

**STUDY ON  
NUTRITIONAL STATUS  
OF UNDER TWO CHILDREN**

**IN TANGIRI APALA GRAMPANCHAYAT  
BLOCK: HARI CHANDANPUR, DISTRICT: KEONJHAR**

*A Report*

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## 1. INTRODUCTION

When children are growing well, at least something is going right but when children are becoming thin and stunted, something must be done. Child growth detects a problem well, but not its cause. So, Anthropometry should be coupled with KAP on feeding the children. This non-specificity has advantages: failed child growth catches many aspects of poverty and detrimental environment. But child growth has different features, preliminarily fatness or thinness (weight in relation to length), and linear growth or length. The use of these measures depends on the circumstances, and the action can be taken. In a crisis, severe thinness indicates serious risk; but chronic underfeeding and ill health cause stunting – shortness of length – often without thinness and this growth failure is a sensitive way of detecting these. Such factors apply in principle to individuals and populations. But the handling of information, and consequent decisions, may vary. Malnutrition and nutritional status have sometimes been used almost synonymously with low anthropometric measures. Anthropometry is a very useful measure of both a poor environment and risk of ill health, death and constrained development.

Anthropometry has become increasingly used for diagnosing individuals and assessing populations, particularly children. For example, a global assessment in 1976 (FAO, Fourth World Food Survey, p 30, FAO, Rome, 1977) quoted only six national surveys of Anthropometry. A recent count (Summary of Current Country Activities in Nutritional Surveillance, A. Kelly, ACC/SCN 16<sup>th</sup> Session paper 1990, plus internal update March 1990) identified more than 80 such national results published in the last 15 years. Equally, the growth chart as a fundamental tool for monitoring individual child health has spread over the years. Many countries now have their own charts. Mothers and clinicians all over the world are being helped in this way in early recognition of potential problems. UNICEF adopted growth monitoring as the first part of its child survival strategy (UNICEF, New York, State of the world's children, 1982-3 & 1984).

Breast milk is the ideal food for the infant. No other food is required until the baby is 4-5 months after birth. Under normal circumstances, Indian mothers secrete 450 to 600 ml of milk daily with 1.2-g percent protein. The energy value of human milk is 70 kcal per 100 ml. It is neither desirable nor necessary to train a baby to “feed according to the clock”. It should be explained to the mother, however, that intervals between feeds are necessary for herself and

for the baby, though they may vary between 1 to 4 hours, according to the baby's needs, size, strength of sucking and the mother's milk supply.

Weight is an important index of the physical growth and development. Infants born to well feed mothers in India weigh about 3.2 kg at birth. Those born to poor mothers have been found to weigh at birth 2.8 kg or even less. A baby usually doubles its birth weight by 5 months of age, and trebles it by the end of the first year. By the end of the second year, the birth weight gets quadrupled. After the second year, the increase is steady at the rate of about 2.25 to 2.75 kg a year until the adolescent occurs. Length is also an important indicator of child's growth. In the first year of life, the body length increases by about 50 percent (from 50 cm to 75 cm) in the second year another 12 to 13 cm are added. Thereafter growth in length settles down to a rate of about 5 to 5 cms every year until adolescence.

The Tangiriapal Granpanchayat of Harichandanpur Block of Keonjhar District is taken as the study area. The area is considered to be a backward area of Orissa inhabited by mostly tribal people. Their living condition is considered to be very adverse. Considering this OVHA planned to take up this study on nutritional status of under two children in the area. We have tried to measure both Anthropometry and KAP of mother of under-two children in this study.

## **2. OBJECTIVES:**

- To assess the nutritional status of under two children of the study area.
- To assess the KAP of mother of under two children of the study area.
- To give suitable recommendations (if any) in this regard.

## **3. STUDY AREA:**

The total study area taken for this study comprises of the whole Tangiriapal Granpanchayat of Harichandanpur Block of Keonjhar District. There are 14 revenue villages in the GP with a total population of 5705. The area has lots of hamlets in these 14 villages. We found out 31 hamlets apart from the main villages. But the number of revenue villages is only 14. We have covered 10 villages at random out of these 14 villages. The total population of these ten villages is our study population. Individuals are taken as unit of study. The following table gives the name of the villages and number of samples drawn from each village in detail.

**Study Area in Tabular Form:**

SI no	Name of the Revenue village	Number of 0-2 child studied
1.	Baliparbat	36
2.	Barigaon	39
3.	Bramhanipal	21
4.	Gaduan	19
5.	Khasapada	26
6.	Mahabirapasi	38
7.	Panchama	48
8.	Ragudi	13
9.	Rasola	45
10.	Tangriapal	15
11.	Tentulipal	Not covered
12.	Altuma	Not covered
13.	Arjunachua	Not covered
14.	Kaithatikiri	Not covered
	Total	300

**4. METHODOLOGY:**

A Schedule of Enquiry for the study was prepared after thorough discussion among the study team members keeping mind the objectives of the study. The two important methodologies used for the study are anthropometry of under two children and KAP of mother of under two children. The schedule was then duly pre tested by administering the same to few respondents in the study area and some necessary changes were made.

Before the actual data collection we have done a sampling exercise where in we have collected data on under two children of the area which helped us to finalise our data collection plan. We have taken 300 under two children of the study area as our sample. Out of 14 revenue villages we have selected 10 villages at random. We have covered all the 0-2 children of these 10 villages available at the time of our visit. Stratified Random sampling and Purposive sampling methods were used in this study.

Then we selected 4 field investigators for the study. For this we contacted different voluntary institutions of the area. After selection we imparted one-day intensive training for the field investigators. In this training a briefing on the questionnaire was followed by question answer session. In the post lunch session a demonstration was done on how to measure the length and weight of

the child. A mock call was also done among the investigators to help them understand the procedure in detail.

The data collection activity took fifteen days. After scrutinisation the schedules the data from the schedules are then lifted to a master sheet from where the necessary tables are formed and analysis is carried out. The Under two-year-old child nutritional status was assessed using anthropometric measurements like length and weight. The measurements were taken using standard equipment. Through out the survey the same length-measuring instrument and weighing scales were used.

Recumbent length (crown-heel length) of the child was measured using a length-measuring instrument (Wooden length Board) which is specially prepared. The subjects were made to sleep on the wooden machine with head touching the fixed end of the machine. The other end was then made to slide so as to touch the ankle of the foot. The length was then recorded up to the nearest centimetre. Weight of the child was measured with the help of a weighing scale measuring up to a maximum of 25 kg with increments of 100 gram. The scales were initially calibrated against standard weights. Before each measurement, they were adjusted to read 0.0 kg to ensure accuracy. With slippers removed the child was asked to sit or sleep in the centre of the scale. Care was taken to ensure that the child did not move as this may cause error.

The Knowledge, Attitude and practice of the mother on were obtained through the interview schedule. The field workers were instructed not to rush through the question, rather to provide adequate time for the mother to understand and respond. These questions were asked in a number of ways. Review was held after each day of data collection to make sure that there was uniformity among the data collectors. Office editing ensured completion and accuracy of data by cross checking the answers provided. The first process of data analysis was editing of survey schedules. Field editing was done on completion of each day's data collection. The supervisor did editing of completed schedules. The next step was followed was coding of data. This was done by using a coding key that is provided in the end of this report for reference. Percentages were calculated for the variables. Means and standard deviations were calculated wherever appropriate.

## 5. RESPONDENTS PROFILE

The following few tables gives the profile of the 300 respondents in detail, which are self-explanatory.

Table 1: Age Structure of respondents

Age of Mother	Number	Percentage
<18	1	0.33
18-23	43	14.33
24-28	138	46.00
29 and above	118	39.34
Total	300	100.00

This table shows the age wise division of the mother of U2 children interviewed. Here we find that the age of mother interviewed is mostly between 18-28 years (46%). We could find 0.33% (1) mothers below the age of 18. The mothers of age 29 year and above are also comparatively high i.e. 39.34% (118 mothers).

Table 2: Educational status of respondents

Education of Mother	Number	Percentage
No Education	279	93.00
1-5 standard	5	1.67
6-8 standard	5	1.67
9-10 standard	11	3.66
11 standard and above	0	0.00
Total	300	100.00

This table shows the educational status of mother interviewed during the study. Not surprisingly we found 93% of them having no education. 1.67% each has education up to 5<sup>th</sup> standard and 6-8 standard respectively. Only 3.66% have education 9-10 standard. No mother has education above 11 standard. This shows the educational status of these mothers is very low. This could have resulted in poor KAP of those mothers about childcare practices and hence could have resulted in poor nutritional status of the child.

Table 3: Religion of respondents

Religion of Mother	Number	Percentage
Hindu	300	100.00
Muslim	0	0.00
Christian	0	0.00
Others	0	0.00
Total	300	100.00

This table shows the religion of the mother interviewed. All the study subjects are thus found to be Hindu by religion.

Table 4: Caste of respondents

Caste of Mother	Number	Percentage
SC	23	7.67
ST	266	88.67
OBC	9	2.00
GEN	2	0.66
Total	300	100.00

This table represents the caste of the mother interviewed. We found out that 7.67% are SC, 88.67% are ST, 2.00% are OBC and 0.66% are of General caste.

## 6. RESULTS/ FINDINGS

In the following few tables we have given the study results and findings in a tabular form.

Table 5: Annual Family Income

Annual Family Income	Number	%
Up to Rs. 11,000	106	35.33
Rs. 11,001 to Rs. 40,000	187	62.33
Rs. 40,001 and above	7	2.34
Total	300	100.00

The annual family income of the households is up to Rs. 11,000 in 35.33% households, Rs 11,001 – Rs. 40,000 in 62.33% households and Rs. 40,001 and above in 2.34% households. The annual family income of the families is thus low.

Table 6: Family Size

Family size	Number	%
1-5	105	35.00
6-10	173	57.67
11 and above	22	7.33
Total	300	100.00

The family size is 1-5 in 35% households, 6-10 in 57.67% households and 11 and above in 7.33% households. The family size is thus high in 65% households.

Table 7: Gravida of mother

Gravida of mother	Number	Percentage
1	55	18.33
2	51	17.00
3	51	17.00
4 and above	143	47.67
Total	300	100.00

This table represents the Gravida of mother. We found that 18.33% have Gravida 1, 17% each have Gravida 2 and 3. 47.67% have Gravida 4 and above. This shows there is practice of being pregnant for more than 2 times in 74.67% cases. Even in other cases where the Gravida is 1 or 2 there is still change to be pregnant in future.

Table 8: Para of mother

Para of mother	Number	Percentage
1	58	19.33
2	51	17.00
3	55	18.33
4 and above	136	45.34
Total	300	100.00

This table represents the number of times a mother has delivered. We have found that 19.33% have para 1, 17% have para 2, 18.33% have para 3 and 45.34% have para 4 and above.

Table 9: Abortion of mother

Abortion	Number	%
0	289	96.34
1	10	3.33
2	0	0.00
3 and above	1	0.33
Total	300	100.00

Out of total 13 abortions 10 women have aborted once each and one women have aborted three times. 289 women have never aborted.

Table 10: Still Birth of mother

Still birth	Number	%
0	288	96.00
1	11	3.66
2	1	0.33
3 and above	0	0.00
Total	300	100.00

The 13 still birth cases have occurred as follows. There are 11 cases where stillbirth has occurred once for the mother. For one mother the still birth has occurred twice. 288 mothers have never experienced still birth.

Table 11: Child Death of mother

Child death	Number	%
0	205	68.33
1	56	18.67
2	27	9.00
3 and above	12	4.00
Total	300	100.00

68.33% mothers have never experienced child death. 18.67% mothers have experienced child death once. 9% mothers have experienced child death twice. 4% pregnant women have experienced child death three times or more.

Table 12: Living of mother

Living of mother	Number	Percentage
1	69	23.00
2	61	20.33
3 and above	170	56.67
Total	300	100.00

This table represents the living value of mother interviewed. This means the number of children of the mother now living. We found that living is 1 for 23% cases, 2 for 20.33% cases and 3 and above for 56.67% cases.

Table 13: Age structure of Children

Age of Children	Number	Percentage
0-28 days	5	1.67
29 days to 12 months	157	52.33
12 months and one day to 24 months	138	46.00
Total	300	100.00

The age of children we came across the study is between 0-28 days in 1.67% cases, between 29 days to 12 months in 52.33% cases and between 12 months one day to 24 months in 46% cases.

Table 14: Sex structure of children

Sex	Number	Percentage
Male	144	48.00
Female	156	52.00
Total	300	100.00

During the study we came across 48% male and 52% female under-two-year old child. The number of male child is less than the number of female child. The sex ratio is 1083.33.

Table 15: Length (cm) by Age (months) of the study children

Sex of child	Number of child with length by age below (median – 2SD) of reference population	Number of child with length by age above (median – 2SD) of reference population	Total
Boys	61	83	144
%	42.36	57.64	48
Girls	57	99	156
%	36.54	63.46	52
Total	118	182	300
%	39.33	60.67	100

The universally accepted cut off point for nutritional assessment of population is (median – 2 SD). Here we find that 118 children out of total 300 children studied fall below this cut off point and hence have less length for age, which is 39.33% of the total sample taken. Out of these 118 children, 61 are boys and 57 are girls. These children suffer from nutritional dwarfing/ stunting.

Table 16: Weight (kg) by Age (months) of the study children

Sex of child	Number of child with weight by age below (median – 2SD) of reference population	Number of child with weight by age above (median – 2SD) of reference population	Total
Boys	82	62	144
%	56.94	43.06	48
Girls	99	57	156
%	63.46	36.54	52
Total	181	119	300
%	60.33	39.67	100

The universally accepted cut off point for nutritional assessment of population is (median – 2 SD). Here we find that 181 children out of total 300 children studied fall below this cut off point and hence have less weight for age, which is 60.33% of the total sample taken. Out of these 181 children, 82 are boys and 99 are girls.

Table 17: Weight (kg) by length (cms) of study children

Sex of child	Number of child with weight by length below (median – 2SD) of reference population	Number of child with weight by length above (median – 2SD) of reference population	Total
Boys	54	90	144
%	37.50	62.50	48
Girls	68	88	156
%	43.59	56.41	52
Total	122	178	300
%	40.67	59.33	100

The universally accepted cut off point for nutritional assessment of population is (median – 2 SD). Here we find that 122 children out of total 300 children studied fall below this cut off point and hence have less weight for length, which is 40.67% of the total sample taken. Out of these 122 children, 54 are boys and 68 are girls. These 122 children suffer from wasting/acute malnutrition.

Table 18: Waterlow's Classification (cross table of Length by age with weight by length):

Length by age ↓	Weight by length →	Number of child with weight by length above (median - 2SD) of reference population	Number of child with weight by length below (median - 2SD) of reference population
Number of child with length by age above (median - 2SD) of reference population		96 (47 boys and 49 girls)	86 (36 boys and 50 girls)
%		32	28.67
Number of child with length by age below (median - 2SD) of reference population		82 (43 boys and 39 girls)	36 (18 boys and 18 girls)
%		27.33	12.00

According to Waterlow's classifications we find that 96 children (47 boys and 49 girls) are normal children. So only 32% of children are normal which is very low. 86 children (36 boys and 50 girls) have only less weight for length. So they are suffering from only wasting/ acute malnutrition which is 28.67% of the total number of children studied. 82 children (43 boys and 39 girls) have only less length for age. So they are suffering from only stunting/nutritional dwarfing, which quite alarmingly 27.33% of the total child studied. 36 (18 boys and 18 girls) children have both less weight for length and less length for age. So they are suffering from both stunting and wasting or acute/chronic malnutrition, which is 12% of the total number of child studied.

Table 19: Mean and SD of some important variables

Variables	Mean	SD	SUM
Gravida	3.64	2.09	1091
Para	3.60	2.08	1079
Abortion	0.04	0.25	13
Still birth	0.04	0.22	13
Child death	0.50	0.87	150
Living	3.05	1.73	916

The Mean Gravida is 3.64 with a standard deviation of 2.09. The mean Para is 3.60 with a standard deviation of 2.08. The mean living is 3.05 with a standard deviation of 1.73. The mean child death is 0.50 with a standard deviation of 0.87 that is very high. In every two women there is one case of child death on an average. This is quite alarming. There are 1091 Gravida, 1079 para, 13 abortions, 13 still births and 150 child deaths. Thus there are 916 living children.

Table 20: Knowledge about starting time of mother's milk

Variables	Number	Percentage
Within One hour of birth	22	7.33
1-3 hours of birth	63	21.00
4-24 hours of birth	23	7.67
After 24 hours of birth	12	4.00
Don't Know	180	60.00
Total	300	100.00

When we asked about when mother's milk should be started, only 7.33% said that it should be started within one hour of birth and 21% said it should be started between 1-3 hours of birth. Another 7.67% said it should be started between 4-24 hours of delivery and 4% said that it should be started after 24 hours of delivery. 60% of the mothers said that they do not know the answer. The knowledge about when mother's milk should be started is poor.

Table 21: Practice of starting time of mother's milk.

Variables	Number	Percentage
Within One hour of birth	44	14.67
1-3 hours of birth	146	48.67
4-24 hours of birth	51	17.00
After 24 hours of birth	59	19.66
Total	300	100.00

This table shows the practice of starting mother's milk by the mother to newborn baby. 17.67% started mother's milk within one hour of birth followed by 48.67% between 1-3 hours of birth. Another 17% started mother's milk between 4-24 hours of birth and 19.66% started mother's milk after 24 hours of birth. This shows that practice on starting mother's milk is good in most cases.

Table 22: Knowledge about first food for the baby after birth

Variables	Number	Percentage
Mother's Milk	163	54.33
Other food/ drink	10	3.33
DK	127	42.34
Total	300	100.00

When asked what should be the first feed for the baby, 54.33% said mother's milk, 3.33% gave wrong answer i.e. other food/ drink and 42.34% said they do not know the answer. This shows that the knowledge on first feed to the baby is good in above 50% cases. Of course knowledge is less as 42.34% said they do not know the answer.

Table 23: Practice of first food given to your baby after birth

Variables	Number	Percentage
Mother's Milk	257	85.67
Mishri/ Honey/ Sugar Water	24	8.00
Cow/ Goat Milk	13	4.33
Boiled water	6	2.00
Total	300	100.00

The mothers of the study area gave the following first feed. 2% gave boiled water, 8% gave Mishri/ Honey/ Sugar Water, and 4.33% gave Cow/ Goat milk. 85.67% gave mothers milk to the baby. This shows that the practice on first feed is right in most cases.

Table 24: Knowledge about essentialness of Cholostrum for the baby

Variables	Number	Percentage
Yes	74	24.67
No	25	8.33
DK	201	67.00
Total	300	100.00

24.67% mother's thought that Cholostrum is essential for the baby and 8.33% thought that it is not essential for the baby. 67% did not know the answer. The knowledge regarding the usefulness of Cholostrum is less, as 67% did not know the answer.

Table 25: Practice of giving cholostrum to the baby

Variables	Number	Percentage
Yes	193	64.33
No	107	35.67
Total	300	100

64.33% gave cholostrum to the baby and 35.67% not gave cholostrum to the baby. The practice is thus right among more respondents.

Table 26: Knowledge about duration of exclusive breast-feeding

Variables	Number	Percentage
Up to 4/5 months	54	18
Up to 6 months and above	243	81
DK	3	1
Total	300	100

When asked about for how long exclusive breast feeding should be given to the baby we find that 18% said up to 4/5 months and 81% said up to 6 months and above. 1% did not know the answer. The knowledge is thus not right among more mothers. The breast-feeding should be coupled with other supplementary food after 6 months and onwards.

Table 27: Practice of avoidance of food for baby during illness

Variables	Number	Percentage
Rice Cake	58	19.33
Biscuits	27	9
Packed food	1	0.33
Mother's milk	4	1.33
Other	35	11.67
Not avoid anything	188	62.67
Total	300	100

During illness it was found that the mothers during illness of children avoid the following food. 19.33% mothers avoided rice cake, 9% avoided biscuits, 0.33% avoided packed food, 1.33% avoided mothers milk, 11.67% avoided other foods. 62.67% did not avoid anything. It was thus concluded that the practice is mostly good.

Table 28: Practice of continuing breast-feeding when the child is ill

Variables	Number	Percentage
Yes	296	98.67
No	4	1.33
Total	300	100

98.67% continue breast feeding when child is ill and 1.33% do not continue breast feeding when child is ill. The practice is thus good among most mothers studied.

Table 29: Practice of duration of giving exclusive breast-feeding to the baby

Variables	Number	Percentage
Up to 4/5 months	94	31.33
Up to 6 months and above	206	68.67
Total	300	100

31.33% had given exclusive breast feeding for 4/5 months, 68.67% had given exclusive breast feeding up to 6 months and above. This practice is not good as after 6 months the child should be given semi-solid food along with mother's milk.

Table 30: Practice of times of feeding the baby per day

Variables	Number	Percentage
<5 times	6	2
5-10 times	227	75.67
>10 times	67	22.33
Total	300	100

2% fed the baby less than 5 times a day, 75.67% feed the baby 5-10 times a day and 22.33% feed the baby more than 10 times a day.

Table 31: Practice of adding types of food to the baby's diet after 4 months besides mother's milk

Variables	Number	Percentage
Sagu/ Barley	6	2
Chuda Gunda	1	0.33
Rice and Vegetables	184	61.33
Packed baby food	18	6
Cake, bread and biscuits	54	18
Others	42	14
Not add anything	49	16.33
Not applicable	49	16.33
Total	300	100

The following answers came when we enquired about the types of food mothers add to baby's diet after 4 months. 2% add Sagu/ Barley, 0.33% add Chuda Gunda, 61.33% add Rice and Vegetables, 6% give packed baby food, 18% give cake, bread and biscuits and 14% add other foods. 16.33% are still continuing breast-feeding (child less than 4 months old) and hence classified as not applicable. Another 16.33% do not add anything even after 4 months.

Table 32: Knowledge whether mother's milk should be continued with supplementary feeding

Variables	Number	Percentage
Yes	99	33
No	26	8.67
DK	175	58.33
Total	300	100

Mother's milk should be continued with supplementary feeding. 33% mothers know it and it is unknown to 8.67% mothers. 58.33% did not know the answer. The knowledge is thus not there among most mothers.

Table 33: Attitude towards essentialness of packed food

Variables	Number	Percentage
Yes	90	30.00
No	25	8.33
DK	185	61.67
Total	300	100

30% mother's thought that use of packed food is essential for baby and 8.33% mothers did not think so. 61.67% do not know the answer. The attitude towards packed food is not there among majority of mothers.

Table 34: Practice of giving packed food to the baby

Variables	Number	Percentage
Yes	19	6.33
No	281	93.67
Total	300	100

6.33% give packed food to the baby and 93.67% do not give packed food to the baby. The practice is thus good among most mothers.

## 7. LIMITATIONS OF THE STUDY

During this study we have certain limitations that may have affected the study results. These limitations were as follows.

- a) Utmost care was taken to collect accurate and authentic data, however, some amount of interviewer bias and mis-reporting by the respondents cannot be ruled out.
- b) Sample size in some cases is not proportionate to the villages' populations, which might have affected the study results.

## 8. CONCLUSION

The following are some of the important conclusions of the study.

- The age of mother interviewed is mostly between 18-28 years (46%). We could find 0.33% (1) mothers below the age of 18. The mothers of age 29 year and above are also comparatively high i.e. 39.34% (118 mothers).
- Not surprisingly we found 93% of them having no education. 1.67% each has education up to 5<sup>th</sup> standard and 6-8 standard respectively. Only 3.66% have education 9-10 standard. No mother has education above 11 standard. This shows the educational status of these mothers is very low. This could have resulted in poor KAP of those mothers about childcare practices and hence could have resulted in poor nutritional status of the child.
- All the study subjects are found to be Hindu by religion.
- We found out that 7.67% are SC, 88.67% are ST, 2.00% are OBC and 0.66% are of General caste.
- The annual family income of the households is up to Rs. 11,000 in 35.33% households, Rs 11,001 – Rs. 40,000 in 62.33% households and Rs. 40,001 and above in 2.34% households. The annual family income of the families is thus low.
- The family size is 1-5 in 35% households, 6-10 in 57.67% households and 11 and above in 7.33% households. The family size is thus high in 65% households.

- We found that 18.33% have Gravida 1, 17% each have Gravida 2 and 3. 47.67% have Gravida 4 and above. This shows there is practice of being pregnant for more than 2 times in 74.67% cases. Even in other cases where the Gravida is 1 or 2 there is still change to be pregnant in future.
- We have found that 19.33% have para 1, 17% have para 2, 18.33% have para 3 and 45.34% have para 4 and above.
- Out of total 13 abortions 10 women have aborted once each and one women have aborted three times. 289 women have never aborted.
- The 13 still birth cases have occurred as follows. There are 11 cases where stillbirth has occurred once for the mother. For one mother the still birth has occurred twice. 288 mothers have never experienced still birth.
- 68.33% mothers have never experienced child death. 18.67% mothers have experienced child death once. 9% mothers have experienced child death twice. 4% pregnant women have experienced child death three times or more.
- We found that living is 1 for 23% cases, 2 for 20.33% cases and 3 and above for 56.67% cases.
- The age of children we came across the study is between 0-28 days in 1.67% cases, between 29 days to 12 months in 52.33% cases and between 12 months one day to 24 months in 46% cases.
- During the study we came across 48% male and 52% female under-two-year old child. The number of male child is less than the number of female child. The sex ration is 1083.33.
- The universally accepted cut off point for nutritional assessment of population is (median – 2 SD). Here we find that 118 children out of total 300 children studied fall below this cut off point and hence have less length for age, which is 39.33% of the total sample taken. Out of these 118 children, 61 are boys and 57 are girls. These children suffer from nutritional dwarfing/ stunting.

- The universally accepted cut off point for nutritional assessment of population is (median – 2 SD). Here we find that 181 children out of total 300 children studied fall below this cut off point and hence have less weight for age, which is 60.33% of the total sample taken. Out of these 181 children, 82 are boys and 99 are girls.
- The universally accepted cut off point for nutritional assessment of population is (median – 2 SD). Here we find that 122 children out of total 300 children studied fall below this cut off point and hence have less weight for length, which is 40.67% of the total sample taken. Out of these 122 children, 54 are boys and 68 are girls. These 122 children suffer from wasting/ acute malnutrition.
- According to Waterlow's classifications we find that 96 children (47 boys and 49 girls) are normal children. So only 32% of children are normal which is very low. 86 children (36 boys and 50 girls) have only less weight for length. So they are suffering from only wasting/ acute malnutrition which is 28.67% of the total number of children studied. 82 children (43 boys and 39 girls) have only less length for age. So they are suffering from only stunting/ nutritional dwarfing, which quite alarmingly 27.33% of the total child studied. 36 (18 boys and 18 girls) children have both less weight for length and less length for age. So they are suffering from both stunting and wasting or acute/ chronic malnutrition, which is 12% of the total number of child studied.
- The Mean Gravida is 3.64 with a standard deviation of 2.09. The mean Para is 3.60 with a standard deviation of 2.08. The mean living is 3.05 with a standard deviation of 1.73. The mean child death is 0.50 with a standard deviation of 0.87 that is very high. In every two women there is one case of child death on an average. This is quite alarming. There are 1091 Gravida, 1079 para, 13 abortions, 13 still births and 150 child deaths. Thus there are 916 living children.
- When we asked about when mother's milk should be started, only 7.33% said that it should be started within one hour of birth and 21% said it should be started between 1-3 hours of birth. Another 7.67% said it should be started between 4-24 hours of delivery and 4% said that it should be started after 24 hours of delivery. 60% of the mothers said that they do not know the answer. The knowledge about when mother's milk should be started is poor.

- 17.67% started mother's milk within one hour of birth followed by 48.67% between 1-3 hours of birth. Another 17% started mother's milk between 4-24 hours of birth and 19.66% started mother's milk after 24 hours of birth. This shows that practice on starting mother's milk is good in most cases.
- When asked what should be the first feed for the baby, 54.33% said mother's milk, 3.33% gave wrong answer i.e. other food/drink and 42.34% said they do not know the answer. This shows that the knowledge on first feed to the baby is good in above 50% cases. Of course knowledge is less as 42.34% said they do not know the answer.
- The mothers of the study area gave the following first feed. 2% gave boiled water, 8% gave Mishri/Honey/Sugar Water, and 4.33% gave Cow/Goat milk. 85.67% gave mother's milk to the baby. This shows that the practice on first feed is right in most cases.
- 24.67% mother's thought that Colostrum is essential for the baby and 8.33% thought that it is not essential for the baby. 67% did not know the answer. The knowledge regarding the usefulness of Colostrum is less, as 67% did not know the answer.
- 64.33% gave colostrum to the baby and 35.67% not gave colostrum to the baby. The practice is thus right among more respondents.
- When asked about for how long exclusive breast feeding should be given to the baby we find that 18% said up to 4/5 months and 81% said up to 6 months and above. 1% did not know the answer. The knowledge is thus not right among more mothers. The breast-feeding should be coupled with other supplementary food after 6 months and onwards.
- During illness it was found that the mothers during illness of children avoid the following food. 19.33% mothers avoided rice cake, 9% avoided biscuits, 0.33% avoided packed food, 1.33% avoided mother's milk, 11.67% avoided other foods. 62.67% did not avoid anything. It was thus concluded that the practice is mostly good.
- 98.67% continue breast feeding when child is ill and 1.33% do not continue breast feeding when child is ill. The practice is thus good among most mothers studied.

- 31.33% had given exclusive breast feeding for 4/5 months, 68.67% had given exclusive breast feeding up to 6 months and above. This practice is not good as after 6 months the child should be given semi-solid food along with mother's milk.
- 2% fed the baby less than 5 times a day, 75.67% feed the baby 5-10 times a day and 22.33% feed the baby more than 10 times a day.
- The following answers came when we enquired about the types of food mothers add to baby's diet after 4 months. 2% add Sagu/ Barly, 0.33% add Chuda Gunda, 61.33% add Rice and Vegetables, 6% give packed baby food, 18% give cake, bread and biscuits and 14% add other foods. 16.33% are still continuing breast-feeding (child less than 4 months old) and hence classified as not applicable. Another 16.33% do not add anything even after 4 months.
- Mother's milk should be continued with supplementary feeding. 33% mothers know it and it is unknown to 8.67% mothers. 58.33% did not know the answer. The knowledge is thus not there among most mothers.
- 30% mother's thought that use of packed food is essential for baby and 8.33% mothers did not think so. 61.67% do not know the answer. The attitude towards packed food is not there among majority of mothers.
- 6.33% give packed food to the baby and 93.67% do not give packed food to the baby. The practice is thus good among most mothers.

## **9. RECOMMENDATIONS**

Based on the above findings the study wishes to give the following recommendations to improve the nutritional status of under two children.

- The educational status of the mother of under two-year-old child in the study area is very poor. It needs to be improved. For this Adult education methodology can be adopted. Side by side the primary education should be strengthened so that the future mothers can be educated.
- As the Gravida is found to be very high, it is recommended that family planning to be promoted so that two/one child norm is practised. The different family planning methods should be taught to them so that they can choose the one, which is convenient to them.

- The immunisation measures in the area are very low. The child death 0-2 years is observed to be very high in the area i.e. we found 150 child death cases among the history of 300 mothers studied. This high number of child death is quite alarming and the government should look into the matter and do the needful to prevent the child deaths in the area. The percentage of children who are not growing well is very high. This must have resulted in high number of child deaths.
- There is no Anganwadi centre in most villages. Anganwadi centre is there in the Panchayat headquarters. Over all development measures especially income generating activities should be promoted to improve financial status of the population of the area.
- As the nutritional status of the child is low it is recommended that nutritional supplements for child should be provided.
- As the KAP of mother on different aspects of feeding under two children is low, it is recommended that the women especially the mother and adolescents should be taught about the elements of child-care, nutrition, personal hygiene, and environmental sanitation.
- The women, especially mother and adolescents should be taught about the importance of starting breast feeding as soon as possible, exclusive breast feeding, colostrum feeding, supplementary feeding, personal hygiene of mother/child and feeding during illness.
- The baby's who are classified below the (median – 2SD) in each classifications (weight for age, weight for length and length for age) should be treated specially. Those children should be taken up for specific intervention plans, which is different for each classification. Supplementary feeding programme will help these children a great deal and would improve the nutritional status.
- From the Waterlow's classifications we find that there are 82 children suffering from only stunting/nutritional dwarfing, 86 children are suffering from only wasting/acute malnutrition and 36 children are suffering from both stunting & wasting or acute/chronic malnutrition. These categories of children should be taken up for specific intervention plans, which is different for each classification. Supplementary feeding programme will help these children a great deal and would improve the nutritional status.

- The child should be fed the first breast milk (colostrum) which contains vital ingredients for the child that gives immunity to the child.
- The breast-feeding should be started as soon as possible after delivery and the first food for the baby should be the mother's milk. Other foods such as sugar water, honey water, any other drink should not be given.
- From 0-4/5 months the child should be given only the mother's milk. Other food/drink should not be given. Start feeding the mother's milk within one hour of childbirth. Feed the child as often as he/she did want. Do not give any other food before 4/5 months except mother's milk.
- Start giving boiled and smashed food (dal, fruit, vegetables, and corns) after 4/5 months up to six months. This period is the period the child is taught to eat other foods except mother's milk. After six months the child should be ready to eat other foods. A six months child should be eating  $\frac{1}{2}$  Katori of food.
- Slowly raise the amount of food for the child so that the child eats  $\frac{1}{2}$  Katori food for 4 times a day when the child is 6-9 month old. Start giving oil in small quantity in this period.
- Add two Katori of cooked green leafy vegetables in 9-12 months. At 12 months age the child should be eating  $\frac{1}{2}$  Katori of food 5 times a day.
- After 12 months the start giving food cooked for the family minus chilly. Add one spoon oil or Ghee to the food. Start increasing the food so that when the child is 2 year old he/she should be eating  $\frac{1}{2}$  of an adult's diet.
- During all this period please continue breast-feeding.

It is necessary to compare the study findings with the findings of a study in a control area, which can provide vital information regarding nutritional status of under two children in the area and about the infant feeding practices in the area. Such a study is highly recommended.

## 10. COMPARISON OF STUDY FINDINGS WITH SIMILAR STUDY CONDUCTED IN SLUMS OF BHUBANESWAR

We have conducted a similar study in the slums of Bhubaneswar. Some comparison of the study with present study is given below.

Table 1:

Study Area	Number of child with length by age below (median – 2SD) of reference population	Number of child with length by age above (median – 2SD) of reference population	Total
Tangiriapal	118	182	300
Per cent age	39.33	60.67	100
Bhubaneswar	110	140	250
Per cent age	44.00	56.00	100

The percentage of children suffer from nutritional dwarfing/ stunting in Tangiriapal is slightly lower than that of the Bhubaneswar slums.

Table 2:

Study Area	Number of child with weight by age below (median – 2SD) of reference population	Number of child with weight by age above (median – 2SD) of reference population	Total
Tangiriapal	181	119	300
Per cent age	60.33	39.67	100
Bhubaneswar	122	128	250
Per cent age	48.8	51.2	100

The percentage of children having less weight for age in Tangiriapal is much higher than that of Bhubaneswar slums.

Table 3:

Study area	Number of child with weight by length below (median – 2SD) of reference population	Number of child with weight by length above (median – 2SD) of reference population	Total
Tangiriapal	122	178	300
Percentage	40.67	59.33	100
Bhubaneswar slums	48	202	250
Percentage	19.2	80.8	100

The percentage of children suffer from wasting/ acute malnutrition is much higher in Tangiriapal than that of Bhubaneswar slums.

Table 4:

Length by age ↓	Weight by length →	Number of child with weight by length above (median – 2SD) of reference population		Number of child with weight by length below (median – 2SD) of reference population	
Study Area	→	Tangiriapal	BBSR slums	Tangiriapal	BBSR slums
Number of child with length by age above (median – 2SD) of reference population		96	108	86	32
%		32.67	43.2	28.67	12.8
Number of child with length by age below (median – 2SD) of reference population		82	94	36	16
%		27.33	37.6	12	6.4
Total		300	250	300	250

The percentage of children suffering from only wasting/ acute malnutrition which is much higher in Tangiriapal than that of Bhubaneswar slums. The percentage of children suffering from only stunting/nutritional dwarfing is lower in Tangiriapal than that of Bhubaneswar slums. The percentage of children suffering from both stunting and wasting or acute/ chronic malnutrition is much higher in Tangiriapal than that of Bhubaneswar slums.

## 11. COPY OF SCHEDULE USED

STUDY ON NUTRITIONAL STATUS OF UNDER TWO CHILDREN  
SCHEDULE OF ENQUIRY

Schedule No.:

District : Keonjhar

Block: Harichandanpur

GP: Tangiriapal

Village:

Hamlet :

Name of the mother	Age	Education	Religion	Cast e	Annual family Income	Family size

Gravida	Para	Abortion	Still Birth	Deat h	Living

Name of the child	Age (in mont hs)	Sex	Lengt h (cm)	Weight (kg)

### KAPOF MOTHER OF U2 CHILDREN:

1. When mother's milk should be started after childbirth?

- a) Within one hour of birth
- b) 1-3 hours of birth
- c) 4-24 hours of birth
- d) After 24 hours of birth
- e) Don't know

2. When did you give your milk to the baby for the first time?

- a) Within one hour of birth
- b) 1-3 hours of birth
- c) 4-24 hours of birth
- d) After 24 hours of birth

3. What should be the first feed for the baby?

- a) Mother's milk
- b) Other food/ drink
- c) Don't know

4. What first feed did you give to your baby after birth?

- a) Mother's milk
- b) Mishri/ Honey/ Sugar water
- c) Cow/ Goat Milk
- d) Boiled water
- e) Others

5. Do you think Colostrum is essential for your baby?

- a) Yes
- b) No
- c) DK

6. Did you give Colostrum to your baby?

- a) Yes
- b) No

7. For how long exclusive breast-feeding should be given to the baby?

8. What food you avoid for your baby during illness?

9. Do you continue breast-feeding when the child is ill?

- a) Yes
- b) No

10. How long you exclusively fed breast milk to your baby?

- a) Up to 4/5 Months
- b) Up to 6 months and above

11. How many times do you feed the baby per day?

- a) <5 times
- b) 5-10 times
- c) >10 times

12. What type of food you add to the baby's diet after four months?

13. Do you know that mother's milk should be continued with supplementary feeding?

- a) Yes
- b) No
- c) DK

14. Is it essential to use packet foods?

- a) Yes
- b) No
- c) DK

15. Do you feed packet food to your baby?

- a) Yes
- b) No

Name and Signature of the Investigator:

Date:

## **12. Study Organisation (OVHA)**

### **Historical Background**

During early seventies, after World Health Organisation's efforts, many developing countries came up with several approaches to ensure the effective delivery of primary health care to achieve the broad target of Health for All by 2000 AD. Community participation was emerged as a key to success in primary health care for which the importance of voluntary actions was also enhanced. Voluntary action got significant importance in promotive, curative and preventive aspects of health care.

In India, Fr. James Tong started a movement to bring the voluntary organisations involved in community health and development activities to one network, which would base on secular values while working towards making health a reality for the people of India. As a result of Fr. Tong's effort Co-ordinating Agency for Health Planning (CAHP) was formed in 1972 that was later on renamed as Voluntary Health Association of India (VHAI). Likewise, in State level too, different State units were formed. Several leading health-NGOs and missionary hospitals put their efforts for the formulation of Orissa Voluntary Health Association (OVHA), which came into existence on 6th December 1974.

### **Vision**

People of the state would be able to live a healthy and peaceful life that would base on 'growth with justice.' Violence, misery, poverty, ignorance, illiteracy, gender inequality, diseases and infirmity would be replaced by peaceful community and family life, prosperity, adequate education and physically, mentally and socially healthy individuals. In fulfilling the needs of the people the scarce natural resources would be effectively utilised, and there would be continuous efforts to promote sustainable human development. Thus, we can make health a reality for the people of Orissa.

### **Mission**

OVHA would strive hard to systematically convince the government and other agencies about the health needs of the communities. It would help support the government and other agencies in formulating and implementing necessary health programmes in State. It would also facilitate the planning, management and evaluation of health and development activities by the voluntary agencies particularly through the capacity building of NGO workers, sharing information and research findings and extending consultancy support. At the time of need it would also respond to the emergencies, like epidemics, calamities, etc. In other words, OVHA would always be putting its sincere efforts to promote the health status of the State.

### **Goal**

To improve the health status of Orissa State.

### **OVHA Structure**

OVHA has had two types of members, Members & Associate Members, who form the general body. Voluntary Agencies are eligible to get the status of Member and individuals for Associate Member. The Members elect the Governing Board from the representatives of different member organisations. The Governing Board consists of 11 members from member organisations and the Executive Director as ex-officio member. The Governing Body looks into the activities of OVHA, which is generally executed by the Executive Director. The Executive Director is the crucial link between management and staff. Under the Executive Director there are six departments. The departments are as follows:

- Training
- Research, Consultancy & Networking
- Information, Documentation & Communication
- Field Projects
- Finance
- Executive Director's Secretariat

A Programme Officer heads each department except the Executive Director's Secretariat. The Executive Director himself heads the Executive Director's Secretariat. Right now OVHA has had 21 staff who has adequate technical competence and experience.

### **Role of OVHA in Orissa**

OVHA is the largest and oldest network of NGOs working in the field of community health and development in Orissa. OVHA being a federation, its real strength and weakness lies with its member organisations who are spread throughout the State. The individual members, also known as Associated Members, only contribute to the strengthening of organisation by giving suggestions, expertise, sharing their experiences, etc.

Since the day of its inception OVHA has been contributing significantly to the overall development of health status in state. Besides conducting a number of training programmes OVHA organises seminars, workshops & exhibitions and publishes books and periodicals. The other important activity of OVHA is advocacy and lobby. We keep a close look on different health related developments of the state and at the time of necessity respond to these in a professional manner. OVHA help enhances the capacity of many NGOs and enable them to plan, implement and evaluate community health and development projects. OVHA's research findings are of great help in planning and implementing different programmes or projects for the enhancement of state health status. OVHA has been playing a major role in the counselling of HIV/AIDS infected people in Orissa. OVHA closely work with the government and other agencies and extends every kind of support for enhancing the health status of Orissa. It's noteworthy that OVHA has been contributing significantly as an important member in

many State level committees on health, population, environment, etc. formed by the government.

Since few years OVHA has been recognised as a Mother NGO by the Government of India for implementing the Reproductive & Child Health Programme and Indian Systems of Medicine & Homeopathy programme in eight districts of Orissa. OVHA supported some voluntary agencies for relief, rehabilitation and reconstruction work immediately after the super cyclone and flood of 1999. It's noteworthy that OVHA was directly involved in the emergency relief work immediately after the super cyclone and flood of 1999. For the control of malaria inside the state OVHA supported several member organisations to establish and strengthen Malaria Centres. Under these programmes OVHA supported a number of voluntary agencies, both financially and technically, which contribute to enhance the health status of Orissa.

OVHA has completed twenty-six years of its services in Orissa, however, it has to go a long way as its responsibilities has been growing tremendously inside the state as a pioneer of health in voluntary sector. The present health indicators of Orissa are far below the desired level, and still health for all is a dream for State. Voluntary action would continue to play a significant role to enhance the health status of Orissa, as the state efforts alone cannot be adequate. In this situation it's the moral responsibility of OVHA to provide necessary leadership and professional inputs to the voluntary agencies of state to make health a reality for the people of Orissa.

#### **Future Thrust Areas of OVHA**

- To address the immediate health needs of most vulnerable groups, particularly women and children.
- To enhance the disaster preparedness capacity of communities.
- To further strengthen the malaria control programme.
- To take initiatives for addressing the less-addressed problems in State like Mental Health, Tribal Health, Rational Drug, Substance Abuse, Sickle Cell Anaemia, etc.
- To intensify OVHA's efforts in the areas of Reproductive & Child Health as well as HIV/AIDS.
- To promote the Traditional Systems of Medicine.
- To encourage networking among different agencies for planning and implementing necessary common-action-programmes, at all levels, to promote the health status of state.
- To further strengthen the Health-IEC activities in State.
- To establish five Regional Resource Centres for providing better supports to voluntary agencies.
- To advocate with the government for formulation and implementation of adequate policies for enhancing the State health status.
- To start Diploma Programme in Community Health Management.
- To construct a building, with necessary facilities, for OVHA by looking into the needs of the state.

**List of Governing Body Members (9<sup>th</sup> August 2000 – 8<sup>th</sup> August 2004)**

- Mr. P. Pattanayak President
- Mr. M. K. Mohapatra Vice-president
- Mr. K. K. Swain Secretary
- Mr. P. K. Satapat hy Asst. Secretary
- Mr. D. C. Nayak Treasurer
- Mr. R. K. Mohant y Member
- Dr. D. K. Samal Member
- Dr. (Ms) S. Mohant y Member
- Mr. P. C. Mishr a Member
- Mr. S. K. Dash Member
- Mr. S. C. Sahu Member
- Mr. A. Tripat hy (Executive Director) Ex-Of ficio Member

**List of OVHA Staff**

1. Mr. A. Tripat hy, Executive Director
2. Mr. B. Panda, Programme Co-ordinator
3. Mr. P. C. Panigrahi, Finance Officer
4. Mr. H. S. Dut ta, Programme Officer (RCN)
5. Mr. N. R. Pat ra, Programme Officer (I DC)
6. Mr. D. Mohant a, Programme Officer (Training)
7. Mr. S. K. Bisoi, Programme Officer (FP)
8. Dr. (Ms.) S. Mohant y, Programme Officer (Health)
9. Dr. (Ms.) A. Mohapat ra, Programme Officer (Health)
10. Ms. S. Dash, Counsellor (HI V/ AI DS)
11. Ms. M. S. Mohapat ra, Counsellor (HI V/ AI DS)
12. Mr. M. K. Sahoo, Counsellor (HI V/ AI DS)
13. Mr. D. Pat t anayak, Counsellor (HI V/ AI DS)
14. Mr. N. Sahu, Programme Assistant (RCN)
15. Ms. B. R. Pat t anayak, Programme Assistant (I DC)
16. Mr. N. G. Jena, Administrative Assistant
17. Mr. P. Khilar , Administrative Assistant
18. Ms. S. Mohapat ra, Of fice Secretary
19. Mr. S. Behera, Care Taker
20. Ms. S. S. Bal, Care Taker
21. Mr. R. C. Parida, Driver

### 13. THE STUDY TEAM

#### Person power

#### Qualifications

#### **Consultants:**

Mr. K. K. Swain MA, Economics (Utkal)

Mr. Ajay Tripathy BA, DCHM

#### **Principal Investigator**

Himansu Sekhar Dutta MSc, Statistics (Utkal)

#### **Tabulators**

Mr. Nirakar Sahu BA

#### **Field Investigators:**

Ms. Bina Pradhan

Ms. Sangita Sharma

Mr. Kuna Jena

Mr. Sukadev Rout

#### **Field Volunteers:**

Mr. Rama Murmu