer) and immunoglobulin A (IgA) have been shown to protect an infant's gastrointestinal tract and protect against bacteria such as *E. coli*, diphtheria, pneumonia, salmonella, streptococcus, and a host of other diseases (Riordan and Auerbach, 1999). Medical and public health experts advocate breastfeeding as the best method of feeding young infants for a wide variety of reasons. Breastfeeding has been a universal practice in the past. There are no marked differences between states or between different income groups. Two major areas of concern are that colostrum feeding is uncommon, and in rural areas there is a delay in introduction of supplements (Ramachandran, 1995).

Many taboos regarding colostrum reach back to the dawn of civilization. For approximately three day's post-partum, a mother's breast produces colostrum. Colostrum is thicker, creamier and more yellow in color than the thin bluish-white mature milk.

Compared to mature milk, colostrum is richer in protein, including many immunoglobulins and high in some water-soluble vitamins such as A, E, and K, and lower in carbohydrates and fats (Riordan and Auerbach, 1999). But the colostrum is discarded because of the cultural belief that it is "heavy" or "not good for the child". The color of the initial breast milk is slightly yellow which supports the perception that for first two days mothers milk is impure and can be harmful for the child.

It is recommended that breast-feeding should be started as soon as possible after birth and if possible within six hours of birth. Colostrum has distinctive nutritional and antibody properties but it is not fed to infants in some rural areas of India and hence its disadvantages to those infants are recognized and documented. Initiation of early breast-feeding has also been reported from some rural areas of Himachal Pradesh (Belavady *et al.*, 1959). Mudgal *et al.,* (1979) reported early initiation in Madhya Pradesh and an Organizational Research Group (ORG) report in 1989 and various other researchers reported it from urban and rural Gujarat (Khan and Basu, 1987).

MATERIAL & METHODS

Sampling design

The study is a cross-sectional questionnaire-based observational exploration using random sampling scheme. 300 households including 100 from the tribal districts and 170 from the non-tribal were selected using random sampling method. Thirty households were taken from high income households in urban provinces to represent the control group. From the 100 tribal households, 130 children were sampled whereas from the non-tribal households, 220 children were sampled. Thirty five children were taken to represent the control group. Hence, the total sample comprises of 385 children. In some households there were joint families. In all 350 mothers were interviewed from tribal and non-tribal areas and 35 from urban province. Tribal children were selected from districts Kinnaur and Chamba taking fifty households from each district. 130 children were available for sampling from these 100 tribal households at the time of survey. Non-tribal children were selected from districts Mandi, Shimla, Solan and Chamba. Fifty households each were selected and thirty five households each were selected from Chamba and Solan. The control group children were taken from the urban pockets in Shimla and Solan taking 15 households from each district.

Secondary sources

For the accomplishment of the objectives of the study, both primary and secondary data was utilized. The secondary sources used in the study include the Himachal Pradesh human development report, reports and documents of the department of health, tribal sub plan and Himachal Pradesh development report.

Primary sources: Method of data collection

Feeding patterns

(i) Breast feeding:
   a. Time of initiating
   b. Duration of breast feeding
   c. Method of stopping breast feeding

(ii) Time of Weaning and starting of supplementary food.

Awareness of mothers regarding

   a. Colostrum feeding
   b. Breast feeding
   c. Role of oral rehydration syrup (ORS) in managing diarrhea
   d. Vaccination against diseases
   e. Balanced diet and dietary intake during pregnancy
   f. General hygiene and healthcare

Status of breastfeeding, i.e. time of initiation, duration of breastfeeding, method and reason of stopping breastfeeding, and view regarding mother's milk and time of weaning is represented in frequencies and percentages. The Chi-square test has been used for seeing the variance in responses of mothers with regard to the duration for which the child is breastfed. Percentages and frequencies have been calculated for infant feeding practices such as the number of times the child is fed, frequency of cooking special food for the child, the interest of mothers in learning new methods of cooking, consumption of breakfast and lunch by the child, boiling and filtering of drinking water and awareness regarding ORS.

Household conditions

In order to find out the relationship of malnutrition with living condition of the children, conditions around house/locality of subject under study were taken into account. Observation method was used for assessing quality of house in terms of

maintenance, hygiene, rubbish disposal and sanitary conditions were also taken into consideration. Sunlight and air circulation in rooms, sources of drinking water and fuel used etc.

Awareness regarding the frequency of cleaning the kitchen, conditions of kitchen, type of house, and conditions of the house are tabulated in frequency and percentage tables. Frequencies and percentages are used to represent the time of occurrence of milestones in non-tribal and tribal children.

RESULTS & DISCUSSION

A. Infant Feeding Practices in tribal and non-tribal areas

The literacy level of the mother has a deep impact on the nutritional status of the child, the higher the education level of the mother, the lower the under-nutrition level of the children**.** The interplay of social, biological, and attitudinal factors thus influences infant-feeding practices and consequently child nutrition and health. Infant feeding and caring practices of mothers are important determinants of children's nutritional status. Proper infant feeding starts from the time of birth and is important for the physical and mental development of the child.

Breastfeeding is the best food for the proper growth and development of the infant. Breastfeeding improves the nutritional status of children and reduces morbidity and mortality. Breast milk not only provides important nutrients but also protects the child against infection. The timing and the type of supplementary foods introduced in an infant's diet also have significant effects on the child's nutritional status. Feeding of colostrum, time of initiation of breast milk, type of pre-lacteal feed, method and reason of stopping breast milk, and time of weaning are important determinants of infant feeding and child care and in turn, affect the nutritional status of a child. Data regarding the status of breastfeeding and weaning among the tribal and non-tribal mothers are discussed as follows:

B. Feeding of colostrum

According to modern medical science, early initiation of breastfeeding is beneficial for both mothers and children because it stimulates the release of a hormone that helps the uterus to contract. The first breast milk i.e. colostrum is highly nutritious, rich in antibodies, and protects the newborn from diseases. Breastfeeding status and the timing of initial breastfeeding in tribal and non-tribal areas of Himachal Pradesh are presented in Table 1. It emerges from the study that breastfeeding is widespread activity in Himachal Pradesh. 98.6 percent of the surveyed children were breastfed at least for some time. A significant number of children in the study area (69.2 percent) received colostrum. 78.5 percent of children in tribal and 63.6 percent of children in non-tribal areas were fed colostrum. Out of 49 illiterate mothers from non-tribal 40 percent of mothers discard colostrum. And out of 42 illiterate mothers from tribal areas, 57.1 percent of mothers discard colostrum. Whereas graduate mothers from both non-tribal (17.8 percent) and tribal (19.8 percent) areas feed colostrum to children. Thus mothers who are educated are more likely to feed colostrum than those who are illiterate (Table 2).

The reasons stated for discarding colostrum by mothers are that it is impure and it is thick milk which is harmful to the child's digestive system. There seems to be a deep-rooted prejudice in some households and in certain parts of the state people are against giving colostrum to the child. Thus, infants are deprived of breast milk for 3 days after birth, especially where the age-old practice of celebrating *harad* (a ritual) exists. But in the control group, it was found that all mothers fed colostrum to their children and they knew the value of colostrum.

In interviewing mothers who fed colostrum to their children, it was found that these mothers are either aware of the value of colostrum or were advised by a doctor or a medical health worker. It was also found that in deliveries done in the hospital colostrum was fed to the child on the advice of doctors and nurses whereas the same was not true for deliveries done at home. Even some mothers who are less educated accepted that they fed first milk to their child even when the delivery is carried out at home and were advised to do so by doctors and health workers when they visited health centers/hospitals for checkups during pregnancy.

C. Initiation of breastfeeding

Modern medical science prescribes the early initiation of breast milk to the child i.e. within one hour after birth. In order to know about the time of initiation of breast milk, mothers are interviewed (Table 1**)**. Data collected during the study indicates that in total; nearly 64 percent of children were breastfed within one hour of birth which is quite satisfactory. In tribal areas, 92.3 percent of children were breastfed within one hour of birth followed by 4.6 percent fed between 12-14 hours after birth, and only 2.3 percent were breastfed on the second day. In non-tribal areas, 56.4 percent of children were breastfed within one hour after birth followed by 10 percent who were breastfed between 12 to 14 hours. 11.8 percent of the children were breastfed on the

second day after birth and the remaining 21.8 percent of children were breastfed on the third day. However, no difference was seen in the timing of initial breastfeeding with the sex of the child.

Thus more tribal children were breastfed within one hour of birth as compared to their non-tribal counterparts. In tribal areas of Kinnaur, it was seen that out of the total sample, 98 percent of mothers breastfed their infants immediately after birth. In tribal areas, feeding breast milk to the child on the third day is comparatively less as compared to non-tribal areas. 85.7 percent of mothers in the control group initiated breast milk soon after the birth followed by 8.6 percent who initiated it between 12 to 14 hours and the remaining 5.7 percent who started it on the second day. Thus, delivery in a public hospital has enhanced the proportion of mothers who initiate breastfeeding within one hour of birth. But on the contrary, the prevalence of age-old practices of feeding the child on the third day still prevails in both tribal and non-tribal areas.

D. Feeding of Pre-lacteal Feeds

A pre-lacteal feed is a feed other than breast milk that is given to newborns before the regular flow of mother's milk. It is not encouraged by doctors as it is less nutritious than breast milk and is more susceptible to contamination and discourages suckling. However primary survey reveals that 73.9 percent of the children are given pre-lacteal feeds. The data indicate that pre-lacteal feeds are common in both tribal and non-tribal areas. 45.3 percent of children living in the tribal areas received pre-lacteal feeds as compared to 90 percent living in the non-tribal areas. Different types of pre-lacteal feeds are given to neonates. These include honey, sugar/jaggery dissolved in water, diluted milk of cow/buffalo, and *ghutti. Ghutti* is given to neonates with a belief that it helps to prevent stomach disorders and acts as a tonic and cleansing agent.

These pre-lacteal feeds are given before the establishment of lactation of the mother. Breast feeding should be more common than pre-lacteal feeding but people are inclined to follow the traditional and outdated methods of infant feeding. Out of 350 mothers interviewed, only 26.2 percent of mothers fed breast milk to their child and avoided any type of pre-lacteal feed. The pre-lacteal feed given to the children in tribal and non-tribal areas (Table 1) comprised of honey (26.6 percent), sugar and water (14.5 percent), and *gur* (molasses) and water (32.8 percent).

The feeding of pre-lacteal feed to the newborn may result in infection because of contamination while feeding the child. Regarding the manner of the feeding of pre-lacteal feed, it is found that it is mostly fed with a finger or spoon. Pre-lacteal feed is also fed with the help of cotton/ cotton cloth. Mothers/ grandmothers were questioned about the cleanliness and hygiene of the cotton/ cotton cloth used for feeding children. They claimed that it is washed dried and kept properly for use. Mothers admitted that pre-lacteal feed is given by some elderly person usually a grandmother or grandfather as it is thought that it would help the child to take after or follow the footsteps of the person who fed the pre-lacteal feed.

In some cases, honey is given as a pre-lacteal feed with a thin gold wire. *Om* is written with the help of a wire and honey is put on the tongue of the infant. This is considered very auspicious among both tribal and non-tribal communities. In some areas of district Solan and Mandi where the breast milk is initiated after two or three days, honey is exclusively fed to the child and in some cases, honey along with milk other than breast milk using a spoon or cotton swab is given. It is also believed that the infant's intestine is filled with dirt that needs to be cleaned and honey is considered a good cleansing agent. Most other pre-lacteal feeds (sugar and water or gur and water) were fed with a spoon. It was found that some communities in district Mandi give a finger touch of cow dung on the tongue of the infants for the purpose of *shudhi* (purification ceremony). This ritual is known as *gulchutu dena*. Also, it is found that 71.4 percent of children were given honey as pre-lacteal feed while the rest 28.6 percent are given no pre-lacteal feed but only breast milk in the control group.

E. Awareness regarding the importance of breast milk

All the mothers interviewed regarding the importance of breast milk responded that breast milk is good for the child (Table 1).

a. Duration of breastfeeding

Exclusive breastfeeding is recommended for the first six months of a child's life because breast milk is uncontaminated and contains all essential nutrients needed by infants in the first few months of life. In addition, the mother's antibodies in breast milk provide immunity to the child. Data on the duration of breastfeeding is presented in Table 1. The majority of mothers (46.8 percent) exclusively breastfed their children up to the 5^{th} month while 41.7 percent of mothers fed their children up to the 8^{th} month. Only 10.2 percent of the mothers breastfed their children for nearly one year. In non-tribal areas, 63.6percent of mothers exclusively fed their children for up to eight months. While analyzing the situation in tribal and non-tribal areas, it was found that 92.3 percent of mothers exclusively feed their child for up to five months in comparison to 20 percent of mothers in the non-tribal areas. Primary data shows that all the respondents of district Mandi exclusively breastfed their infants and did not use bottle feeding.

b. Methods and reasons for stopping breastfeeding

According to modern medical science, breastfeeding should be continued up to 2 years of age although not exclusively. In tribal areas, 45.4 percent of mothers accepted that they had breastfed their child for up to two years followed by 43.1 percent of mothers who said they had fed their child for up to 3 years (Table 1); while the scenario is different in non-tribal areas, where 55 percent of mothers had breastfed their child for up to two years followed by 24.1 percent of mothers who have breastfed their child for up to 3 years. Thus, only 51.4 percent of mothers in the whole sample were aware of the importance of feeding breast milk for up to two years. In the control group, it was found that 37.1 percent of mothers fed breast milk for less than two years, while 28.6 percent of mothers fed breast milk for more than two years, and the remaining 34.3 percent fed breast milk for less than six months.

The Chi-square test has been used for seeing the variance in responses of mothers with regard to the duration for which the child is breastfed. The results indicate a high variance in responses in the case of both tribal and non-tribal areas. The chi-square value of 128.3 for 4 degrees of freedom at 0.001 percent level of significance, in the case of tribal households, is much higher than the expected chi-square value of 18.5 if the null hypothesis or hypothesis of no variance in responses is true (Table 3). The highest response category for the duration for which a child was breastfed in the case of tribal households is for less than two years (45.4 percent) whereas 43.1 percent responded in favor of 2-3 years.

In the case of non-tribal households, the chi-square value of 276.1 for 5 degrees of freedom at 0.001 percent level of significance is much higher than the expected chi-square value of 20.5 thereby indicating high variance in responses. The highest response category for the duration for which a child is breastfed in the case of non-tribal households is again for 1-2 years (55 percent). 24.1 percent responded in favor of 2-3 years.

In the case of control households, 37.1 percent of households responded in favor of 1-2 years whereas 28.6 percent of households responded in favor of 2-3 years. 17.1 percent of households responded in favor of 3-6 months whereas 17.1percent responded in favor of 6-9 months. The tabulated value of 4.11 at a 0.265 level of significance is higher than the calculated chi-square value of 3.971 indicating that there is no significant evidence of variance.

There is a time for everything to end and breastfeeding is no exception. Many mothers do not know when and how to stop breastfeeding. It is a tough decision for the mother, as both mother and child are emotionally attached to one another. But there are many reasons responsible for stopping breastfeeding at an early stage. Mother's health, less milk, working status of the mother, and even second pregnancy insist mothers stop breastfeeding. 13.8 percent of mothers in tribal and 12.2 percent of mothers in non-tribal areas stopped feeding breast milk because of insufficient milk. Another reason responsible for stopping breast milk is the illness of mothers 9.2 percent of mothers in tribal and 9.1 percent of mothers in non-tribal stopped breastfeeding because of this. In tribal areas, 22.3 percent of mothers stop breastfeeding and in non-tribal areas, 45.6 percent of mothers stop it due to second pregnancy. Another cause of stopping breastfeeding is the working status of mother. In urban areas, mothers are engaged in jobs whereas in rural areas they are busy with fieldwork and other household chores. 11.5 percent of mothers in tribal areas and 9.1percent of mothers in non-tribal areas stop breastfeeding because of their agricultural work or job. But in the control group, it is found that 31.5 percent of mothers stop feeding breast milk to the child because of their job, 20 percent because of a second pregnancy, and 48.5 percent do not feed milk because of insufficient milk.

The method chosen to stop breastfeeding may be gradual or abrupt. The gradual method is considered better because the mother before stopping breastfeeding makes the child familiar with other milk/food which does not affect the health of the child. On contrary, the abrupt method at times makes a child suffer. In this case, at times the child is not prepared or even doesn't like the supplementary food and thus remains hungry. Therefore, mothers choose 'a quick and easy method to replace the sweat-tasting breast milk with some repelling material. The use of various herbs and spices to bring about weaning is common in various societies but this may be harmful to mother and child.

It is observed during the survey that 63.1 percent of mothers in tribal and 65.5 percent of mothers in non-tribal areas gradually stop feeding breast milk to their child, while 36.9 percent in tribal areas and 34.5 percent of mothers in non-tribal areas abruptly stop feeding breast milk (Table 1). Those who abruptly stop feeding children either use some plant base material or another practice to stop it. The various stuffs used for abruptly stopping breastfeeding in non-tribal areas include paste of *kadvo* (*Roylea elegance*) plant, a paste of *mehandi* (*Lawsonia inermis*), the paste of *lal-mirch* (*Capsicum annum*), nail polish etc. Sheep wool is used in tribal areas to make children fear the breast and distract his attention. These are generally smeared on the nipple/breast which changes the taste and repels the child from taking breast milk. But in the control group it is found that 94.3 percent of mothers gradually stop breastfeeding while remaining 5.7 percent stop it abruptly and nothing is used to stop breastfeeding.

Bottle-feeding is discouraged for very young children because of its potential negative effects on a child's health. It is often associated with an increased risk of illness, especially diarrheal diseases. The use of a bottle is associated with a lessening of the

intensity of breastfeeding and a consequent shortening of the period of postpartum amenorrhea. Only 5.4 percent of children are given milk by the bottle in tribal areas as compared to 11.4percent in non-tribal areas (Table 1). Bottle-feeding is more common among working, urban, and high society women. Bottle feeding is relatively rare in Himachal Pradesh. 38.5 percent of mothers in tribal and 60.9 percent of mothers in non-tribal areas only breastfed their child. Another indigenous method of feeding milk to the child in non-tribal areas was the use of a feeding vessel locally named as *charu* which is no longer in use. It is seen in the whole study area that when mothers introduced top milk they feed it with the help of a spoon and cup (30.5 percent) and with a glass (7.7 percent). In the control group, 94.3 percent of mothers feed milk to the child by the bottle along with breastfeeding and the rest 5.7 percent only feed breast milk. No other method of feeding milk is observed in the control area. However, feeding milk with the bottle is relatively higher in the control group in comparison to tribal and non-tribal areas where along with breast and bottle feeding even the indigenous methods of feeding milk such as with cup and spoon, glass, etc. is also observed.

F. Weaning Practices

Weaning is an act of complementing mother's milk with other food items. But early complementary feeding is discouraged for several reasons. It exposes infants to pathogens and increases the risk of infection, especially diarrhoeal disease and also decreases infants' intake of breast milk. In harsh socio-economic environments, supplementary food is often nutritionally inferior. Information on feeding is obtained by asking mothers about the time of weaning and the introduction of complementary feeding in children. Mothers were judged to know the time for starting supplementary foods. It is found that only 3.1 percent of mothers from tribal areas start supplementary food as early as between 3-4 months whereas a maximum (40.8 percent) of mothers start it between 7-8 months (Table 1). About 33 percent of the mothers in the tribal areas introduce supplementary food between the fifth and seventh months. Even 15.3 percent of mothers delay in starting supplementary food i.e. between the 8^{th} and 9^{th} month. The scenario is different in non-tribal areas where 6.8 percent of mothers start supplementary food between 3-4 months followed by 11.4 percent who introduce it between 4-5 months. About 50 percent of mothers in non-tribal areas give supplementary food between the fifth and seventh months. All the mothers interviewed from the control group introduce the supplementary food between 5-6 months which is considered the right time to introduce the supplementary food. The late introduction of supplementary food among many cultures in Himachal Pradesh is celebrated. The formal ceremony is called *lugru* or *khirpu*. This ceremony is considered auspicious and is done between the seventh and eighth months after birth.

Thus, mothers in non-tribal areas start supplementing children's diets earlier than those in tribal areas whereas mothers in Shimla introduce supplementary foods in time. The reason given by the mothers for introducing supplementary foods is insufficient breast milk, pregnancy and work. But the educated mothers and those who are aware of the benefits of timely initiation of supplementary food accepted the advantages of introducing these foods at an appropriate time. 42.5 percent of mothers are forced to change from breast milk to other foods because of another pregnancy. For children, the transition from breast milk to solid foods or other milk is abrupt, usually due to the mother's pregnancy. Such a practice adversely affects the child's health. Moreover, short birth intervals can affect the health of both the mother and the next infant. The working status of the mother has a slight influence on infant-feeding practices. Women working outside the home tend to wean their children earlier and introduce supplementary food early. 57.5 percent of the working mothers feed supplementary foods to their children before the child has attained the age of six months. Other investigators have reported similar reasons given by mothers from developing countries for supplementary food and ceasing breastfeeding (Almroth and Latham, 1982; Ghosh *et al*, 1976; Huffman *et al*, 1980).

G. Supplementary foods and feeding taboos

A number of supplementary foods are prepared by mothers in tribal and non-tribal areas. In non-tribal areas *dal ka paani* (boiled lentil water), *khichari* (rice cooked with lentil), *kheer* (rice pudding), *dalia* (porridge), *chapatti* (bread), *suji kheer* (semolina pudding), *peech* (rice water), *sabudaana* (cooked seeds of *caryota urens*) *savion ke kheer* (vermicelli pudding), *churri* (soup of dried chees), *tayap* (roasted rice soaked in milk), *tehlava* (preparation of dry fruits including almonds, poppy seeds, cucumber seeds), rice, mashed potatoes, fruits, vegetables, and biscuits; while, in non-tribal areas besides the above-mentioned items, some traditional weaned food items given to children are *chulphanting* (gruel of dried apricot), *sattu ki ladoo* (sweetmeat of roasted barley), *bakrey ka* soup (non-veg soup). Some food items to be given as supplementary food are restricted. These include *mash* (*Vigna radiata*) *dal*, *arbi* (*Colocasia spp.*), *rajmaa* (*Phaseolus vulgaris*), curry, and *bhindi* (*Hibiscus esculentus*) because of a popular belief that these food items are not digestible to child and result in digestive disorders including stomach ache and diarrhea. Curd is excluded from supplementary foods by mothers due to the fear of the adverse effect on the health of the child. Both tribal and non-tribal mothers have some knowledge of the importance of fruit or vegetable soup/water as a liquid supplement. However, few mothers give fruit juices, eggs, and non-vegetarian foods to their babies. But in the control group, the trend is different, the

mothers in addition to all home-based supplementary food included fruits, vegetables, and dry fruits. Mothers also give commercial weaning foods.

Thus, the factors mentioned above are responsible for poor child health in tribal and non-tribal areas as the people are still inclined to follow the traditional and outdated methods of feeding infants. Practices such as discarding of colostrum, unhygienic methods of feeding pre-lacteal feed to the child, late start of breastfeeding after the childbirth at the behest of elders, and early or late start of supplementary food has telling effects on child health. In certain non-tribal areas, in certain families, the infants are deprived of breast milk for 3 days after childbirth due to the prevalence of the age-old practice of celebrating "*Harad*". Such unreasonable and unscientific beliefs still exist in non-tribal areas. In a similar study by Bhat *et al.* (1992), mothers of malnourished and well-nourished infants are interviewed and the practice of breastfeeding and weaning exhibited a direct relationship with infant nutrition. According to studies by Das *et al.* (1995), mothers were assessed for their knowledge and attitude regarding breastfeeding and weaning and it is concluded that most mothers do not have correct knowledge about breastfeeding and the appropriate time for introducing weaning foods. In the present investigation, though mothers are aware of the benefits of breastfeeding and the appropriate time for introducing weaning foods still they are inclined to follow the advice of elders or their tradition. Developmental programs such as the Integrated Child Development Scheme (ICDS) and the national nutrition mission are operative in these areas. Nutrition education in various areas, including breastfeeding and weaning, is also given to mothers of the beneficiary children. In conversing with mothers, it is seen that they took a keen interest in such programs and the impact of this is seen on the infant feeding and caring habits in both tribal and non-tribal areas.

H. Mother's attitude and awareness regarding child-rearing practices

The present study has made an in-depth inquiry into the impact of a mother's literacy, her awareness, and attitude regarding feeding, weaning, and caring habits. It is conclusively found that a higher rate of education equips the mother with the requisite information regarding infant care, feeding and weaning, health and hygiene, and all other related information which reduces the risk of the children falling prey to nutritional deficiency disorders. Mothers in tribal and non-tribal areas know their feeding and caring attitudes. An account of infant feeding and caring practices in tribal and non-tribal areas is recorded in Table 4. Regarding the feeding of the child, 80.5 percent of mothers feed their child thrice a day while 12.5 percent feed their child three to four times a day. Feeding a child, three to four times a day is more (17.7 percent) in the non-tribal areas than in the tribal. About 6.8 percent of children are fed twice a day and this practice is more common in non-tribal areas (9.6 percent) in comparison to tribal areas. All the mothers of the control group feed their children thrice a day.

Mothers were interviewed to know their interest in learning new methods of cooking food and the frequency of serving special foods to the child. In tribal areas, 50 percent of mothers are interested in learning new methods of cooking as compared to 63.1percent in non-tribal areas. All the mothers of the control group show interest in learning new methods of cooking and they even try these for their families. The frequency of cooking special food for children also varies (Table 4) and only 3.8 percent of mothers in tribal areas and 1.8 percent of mothers in non-tribal areas prepare special food for children daily as against 42.3 percent of mothers in tribal and 39.1 percent mothers in non-tribal areas who never cook anything special for their child and their routine food forms the part of child's diet. The reason behind this is that some mothers are either not interested in cooking special food for children or they don't have the time to do so because of too many household chores to attend. Still, 42.3 percent of mothers in tribal and 35.5 percent in non-tribal areas find time at least once a week to cook something special for their children. 51.4 percent of mothers belonging to the control group cook special food for their children daily while rest 48.6 percent cooked some special food for their children on alternate days.

Feeding a child is the prime duty of the mother and is also an integral part of caring for the child. This responsibility is shared by grandmothers in both tribal and non-tribal areas in both joint and nuclear families where grandmothers are the caretakers as (Table 4). This responsibility is shared by 9.2 percent of grandmothers in tribal and 9.1 percent in non-tribal areas. But in most families, mothers perform this duty. In the control area, 8.5 percent of grandmothers and 91.6 percent of mothers help in feeding children. All children in the present study ate food on separate plates. On the whole 78.3 percent of families, parents and children ate together while in 21.7 percent families meals are taken separately and the reason is the hectic schedule of parents as a result of which they are not able to eat with their children. While all parents of control responded positively in this regard. They take their evening meals with their children. Eating with the child is very essential because it not only helps in checking the diet of the child but also provides a chance for the child to learn and use a communicative approach. All children included in the study are given breakfast and lunch on time. Nowadays most children receive mid-day meals in their school. But prior to this mothers use to give packed lunch to their children.

Drinking water should be clean because its contamination leads to a number of water-borne diseases including diarrhea. To overcome this problem, water should be boiled or properly filtered. A relatively poor response is given by mothers in this regard. Out of 350 mothers, only 24 percent of mothers boil or filter the water for drinking in tribal and non-tribal areas (Table 4). All the mothers from the control group use boiled or filtered water. Caring practices also include special care for health and hygiene when the child is sick, and special care for diet has to be taken care of. A child suffering from diarrhea should be given liquid, semi-liquid food and should be fed frequently. 93.4 percent of mothers respond well to this. Rest 6.6 percent of mothers are not aware of this due to illiteracy.

Mothers were judged to know about awareness of the use of ORS in the management of diarrhea. 84.4 percent of mothers are aware of its use in tribal areas as compared to 89.5 percent of mothers in non-tribal areas (Table 4). Some outdated feeding and caring practices are also prevalent in both tribal and non-tribal areas.

The environment and the living conditions play a major role in a child's growth and health. The influence of the macro-environment, including social, economic, and cultural variables, on child-rearing practices, is well established. But the micro-environmental conditions such as poor housing and sanitation have been implicated in the synergism of malnutrition and infection. Living conditions and sanitary conditions are assessed in the study area by observation method and by making inquiries from mothers regarding the cleanliness and hygiene maintained (Table 5). The main source of water is tap (82.5 percent) while other sources are spring (10.0 percent) and *bauri* (7.5 percent). Out of total households surveyed in tribal and non-tribal areas, only 81.5 percent of houses have a separate room for a kitchen while 10.5 percent of houses have no separate kitchen. The frequency of cleaning the kitchen also varies. In the control province, all houses have a separate kitchen in good condition. Out of 350 households surveyed in tribal and non-tribal areas, 16.5 percent of women clean their kitchen daily while 11.7 percent clean only once a month and remaining 45.1 percent and 26.8 percent clean the kitchen once a week and once fortnightly. It is found that 49.4 percent of kitchens have satisfactory conditions. 37.4 percent of kitchens in tribal and 20 percent of kitchens in non-tribal areas have poor conditions. In total, only 24.2 percent of kitchens are in good condition (Table 5). In the control group, the conditions of the kitchen in terms of cleanliness are good.

Availability of sanitary facilities is observed in tribal and non-tribal areas and it is found that 56.9 percent of houses in tribal and 70 percent of houses in non-tribal areas have toilets whereas 30.8 percent of people in tribal and 16.4 percent of people in non-tribal areas go outside. 12.3 percent of people in tribal and 13.6 percent of people in non-tribal use common toilets (Table 5). The scenario is altogether different in the control area in all respects. All houses have proper sanitary facilities. Out of the total houses surveyed in tribal and non-tribal areas, 40.2 percent are *kuccha* houses and 42.2 percent are *puccka* houses, whereas all houses in the control area are *puccka*. Conditions of the house in terms of maintenance, cleanliness, and garbage disposal are also assessed. It is found that 37.4 percent of houses in tribal and 20 percent in non-tribal areas are in poor condition while 44.3 percent of houses in tribal and 52.3 percent in non-tribal conditions are satisfactory and only in whole 24.1 percent of houses are in good condition (Table 5). But the conditions of the house in the control area are good in all respects. Binary logistics is run and it is seen that condition of the house has a positive coefficient with regard to nutritional status and better living conditions. Thus, the study indicates that malnutrition among children depends on both better living conditions and dietary intake. Malnutrition among children is much higher among those with poor housing and sanitary conditions even with the same level of dietary intake whereas, in spite of low dietary intake, the level of malnutrition is much low for those living in better sanitary conditions. Similar results are obtained by Yadav and Singh (1999) in their study conducted on tribal children of Bihar.

The study revealed that people are still inclined to follow the traditional and outdated methods of feeding of infants. Practices such as discarding of colostrum, unhygienic methods of feeding pre-lacteal feed to the child, late start of breast feeding after the child birth at the behest of elders, early or late start of supplementary food has telling effect on child health. Living and sanitary conditions were assessed by observation method and by making enquiries from mothers regarding the cleanliness and hygiene.

CONCLUSION

There is a need to formulate realistic health development plans based on need as felt by people in these areas. Healthy nutrition can be encouraged through local produce and local recipes. What all is required to do about food habits, old and new is to protect, support and help preserve the existing good food habits. And if some unhealthy dietary practices exist, it is very essential to first of all understand the knowledge and customs of the people who follow such practices and then slowly eradicate them. Factors which affect the child health, like nutritional needs during pregnancy, immunization of children harmful practices of discarding colostrums, delayed initiation of breastfeeding, proper time for starting supplementary food should be included in health education programmes. Awareness should be generated among mothers to protect, support and promote breast-feeding, proper time of weaning, and to eliminate promotion of breast milk substitutes, bottle feeding and manufactured baby foods. The use of

locally available complementary foods should be encouraged. There is need to examine the effectiveness of existing programmes related to mother and child health, identify their limitations and feasibility.

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Table 1. Status of breast feeding and weaning among tribal and non-tribal mothers

Sr. No.	Query	Response	Tribal		Non-tribal		Total		Control	
			No.	%	No.	%	No.	%	No.	%
1.	Is colostrum fed to the child after birth?	Yes	102	78.5	140	63.6	242	69.2	35	100.0
		No	28	21.5	80	36.4	108	30.8	-	-
2.	When is the breast milk started?	Within one hour of birth	120	92.3	124	56.4	244	64.0	30	85.7
		Between 12-14 hours	6	4.6	22	10.0	28	8.0	3	8.6
		Second day	3	2.3	26	11.8	29	8.2	2	5.7
		Third day	1	0.8	48	21.8	49	14.0	-	-
3.	What is given to the child just after birth?	Honey	27	20.8	65	29.6	92	26.6	25	71.4
		Sugar and water	21	16.2	30	13.6	51	14.5	-	-
		Gur and water	11	8.5	104	47.3	115	32.8	-	-

		Breast milk	71	54.6	21	9.5	92	26.2	10	28.6
4.	Duration for which child should be given exclusively breast milk	4-5 months	120	92.3	44	20.0	164	46.8	21	60.0
		7-8 months	6	4.6	140	63.6	146	41.7	-	-
		Up to 1 year	3	2.3	33	15.0	36	10.2	14	40.0
		More than 1 year	1	.8	3	1.4	4	1.1	-	-
5.	Duration for which child was breast-fed	No feeding	0	0	3	1.4	3	1.4	-	-
		0- 3 months	1	.8	21	9.5	22	6.2	6	17.1
		3-6months	6	4.6	6	2.7	12	3.4	5	17.2
		6-9 months	8	6.2	16	7.3	24	6.8	13	37.1
		Less than 2 years	59	45.4	121	55.0	180	51.4	10	28.6
		2-3 year	56	43.1	53	24.1	109	31.1	-	-
6.	Why was breast-feeding stopped?	Insufficient milk	18	13.8	27	12.2	45	12.8	17	48.6
		Sickness	12	9.2	20	9.1	32	9.1	7	-
		Pregnancy	29	22.3	100	45.6	129	36.8	-	20.0
		Work	15	11.5	20	9.1	35	10.0	11	31.5
		Didn't stop feeding milk before 2 years.	56	43.0	53	24.0	109	31.1	-	-
7.	Method of stopping breast feeding.	Gradual	82	63.1	144	65.5	226	64.5	33	94.3
		Abrupt	48	36.9	76	34.5	124	34.5	2	5.7
8.	What was used to stop breastfeeding?	Nothing	103	79.2	153	69.5	256	73.1	35	100.0
		Some material	27	20.8	67	30.5	94	26.9	-	-
9.	Method of feeding milk to child	Bottle	7	5.4	25	11.4	32	9.1	33	94.3
		Only breast milk	50	38.5	134	60.9	184	52.5	2	5.7
		Cup/spoon	54	41.5	53	24.1	107	30.5	-	-
		Glass	19	14.6	8	3.6	27	7.7	-	-
10.	View regarding the nature of breast milk.	Good	130	100.0	220	100.0	350	100.0	35	100.0
		Bad	0	0	0	0	0	0	-	-
11.	When to start supplementary food	3-4 months	4	3.1	15	6.8	19	5.4	-	-
		4-5 months	10	7.7	25	11.4	35	10.0	-	-
		5-6 months	18	13.8	44	20.0	62	17.7	35	100.0
		6-7 months	25	19.2	68	30.9	93	26.5	-	-
		7-8 months	53	40.8	52	23.6	105	30.0	-	-
		8-9 months	19	14.6	16	7.3	35	10.0	-	-
		After 1 year	1	.8	0	0	1	0.8	-	-
12.	Reason for starting early supplementary food.	Stopped feeding breast milk because of second pregnancy	8	57.1	15	37.7	23	42.5	-	-
		Stopped feeding breast milk because of job	6	42.8	25	62.5	31	57.5	-	-

Source: Primary Survey

Table 2. Awareness regarding feeding of colostrum among tribal and non-tribal area

Education	**Non- Tribal**				**Tribal**			
	Yes		**No**		**Yes**		**No**	
	No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
Illiterate	9	6.4	40	50.0	26	25.4	16	57.1

Up to 5th	0	-	6	7.5	0	-	0	-
Up to 8th	37	26.4	12	15.0	29	28.4	2	7.2
Matric	45	32.2	13	16.3	15	14.7	3	10.7
Plus Two	24	17.2	1	1.2	12	11.7	0	-
Graduation	25	17.8	8	10.0	20	19.8	7	25.0
Total	**140**	**100.0**	**80**	**100.0**	**102**	**100.0**	**28**	**100.0**

Source: Primary Survey

Table 3. Chi-square results for variance in response with regard to duration of breastfeeding

Area	**Duration for which Breastfed**							**Chi Square results**			
	0 months	**0- 3 months**	**3-6 months**	**6-9 months**	**1-2 months**	**2-3 months**	**Expected frequency**	**Tabulated value at degrees of freedom (df)**	**Chi Square Value**		**Level of significance**
	No.	**No.**	**No.**	**No.**	**No.**	**No.**		df	value		
Tribal	0	1	6	8	59	56	26.0	4	18.5	128.3	0.001
Non-Tribal	3	21	6	16	121	53	36.7	5	20.5	276.1	0.001
Control	0	0	6	6	13	10	8.8	3	4.11	3.971	0.265

Source: Primary Survey

Table 4. Infant feeding practices among tribal and non-tribal areas

Sr. No.	**Query**	**Response**	**Tribal**		**Non-tribal**		**Total**		**Control**	
			No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
1.	Number of times child is fed	Twice a day	3	2.3	21	9.6	24	6.8		
		Thrice a day	122	93.8	160	72.7	282	80.5	32	91.4
		3-4 times a day	5	3.8	39	17.7	44	12.5	3	8.6
2.	Frequency of cooking special food for child	Once a week	55	42.3	78	35.5	133	38.0	-	-
		Daily	5	3.8	4	1.8	9	2.5	18	51.4
		Alternate days	4	3.1	11	5.0	15	4.2	17	48.6
		Once in 15 days	7	5.4	11	5.0	18	5.1	-	-
		Once a month	4	3.1	30	13.6	34	9.7	-	-
		Never	55	42.3	86	39.1	141	40.2		
3.	Interested in learning new methods of cooking	No	65	50.0	79	35.9	144	41.2	-	-
		Yes	65	50.0	141	63.1	206	58.8	35	100.0
4.	Child is fed by	Mother	94	72.3	165	75.0	259	74.0	32	91.4
		Grandmother	12	9.2	20	9.1	32	9.1	3	8.6
		Both	18	13.8	35	15.9	53	15.1		
5.	Children have separate plate	Yes	130	100.0	220	100	350	100.0	35	100.0
		No	0	0	0	0	0	0	-	-
6.		Separately	47	36.2	29	13.2	76	21.7	-	-

	Food consumption by parents and children	Together	83	63.8	191	86.8	274	78.2	35	100.0
7.	Breakfast consumed by child	Yes	130	100.0	220	100	350	100.0	35	100.0
		No	0	0	0	0	0	0	-	-
8.	Lunch consumed by child	Yes	130	100.0	220	100	350	100.0	35	100.0
		No	0	0	0	0	0	0	-	-
9.	Boiled/filtered drinking water	Yes	22	16.9	62	28.2	84	24.0	35	100.0
		No	108	83.1	158	71.8	266	76.0	-	-
10.	Child suffering from diarrhea should be given liquid, semi-liquid food and should be fed frequently	Yes	130	100.0	197	87.2	327	93.4	35	100.0
		No	0	0	23	10.4	23	6.6	-	-
11.	Awareness regarding ORS	Yes	110	84.6	197	89.5	307	87.7	35	100.0
		No	20	15.4	23	10.5	43	12.3	-	-
12.	Who is fed first among family members	Elders	25	19.2	26	11.8	51	14.5	-	-
		Children	105	80.8	191	86.8	296	84.5	35	100.0
13.	If the child cries, then *dhuni*[1] should be given.	Yes	120	92.3	162	73.6	282	80.5	-	-
		No	10	7.7	58	26.4	68	19.5	35	100.0
14.	Applying *kajal*[2] in baby's eye is dangerous for eyes.	Yes	108	83.1	177	80.5	285	80.5	35	100.0
		No	22	16.9	43	19.5	65	18.5	-	-
15.	First and last chapatti should not be given to child.	Yes	24	18.5	113	51.4	137	39.1	-	-
		No	106	81.5	107	48.6	213	60.9	35	100.0

Source: Primary Surve

Table 5. Awareness among tribal and non-tribal mothers regarding hygiene and surrounding

Sr. No.	Query	Responses and observations	Tribal		Non-tribal		Total		Control	
			No.	%	No.	%	No.	%	No.	%
1.	Source of water	Tap	90	69.2	197	89.5	287	82.5	35	100.0
		Spring	37	28.5	0	0	37	10.0	-	-
		Bauri	3	2.3	23	10.5	26	7.5	-	-
2.	Do you have a separate room which is used as a kitchen	Yes	91	70.0	194	88.2	285	81.5	35	100.0
		No	39	30.0	26	11.8	65	10.5	-	-
3.	Frequency of cleaning the kitchen	Daily	36	27.5	22	10.0	58	16.5	35	100.0
		Once a week	38	29.0	120	54.5	158	45.1	-	-
		Once in 15 days	41	31.3	53	24.1	94	26.8	-	-
		Once a month	16	12.2	25	11.4	41	11.7	-	-
4.	Conditions of kitchen	Poor	49	37.4	44	20.0	93	26.5	-	-
		Satisfactory	58	44.3	115	52.3	173	49.4	-	-
		Good	24	18.3	61	27.7	85	24.1	35	100.0

1 A type of smoke usually created by burning some seeds or spices in fire and infants are made to inhale it. These seeds are usually obtained from priest and this is done to prevent the child from evil eye.

2 It is black soot prepared by burning an oil lamp. This is applied in baby's eyes to prevent from evil eye.

5.	Where you go to answer natural call	Toilet	74	56.9	154	70.0	228	65.1	35	100.0
		Outside	40	30.8	36	16.4	76	21.7	-	-
		Common toilets	16	12.3	30	13.6	46	13.1	-	-
6.	Type of family	Nuclear	101	77.9	137	62.3	239	68.2	19	54.3
		Joint	29	22.1	83	37.7	112	32.0	16	45.7
7.	Type of house	*Kuccha*	61	46.6	80	36.4	141	40.2	-	-
		Puccka	37	28.2	111	50.5	148	42.2	35	100.0
		Semi-*Puccka*	33	25.2	29	13.2	62	17.7	-	-
8.	Conditions of house	Poor	49	37.4	44	20.0	93	26.5	-	-
		Satisfactory	58	44.3	115	52.3	173	49.4	-	-
		Good	24	18.3	61	27.7	85	24.1	35	100.0

Source: Primary Survey