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Comparative Study of Growth Monitoring & Promotion of Children with Special Care (IYCF Counseling) and without Special Care

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Abstract This comparative study was conducted to see the challenges and impact of counselling of Infant and Young Child Feeding (IYCF) to the mother's knowledge and the practices of the mother from case group and control on best IYCF interventions, mainly targeted the behavioral change of the mother and to see the effect on the nutritional status of the children under 2 years. A total of 353; 177 mother of case group for counselling and 176 of control group for non-counselling, eligible mothers having children 0-11 months were approached with the purpose of study and informed consent was obtained from the mothers. Then all 177 mothers from case group received IYCF counseling according to the need of mothers as well as on key IYCF messages. At the same time the 176 mothers from control group didn't receive any kind of IYCF support and counselling, they received only regular health services counselling and messages on IYCF. IYCF practices have a great impact on the physical and mental development of the child. The objective of this study was the lactating mothers with the children in the age group 0-11 months were studied and delivered IYCF counseling according to their need basis as well as key IYCF messages from case group and at the same time mothers from control group would not receive any kind of message from study and they would receive only regular health program messaging. Low percentage of mothers from the case group had knowledge on early initiation of breast feeding within one hour after birth, the exclusive breast-feeding up to 6 months. Timely initiation of complementary feeding after 6 months (61,0%, 58.7%, 61.6% & 55.4% respectively) before IYCF counselling to mothers. After IYCF counselling to the mothers of case group, they motivated and learnt to early initiation of breast feeding within one hour after birth, the exclusive breast-feeding up to 6 months. Timely initiation of complementary feeding after 6 months (79.1%, 75.7%, 75.2% & 65.5% respectively). For control group the results were 61.9%, 65.3%, 65.9% & 63.6% respectively before study and 66.5%, 67.7%, 66.8% & 64.1% after the study. The study result showed that the impact of IYCF counselling and messaging on the mother knowledge was great and it changed the knowledge level of the mother in dramatic way. The percentage of mothers from the case group & the control group those had children over 6 months practiced the exclusive breast-feeding were (60.2% & 73.5%) before study. After IYCF counselling to the mothers of case group, they motivated and changed their attitude to ensure the exclusive breast feeding for their children (73.5% and 73.9% from case and control group respectively). Before the study Minimum Dietary Diversity (MDD) was observed in only 30.3% & 36.6% respectively from case and control group for the children between 6- and 11months age group and after IYCF counselling mothers from the case group improved their practice for MDD for their children aged 6-23 months and increased to 39.0% in case group and in control group improved to 37.3%. Minimum Meal Frequency (MMF) was observed in the majority (63.6%) of children aged 6–23 months before the study and after IYCF intervention it increased to 74.6% in case group. But in Control group it changed from 72.6% to 73.1%. The indirect effect of IYCF counselling on the nutritional status of the children who are benefited from the improved mother knowledge and practices to good practices. Before the controlled comparative study, the GAM rate of the children was 21.1% & 20.3% respectively for case & control group of wasting (WHZ) and after study it was 20.1% & 20.3% respectively for case & control group. The same happened for underweight (WAZ) & stunting (HAZ). They also changed from 36.9% to 35.4% and 45.4% to 43.8% for underweight & stunting respectively. The IYCF practices are strongly influenced by what people know, think and believe and also affected by social circumstances and economic factors. Effective communication for behavioral change is necessary for ensuring optimal infant and young child feeding. Awareness regarding IYCF practices and their benefits in Maternal and Child Health (MCH) is poor leading to poor compliance. It is important to educate mothers during the antenatal visits. This study showed same impact as stated above.

Keywords: *Infant and Young Child Feeding (IYCF), Brest feeding, Complementary feeding, Lactating mother*

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1. Introduction

The optimal infant and young child feeding practices during the first 2 years of life is of paramount importance as this period is the "critical window" for the promotion of health, good growth, behavioral and cognitive development. Optimal infant and young child feeding practices include initiation of breast-feeding within 1 hour of birth, exclusive breast-feeding for the first 6 months, and continuation of breast-feeding for 2 years or more, along with nutritionally adequate, safe, age appropriate, responsive complementary feeding starting at 6 months. [1] Breast-feeding strengthens emotional security and affection creating a strong bond between the mother and the child, which in turn promotes psychosocial development of a child. To ensure good nutrition status of the infant as well as the mother, maternal nutrition plays a vital role. Breast-feeding is nature's way of nurturing the child. It provides learning and development opportunities to the infant. Breast milk also leads to increased intelligence quotients and better visual acuity due to the presence of special fatty acids in it. [2]

Approximately, 1.4 million deaths of children under the age of 5 years worldwide can be attributed to suboptimal breast-feeding. Almost 6% of under-five mortality can be pre- vented by the timely introduction of complementary feeding. [3] It was estimated that about one-fifth of overall under-five mortality can be averted if 90% infants are covered with an inclusive package of interventions to promote, protect, and support the optimal infant young child feeding (IYCF) practices. [3] A large proportion of children become vulnerable to stunting, poor cognitive development, and significantly increased risk of infectious diseases, such as, diarrhea and acute respiratory infection due to the poor complementary feeding practices. [4]

It has been established that because of the best bioavailable iron in breast milk, exclusive breast-feeding prevents anemia and infections particularly the diarrheal infections in the child. The need of introducing cereal-based foods in the diet of infant after the age of 6 months can be correlated with the fact that enzyme amylase appears in the seventh month of the infant. [5] The mother's risk for excess postpartum bleeding is decreased if breast-feeding is initiated early, which in turn lowers the risk for anemia. Exclusive breast-feeding delays next pregnancy boosts mother's immunity and reduces the insulin needs of diabetic mothers. Breast-feeding also provides protection from breast and ovarian cancers and osteoporosis. [6] This has an enormous impact in a developing country, like India, with a high burden of disease and low access to safe water and sanitation. The recent studies conducted even in developed countries have also emphasized the role of IYCF practices in reducing child mortality. [7] A global strategy for infant- and young child-feeding has been devised by the World Health Organization (WHO) and United Nations Children Fund. Based on these guiding principles, the Government of India, in collaboration with international agencies, has adopted the culturally acceptable IYCF guidelines, which were incorporated in the Integrated Management of Neonatal and Childhood Illness Programme. [8]

These guidelines recognize appropriate infant feeding practices to be crucial for improving nutrition status and decreasing infant mortality in all countries. WHO offers three recommendations for IYCF practices for children aged 6–23 months: continued breast-feeding or feeding with appropriate calcium-rich foods if not breast-fed; feeding solid or semisolid food for a minimum number of times per day according to age and breast-feeding status; and including foods from a minimum number of food groups per day according to breast-feeding status.

Bangladesh Demographic and Health Survey |(BDHS 2014) have provided useful national- and state-level information on the IYCF practices. [9] Available data showed a gross interstate variation. However, the BDHS was not designed to provide district-level data. According to the BDHS-2014 data Fifty-five percent of infants under age 6 months are exclusively breastfed. The Multiple Indicator Cluster Survey 2012-13 reported lower exclusive breastfeeding rates of 56 percent [10]. Overall, 26 percent of breastfed children age 6-23 months are given the recommended four or more food groups, and 63 percent are fed at least the minimum number of times.

According to the Multiple Indicator Cluster Survey 2012-13 (MICS-2012-13) early initiation of breast feeding (within an hour of delivery) is 57.4%., continued breast feeding up to 2 years 87.5%. [10]

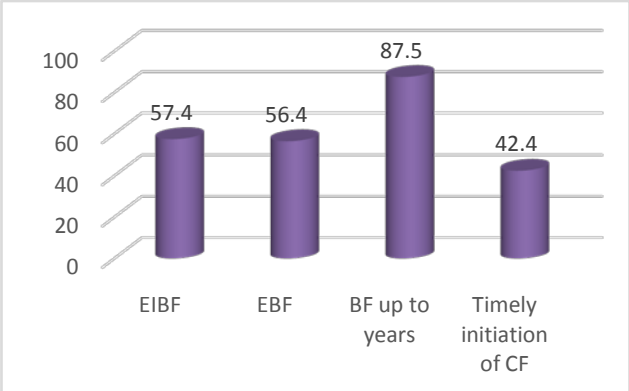

Figure 1. Bangladesh multiple indicator cluster survey, 2012-2013

With this background, this study was undertaken to assess the IYCF knowledge and practices with special emphasis on IYCF indicators, among children aged less than 2 years among16 rural areas or villages at Maligasa Union, Pabna district, Bangladesh.

Accelerating interventions aimed at improving infant and young child feeding (IYCF) at community level is a

key priority in the effort to improve survival, growth, and development of children with equity. However, in many communities IYCF practices remain far from optimal. Caregivers often lack the practical support, one-to-one counseling and correct information. Community-based IYCF counseling and support can play an important role in improving these practices: it can ensure access to these services in the poorest and the most vulnerable communities with limited access to health care, and therefore become an important strategy for programming with an equity focus.

In 2010, UNICEF developed a new set of generic tools for programming and capacity development on community based IYCF counseling with high quality graphic illustrations for low-literacy contexts. Aimed for use in diverse country contexts, the package of tools guides local adaptation, design, planning and implementation of community based IYCF counseling and support services at scale. It also contains training tools to equip community workers (CWs), using an interactive and experiential adult learning approach, with relevant knowledge and skills on the recommended breastfeeding and complementary feeding practices for children from 0 up to 24 months, enhance their counseling, problem solving, negotiation and communication skills, and prepare them to effectively use the related counseling tools and job aids. To date, a large number of countries have adapted the materials to the local context, building capacity and rolling out community based IYCF counseling and communication using the package. [11]

1.1. Good Attachment and Positions during breast feeding

1.1.1. Attachment

1. Infant's mouth wide open
2. Lower lip turned outwards
3. Chin touching breast
4. Darker skin (areola) visible above than below the mouth.

1.1.2. Positioning

1. Infant's body should be straight, not bent or twisted
2. Infant's body should be facing the breast
3. Infant should be held close to mother
4. Mother should support infant's whole body, not just neck and shoulders (for tummy down or reclining position: assisted by gravity, with baby's full weight resting on mother's body during the period the infant is learning to breastfeed; works with cesarean sections).

1.2. Counselling and Support Action: Note on Natural Breastfeeding

Every newborn has a series of responses designed by Mother Nature to make infant an active breastfeeding partner.

- When newborn lies tummy down on mother, anchored by gravity, the baby's innate reflexes kick in. This position helps the baby move toward the breast, resulting in attachment and suckling.
- If infant not alert/doesn't open mouth, hand express drops of milk and apply on infant's lips to stimulate mouth opening
- Good attachment helps to ensure that your baby suckles well and helps you to produce a good supply of breast milk
- Good attachment helps to prevent sore and cracked nipples

Note: there is no ONE right position for all mothers. No matter the position (from cradle to tummy down), there are commonalities that assist a deep latch.

1.3. Observation of Effective Suckling While Breast Feed

1. Slow deep suckles, sometimes pausing
2. Audible or visible swallowing
3. Infant's jaw will drop distinctly as he or she swallows
4. Infant's cheeks are rounded and not dimpled or indrawn
5. Mother responds with satisfaction and self-confidence.

Counselling and support action:

1. Counsel on the same actions as above for good attachment
2. If infant is not suckling, hand express drops of milk into infant's mouth to encourage suckling. [12]

Frequency of breastfeeds

Breastfeeding pattern

- On demand (on cue) breastfeeding, day and night
- Infant releases one breast before switching to the other
- Infant breastfeeds 8 – 12 times in 24 hours

If < 8 breastfeeds in 24 hours

- Increase frequency of breastfeeds by alerting and stimulating infant to breastfeed
- Breastfeed as often and as long as the infant wants, day and night
- Let infant release one breast before off ering the other

If > 12 breastfeeds in 24 hours

- Assess length of each breastfeed
- Assess if infant is getting milk at each feed: refer 'Not enough breast milk'.
- Check attachment and effective suckling

Note: Infants <2 months sometimes breastfeed every 2 hours because they have very small stomachs. Breastfeeding more frequently helps to establish breastfeeding/breast milk flow. [12]

2. Objective of the Study

2.1. General Objective

The objective of the study was to evaluate impact of Infant & Young Child feeding (IYCF) practices and counselling on the mother's knowledge and practices in terms of proper breast feeding, quantity, quality and timing of complementary feeding in infant and young child (case group), by identifying the actual status of the rural lactating mother with under one year children in comparison to control group.

2.2. Specific Objective

1. To assess the knowledge about IYCF practice before and after the IYCF counseling.
2. To find out the impact of IYCF counseling on child heath.
3. To make more conscious about IYCF and also child health among the mothers and their family members as well.
4. To reduce the malnutrition rate among the children in this community.
5. To see the impact of IYCF counselling on children's nutritional status

3. Methods and Materials

It was a convenient sample survey method and comparative study conducted from August 2016 to March 2018, at Maligasa Union, Pabna district, Bangladesh. These union caters population of about 25000 in the field practice area by providing primary and promotive health care.

3.1. Subjects

Study population comprised of mothers having children of age group 0–11 months that means below one year. A total of 353 eligible mothers were approached through house-to-house visit to participate in the study by convenient sampling method. They were informed about the purpose of study and informed consent was obtained from the mothers. The data were collected by interview method using a pretested schedule.

3.2. Standard questionnaire Development

A standard questionnaire developed to use for IYCF survey have been updated to fit with IYCF component. WHO indicators for assessing infant and child feeding practices were used. The questionnaire mainly based on the standard questionnaire on IYCF practices given by WHO was used for data collection [13]. These questions provide the information needed to calculate the key indicators of IYCF.

Questionnaire have been translated into Bangla and tested at field level to cross check eventual bias that could be introduced during interview.

3.3. Selection of Groups

Case Group: The case group which contain 177 mothers. I have selected those mothers for this group, because they are relatively weak in their knowledge and practices of IYCF. They are also want to know vast about the IYCF. They also want to give me time for this.

Then all mother received IYCF counseling according to the need of mothers such as those who have attachment or position problem, they received counseling on attachment or position as well as on key IYCF messages with the help of Simple Rapid Assessment form and Full Assessment Form adopted from IYCF toolkits, Nutrition Sector.

Everyday 5-8 mothers have got counseling depending on the weather, geographical location and availability of the mother at home.

All the mothers went through a simple rapid assessment process which contains 7 questions on breast feeding. Those who have problem identified by simple rapid assessment went to in-depth full assessment to identify where the problem is and what kinds of problems they actually have. They are-

- attachment problem,
- position problem,
- any problem found in breast,
- frequency of breast feeding,
- complementary feeding,
- Food diversity,
- Meal frequency,
- re-lactation problem or
- Problem in mother-baby bonding.
- hygiene problem,

Control Group: Those who are not so interested to conversation with me, can't give me enough time but want to give data or information about them and their children, their knowledge is relatively better than the others, I have separated them into control group, which contain 176 mothers.

Mothers of control group and village remain untouched that not getting any counseling from me. They are getting the regular support and counseling from health and family planning workers.

3.4. Counseling Method

In this study, my main focus was on counseling to the mothers. This counselling method was (IPC) Interpersonal Communication or one to one counselling.

Individual counseling is exactly what it sounds like. It is one individual working one on one with a counselor. It is the most common type of therapy. In individual therapy sessions, the person will meet with his or her counsellor and focus on the goals of the individual seeking help. The great thing about individual therapy is the individual is able to have a safe environment to talk about hard things and get unbiased, objective feedback and suggestions. Couples and family therapy are different because there are many other people, thoughts, and feelings in the room and the therapist spends time helping everyone communicate and work better together. In individual therapy, the therapist will help the individual set goals and create objectives to help them achieve those goals and it is generally documented in a treatment plan, which is like a road map for how to be successful with therapy goals. Objectives are important because many times, the person seeking therapy is likely to know what his goals are but doesn't know the steps to take to achieve them. That is where the therapist is very helpful and will create objectives, or steps, to help the individual meet his or her goals. [14]

In my study, the counselling was about Infant and young child feeding practice, hygiene, and basic nutrition, already mentioned in the section of 5.3, case group para. I have talk to the mothers by finding their problem by rapid assessment. After identifying those problem, I have given them counselling according to their needs. As I have

selected 177 mother s for case group, every day I have visited 5-7 different mothers for counselling. 1 mother got one-time counselling in every month. These sessions continue for 10 months. Thus, I have covered 177 mothers every month. Actually, counselling is a very long-term method, which can change behavior of a mother, but very slowly. Outcome of this experiment is not so visible, but can be find out by their practices.

3.5. Anthropometric Measurement

In case of anthropometric measurement for their weight and height-

Children were weighed using electric weighing scale with a precision of ±100g. Electric weighing scale was confirmed to be accurate every night using a 2kg known weight and repaired or rejected if imprecise.

The height (standing position) was measured for above 87 cm and the length (recumbent position) for children under 87 cm. The measurements were done with a 160 cm height wooden board with a precision of ±0.1cm.

3.6. Data Analysis

Data were analyzed through Epi info 6 and SPSS 13 software.

As per WHO recommendations, information was collected about the child's diet in the previous

4. Result & Discussion

4.1. Summary of Knowledge of the Lactating on Key IYCF Practices before and after Study

Table 1. Timely Initiation of Breast Feeding (within 1 hour of Birth)

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
Don't Know	2.3	1.1	1.1	1.0
After 3/4 days	5.6	5. 7	1.1	5. 4
After 8/10 hours	31.1	31.3	18.7	27.1
Immediately	61.0	61.9	79.1	66.5

61.0 % of mothers had proper knowledge about timely initiation of breast feeding within one hour of birth from case group and finally we found that 79.1% mother knew the right time after the intervention. At the same time in control group initially the rate was 61.9% and finally it was 66.5%.

Table 2. Exclusive Breast-Feeding children age up to 6 months

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
Don't know	7.9	5.1	1.7	2.9
Up to 5 months	21.5	21.6	11.9	21.5
Up to 6 months	58.7	65.3	75.7	67.7
Up to 1 year	11.9	8. 0	10.7	7. 9

Before the study 58.7% mothers from case group and 65.3% mothers from control group had knowledge about exclusive breast-feeding time up to 6 months of child's age and after the IYCF counselling intervention to case group, it's increased to 75.7% in case group and 67.7% in control group.

Table 3. Timely Initiation of Complimentary Feeding after 6 months of age

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
Don't know	11.9	9.1	6.8	8.5
4-5 months	19.2	21.6	10.7	21.3
After 6 months	61.6	65. 9	75.2	66. 8
After 9 months	7.3	3.4	7.3	3.4

The knowledge about the timing of starting complementary feeding after completing 6 months of age of the children of the mothers was quite good; 61.6% and 65.9% from case group and control group respectively. After the intervention the knowledge level of the mother from case group increased dramatically from 61.6% to 75.2% but in the control group its changed slightly from 65.9% to 66.8%.

Table 4. Continued Breast Feeding for 2 Years

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
As long as baby drink	23.7	17.6	17.5	17.4
Up to 2 years	55.4	63.6	65.5	64.1
Up to 1 year	20.9	18.8	17.0	18.5

Knowledge on continuation of breast feeding up to 2 years; we found that low number mothers from case group had proper knowledge (55.4% & 63.6% for case group and control group respectively). After the IYCF intervention among the mothers of case group, the situation changed to 65.5% but a little change in the control group's mothers was 64.1%.

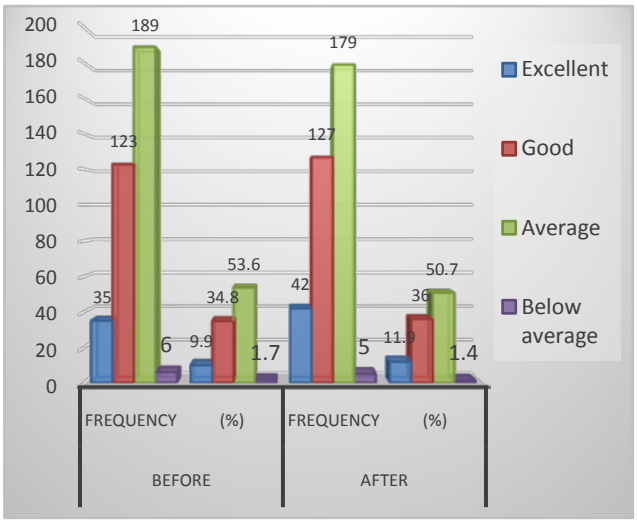

Figure 2. Assessment of Lactating mother's knowledge status on IYCF practices

Most of the mothers had knowledge on best practices of IYCF components lies in average categories and the study changed the situation slightly (43.7% mother had proper knowledge about IYCF practice (Excellent plus Good) and after the study they had proper knowledge on IYCF 47.9%.

Table 5. Comparison of knowledge of the mothers on IYCF between case and control group (Before & after study)

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
Early Initiation of Breast Feeding (EIBF)	61.0	61.9	79.1	66.5
Exclusive breast feeding up to 6 months	58.7	65.3	75.7	67.7
Timely initiation of Complementary feeding	61.6	65. 9	75.2	66. 8
Continued breast feeding up to 2 years	55.4	63.6	65.5	64.1

Low percentage of mothers from the case group had knowledge on early initiation of breast feeding within one hour after birth, the exclusive breast-feeding up to 6 months. Timely initiation of complementary feeding after 6 months (61,0%, 58.7%, 61.6% & 55.4% respectively) before IYCF counselling to mothers. After IYCF counselling to the mothers of case group, they motivated and learnt to early initiation of breast feeding within one hour after birth, the exclusive breast-feeding up to 6 months. Timely initiation of complementary feeding after 6 months (79.1%, 75.7%, 75.2% & 65.5% respectively).

4.2. Summary of the Compliance to Key IYCF Practices of All Mothers and Their Children

Table 6. How often you breastfeed your children

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
8-12 times a day	67.2	69. 9	81.4	72. 3
6-8 times a day	26.6	25. 0	13.0	22. 7
When baby cry	6.2	5.1	5.6	5.0

Low percentage of Mothers from the case group practiced the exclusive breast-feeding was done than by the control group before the IYCF counselling those had children over 6 months (60.2% & 73.5% respectively for case group and control group). After IYCF counselling to the mothers of case group, they motivated and changed their attitude to ensure the exclusive breast feeding for their children (73.5% and 73.9% from case and control group respectively).

Table 7. Exclusive breast feeding up to 6 months

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
Up to 4-5 months	31.2	23.9	20.3	21.2
Up to 6 months	60.2	70.9	73.5	73.9
Up to 1 Years	8.6	5.2	6.2	4.9

Low percentage of Mothers from the case group practiced the exclusive breast-feeding was done than by the control group before the IYCF counselling those had children over 6 months (60.2% & 73.5% respectively for case group and control group). After IYCF counselling to the mothers of case group, they motivated and changed their attitude to ensure the exclusive breast feeding for their children (73.5% and 73.9% from case and control group respectively).

Table 8. Minimum diet diversity of Complementary feeding (at least 4 food groups)

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
Acceptable diet	30.3	36.6	39.0	37.3
Not acceptable diet	69.7	63.4	61.0	62.7

Minimum dietary diversity (MDD) was observed in only 30.3% & 36.6% respectively from case and control group for the children between 6- and 23-months age group and after IYCF counselling mothers from the case group improved their practice for minimum dietary diversity (MDD) for their children aged 6-23 months and increased to 39.0% and in control group improved to only from 36.6% to 37.3%

Table 9. Age appropriate meal frequency

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
Acceptable diet	63.6	72.6	74.6	73.1
Not acceptable diet	36.4	27.4	25.4	26.9

Minimum Meal Frequency (MMF) was observed in the majority (63.6%) of children aged 6–23 months before the study and after IYCF intervention it increased to 74.6% in case group. But in Control group it changed from 72.6% to 73.1%.

Table 10. Comparison of Compliance of the mothers on IYCF between case and control group

Indicator	Before (%)		After (%)	
	Case group	Control group	Case group	Control group
Breast feeding frequency	67.2	69. 9	81.4	72. 3
Exclusive breast feeding up to 6 months	60.2	70.9	73.5	73.9
Minimum dietary diversity of complementary feeding	30.3	36.6	39.0	37.3
Age appropriate meal frequency of CF	63.6	72.6	74.6	73.1

This table shows that practice level of mothers from the case group on breast feeding frequency, the exclusive breast-feeding up to 6 months (EBF), minimum dietary diversity (MDD) and acceptable age appropriate meal frequency of complementary feeding (67.2%, 60.2%, 30.3% & 63.6% respectively) before IYCF counselling to mothers. After IYCF counselling to the mothers of case group, they motivated and practiced to breast feeding frequency (8-12 times per day), the exclusive breast-feeding up to 6 months (EBF), minimum dietary diversity

(MDD) and acceptable age appropriate meal frequency of complementary feeding (81.4%, 73.5%, 39.0% & 74.6% respectively).

4.3. Effect of Infant and Young Child Feeding (IYCF) Counselling on the Malnutrition Status of the Children

Table 11.Nutritional Status of Study children before and after study (Case Group)

Indicator	Before (%)			After (%)		
	Severe	Moderate	Total	Severe	Moderate	Total
Wasting (WHZ)	3.9	17.2	21.1	3.2	16.9	20.1
Underweight (WAZ)	6.7	30.2	36.9	6.1	29.3	35.4
Stunting (HAZ)	10.1	35.3	45.4	9.3	34.5	43.8

Before the IYCF intervention the malnutrition rates among the children were wasting (WHZ) 21.1% underweight (WAZ) 37.9% and Stunting 45.4%. The malnutrition was higher than the national malnutrition rate as we only focused on children 6-23 months and national one focused on children 6-59 months and malnutrition among children 6-23 months is always higher than other age groups. IYCF intervention has some extent of effect on the malnutrition rates of the children as reduction of wasting to 20.1%, underweight to 35.4% and stunting 43.8%.

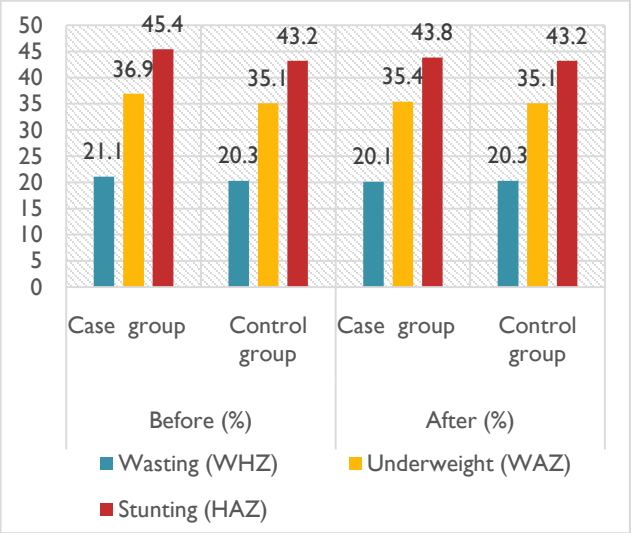

Figure 3. Malnutrition rate among the children of the lactating mothers

The indirect effect of IYCF counselling on the nutritional status of the children who are benefited from the improved mother knowledge and practices to good practices. Before the controlled comparative study, the GAM rate of the children was 21.1% & 20.3% respectively for case & control group of wasting (WHZ) and after study it was 20.1% & 20.3% respectively for case & control group. The same happened for underweight (WAZ) & stunting (HAZ). They also changed from 36.9% to 35.4% and 45.4% to 43.8% for underweight & stunting respectively.

5. Discussion

5.1. Infant and Young Child Feeding (IYCF) Knowledge of the Mother before and after Counselling

- 61.0 % of mothers had proper knowledge about timely initiation of breast feeding within one hour of birth from case group and finally we found that 79.1% mother knew the right time after the intervention. At the same time in control group initially the rate was 61.9% and finally it was 66.5%.
- Before the study 58.7% mothers from case group and 65.3% mothers from control group had knowledge about exclusive breast-feeding time up to 6 months of child's age and after the IYCF counselling intervention to case group, it's increased to 75.7% in case group and 67.7% in control group.
- The knowledge about the timing of starting complementary feeding after completing 6 months of age of the children of the mothers was quite good; 61.6% and 65.9% from case group and control group respectively. After the intervention the knowledge level of the mother from case group increased dramatically from 61.6% to 75.2% but in the control group its changed slightly from 65.9% to 66.8%.
- Knowledge on continuation of breast feeding up to 2 years; we found that low number mothers from case group had proper knowledge (55.4% & 63.6% for case group and control group respectively). After the IYCF intervention among the mothers of case group, the situation changed to 65.5% but a little change in the control group's mothers was 64.1%.
- Most of the mothers had knowledge on best practices of IYCF components lies in average categories and the study changed the situation slightly (43.7% mother had proper knowledge about IYCF practice (Excellent plus Good) and after the study they had proper knowledge on IYCF 47.9%.
- Low percentage of mothers from the case group had knowledge on early initiation of breast feeding within one hour after birth, the exclusive breast-feeding up to 6 months. Timely initiation of complementary feeding after 6 months (61,0%, 58.7%, 61.6% & 55.4% respectively) before IYCF counselling to mothers. After IYCF counselling to the mothers of case group, they motivated and learnt to early initiation of breast feeding within one hour after birth, the exclusive breast-feeding up to 6 months. Timely initiation of complementary feeding after 6 months (79.1%, 75.7%, 75.2% & 65.5% respectively).

Overall the study has good impact on the knowledge of the lactating mothers on IYCF.

5.2. Infant and Young Child Feeding (IYCF) Practices of the Mother before and after Counselling

- Low percentage of Mothers from the case group practiced the exclusive breast-feeding was done than by the control group before the IYCF counselling those had children over 6 months (60.2% & 73.5% respectively for case group and control group). After IYCF counselling to the mothers of case group, they motivated and changed their attitude to ensure the exclusive breast feeding for their children (73.5% and 73.9% from case and control group respectively).
- Minimum dietary diversity (MDD) indicator is the proportion of children of 6–23 months of age who receive foods from four or more food groups from a total of seven food groups, such as, dairy products, legumes and nuts, flesh foods, eggs, vitamin A-rich fruits and vegetables, cereals and tubers, and other fruits and vegetables. This indicator reveals whether the child is receiving a complete and balanced diet or not. Before the study MDD was observed in only 30.3% & 36.6% respectively from case and control group for the children between 6- and 23-months age group and after IYCF counselling mothers from the case group improved their practice for minimum dietary diversity (MDD) for their children aged 6-23 months and increased to 39.0% and in control group improved to only from 36.6% to 37.3%
- Minimum Meal Frequency (MMF) indicator is the proportion of breast-fed and non-breast-fed children aged 6–23 months who receive solid, semisolid, or soft foods (but also including milk feeds for non-breast-fed children) the minimum number of times or more. For breast-fed children, the minimum number of times varies with age (two times if 6–8 months and three times if 9–23 months). For non-breast-fed children, the minimum number of times does not vary by age (four times for all children aged 6–23 months). MMF was observed in the majority (63.6%) of children aged 6–23 months before the study and after IYCF intervention it increased to 74.6% in case group. But in Control group it changed from 72.6% to 73.1%.
- The practice level of mothers from the case group on breast feeding frequency (8-12 times per day), the exclusive breast-feeding up to 6 months (EBF), minimum dietary diversity (MDD) and acceptable age appropriate meal frequency of complementary feeding (67.2%, 60.2%, 30.3% & 63.6% respectively) before IYCF counselling to mothers. After IYCF counselling to the mothers of case group, they motivated and practiced to breast feeding frequency (8-12 times per day), the exclusive breast-feeding up to 6 months (EBF), minimum dietary diversity (MDD) and acceptable age appropriate meal frequency of complementary feeding (81.4%, 73.5%, 39.0% & 74.6% respectively).

5.3. Effect of Infant and Young Child Feeding (IYCF) Counselling on the Malnutrition Status of the Children

- Before the IYCF intervention the malnutrition rates among the children were wasting (WHZ) 21.1% underweight (WAZ) 37.9% and Stunting 45.4%. The malnutrition was higher than the national malnutrition rate as we only focused on children 6-23 months and national one focused on children 6-59 months and malnutrition among children 6-23 months is always higher than other age groups. IYCF intervention has some extent of effect on the malnutrition rates of the children as reduction of wasting to 20.1%, underweight to 35.4% and stunting 43.8%.
- The indirect effect of IYCF counselling on the nutritional status of the children who are benefited from the improved mother knowledge and practices to good practices. Before the controlled comparative study, the GAM rate of the children was 21.1% & 20.3% respectively for case & control group of wasting (WHZ) and after study it was 20.1% & 20.3% respectively for case & control group. The same happened for underweight (WAZ) & stunting (HAZ). They also changed from 36.9% to 35.4% and 45.4% to 43.8% for underweight & stunting respectively.

6. Recommendation

The IYCF practices are strongly influenced by what people know, think and believe and also affected by social circumstances and economic factors. Effective communication for behavioral change is necessary for ensuring optimal infant feeding. Awareness regarding IYCF practices and their benefits in Maternal and Child Health (MCH) is poor leading to poor compliance. It is important to educate mothers during the antenatal visits. The situation can be improved by training of grass root health workers on IYCF policies of WHO and MoHFW, Govt. of Bangladesh, stressing on the benefits of appropriate feeding practices by the hospitals, Health & Family Welfare Centre (H&FWC), Union Health Sub Centre (USC) and Community Clinic and making these services universally available along with intensive IEC (Information, Education & Communication) efforts to generate demand for these services. Most of the world's religions place particular emphasis on the total care of the child. In the context of the overwhelming evidence, the involvement of religious teachings in the promotion of breastfeeding is quite debatable. It is well established that religious ideologies influence the human mind and a person's way of living.

Health professionals traditionally encourage mothers to breastfeed by giving information on benefits of breastfeeding for the infant and the mother herself. The behavior of women can be easily modified through religious teachings in a positive way. Breastfeeding may be affected by religious ideologies using the doctrine in

religious texts. Counseling the mothers by reinforcing the cultural and religious practices supporting breastfeeding can help enormously. Use of local religious teachings can bring positive changes in the implementation of health programs [14]. In addition, public nutrition education that promotes infant and young child feeding as defined by WHO, taking into account social-cultural factors is needed and recommended.

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