



Healthy start for the children of Odisha

An Initiative of

Child Rights and You (CRY)

And

Voice for child Rights Odisha (VCRO)

December 2019.

Foreword



In June 2017, CRY – Child Rights and YOU took a small step to change things, for the better. In association with Voice for Child Rights – Odisha, CRY launched a campaign ‘Healthy Start for the children in the tribal districts of Odisha’. The program focused on alleviating the status of children, pregnant women and adolescent girls who are malnourished. Varied approaches were used in 150 villages across six districts - Koraput, Kalahandi, Bargarh, Balangir, Kandhamal and Mayurbhanj.

Thirty Six months later, there are success stories and study report emanating from all corners of the districts covered. Around 30,000 families have been benefitted. A total of 18,000 children have been impacted. New ideas have taken shape and strategies and plans have been updated accordingly.

As we stride ahead in our journey, it is befitting that we thank our partners and government stakeholders for their contribution to this campaign. Had it not been for their active support and cooperation, we would not have been where we are today.

It's an opportune moment to look back at some of the wonderful stories of optimism and hope that have come out of this campaign.

Our founder Rippa Kapur had said: “I don't think one can be satisfied as long as there are children who need help. One just has to keep going at it.”

CRY is committed to spearheading this campaign in these and more districts of Odisha and we hope to bring about a lasting and sustainable change in the lives of vulnerable families in the years to come.

With faith and hope,

Puja Marwaha.

Puja Marwaha,

Chief Executive,

CRY – Child Rights and You



ଓଡିଶା ଭାବନା
Govt. of Odisha

ସୁଶ୍ରୀ ସନ୍ଧ୍ୟାବତୀ ପ୍ରଧାନ
ଅଧ୍ୟକ୍ଷା
Ms. Sandhyabati Pradhan
Chairperson

ଓଡ଼ିଶା ରାଜ୍ୟ ଶିଶୁ ଅଧିକାର ସ୍ଵରକ୍ଷା ଆଯୋଗ
Odisha State Commission for Protection of Child Rights (OSPCR)



MESSAGE



I am delighted to know that Child Rights and You (CRY) in partnership with Voice for Child Right Odisha (VCRO) and CRY partners are publishing their campaign report on "Healthy start for the children of the Tribal Districts of Odisha", which is a collection of study reports, campaign activities and success stories of the campaign achieved in course of the campaign. I congratulate them for the efforts undertaken and their commitment towards ensuring healthy childhood for the children of Odisha.

Needless to say, the children are our first call and their physical, mental and social wellbeing is our first priority. The Constitutional Right to Life with Dignity is a fundamental right of all including the children of the country which needs to be ensured by all state and non-state actors.

I take pride in mentioning that Odisha has shown a spectacular progress in the past few years in bringing down the rates of IMR and Malnutrition amongst children as reflected in the data from NFHS-4 corroborated by the data generated by independent surveys and the State's own monitoring data. Report of CRY-Child Rights and You also reflects the changing trends seen at ground level.

I would further opine that in our endeavour to accomplish the afore said objective to a finish, collaborative efforts need to be undertaken involving CRY- Child Rights and You and Civil Societies such as VCROs for further improvement in the state of children in Odisha.

I am sure that this compilation of study reports, findings, positive stories of change and recommendation will go a long way for restructuring the strategy to address the children's issues effectively.

I offer my best wishes to all those who are engaged in the all-important mission to combat the next issue confronting the children in our state, that is malnutrition.

Last but not the least, I wish the publication of this report undertaken by the child rights campaigners reach to a wider spectrum of audience engaged in the mission of all-round development of children in our state.

(Ms. Sandhyabati Pradhan)
Chairperson, OSCPCR

Acknowledgment

CRY- Child Rights and You in association with Voice for Child Rights in Odisha (VCRO) took the initiative to conduct the campaign for “Healthy Start for the children of the tribal district of Odisha” with the support of CRY partners namely Palli Alok Pathagar, Society for Promotion of Rural Education and Development, Chale Chalo, Sikshasandhan and Social Welfare Agency and Training Institute.

The campaign recognises the support and valuable contribution of the CDPO's of all the Blocks running the campaign and the Anganwadi workers of all the 150 ICDS centres covered.

The campaign also recognises the contributions of the ANMs, ASHA and the doctors who have contributed to the campaign and have successfully run the Village Health and Nutrition Day in centre.

The Campaign would also grateful to the members of Panchayat and Zila Parisad, who have contributed significantly to promote kitchen garden and resolving the infrastructural issues in the ICDS centres.

The campaign is also thankful to the school teachers and head teachers for running the campaign on food demonstration and hand washing practices which have contributed towards the attitude shift of the community, especially children towards healthy practices.

The campaign also extends its gratitude to all the NRCs staffs who have contributed significantly in the treatment of the referred malnourished children and for co-operating with the parents bringing their ward for treatment.

The campaign is also grateful to all the parents, mothers and the adolescent girls who have participated in the campaign and have accepted the changes in their health practices who have helped the campaign to achieve the results.

Finally the campaign is indebted to the grass root campaigners who has worked relentlessly with the community and have brought about the changes in the health practice amongst the community which have impacted the health status of children, women and the adolescent girls.

ACRONYMS

ICDS	--	Integrated Child Development Scheme
NRC	--	Nutritional Rehabilitation Centre
AWC	--	Anganwadi Centre
AWW	--	Anganwadi Worker
ASHA	--	Accredited Social Health Activist
VHND	--	Village Health and Nutrition Day
ANM	--	Auxiliary Nurse Midwife
MUAC	--	Mid Upper Arm Circumference
GMC	--	Growth Monitoring Chart
CHC	--	Community Health Centre
MM	--	Matru Mondal
SAM	--	Severely Acute Malnutrition
PRI	--	Panchayati Raj Institution
MAM	--	Moderately Acute Malnutrition
IVR	--	Interactive Voice Record
BCC	--	Behaviour Change Communication
HCM	--	Hot Cooked Meal
NRLM	--	National Rural Livelihood Mission
THR	--	Take Home Ration
CDPO	--	Child Development Programme Officer
NHM	--	National Health Mission

Executive Note

Child Rights and You (CRY) in association with Voice for Child Rights Odisha (VCRO) launched a campaign in the year July 2017 "**Healthy start for the children of tribal districts of Odisha**". This was the second edition of the campaign in the state with the support of grass root campaigners.

It covered six districts namely Koraput, Kalahandi, Balangir, Bargarh, Kandhamal and Mayurbhanj district and reached the remote tribal blocks of Lamtaput, Golamunda, Patnagarh, Gaisilte, Paikmal, Phirnigia and Kaptipada.

The campaign has spread to 200 villages in 17 Panchayats of the 6 districts of Odisha; It has affected 21620 children in 150 ICDS centre. It went through 5000 Pregnant and lactating mothers and mobilised them to be part of the 120 Village Health and Nutrition day. It encouraged healthy hand wash practices in over 14000 children in school, where about 250 teachers were engaged. With the proactive support of Panchayat and Horticulture department of the Government of Odisha, the campaign has promoted 2500 Kitchen gardens.

The 50+ positive stories related to the inspiration, hope and encouragement reflects the behavioural change communication among the stake holders and community due to the campaign. It has referred 20 SAM children in Nutritional Rehabilitation Centre (NRC).

During the campaign, it has tracked growth monitoring of more than 4500 children below the age of 5 years. It has also conducted camps in the village to identify the severe anaemic adolescent girls through Haemoglobin check-ups with the support of Health department, Government of Odisha.

More than 5 researches were conducted on nutrition considering the life cycle approach for change. It has completed the analysis of growth monitoring for the same cohort of 2017 and 2018 with the purpose of measuring the changes and its reasons and identifying the gap area for future intervention. An in-depth analysis was done for the 2000 adolescents with respect to improvements in the anaemic conditions, the reasons and good practices among them. Knowledge, Attitude and Practice (KAP) study has been done in Kalahandi districts to understand the level of awareness on nutrition and its factors. The findings of the study established the linkages of the early marriage, early motherhood, low birth baby weight and acute malnutrition. The campaign has led to the establishment of the Interactive Voice Record (IVR) platform, a tool for Behaviour Change Communication (BCC), which has also helped in collecting information from the beneficiary directly. With the IVR tool, it has reached the 746 lactating and pregnant mothers to understand the trend and pattern of uses of services from the VHND for betterment of maternal and child health. Study on anaemic pregnancy guided campaigners to focus more on high risk mothers, enhancement of iron deposits in the

bloods among the pregnant mothers, improvement in the diversity diet and the importance of “Ma Gruha”.

The aforementioned analysis and observation helped in further fine tuning of the campaign. There is better nutritional improvement among the girl child than the male. There are reduction in the severe underweight children and severe wasting among the 3 to 6 years children because of quality improvement in the Anganwadi centre. Government of Odisha is making improvement in its supplementary food programme i.e Hot Cooked meal (HCM) for the preschool children.

Community based management for acute malnutrition worked well. Family counselling by the AWW, ASHA, ANM and community mobilisers proved as one of the important approach to improve the nutritional status of the Child below the age of 2 years. Intervention on kitchen garden at household level for the pregnant and lactating mothers worked well among the high risk mothers and it improved in baby birth weight. Kitchen garden was also promoted with referral to the NRC for the children who were identified severely underweight as per MUAC measurement. Community monitoring and the greater participation in the functioning of the Anganwadi centre resulted better results. Food demonstration followed with the nutritional education among the lactating and pregnant mothers worked well to improve the food intake among the mothers.

Analysis has been done by the WHO anthro calculator for the both the year 2017 and 2018. In the year 2017, under -3SD total 11.2% children registered, whereas it is reduced down to 9% in the year 2018. There is reduction of 2.2% in severe wasted category children in same cohort.

In order to control the malnutrition and anaemia among the children and adolescents, one needs to focus on anaemia during the pregnancy as well. Study spells clearly that 100% pregnant mothers are falling under the category of (Mild and moderate) anaemia.

Campaign derived that the children above 6 months and below 30 months are critical, for them HCM (Hot Cooked Meal) at centre level is must and Government need to review the supplementary programme (THR- take Home ration) for the children below the age of 3 years, particularly for the children who are denied the entitlements due to the long distance from the AWC.

There are very strong linkages in between the early marriage, early motherhood, low birth baby weight and severe wasting in tribal area of Odisha. Reduction in early marriage and early motherhood will lead to a fall in the proportion of malnutrition.

Henceforth, CRY and VCRO appeal to all stakeholders to come forward to work for reducing down the malnutrition among the children. We recognise the potential of each individual to contribute towards the wellbeing of our children which would further help in building a healthy state and nation.

Index

1. About CRY
2. About VCRO
3. About Campaign
 - a. Activities of the campaign
 - b. Selected photographs
4. Analytical Study Report of campaign
 - a. Analysis of 2017 to 2019- Malnutrition 6 months to 5 years (GMC)
 - b. Analysis of 2018-19, adolescent health- Haemoglobin and BMI study
 - c. Narrative report of the KAP study of the Kalahandi study
 - d. Analysis of State level surveys on services for the lactating mothers
 - e. A narrative of the analysis of the Ma Gruha- Kamdhamal- status of haemoglobin among pregnant mothers
5. Stories of Change
6. Conclusion

About CRY

Child Rights and You (CRY) is an Indian non-profit organisation that believes in every child's right to a childhood- to live, learn and play. For nearly 4 decades, it has worked with over 200 partner NGOs for parents and communities across 23 states to ensure sustainable change in the lives of over 2 million underprivileged children.

Vision

A happy, healthy and creative child whose rights are protected and honoured in a society that is built on respect for dignity, justice and equity for all.

Mission

To enable people to take responsibility for the situation of the deprived Indian child and motivate them to seek resolution through individual and collective action, thereby enabling children to realise their full potential.

To help people discover their potential to initiate action and change.

To enable people's collectives and movements encompassing diverse segments, to pledge their particular strengths, working in partnership to secure, protect and honour the [rights of India's children](#).

About VCRO

The process of initiating Voice for Child Rights in Odisha (VCRO) began in June 2004, by a large group of like-minded voluntary organizations and individuals for protection and promotion of child rights in the state of Odisha.

Vision - The alliance visualizes a society where every child will be ensured with rights for his or her holistic development.

Mission – Civil society mobilization and building people's movement to ensure child right in the frame work of Indian constitution and UN declaration.

CRY partners at grass root

- 1) **SPREAD**- Society for Promotion of Rural Education and Development (SPREAD), working in Koraput on the issue of health nutrition with the support of CRY- Child Rights and You since 2005 among the tribal community.
- 2) **PAP**, Bargarh- Palli Alok Pathagar (PAP), working in Bargarh and Balangir districts on health and nutrition since 2012 under the support of CRY- Child Rights and You, is a very vibrant organization in community mobilization and has established a good rapport with the community.
- 3) **Chale Chalo**, Nuapada- working in Nuapada and Kalahnadi under the support of CRY- Child Rights and You. It has expertise on community radio since 2005 and Mobilvanni since 2017.
- 4) **Sikhasandhan**, Bhubaneswar, working with the support of CRY- Child Rights and You since 2011 on the quality education outcome among the tribal community of the Mayurbhanj.
- 5) **SWATI**- Social Welfare Agency & Training Institute, Kandhamal working with the support of CRY- Child Rights and You since 2019 in Phringia Block of the districts on health and nutrition.

About the Campaign

Incepted in July 2017 in tribal districts of Odisha, it has covered six districts of the Western, Northern and Southern districts of the State. It worked with the purpose of reducing malnutrition and anaemia among the tribal population. During the period of January 2019 to December 2019, a series of activities were conducted at the grass root level to bring about change. They are as follows:

- 1> Growth monitoring and tracking of children 6 months to 5 years through WHO (World Health Organisation) growth monitoring sheet.
- 2> Counselling the identified SAM (Severely Acute Malnutrition) children and preparation for referring them to the Nutritional rehabilitation centre. Follow up with the parents and family for continuing the nutritional and balance food.
- 3> Establishing coordination among the beneficiary and service providers in Village Health and Nutrition day. Focus on health education session, regular check-ups and monitoring of the mothers card.
- 4> Management of High risk mothers to reduce the low birth weight of new born baby. Registration of the high risk mothers with the ICDS (Integrated Child Development Scheme) centre, periodic follow up and monitoring of the HB and weight of the mothers.
- 5> Empowering community to strengthen the functioning of ICDS centre and ensure contribution of nutritional food items from the community to centre under CMAM- Community based management of acute malnutrition.
- 6> Mapping and tracking of anaemic adolescent through Haemoglobin check-up and follow up. Every years HB camps used to be organised with the support of Health department and follow up with the adolescent girls, who are anaemic.
- 7> Promotion of kitchen garden amongst the SAM and Anaemic mothers household. Meeting with the parents, creating awareness among them about the importance of kitchen gardens, collaborating with the horticulture and NRLM (National Rural Livelihood Mission) team for promotion of kitchen gardens.
- 8> Organising adolescent girls for promotion of health and hygiene. Counselling and capacity building with life skill programme organised with the adolescents for management of health, body growth and linking them with the schemes.
- 9> Proper management of THR (Take home ration) at household level. Enrolment of all pregnant and lactating mothers with the ICDS centre. Counselling them about the uses of THR at household level.
- 10>Community meeting, ensuring the participation of GKS (Gaon Kalyan Sammittee), Matri committee, Janch Committee, panchayat members. Ensuring their engagement with the functioning of ICDS centre, management of the centre and

handholding support to the Anganwadi workers. Resource allocation through their own fund in the centre.

- 11> Stake holder engagement like Panchayat members, Sarpanch, Zila Parisad members, Legislative assembly members, NHM officials, horticulture department, CDPO (child Development programme Officer), education department.
- 12> Food demonstration during VHND (Village Health and Nutrition day) and in school programme. Nutritionist has been invited at village level, demonstration of the food with local available food with mothers. Schools are organising programme with the children on nutritional and balance food.
- 13> Hand washing practices amongst the children at Anganwadi centre and in school. Community workers in support of AWW (Anganwadi worker) organising hand wash demonstration at centre with children.
- 14> Research and study through mobile vanni platform and other tools to measure the changes among the beneficiary and impact assessment of the campaign.
- 15> Developing digital behavioural communication capsules for awareness at community level through mobile vanni programme.

GROWTH MONITORING:



Growth Monitoring is one of the regular activities of the campaign, conducted every month during the VHND day. It involves children below the age of 5 years being measured at centre and making their parents aware about the growth of their child. It covered 4319, 3800 and 4500 children in 2017, 2018 and 2019 respectively. This

programme was done with 150 ICDS centre in six districts namely Mayurbhanj, Balangir, Bargarh, Kalahandi, Kandhamal and Koraput district of Odisha State.

COMMUNITY MEETINGS:



During the campaign period, the community workers and officials of the campaign organised more than 1000 meeting at villages, covering 200 villages, 17 Panchayats. More than 30000 villagers participated in this programme. Various types of programmes like exclusive breast feeding, promotion of kitchen gardens, health and hygiene, nutritional food, activation of ICDS centre, sub-centre, role of janch and Matru committee and the involvement of elected representatives in the community level programme.

CAPACITY BUILDING OF THE BENEFICARY:

Capacity building is one of the focus programme of the campaign, it has capacitated the 50 grass root campaigners on health and nutrition. 2000 adolescents across the districts were trained on life skill and nutrition. Apart from these 300 Anganwadi workers also trained on the nutrition by the nutritionist. Nearly 1000 lactating and pregnant mothers capacitated through the digital mobile vanni programme with regards to the government scheme for mothers and exclusive breast feeding, home based management of the new born children. At the Panchayat and Block level, capacity building programme was

organised with multiple stake holders. ASHA, ANM, AWW, CDPO, Panchayat members, Sarpanch, health officials participated in the programme.



FOOD DEMONSTRATION:

Nutritional food demonstration among the lactating, pregnant mothers, adolescent girls and the family members was one of the prime programmes to improve the food palate of the families. This programme was tagged with the village health nutrition day at ICDS centre, where the mothers are the biggest beneficiaries.





IMMUNIZATION:

During every VHND, the ANM conducts the immunization process where all the children (0-9 months) and pregnant mothers receive basic vaccine doses. In the year 2019, there were 120 children (Mayurbhanj Dist.), 119 children (Koraput Dist.) 162 children (Kalahandi Dist.) 155 children (Bargarh Dist.) 106 children (Balangir Dist.) and 377 children (Kandhamal Dist.) who got immunized during VHND and received the dosage of B.C.G, D.T.P, Polio and Measles in all the six districts of Odisha. Along with this, 92% of all the mothers received ANC (Antenatal care) services during pregnancy availed the services from the ICDS centres during VHND.





KITCHEN GARDEN:

One of the major campaigns of the year was encouraging the practice of Kitchen Gardens in the households of the beneficiaries. In 2019, a total of **2500 Kitchen Garden** was practiced by individual households, ICDS centres and Schools. The kitchen gardens had sajana, moonga, papaya, kadali and many other green leafy vegetables which contributed towards improving the nutritional condition of the children, adolescent girls and pregnant and lactating mothers.





HAEMOGLOBIN CHECKUPS:

In 2018, adolescent girls' health was prioritized and HB tests were conducted covering 1256 adolescent girls and it was found out that only 9% of the total girls were non-anaemic and 75% of the girls were suffering from moderate anaemic conditions. Practices like regular counselling, changes in the food plate and growth and consumption of green vegetables in the kitchen garden were practiced for a year after which 2066 girls were again tested for Anaemic status and 864 girls were mapped in both the years and there was an increase in the percentage of non-anaemic category by 3% and a decrease in the moderately anaemic category by 14%.

COUNSELLING WITH ADOLESCENT GIRLS AND PARENTS ON IMPROVING NUTRITIONAL STATUS OF CHILDREN AND ADOLESCENT GIRLS:

There were counselling sessions taking place for the mothers and adolescent girls regarding the changes to be made in the food plate so that it could impact the nutritional status of the children and development could be seen in the growth of the children and for adolescents, the anaemic status of the girls could improve with the addition of tri colour vegetables and fruits in the food plate through the practice of Kitchen Garden in

the premises of their houses. Along with these, counselling sessions were also held for pregnant and lactating mothers regarding availing of the ANC and PNC services.



CELEBRATING OF VILLAGE HEALTH SANITATION NUTRITION DAY:

VHSND is celebrated in all the six districts of Odisha and covering almost all the villages leaving behind those which are located in the remotest parts which could not be covered by the ANMs. During the VHSND all pregnant and lactating mothers can avail the ANC and PNC services, regular tracking of the growth of the children from 6 months to 5 years of age are done and the ones suffering from severe malnutrition are referred to the nearby health centres and the adolescent girls are also diagnosed with the HB count and their height and weight is measured to find out their BMI. In addition to these services the beneficiaries are also provided with Take Home Rations as per their need criteria.



HAND WASHING PRACTICES IN SCHOOLS AND ICDS CENTRES TO ENSURE HYGENIC PRACTICES BEFORE EATING FOOD:

In 32 schools and 30 ICDS centres, healthy hand washing practices were taught to encourage healthy practices before eating food to prevent infections while eating. In addition to this, pregnant and lactating mothers were also counselled on the use of soap while washing hands before cooking and eating meals.





EFFECTIVE MEETING WITH THE PANCHAYATI RAJ MEMBERS TO RESOLVE ISSUES RELATED TO INFRASTRUCTURE AND SYSTEM RELATED PROCESS.

Continuous engagement with the PRI members took place in all the villages during which issues such as construction of new ICDS centres, infrastructural lacks in the centres like the unavailability of electric current or plates for the distribution of MDM were discussed. Issues related to the attendance of the Anganwadi workers and the irregularity in the visits of the ANMs and the ASHA were discussed as well. As a result of the effective PRI meetings, school boundaries were constructed, 1 ICDS centre had the supply of electricity and availability of plates for the children, regularity of the Anganwadi workers was ensured in 3 Anganwadi centres.



DISTRIBUTION OF THR TO THE MOTHERS AND CHILDREN WHO WERE FOUND TO HAVE NUTRITIONAL DEFICIENCIES:

All the mothers and the children who were found to suffer from acute nutritional deficiencies were provided with THR, the consumption of which was found to positively impact the nutritional status of both mothers and children.



INTERVENTION WITH HIGH RISK MOTHERS TO ENSURE SAFE DELIVERY AND REDUCE INFANT AND MOTHER MORTALITY:

Interventions with High Risk Mothers were done to mitigate the risk of unsafe delivery posing a threat to the life of the mother and the child. During VHND, the pregnant mothers were provided with all ANC services by the ANMs and were also provided with iron tablets. In case of emergency the mothers were also referred to the nearby health centres or hospitals.





INTERVENTION WITH THE ADOLESCENT ON IMPROVING THEIR HEALTH STATUS AND LIFE SKILL EDUCATION:

There are 80 adolescent girls groups made in all the 6 districts of operation having a total of 1935 adolescent girls who are regularly part of the meetings and discussions. They have also carried the campaign on improving haemoglobin and have got their HB tested, propagated the growth and consumption of green vegetables through Kitchen Garden in their villages. Additionally, they have also raised the issue of Child Marriage and have conducted Nukkad Natak in their villages to raise their voices against the issue. A session on life skill education was also taken on self-esteem, self-confidence and self-awareness.



Analysis of Growth Monitoring below 5 years of children of the CRY intervention areas of 4 districts of Odisha in reference to Malnutrition- A comparative analysis for the year 2017 and 2018

Introduction

Odisha, with a population of 41.9 million in 2011, is one of the poorest states in India. About 45.9% of the population in the state was living below the long-term poverty line compared with 29.5% at the national average. In 2005, the Infant Mortality Rate (IMR) of Odisha was the highest in the country—75 per 1000 live births, which reduced to 40 by 2015-16 (according to NFHS-4). During the last decade, the state has made commendable progress in maternal care indicators. The share of institutional births has increased from 36% in 2005–2006 to 85% in 2015–2016, but the nutritional indicators remained poor in the state. The coverage of early initiation of breast feeding increased from 54% in 2005–2006 to 69% in 2015–2016. By 2015–2016, about 34% of children under 5 were stunted, 34% were underweight and 20% were wasted. The level of stunting, wasting and underweight was higher than that in many states in India. (Source: Niti Ayog, Nourishing, National Strategy document, Government of India)

Nutrition means the process of providing or obtaining the food and nutrients necessary for health and growth. Under nutrition means, lack of proper nutrition, caused by not having enough food or not eating enough substances necessary for growth and health, so, good nutrition depends on quality and quantity of food, child and maternal health care, access to health and a healthy environment. If undernourishment occurs during pregnancy or before two years of age, it may result in permanent problem of physical and mental of children. It may have many symptoms that included: a short height, thin body, very poor energy level. Poverty, hunger and insufficient food supply are still affecting large parts of world's population with serious consequences of health problems, especially in children.

All over the world, 159 million children are stunted, 50 million children are wasted and 41 million are overweight out of the 667 million children of below five years (Global Nutritional Report, UNICEF, 2016). When we see the world wide data on nutrition, we see that developing and under developed countries have more undernourished children than developed countries. Around 38.4, 21.0, 7.5, 35.7 percent of children under the age of five years are stunted, wasted, severely wasted and underweight respectively as per fourth round of National Family Health Survey in 2015-16 in India.

Reduction of malnutrition among children has been accorded high priority in global, national and local development agenda. The World Health Assembly (WHA) set six commendable targets for stunting, wasting, overweight, anaemia, low birth weight and exclusive breast feeding to improve the state of maternal and child health. It recommended that stunting be reduced by 40% from its current level and wasting to 5%

among under-5 children by 2025. 12 of the 17 targets of the Sustainable Development Goals (SDGs) are directly or indirectly related to malnutrition. Target 2 aims at reducing malnutrition in all forms by 2030, and target 2.2 reiterates achieving the WHA target. Globally, 156 million children under 5 years of age are stunted, 93 million are underweight and 50 million are wasted. Majority of undernourished children reside in South Asia, and India accounts for 40% of stunted children globally. Despite intense regional, national and global efforts, the progress on reduction of malnutrition continues to be slow and uneven across and within countries.

Malnutrition among children is commonly measured using height and weight, and quantified using stunting, wasting, underweight, and overweight and obesity. Stunting is a form of chronic energy deficiency and defined as the height-for-age below 2 SD of the median of the WHO reference population. Wasting is a form of acute chronic deficiency and measured as the weight-for-height below 2 SD of the median of the WHO reference population. Stunting and wasting are the outcomes of poor nutrition and healthcare during pregnancy and early childhood.

Purpose of study

- To assess the changes in severely underweight children to Normal out of 2084 children in four Tribal districts of Western and Southern districts of Odisha for the period 2017 and 2018.
- To find out the factors of change and gap areas in addressing the Malnutrition in CRY intervention area in 4 districts of Odisha.
- To capture the practices at community level for addressing the issues of Malnutrition through CMAM (Community based Management of Acute Malnutrition)

Methods

In July 2017, CRY in association with VCRO, initiated a campaign on “Giving Children of Odisha a Healthy Start”. The campaign started with Growth Monitoring of the children in between 6 months to 5 years in 5 districts with the support of 30 grass root campaigners and the Anganwadi workers. Data was collected in November 2017 from 4319 children below the age of 5 years from 5 districts of Odisha, those of Balangir, Bargarh, Koraput, Kalahandi and Mayurbhanj. Grass root volunteers / community organizers, who worked in projects in those districts, were trained on nutrition and health issues have been engaged in collecting data with the support of Anganwadi workers at VHND level.

During November 2018, the CRY-VCRO campaign targeted the same age groups and collected data from 3200 children below the age of 5 years from 5 districts of Odisha

namely Balangir, Bargarh, Koraput, Kalahandi and Mayurbhanj to map the changes. Some of the operational area shifted during 2018, data from new operational area has not been incorporated for analysis.

The data of the 2084 children from their respective districts has been analysed. Balangir district has been opted out of the analysis because of non-alignment with the same cohort for the purpose to understand the changes occurred due to the intervention on health and nutrition.

Analysis has been done through the following ways:

- 1> WHO Growth monitoring chart for measuring underweight and
- 2> MUAC- Mid Upper Arm Circumference measurement.
- 3> WHO anthropometry for Wasting and Stunting

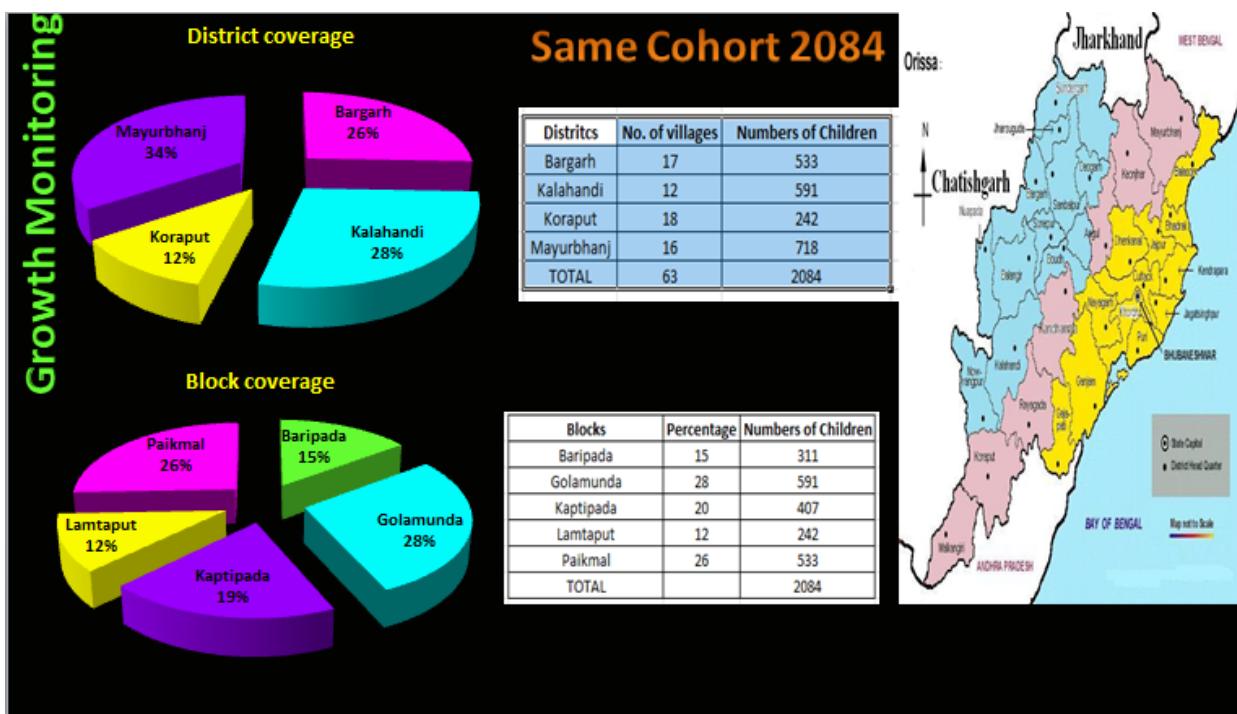
Coverage of data

S.no	Districts	Blocks	Panchayats
1.	Mayurbhanj	Baripada, Kaptipada	Betna, Laxhmipose, Dangabahal
2.	Bargarh	Paikmal, Gaisilet	Bhengrajpur, Kechodadar, Katabahal
3.	Kalahandi	Golamunda	Khalipali, Kuhura, Later, Mahaling, Sinapali
4.	Koraput	Lamtaput	Ballel, Gadihanjhar, Guniepada

Analysis and mapping has been done for the 63 villages for 2084 children in those 4 districts of the State. Paikmal Block covered under Bargarh district, covered 17 villages i.e 26% children coverage of total children of the study. Golamunda Block covered under Kalahandi districts, with 591 children covered in 12 villages, which is around 28% of total study children. Lamtaput block covered under Koraput district, 18 villages covered in the district out of total 63 villages, it covers 18% of total study children. Kaptipada block covered under the Mayurbhanj district of Odisha, covered 16 villages and comprises of 20% of total children of the study.

The population density varies from village to village. Lamtaput and Kaptipada are tribal populated blocks and therefore population density is less than the other two districts of Kalahandi and Bargarh.

Child coverage for both the years was intact with the same children in the four districts of the State. Data related to the GMC (Growth monitoring) for the age group between 6 months to 5 years.



Results:

Severely Underweight Category:

During the year 2017-18, out of 2058 children, 266 identified as severely underweight, which is 12.8% of the total children, which has been reduced down to the 197 in the year 2018-19, i.e. 9.5% of the total children. There is a 3.3% reduction in the children belonging to the severely underweight category, with respect to the data of both the years. If we will see the changes in the status of the severe underweight children category only, it is around 25.9 percent reduction in the same category, comparing to the previous year data.

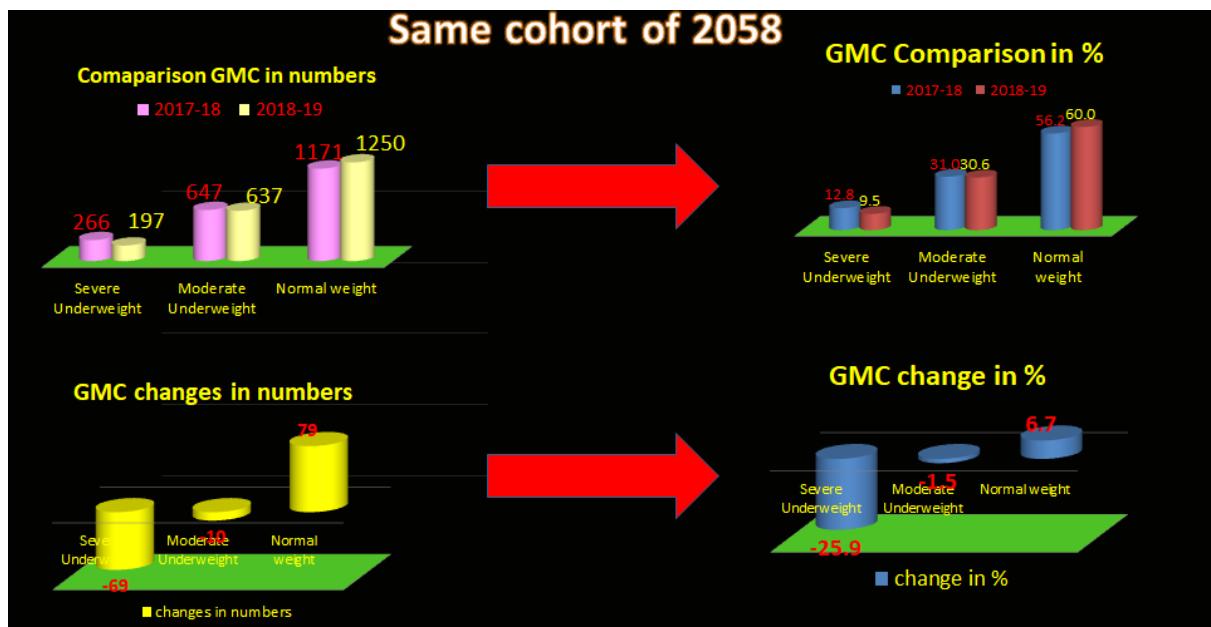
Moderately Underweight Category:

Under the moderately underweight category, 647 children identified, in 2017 i.e. 31.0 percent of total children, which has been reduced down to 637 children i.e. 30.6 percent of the total study children. A change of only 0.4% has been observed. But when compared with the numbers under moderate category only, then there has been a 1.5% reduction in the moderate category of underweight children.

Normal Category:

During the year 2017, total 1171 children identified under the normal category under growth monitoring, which is 56.2 percent of the total children studied during the year, whereas in the year 2018, it has increased to 1250 children in the same category, 79

children moved to the normal category. There is a change of 3.8 percent in the normal category among all the study participants. There is a 6.7 percent change in the status of normal category.



MUAC- Mid Upper Arm Circumference

Red category: During the year 2017, 13 children identified under the red category of the MUAC measurement out of 2058 of cohort, in 2018 the measurement is same with same number of children. Some of the children moved to yellow and green but at the same time some of the children dropped down from the moderate category.

Yellow Category: There are major jumps in yellow category, in the year 2017, there were 123 children in yellow category out of 2058 children, whereas in 2018, it registered only 60 children. There is a reduction of 63 children in the same category, ie. In the year 2018 it came down to 3.1 percent from 6.4 percent of 2017. A change of 51.2 percent was recorded in the yellow category.

Green Category: In the year 2017, a total of 1777 children were identified in green category of MUAC out of 2058 study children. It has increased to 1840 children in the year 2018. There is a jump of 63 children in normal category. After conducting a year-on-year comparison, a jump of 3.5 percent children was recorded. 92.9 percent children registered in 2017 and it increased to 96.2 percent children in green category of MUAC measurement.

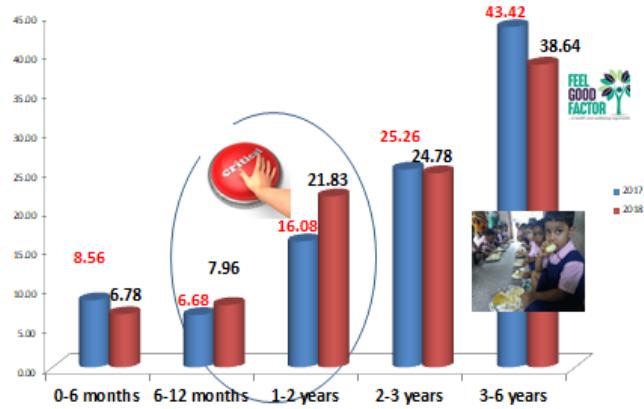
Grade Movement with the movement of Age from infancy to pre-school age

In the 0 to 6 months category, there is a reduction of severe underweight category from 8.56 percent to 6.78 percent.

There is almost a gain of around 2 points from 2017 to 2018. For the category 6 months to 12 months of age, there is an increase of severe underweight from 6.68 percent to 7.96 percent almost jump of 1% in this category. Again with the age group 1 to 2 years, percentage of severe underweight increased from 16.08 to 21.83. There is positive variation among 3-6 years of children; a reduction of severe underweight category from 43.42 percent to 38.64 percent, almost a 6 percent change.

266 children identified as severe underweight category in 2017. If we will observe the grade movement of these children, then 26.52 percent children remain in the same category after passing of one year, whereas 35.13 percent severe underweight children shifted to moderate (Yellow) underweight category and 38.35 percent children made a grade movement to normal category (Green).

Status of Severe underweight children over the Year



Grade movement of severe underweight children of 2017



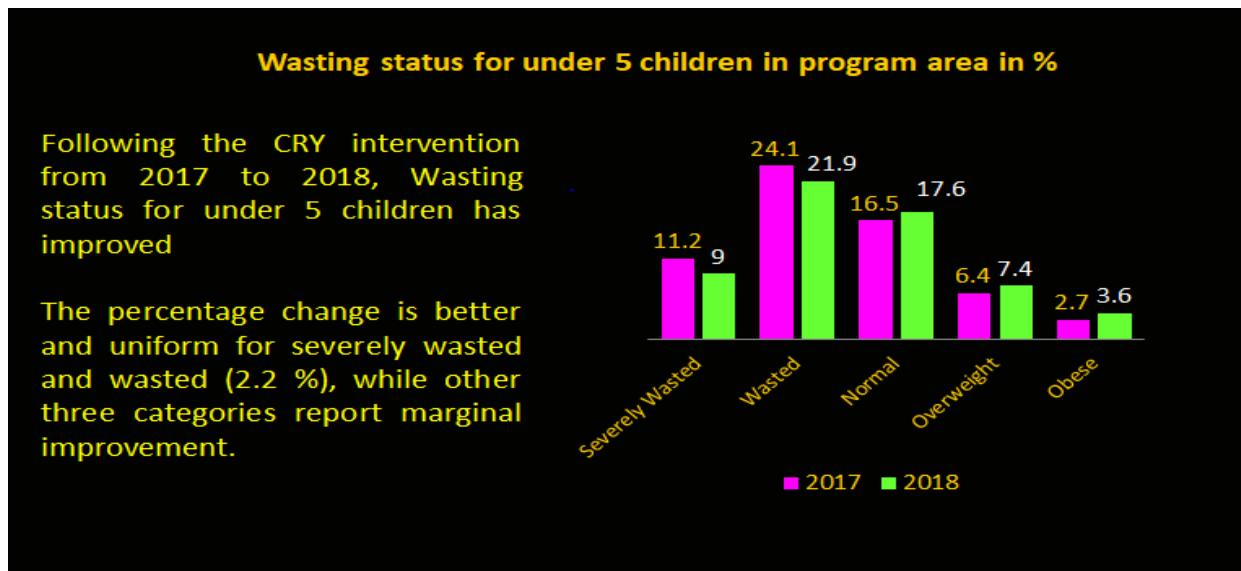
Status of severe wasted and Stunted category

Weight for Length (-3SD) severe wasted: Analysis has been done by the WHO anthro calculator for the both 2017 and 2018. In the year 2017, total 1844 study participants were considered for analysis out of 2058, whereas for the year 2018, it considered 1920 children for analysis. In the year 2017, under -3SD total 11.2% children registered, whereas it is reduced down to 9% in the year 2018. There is a reduction of 2.2% in severe wasted category children in same cohort.

Age (Months)		2017		2018	
		N	-3SD	N	-3SD
Total		1844	11.2%	1920	9%
0-5		81	8.6%	0	0%
6-11		166	16.3%	0	0%
12-23		487	15.6%	287	12.2%
24-35		478	10.5%	481	14.1%
36-47		567	7.8%	510	6.3%
48-60	65	4.6%			5.9%

In the wasted category out of total study children, there is reduction of 2.2 percentage in comparison of 2017 and 2018, it has been reduced from 24.1 to 21.9 percent.

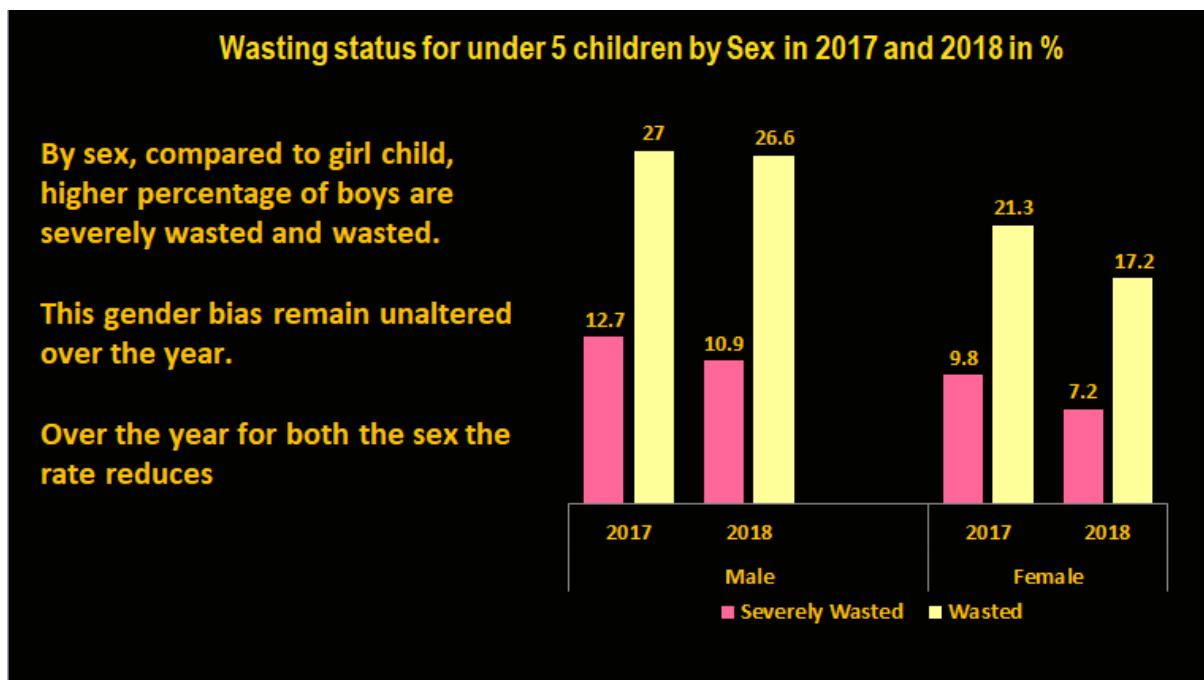
Length/Height for Age (-3SD) severe Stunted: - Analysis has been done by the WHO anthro calculator for the both the year 2017 and 2018. In the year 2017, total 1803 study



participants considered for analysis out of common 2058 study children, whereas for the year 2018 it has considered 1867 children for analysis. In the year 2017, under -3SD total 35.1% children registered which it is reduced to 34.1% in the year 2018. There is a reduction of 1.0% in severe stunted category children in same cohort.

Age (Months)	2017		2018	
	N	-3SD	N	-3SD
Total	1803	35.1%	1867	34.1
0-5	75	32	0	0
6-11	162	30.9	0	0
12-23	472	35.8	266	33.1
24-35	476	34.2	486	36.4
36-47	552	35.5	496	32.5
48-60	66	45.5	619	33.9

Wasting status for under 5 children by Sex in 2017 and 2018: For the year 2017, 12.7 percent male children were registered as severely wasted, whereas it fell to 10.9 in the year 10.9, almost a 2 point reduction. In wasted category for male, it decreased from 27 to 26.2 percent, which was a nominal change. In the female category, there was a reduction of 2.6 points - from 9.8 to 7.2 percent and in wasting category; there is remarkable reduction from 21.3 to 17.2 percent. That is reduction of 4.1 points from the previous year.



Discussion:

Study on growth monitoring of the children below the age of 5 years in selected 4 districts of the Odisha with the same number of children found that there is a reduction in the malnutrition status. Reduction has been recorded in the severe underweight children, moderate underweight children, -3SD wasted and stunted.

Study found that the three percent reduction in the severe underweight children, one percent reduction in the moderate underweight and 4 percent increase in the normal category of children. This is a normal and positive variation in one year of analysis from November 2017 to November 2018.

Analysis revealed that the improvement among 0 to 6 months of children, Severe underweight decreased from 8.56 to 6.78 for the age groups between 0 to 6 months. Then 6 months onwards to 2 years of age there is an increase in the severe underweight children. Among the 6 months to 12 months children, severe underweight status increased from 6.68 to 7.96 for the age group of 1 to 2 years it increased from 16.08 to 21.83 almost five points jump. And then it starts the trend of reduction from 25.26 to

24.78% in the age groups of 2 to 3 years and reduction from 43.42 to 38.64 among 3 to 6 years of children.

Above data revealed that there are changes below the age of 6 months because of intervention for institutional birth delivery, activating services for pregnant and lactating mothers, participation of mothers in village health and nutrition day on regular basis at Anganwadi centre. Monitoring and motivation in feeding colostrum milk to new born child and breast feeding campaign worked well. Due to this, there is a positive reduction in the severe underweight children.

Above data also revealed that the period from 6 months to 2 years is critical and there is an increase in the severe underweight. Take home ration (THR) for the children age group 6 months to 2 years, which is been provided under Integrated Child Development Scheme (ICDS) are not very effective. The population under the tag villages (Hamlets) of the Anganwadi centre are not collecting the THR on time and these are also not being provided by the AWW. There is a grey area in not only receivable of the benefits but also their proper utilisation.

Data also revealed that there is a significant improvement in reduction of severe underweight children among 3-6 years, because of quality improvement in the services of the Anganwadi centre. Government of Odisha, improved a lot in hot cooked meal (HCM) scheme at centre level, which is applicable for pre-school age groups in anganwadi centre. There is major improvement in monitoring of these centres by the mata sammittee and Janch committee at village level. Panchayat members are also taking interest in functioning of the centre.

The intervention was much more focussed on the severely underweight children, therefore the growth in this category has improved, and only 26.52 percent children remained in the same status for second year and the rest of the children upgraded to the moderate and normal category. Amongst the children in the moderate category in 2017, 11.26 children fell to the red category (Severe underweight category) and 46 percentage children upgraded to the normal category (Green). Good progress was seen among the Normal category of children, there are only 6 percentage children fall from normal to the moderate and severe underweight category.

Gender wise analysis revealed that the girl child is better off than the boy child. There are reduction in severely wasted category among male child is from 12.7 to 10.9 and in wasted category for the male child reduced from 27 percent to 26.6 percent, whereas among girl child in severe wasted category it has reduced down from 9.8 to 7.2, whereas in wasted category it reduced from 21.3 percent to 17.2 percent. This indicates that the focus on girl child has worked well across all the districts.

Community based management for acute malnutrition is the need of the hour. Promotion of kitchen gardens at household level for the pregnant and lactating mothers worked well among the high risk mothers and improved the baby birth weight. Kitchen garden was also promoted with referral to the NRC for the children who were identified severely underweight as per MUAC measurement. Community monitoring and the greater participation in the functioning of the Anganwadi centre resulted better results. Food demonstration followed by the nutritional education among the lactating and pregnant mothers worked well to improve the food intake among the mothers.

There is a dire need to work with children, who have been left out from the services of the Anganwadi centre. Those who are in tag villages, need to work for better utilisation of the THR (Take home ration) for the children 6 months to 2 years. Family level nutritional counselling to be imparted at household level so that the care giver other than mother can also be sensitizing to look after the children of 6 months to 2 years.

Conclusion

- Socio-cultural determinants of feeding practices must be incorporated in the design of intervention targeted at improving nutritional status.
- Exclusive breastfeeding for as long as practical and as long as an infant's normal growth is maintained, minimizes a child's risk.
- Maternal nutritional status appears to affect milk volume; its impact on child's growth.
- Life cycle approach on nutrition is a must.
- Evaluation of food processing options must consider food preferences, availability of raw in gradients and local child feeding practices.
- Maternal education programmes that emphasize appropriate practices of food handling. Such programs must be developed and implemented within communities. Such programmes should improve household hygienic and food preparation practices.
- Hot Cooked Meal (HCM) instead of THR will be better option for the children who are not entitled for the HCM at anganwadi centres for reduction in the malnutrition among the children 6 months to 2 years, which are critical age groups.
- Establishment of Creches for working mothers will also be a good option to serve the children for the age group 6 months to 2 years. In rural context, most of the mothers are engaged on the farm and off farm activities and for them it is very difficult to give adequate care to the children who are just entered from lactating

phase to supplementary food phase. Therefore services from Creches will help them serve children below the age of 2 years in better way.

IMPORTANT THINGS TO REMEMBER:

- Behavioral Modification
- Hygienic practices, household resources, food storage and preparation techniques in the transmission
- Enhancement of Breastfeeding and weaning practices
- Relationship between nutritional status and Diarrheal disease.
- Timing of supplementary food introduction
- Nutrient bio-availability and calorie Density
- Improved food processing

Acknowledgement

CRY acknowledges the contribution of the partners Ngo at grass root level for collection of data for both the years. It also acknowledges the government service providers at the community level, who supported the grass root workers with data and interaction with the beneficiary groups under the Government schemes.

Reference:

<http://www.aensi.in/assets/uploads/doc/dd75d-90-103.14474.pdf>

<https://bmjopen.bmj.com/content/9/5/e028681>

http://niti.gov.in/writereaddata/files/document_publication/Nutrition_Strategy_Booklet.pdf

Mazumdar S. Determinants of Inequality in Child Malnutrition in India: The Poverty-Undernutrition Linkage. Asian Population Studies 2010; **6**:307–33

An analytical study of the status of Anaemia amongst adolescent girls in 5 CRY intervention districts of Southern and Western Odisha for the year 2018 and 2019.

Introduction:

India has almost 224 million adolescents in the age group of 10 to 19 years accounting for 22% of the total population of which 105 million are girls. This means that every 5th person in the country is an adolescent and every 10th person is a girl. Adolescent girls have always been more vulnerable in terms of health, education, nutrition and their overall growth and development. As a result of this fact, the adolescent girls enter into adulthood with low health and nutritional status which increases the risk of reproductive morbidity and mortality. One of the major health issues amongst the adolescent girls has been the prevalence of Anaemia which, in later stages, leads to adverse reproductive impacts. Therefore, addressing the health issues of the adolescent especially the rate of Anaemic girls is of utmost priority.

Anaemia is caused due to the decrease in the number of Red Blood Cells or Haemoglobin in the blood. It is a condition when the blood's oxygen carrying capacity decreases due to the decreased RBCs or Haemoglobin. Haemoglobin is made up of two nutrients, Haemin which is the iron content and Globin which is the iron part, hence the deficit of Iron leads to the non-forming of new HB cells leading to Anaemia and the **chronic deficiency of Iron leads to Iron Deficiency Anaemia.**

Anaemia is a global issue but it is more prevalent in developing countries due to the existence of malnutrition, communicable diseases and parasitic infections. Iron deficiency anaemia is present not only in the developing countries but is also a struggling issue for the developed countries. The World Health Organization in their report states that 436 million non-pregnant and 32.4 million pregnant women in the age group of 15 to 49 years are suffering from Anaemia. It is believed that half a billion women of the reproductive age worldwide are affected by Anaemia causing 20% of the maternal death directly. The change in the scenario can only happen when there will be an emphasis on the need to address this issue to combat the growing rate of anaemic women especially adolescent girls. 22% of India's population consists of adolescents of which 25 to 50% of the adolescent girls become Anaemic before the onset of menarche. Anaemia during the adolescent period limits growth and limits the onset of menarche which in turn in the later stages may lead to Cephalopelvic Disproportion.

According to NFHS, prevalence of Anaemia in adolescent girls in the age group of 10 -19 years in the state of Odisha is comparatively higher than in the other age groups by 56%. Hence, anaemia in the adolescent groups specially in the adolescent girls have been one of the major concerns in healthy growth and development of the adolescent girls. In order to control the scenario, there have been many government schemes such as providing with WIFS (Weekly Iron Folic Supplements) through which all the adolescent girls were provided with IFA tablets through the schools for the school going students and through Anganwadi Centres to the out of school

adolescent girls to combat the scenario. In addition to the WIFS, the kruminasak (deworming) tablets are also provided to the girls to prevent malnutrition and better absorption of nutrients.

Objective:

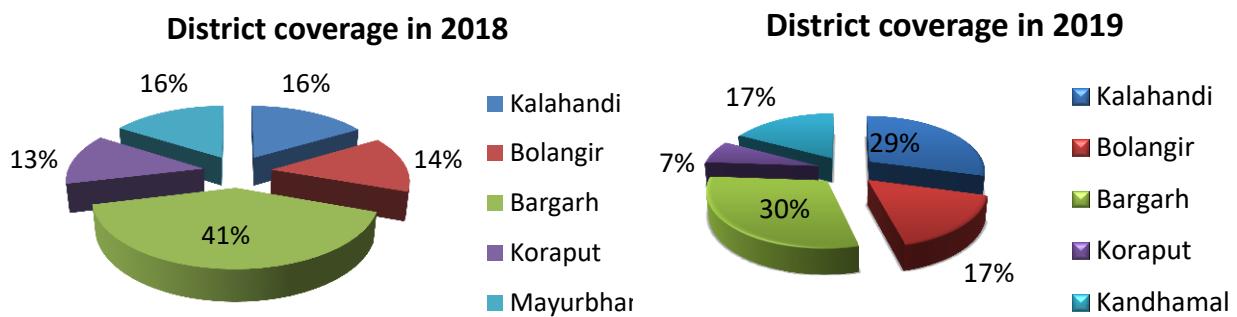
- To find out the status of Haemoglobin count in the girls of age group 9 to 18 years in the CRY intervention area of 163 remote villages being covered under the 5 districts of Koraput, Kalahandi, Kandhamal, Balangir and Bargarh.
- To find out the status of Anaemia or low Haemoglobin in comparison to the age of the adolescent girls.
- To find out the status of Anaemia in comparison to the caste of the girls.
- To find out the district wise status of Anaemia and the districts which have been the most affected.
- To find out the relation between BMI and Anaemia amongst the girls
- To map the improvement in the status of Anaemia when compared between data collected in 2018 and 2019.
- To understand the practices adopted by the community that led to the improvement in the status of Anaemia over the span of a year.

Method:

The data was collected through a campaign by all the partner organizations working in the five major districts of the state, namely Koraput, Bargarh, Balangir, Kandhamal and Kalahandi. The tests were done in collaboration with the health department by the ANM and the ICDS worker during the Village Health and Nutrition Days. The data was collected over a span of one year, the first time during 2018 where 1255 adolescent girls were covered and in 2019 covering 2066 adolescent girls. The data was then analysed to understand the common trends.

In addition to the above first-hand process of collecting data, a complementary survey was also run through an IVR system of collecting responses from the beneficiaries to assess the on ground practices that helped in combating the status of Anaemia amongst the adolescent girls. This process was however followed only during 2019 with the objective to capture the on ground knowledge and practices amongst the adolescent girls.

Through both the systems of data collection, a total of 2066 girls were covered in the year 2019 of which 864 girls were mapped during both the years thus the Haemoglobin count of this cluster consisting of 864 girls truly depicts the impact of the knowledge and practices of the community on Anaemia.



Coverage :

District-wise coverage of Adolescent girls in 2018 and 2019:

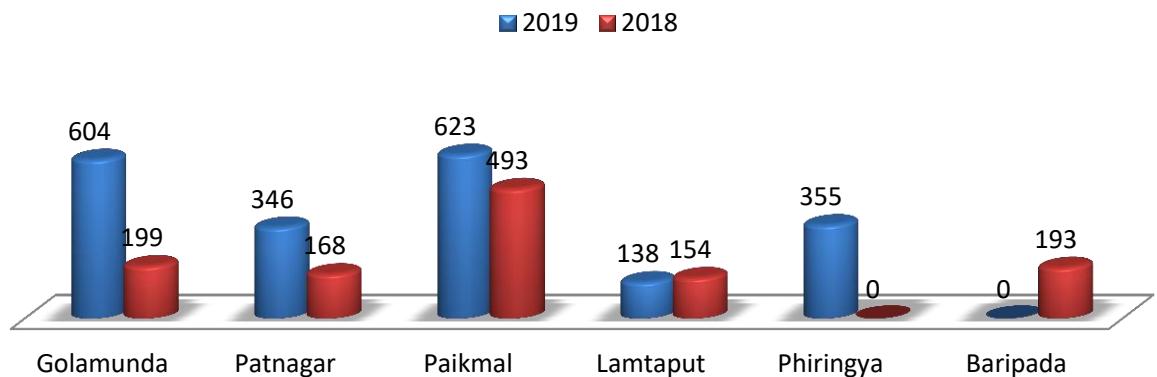
If we compare the data collected in both the years, we find that in both the years, Bargarh has the highest coverage but Kalahandi shows an improvement in the coverage contributing from 16% to 29% in the total coverage. In the year 2018 Mayurbhanj was covered which, due to the operational changes, was not covered during 2019 and Kandhamal is the new district which had been covered in 2019.

Block wise coverage of Adolescent girls in 2018 and 2019:

The adolescent girls covered are from 5 districts covering 6 blocks namely Golamunda, Patnagarh, Paikmal, Lamtaput, Phiringya and Baripada. Amongst all the blocks, Phiringya, which falls under the kandhamal District, has been covered in 2019 alone hence the data for 2018 is missing. Similarly, Baripada Block falling under the District of Mayurbhanj, has been covered only during 2018 hence the data is missing for 2019.

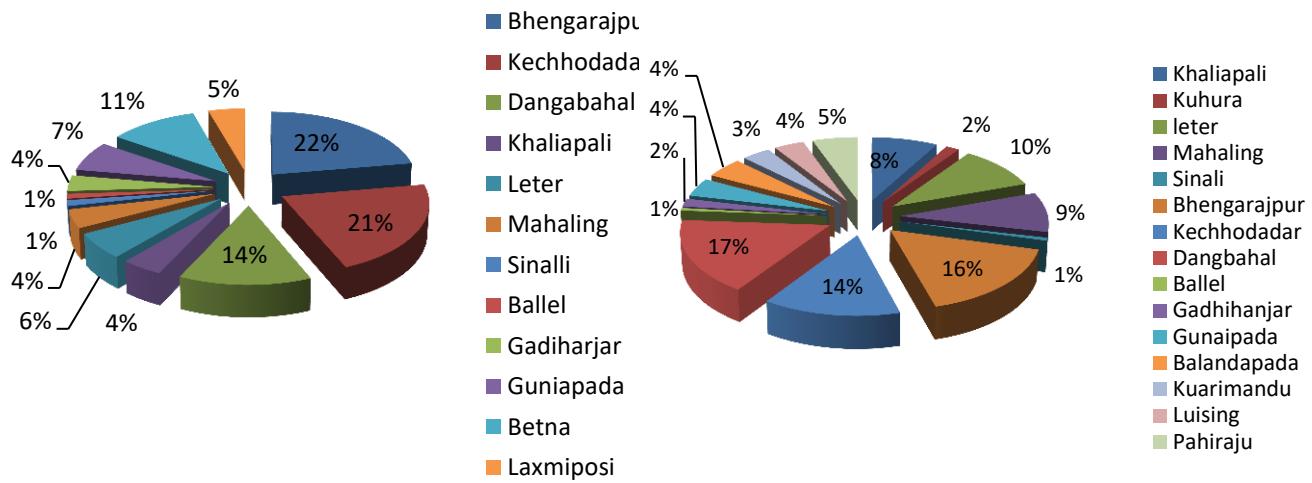
In the comparative we see that the coverage has increased by 811 and Kalahandi shows the major

Block Coverage in 2018 and 2019



increase from 199 to 604 leading to a growth of 14% in the coverage.

In the rest of the blocks, there is a growth in the total coverage barring Lamtaput which shows a decrease by 16 girls.



Panchayat wise coverage of Adolescent girls in 2018 and 2019:

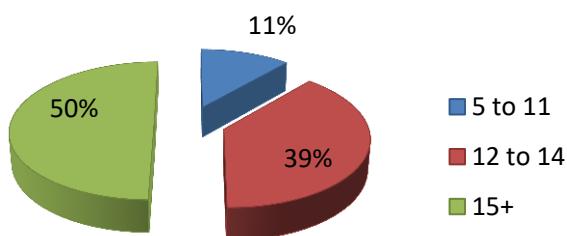
In the above charts we see that the coverage of Panchayat is more in the year 2019 than that in 2018. In 2018, 12 panchayats were covered while in 2019, 15 were covered.

In all the panchayats, Bhangarajpur shows the highest coverage in 2018 and Dangbahal shows the highest coverage in 2019.

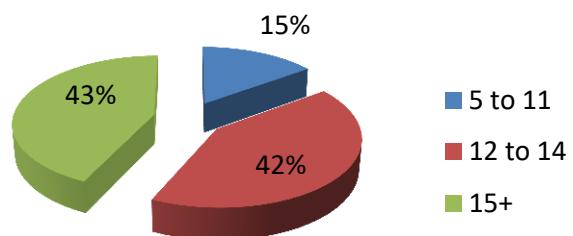
Age wise coverage of Adolescent girls in 2018 and 2019:

In both the years we see that the coverage of adolescent girls is more concentrated in the age group of 15 years and above. There is a slight increase in the coverage amongst the 5 to 11 years and 12 to 14 years as compared to the coverage in 2018 implying that there is a slight decrease in the coverage in the age group of 15 years and above.

Age wise coverage in % in 2018



Age wise coverage in % in 2019



An analysis of the status of Anaemia in Adolescent girls from 9 to 18 years:

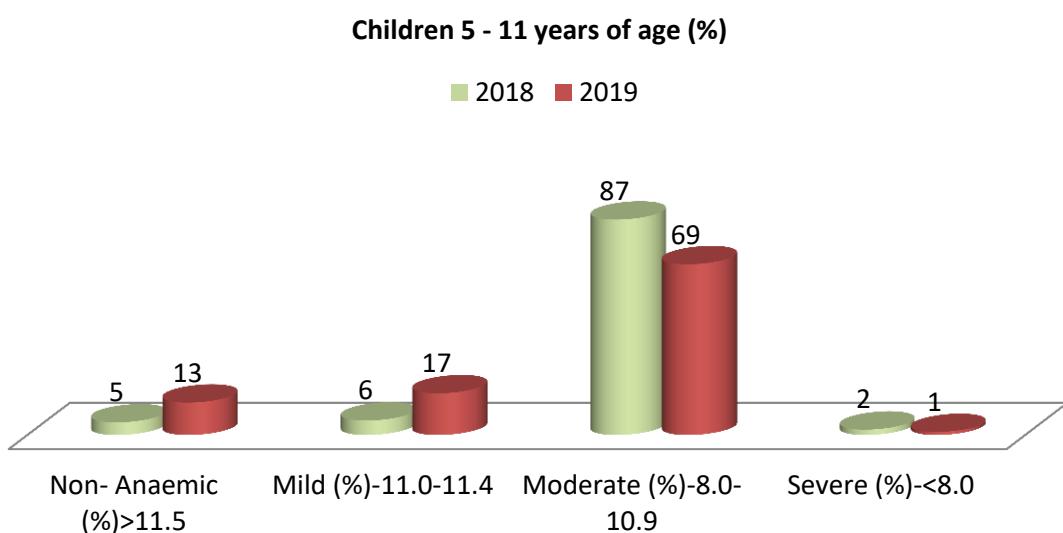
The status of Anaemia has been analysed on the basis of the different age groups that have been covered to understand which age group is more affected on the basis of caste in order to understand whether caste differences have a role to play in the status of Anaemia or not and on the basis of the districts covered to find out which of the districts has been adversely affected.

Age wise status of Anaemia:

Category	2018				2019			
	5-11 yrs.	12-14 yrs.	15+ yrs.	Total	5-11 yrs.	12-14 yrs.	15+ yrs.	Total
Non-Anaemic	12	44	60	116	36	44	76	156
Mild	10	68	112	190	60	162	169	391
Moderate	120	370	448	938	221	653	633	1507
Severe	2	3	6	11	4	2	6	12
Total	144	485	626	1255	321	861	884	2066

In the above table we see a comparison in the status of Anaemia amongst the different age groups covered. During the year 2018, there are 9.24% children under the category Non-Anaemic, whereas 7.55% adolescent girls enrolled as non-anaemic in 2019. In the year 2018, 15.1% adolescents were under mild category, whereas 19.00% registered in 2019 under the same category. 74.7% adolescent girls in moderate category in 2018 and 72.94% adolescent girls in the same category in 2019. Severe anaemic girls are 0.58% in the year 2019, whereas in 2018 it was 0.87%.

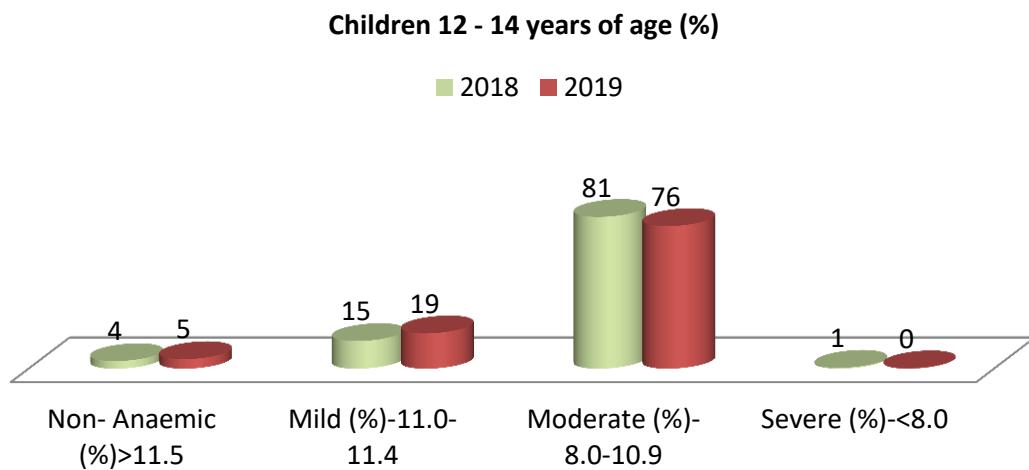
Anaemia among 5-11 years (2018- 2019)



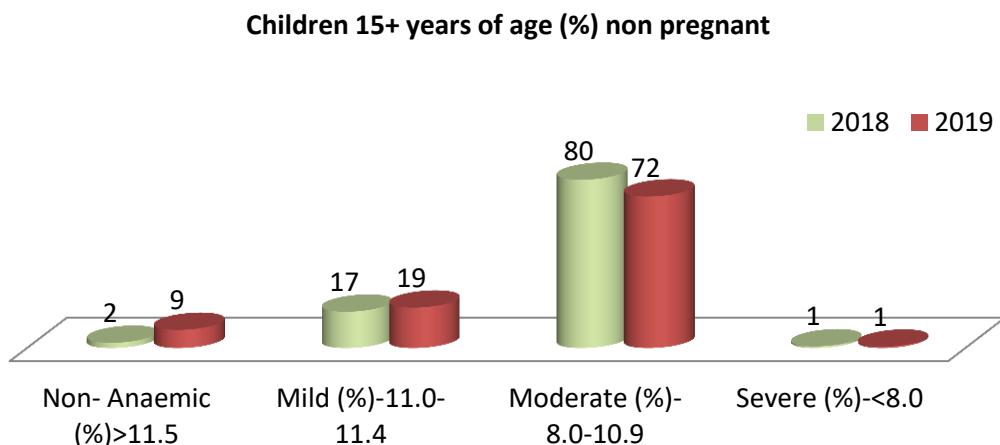
In the diagram we find that there is a growth in the status of the non-anaemic category and in the mild anaemic category whereas there is a decrease of 18% in the Moderate category and 1% decrease in the Severe category.

Anaemia among 12-14 years (2018- 2019)

In the diagram, we observe a 1% improvement in the non-anaemic category and a 4% improvement in the Mild category, However, there is a 5% decrease in the Moderate category.



Anaemia among 15+ non pregnant years (2018- 2019)



In the diagram, we see a 7% improvement in the Non-Anaemic category, a 2% improvement in the Mild category and a 8% decrease in the Moderate category.

An analysis of the status of Anaemia in Adolescent girls mapped in both 2018 and 2019:

The data on the adolescent Haemoglobin has been collected for the first time in 2018 and again in 2019. There were 1255 adolescent girls covered in 2018 and 2066 girls in 2019. Out of all the girls, 864 girls were mapped in both the years.

It is observed that there is an increase in the Non Anaemic and in the Mild Category implying a decrease in the Moderate and severe category. Hence, out of the 864 children covered in both

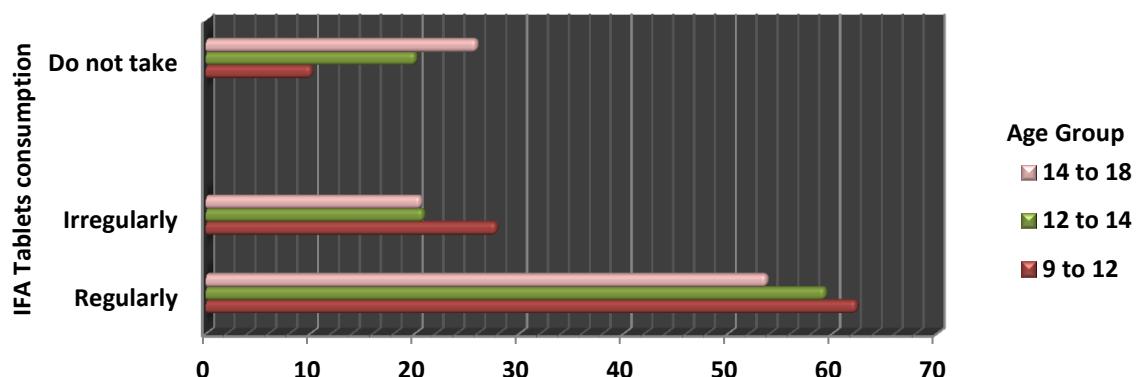
the years, 34 girls shows improvement to the Non Anaemic category and 92 girls to the Mild Anaemic' category. Of the 126 out of the 864 girls mapped, 14% of the girls show improvement in the Anaemic condition in one year.

Practices that helped in improving the status of Anaemia amongst Adolescent girls over one year

Along with the manual data collection process, the adolescent girls were also asked questions through the IVR system of collecting responses to find out the practices in the community that have contributed to the status of Anaemia in the Adolescent girls.

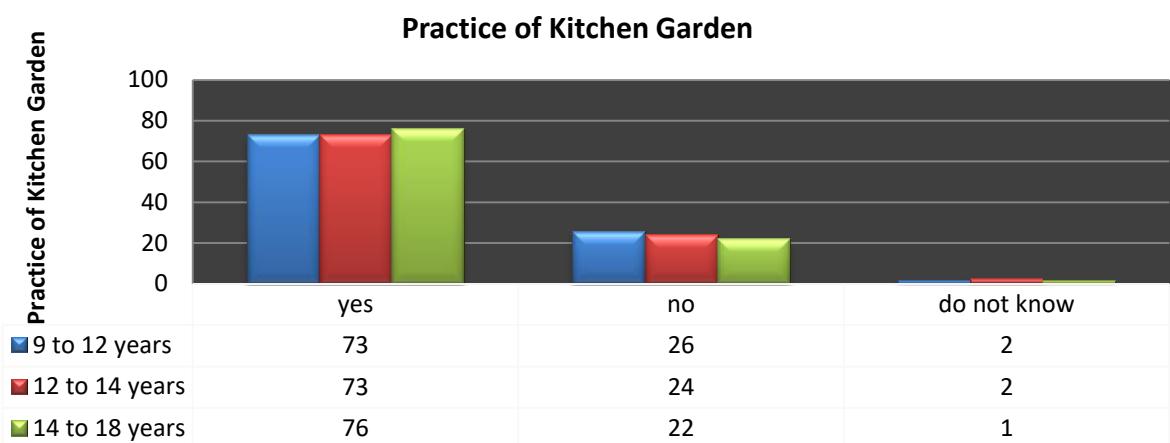
In this process, a questionnaire was devised which questions had related to their food and sanitation practices. It was then uploaded to the IVR system and the adolescent girls then dialled the number from their phones and took the survey to record their responses which helped understand their food practices.

Intake of IFA tablets:



The Adolescent girls were asked if they took the weekly IFA tablets available at the Anganwadi centres meant to improve their iron levels. To this 58% of the girls responded that they took them regularly and 22% of the girls took them irregularly.

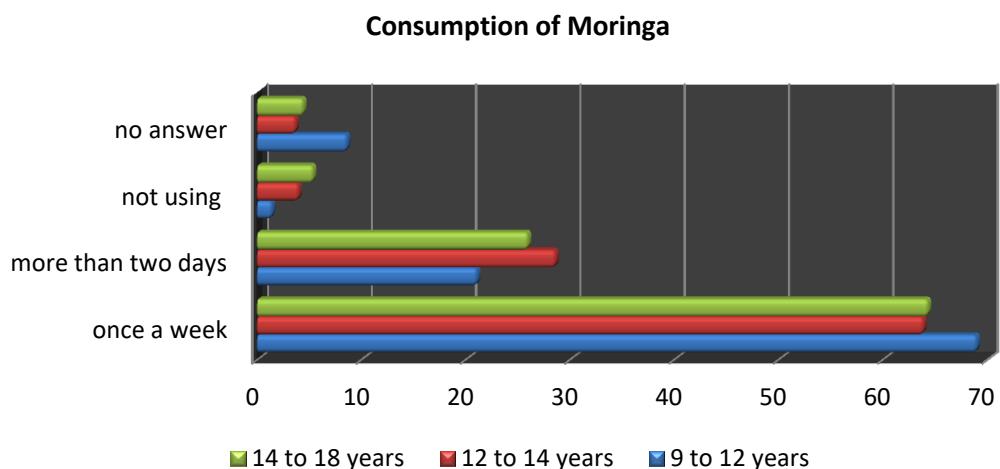
Practice of Kitchen Garden:



The girls were also asked if they practice Kitchen Garden in their homes which would provide them with healthy and nutritious vegetables, the consumption of which helps in combating nutritional deficiency including that of iron. More than 70% of the girls belonging from all the age groups responded positively to the practice of Kitchen Garden.

Consumption of Moringa:

The girls were asked about the consumption of Moringa and it was figured out that the girls of all the age groups consume moringa at least once in a week.



Discussion:

- 74% of the Adolescent girls belong to the Moderately Anaemic Category, 17% in the mild and 8% in the non-anaemic category. On comparison of different age groups we observed that in the age group of 5-11 years there is 19% improvement in the anaemic level whereas an 8% increase is found in the non-anaemic category as compared to 2018 and 11% improvement is found in the Mild Level as compared to 2018. Similarly, it was observed that the age group of 12-14 years shows only 5% of improvement in the non- anaemic and mild category. In the 15+ category, however, there is 9% of increase in both the non -anaemic and mild category. The improvement in the age category of 5-11 years is thus the most significant one. If we compare this with the food habits, we see that the girls in the age group of 5-11 years are the highest respondents who consume the IFA tablets regularly, practice Kitchen Garden at their home and also consumes moringa at least once in a week.
- There are four major castes namely General, OBC, SC and ST. We see that the percentage of girls in the non-anaemic category decreases in case of SC and ST category whereas in General we find that 8% of the girls are non-anaemic and 10% girls in the OBC category are in the non-Anaemic category. Also, in the general category the number of girls in the Mild category is the highest with 24% of the girls in the category when compared with the other castes. Adolescent girls belonging to the SC category has the highest number in the Moderately Anaemic category followed by ST and OBC and general having the least percentage of 65%. Although we see that girls in the general category have the majority percentage in the mild

category but they also have the highest percentage in the severe category of 3% as compared to the rest of the castes. Thus, the girls belonging to the SC category are found to be in a more critical stage than the rest of the castes. Hence, there can be some of the on ground practices in this category that has contributed to the anaemia of which poverty can also be one of the reason.

- In the study of the BMI of the girls it is found that 94% of the girls who are obese are in the moderately anaemic category with no girls in the non-anaemic category. Out of the girls who are underweight and in the normal category, 13% are in the non-anaemic and 14% in the mild category, but if we consider the overweight category then the number of girls in the non-anaemic and mild category decreases and increases in the moderate category which means that being overweight is a bigger issue than being underweight as it is found that overweight girls are found to be more anaemic rather than the underweight ones.

Conclusion:

The anaemic status of the girls mapped in both the years shows improvement. However, there has to be more growth in the mild and in the non-anaemic category. The practice of Kitchen Garden and the consumption of Moringa shows impact in the level of iron hence these practices must be widely practiced even by the once which contribute to the 22% responding that they do not practice kitchen garden in a campaign mode to combat the 1% of the severe anaemia and to increase the number of non-anaemic girls. Along with the practice and consumption of green vegetables, the consumption of IFA tablets is also very important hence focus should be on the regularization of the Anganadi in the area since it is through the Angawadi that the girls are provided with the tablets. Along with this, the timely supply of the IFA tablets must also be ensured.

Acknowledgements:

We would like to extend our thanks to the organizations Palli Alok Pathagar, Society for Promotion of Rural Education and Development (SPREAD), Chale Chalo and Social Welfare Agency and Training Institute (SWATI) for their on ground intervention with the adolescent girls and the service providers and to all the field staffs for facilitating the entire response collection and cleaning data process.

References:

<http://www.nrhmorissa.gov.in/writereaddata/Upload/Documents/Quick%20Assessment%20of%20AACP.pdf>

http://apps.searo.who.int/PDS_DOCS/B4770.pdf?ua=1

<https://www.actascientific.com/ASNH/pdf/ASNH-02-0063.pdf>

Narratives on Nutrition programme of CRY intervention villages–A KAP study, reference to Kalahandi district of Odisha

Introduction:

The health of the nation depends on that of its citizens. Children are priceless resources and if the nation neglects their health, it would become a nation of unhealthy citizens. Nutrition of under-five children is of paramount importance because it can lead to long-lasting effect on the mental and physical health of the children. India faces the burden of diseases in which nutritional deficiencies are most common (Gopalan, 2013).

Malnutrition is a major public health problem. Almost half of India's under-five children are malnourished and it remains a major health problem to achieve the India's target of achieving the Millennium Development Goal (MDG) (Bhutia, 2014). The key to overcome this problem is prevention. Education is important to create awareness among the public in modification of practice and behaviour. It is important to assess the present knowledge, attitude, and practice of the mothers in relation to dietary practices, which can in turn pave the way in educating the mothers and empowering them to modify the harmful practices related to malnutrition.

Knowledge is the capacity to acquire, retain and use information; a mixture of comprehension, experience, discernment and skill. Attitude refers to inclinations to react in a certain way to certain situation; to see and interpret events according to certain predispositions; or to organize opinions into coherent and interrelated structure. By practice we mean the application of rules and knowledge that leads to action. Good practice is an art that is linked to the progress of knowledge and technology and is executed in an ethical manner.

The present study aimed at assessing the knowledge, attitude, and practices related to socio-cultural and dietary practices in prevention of malnutrition and identify the relationship between knowledge attitude and practice. To create awareness regarding malnutrition, a self-instructional module on dietary practices on prevention of malnutrition was prepared by the investigators and administered to the participants of the study. Some of the cultural concern like child marriage, early motherhood, biasness in breastfeeding, serving food plates are been assessed through the survey.

Purpose and objective of the Study:

- To assess the impact of the ongoing nutritional programme among the tribal community of Kalahandi districts covering 30 villages.
- To assess the level of knowledge, attitude and practices among children below 18 years and adults on nutrition.
- To assess the effectiveness of IVR tool to map the behavioral aspects of the beneficiary groups

Methods:

Set of nine questions designed in the IVR (Interactive Voice recording) were set up in relation to the nutrition. These questions were designed with regards to knowledge, attitudes and practices as per the age category, below the age of 18 years and above 18 years of age. These set of questions were uploaded in the IVR and 931 study responded are been questioned through mobile IVR set up. Responded has given the call in miscall numbers and after few seconds call returned back to caller to questions. 931 participants responded in the call and accordingly data base generated by the IVR set up. Grass root workers of the project



have organised training programme with the respondents about the process of survey and then they facilitated the process at field level. Data collection through IVR set up took 30 days of time in the month of May 2019 in Golamunda Block of Kalahandi district of Odisha. Knowledge related questions with adolescent were asked as follows:-1> When do girls get married in your community?, 2> Is regular tracking of HB test important?, 3> Do you feel there is adequate information and nutrition education on locally available food which can address the status of malnutrition in the children with your family?, 4> Child Marriage and early motherhood can lead to birth of malnourished child. Knowledge questions to adults for the age 19 to 25 years, 26 to 45 years and above 46 years were asked are as follows:- 1> Nutrition is the key for child's all round development, 2> Malnourished children are more prone to common disease illness, 3> Malnourished children don't progress in education and thus reduce productivity in later stage.

Attitude related questions with adolescent were as follows:- 1> IFA tablets help addressing anaemia, 2> As result of myths separate food plates for boys and girls can lead to nutritional deficiency and the questions with adults were -1> Do you think there is discrimination in serving food irrespective of girls and boys, 2> As a result of myths are nutrition food not allowed during pregnancy.

Practice related question with adolescent were as follows:- 1> practice of kitchen garden can help address issues of anaemia and malnourishment, 2> do you think unhygienic practice are contributory factors towards malnourishment? Practice related questions with adults were as follows:- 1> do you know six months exclusive breastfeeding can reduce the risk of malnutrition in children? 2> women do discriminate while breastfeeding to their child in respect of boys and girls.

Coverage:

Study has been done in 28 villages of 5 panchayats (Mahaling, Kuhura, Khliapalli, Sinapalli and latter) of Golamunda block of Kalahandi districts. It covered 2564 households and total

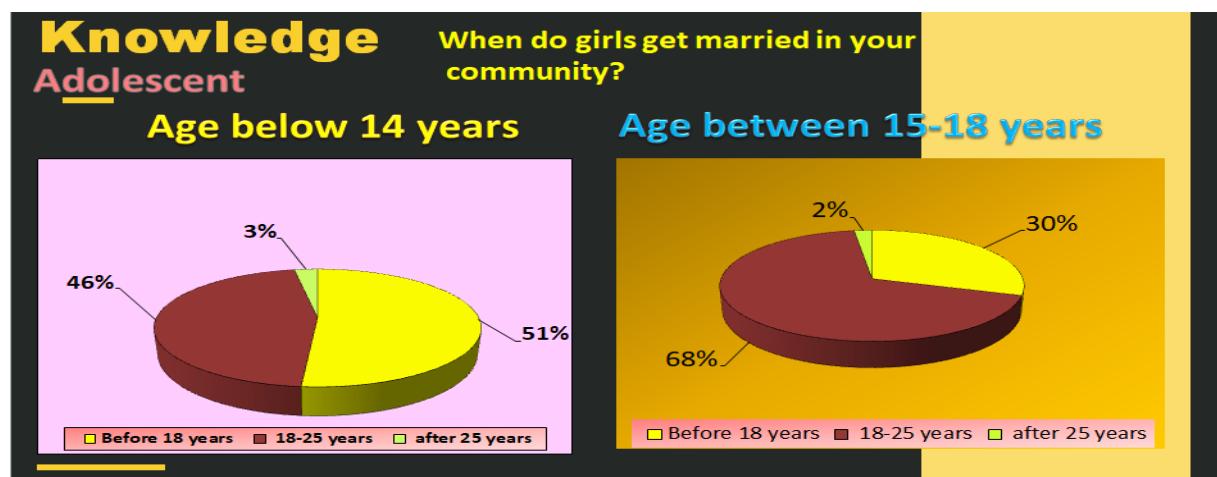
population of 11392. Data has been collected from 931 adolescents and the mothers at community level.

Table-1 Sample coverage for KAP study through Mobilevanni platform on nutrition

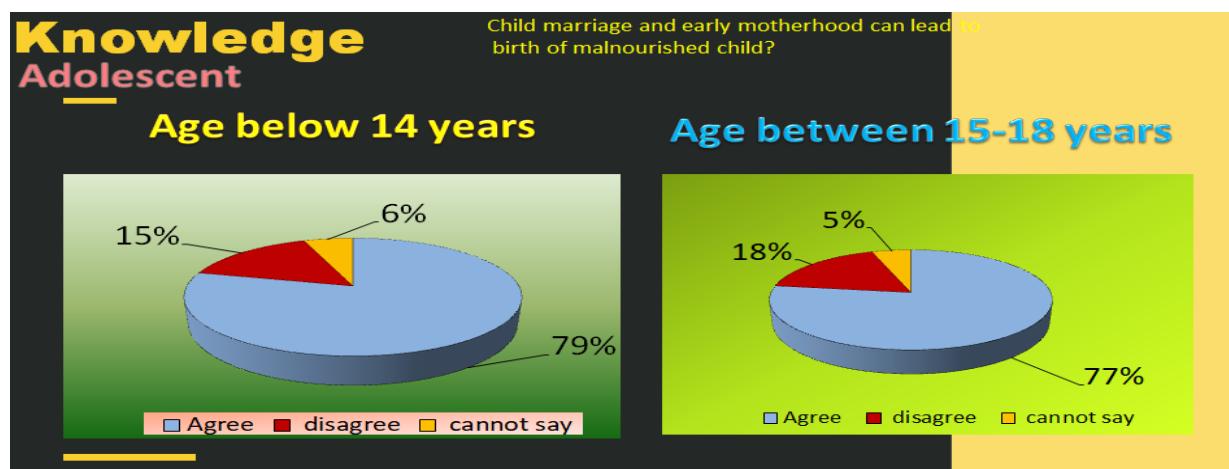
S.no	Age Category	No. of respondents	percentage
1.	Adolescent less than 14 years of age	86	9%
2.	Adolescent 15to 18 years	148	17%
3.	Adults 19 to 25 years of age	302	32%
4.	Adults 26 to 45 years of age	308	33%
5.	Adult above than 46 years	87	9%
	TOTAL	931	

Findings

Knowledge: 51% of children below the age of 14 years agreed that child marriage is prevalent at

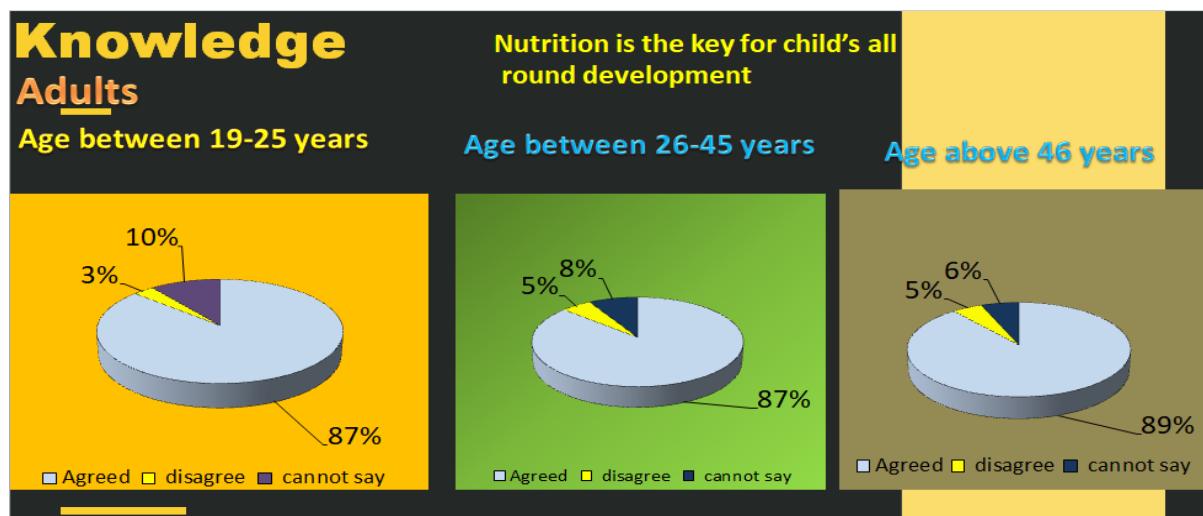


community level, whereas 30% children from 15-18 years of age agreed that 30% are married before the age. This is about their perception and knowledge about the incidence of early marriage at community level. 82% of the girls below the age of 14 years know that Haemoglobin



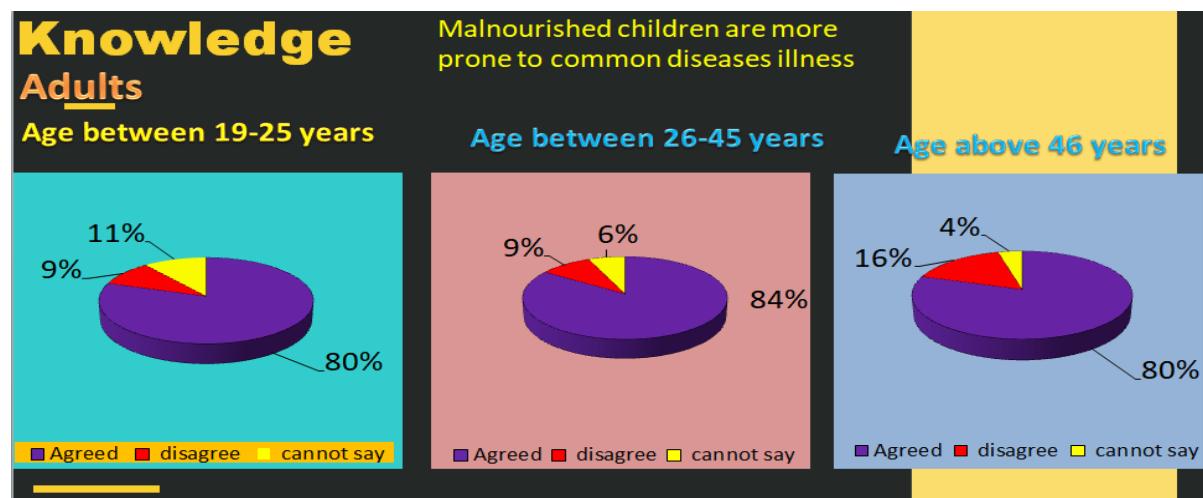
test on regular basis is important, whereas 76% girls in between 15-18 years of age agreed that HB test is mandatory for the girl child. More or less equal percentage of 78% of girl child agreed that the knowledge on nutritional education for fighting against the malnutrition is important for them. What are the local available foods are to be cooked at household level for addressing the

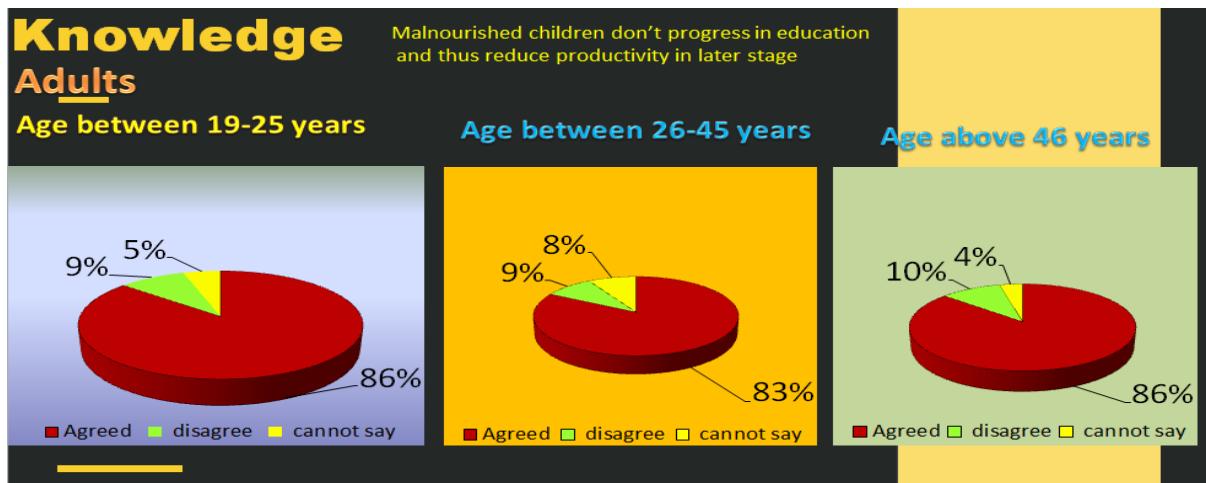
issue of malnutrition. Almost equal in percentage, 79% and 77% of girls have knowledge about the correlation between child marriage, early motherhood and the occurrence of malnutrition at community level.



On an average, 87.66% of the adult population from 19 to 25, 26 to 45 and 46 years know very well that nutrition is the key for the all round development of children. Only 4% did not have knowledge in the given areas.

An average of 81.33% of the adults among 19 age groups knew that malnourished children are more prone to common disease illness. 9% of productive age groups 19 to 45 years disagreed with the perception and don't have knowledge about the relations of malnutrition with the common disease illness.

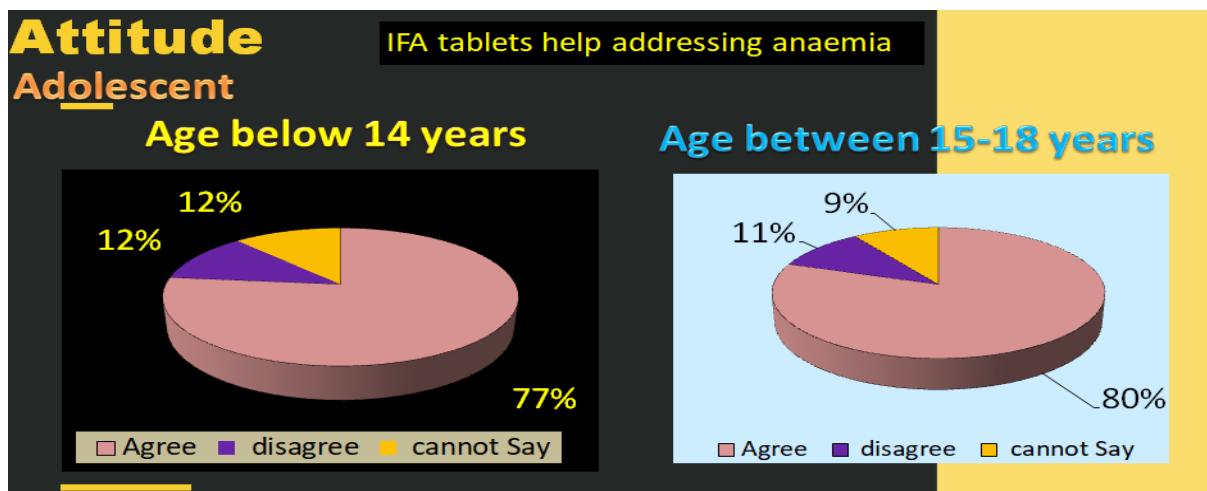




Knowledge about the relativity in terms of progress in education, productivity in patter age and malnourishment is also fair, adult study participants responded with 86%, 83% and 86% respective with increasing their age from 19 and above. 9% around are disagree with relativity in terms of malnutrition and educational development. Around 10% gaps in their knowledge.

Attitude: Positive attitude always leads to good practices for healthy childhood and a negative attitude, mainly social practices, is the main obstacle to fight against the malnutrition. The present study focussed on both the aspects to understand social practices, which derives from the attitude of the adult society.

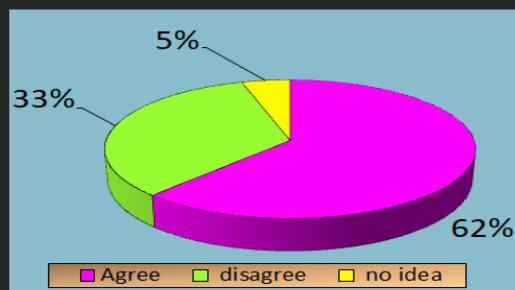
77% of girls below the age of 14 years agreed that IFA tablets help in addressing Anaemia, whereas 80% of girls from 15 to 18 years of age agreed that the IFA tablets help in addressing anaemia. 12% and 11% respectively among the age groups of below 14 years and 15-18 years did not agree on the use of IFA tablets.



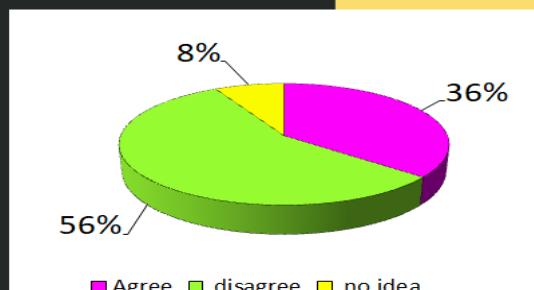
Attitude Adolescent

As result of myths separate food plates for boys and girls can lead to nutritional deficiencies

Age below 14 years



Age between 15-18 years

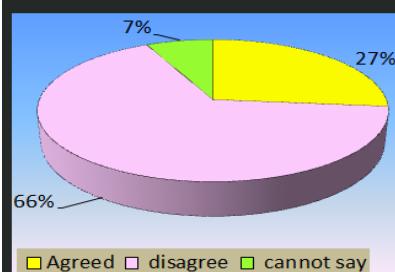


The study participants belonging to the age group below 14 years with 62% responses agreed that the myth of separate food plates for boys and girls can lead to nutritional deficiency, whereas 56%

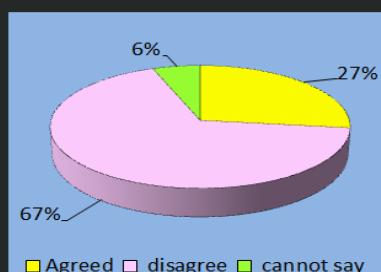
Attitude Adults

Do you think there is discrimination in serving food irrespective of girls and boys

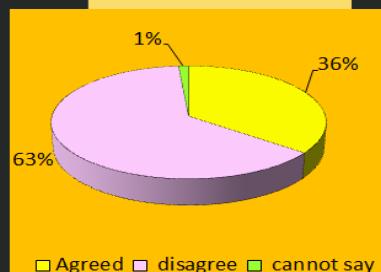
Age between 19-25 years



Age between 26-45 years



Age above 46 years



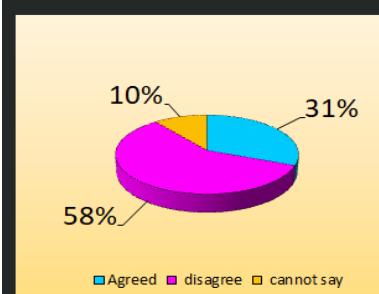
of the study participants among 15 to 18 years of age disagreed with the same.

27%, 27% and 36% respectively among the age brackets of 19 to 25, 26 to 45 years and above 46 years agreed that there is discrimination in serving food irrespective of girls and boys. In rural Odisha, there are myths related to the menstrual cycle of the girls in the community, related to

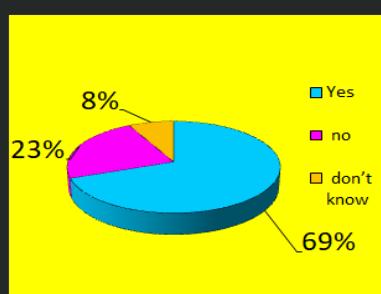
Attitude Adults

As a result of myth are nutritious food not allowed during pregnancy?

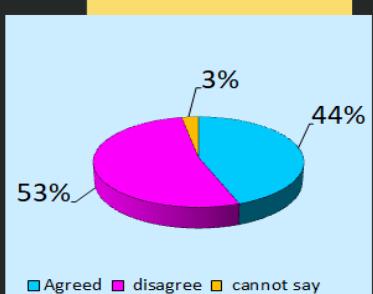
Age between 19-25 years



Age between 26-45 years



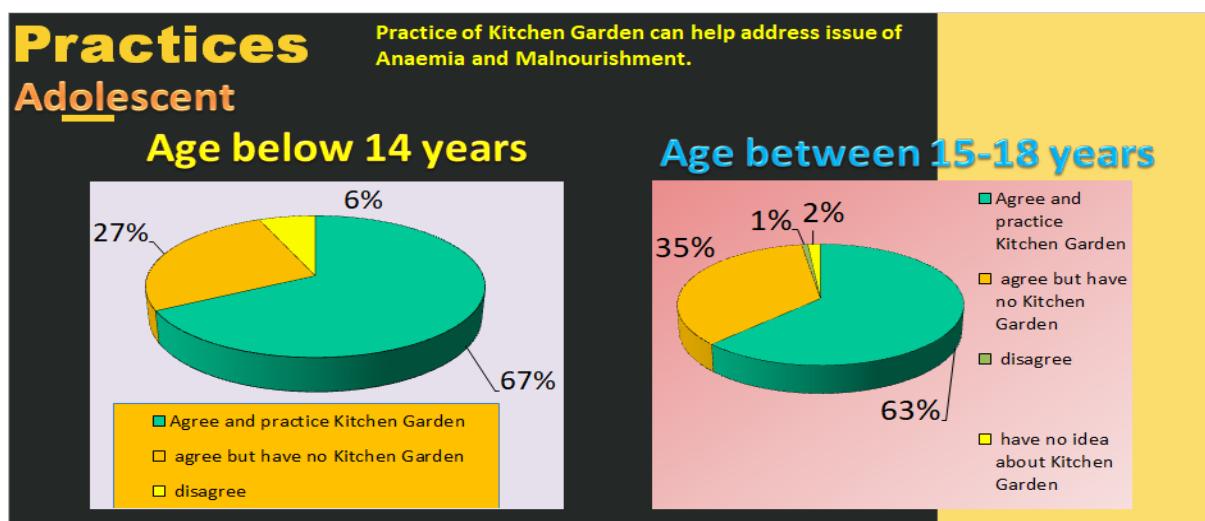
Age above 46 years



the social and cultural practices and food intake particularly with non-vegetarian food.

Responses varied with the age of adults. 31% of study participants among 19-25 age groups agreed that during pregnancy they have not been provided with the nutritious food, whereas 69% of the age groups between the age of 26 to 45 agreed that they are not been allowed to take nutritious food during pregnancy and age 46 and above responded with 44%.

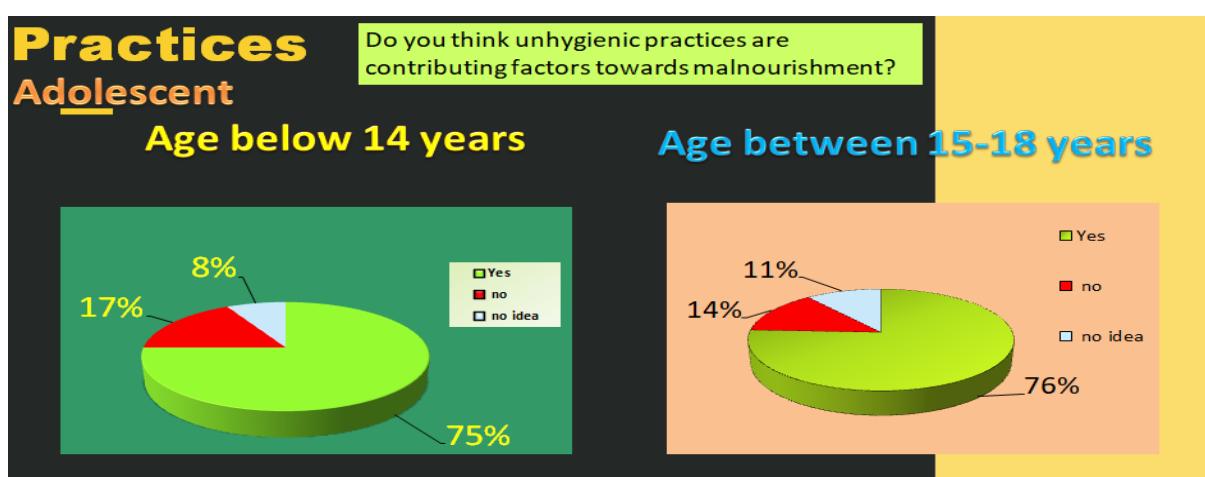
Practices: Good practices go hand in hand with better knowledge and a positive attitude. Practices are more about action and a regular phenomenon of day to day actions. Practices are at



personal and community level. Some of the individual practices are derived from the social norms and practices.

67% of the study participants among the age groups below than 14 years agreed upon the practices of kitchen garden help in addressing the anaemia and malnourishment. Whereas 63% of respondents among 15-18 years of age agreed that kitchen garden helps in addressing the issue of anaemia and malnourishment. There is a gap of almost 32%, where adolescents are disagreeing with the kitchen garden idea and its relations with the anaemia and malnourishment.

Second most important component relates to the hygienic practices. The opinions and perceptions are almost the same for the age category below 14 and between 15 to 18 years i.e. 75% and 76% respectively agreed that the unhygienic practices are contributing factors towards malnourishment.

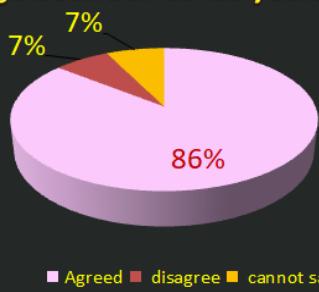


Practices

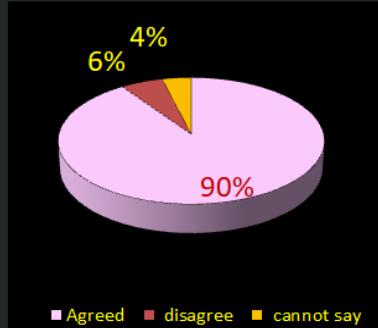
Adults

Do you know Six months exclusive breastfeeding can reduce the risk of malnutrition in children?

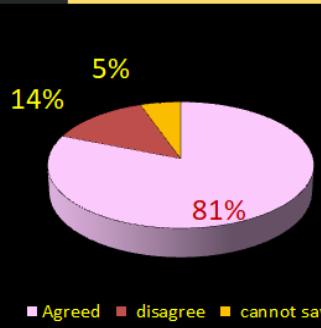
Age between 19-25 years



Age between 26-45 years



Age above 46 years



Almost 85.66% average respondents among the adults responded and agreed that six months of exclusive breastfeeding can reduce the risk of malnutrition in children.

Discussion

- 1> There is almost a gap of 10 percent in the knowledge domain among the adolescents and mothers about the nutrition issues in relativity with the socio- cultural and food intake in their regular practices. It has been found that the adolescent girls and mother have adequate knowledge about the factors contributing the malnutrition and anaemia. Child marriage and early motherhood is one of the major reasons in rural Odisha. In another study for the pregnant women of Kandhamal, it was reflected that 11% percent incidences of early motherhood and they are contributing by 73% in low birth weight of baby. It is critical which multiplies the vicious circle of the malnutrition.
- 2> In most of the cases, it has been observed that the adolescent girls are denying the IFA (Iron Folic Tablets), which is been provided in the VHND (Village Health and Nutrition day) and also in School. But due to vomiting tendency, they are not willing to take the tablets on a regular basis. It was a big challenge in the campaign to encourage regular practice of taking IFA Tablets amongst the adolescents.
- 3> Girls below the age of 14 admit that there are myths related to the food plates and boys and girls of this age and this leads to nutritional deficiency among the adolescent girls. It has been found that in rural Odisha, there are taboos and beliefs (particularly with non- veg protein food) after the girl enters in menstrual cycle/period. Family and society determines what type of food will be consumed by these age groups, when they are on their period.
- 4> Anaemia during pregnancy is one of the critical areas and a big concern for the fight against the malnutrition at community level. There are knowledge gaps related to offering the first colostrum milk to the new born baby and this reflects in practices as well. Pregnant mothers are going through so many socio-cultural taboos in the tribal area of Odisha. These practices exist in other communities as well. Under the THR (Take Home Ration) scheme under the ICDS programme for the pregnant mothers, it has been

observed that these mothers used to collect eggs from the ICDS centre for consumption but instead of eating them, they were being offering to the male members of the family. Not consuming eggs and food items rich in protein during pregnancy is one of the cultural practices.

Conclusion

Digital study on knowledge, attitude and practices and nutrition is the eye opening in regard to the nutrition in respect to the socio-cultural practices among the tribal population of Western Odisha. Campaign on nutrition has worked well in certain areas to change the old orthodox practices and to initiate the good practices like- 6 months exclusive practices, offering first colostrum milk to the new born baby, practicing kitchen garden, consumption of IFA (Iron Folic Tablets). Adolescent girls understood well that child marriage and early motherhood is one of the contributing factors to anaemia and malnutrition. Severe malnutrition impacts the overall development of children, something which is well understood by the community. Health and hygiene practices can improve the nutritional status in areas where they are known well. Campaign needs to be promoted more in order to change the behavioural practices and there is a need to ensure the greater participation of the community as a whole to change the behavioural pattern.

Reference

[https://ejournal.manipal.edu/mjnhs/docs/Volume%202_Issue%202/19%20Original%20-Knowledge,%20attitude,%20and%20practice%20\(KAP\)%20survey%20on%20dietary%20practices%20in%20prevention%20of%20malnutrition%20among.pdf](https://ejournal.manipal.edu/mjnhs/docs/Volume%202_Issue%202/19%20Original%20-Knowledge,%20attitude,%20and%20practice%20(KAP)%20survey%20on%20dietary%20practices%20in%20prevention%20of%20malnutrition%20among.pdf)

<https://pdfs.semanticscholar.org/2a71/bd6aa915a6bfe10a16d7291b8e19d3a7ffbb.pdf>

An Analytical study on services availed by Pregnant and Lactating Mothers in 5 CRY intervention Tribal districts of southern and Western Odisha

Introduction:

Odisha is the home to a total of 62 distinct tribes covering the belt of Mayurbhanj, Keonjhar, Sundargarh, Kandhamal, Gajapati, Koraput, Balangir and Raygada. It has the highest proportion of schedule caste and tribes in India which constitutes almost half of the state's percentage of poor. There continues to be significant differences in the socio economic conditions as well as the delivery of services between the tribal and the non-tribal districts. Geographical inaccessibility, social disparities, a shortage of skilled workers and lack of communication and overall development hamper effective service delivery in the tribal areas. Along with the lack in the service deliveries, the people also lack general awareness about health practices which contributes to the prevalence of malnutrition in the state.

Infant and child nutrition has been catching the attention of scientists and planners for a very long time for the simple reason that the growth rate in the life of a human being is maximum during the first year of life and infant feeding practices, comprising of both breastfeeding as well as complementary feeding, plays the major role in determining the nutritional status of the child. The link between malnutrition and infant feeding has been established and it has been seen that malnutrition is responsible for 60% of the deaths taking place under five years annually and over 2 of the 3 deaths are due to the inappropriate feeding practices during the first year of birth. Only 35% of infants are exclusively breastfed during the first four months of the birth and supplementary feeding practices take place either too early or too late with foods which are either nutritionally inadequate or are unsafe.

Breast milk is the natural first food for babies - it provides all the energy and nutrients that the infant needs for the first months of life, and it continues to provide up to half or more of a child's nutritional needs during the second half of the first year, and up to one-third during the second year of life. Breast milk promotes sensory and cognitive development, and protects the infant against infectious and chronic diseases. Exclusive breastfeeding reduces infant mortality due to common childhood illnesses such as diarrhoea or pneumonia, and helps for a quicker recovery during illness. Breastfeeding also contributes to the health and well-being of mothers; it helps to space children, reduces the risk of ovarian cancer and breast cancer, and increases family and national resources.

As per NFHS-4, in Odisha only two thirds of children under the age of 6 months are exclusively breastfed and 94% of the infants are breastfed within the first day of birth but only 69% of the infants receive breastfeeding within the first hour of birth. Although the initiation of breastfeeding has shown some improvement since NFHS-3, some of the

infants are still deprived of the highly nutritious colostrum milk and the antibodies it contains.

Purpose of the Study:

1. To assess the availability and accessibility of services by the pregnant and lactating mothers in CRY intervention area of 163 remote villages of the five tribal districts of Odisha.
2. To establish the relation between the non-accessibility of services with low birth baby weight and infant deaths in the operational villages of 5 Tribal districts.
3. To establish the efficiency of IVR (Interactive Voice recording) tool for gathering responses from the direct beneficiary from 163 remote villages of the 5 Tribal districts of CRY intervention area.

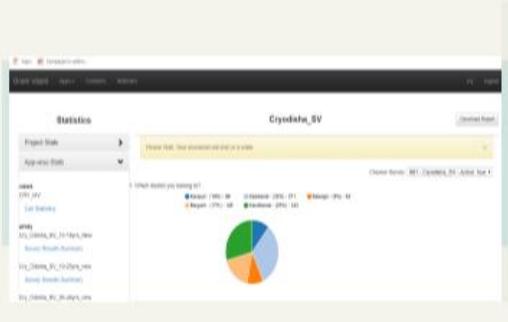
Method:

Survey has been done in the CRY operational area which includes 163 villages in 5 districts and total responded were 774. Survey has been conducted through IVR (Interactive video recording) tool.



MOBILE INTERFACE

- Questions recorded in studio in odiya language.
- Questions uploaded in mobile IVR (Interactive voice record)
- Beneficiary has given miscall in **09266657333**
- Call back in beneficiary mobile phone
- Beneficiary responded in 9 sets of questions.
- Covered 881 mothers through IVR in 5 districts.



DESKTOP INTERFACE

- Data generated in IVR set up daily basis.
- Feedback provided on daily basis to the field staffs based on the data.
- Data cleaning and analysis of 774 responses (for all 9 set of answers)

Services targeted which are made available to the beneficiaries through the Anganwadi centres during the Village Health and Nutrition day with the help of service provider such as the ANMs, ASHA and the Anganwadi workers.

The study on the status of the services provided to the lactating mothers has been done with the help of data collected through direct responses from women who are pregnant and in their lactating period through the use of IVR system of collecting responses. Data was covered for the mothers who delivered a year back.

Survey took a period of one month in these 163 villages, where grass root social workers interacted with each of the 774 respondents and briefed them about the process of responses and about the tools. Data was collected in the month of June 2019. There were challenges in the remote villages, where telephone network was weak, therefore that data is not included in the analysis.

Coverage of Study:

District wise coverage of the participants:-

Districts	Numbers	Percentage
Bargarh	147	19
Bolangir	82	11
Kalahandi	228	29
Kandhamal	246	32
Koraput	71	9
Total	774	100

Total of 5 districts namely Bargarh, Balangir, Kalahandi, Kandhamal and Koraput were covered in the IVR survey on services for the pregnant and lactating mothers. In Bargarh two blocks of Paikmal and Giaselet were covered. Patnagarh block in Balangir, Phirgia block in Kandhamal and Lamtaput Block in Koraput district were also covered.

Coverage of village in the respective districts and blocks:-

Districts	Numbers	Percentage
Bargarh	21	13
Bolangir	9	6
Kalahandi	28	17
Kandhamal	75	46
Koraput	30	18
Total	163	100

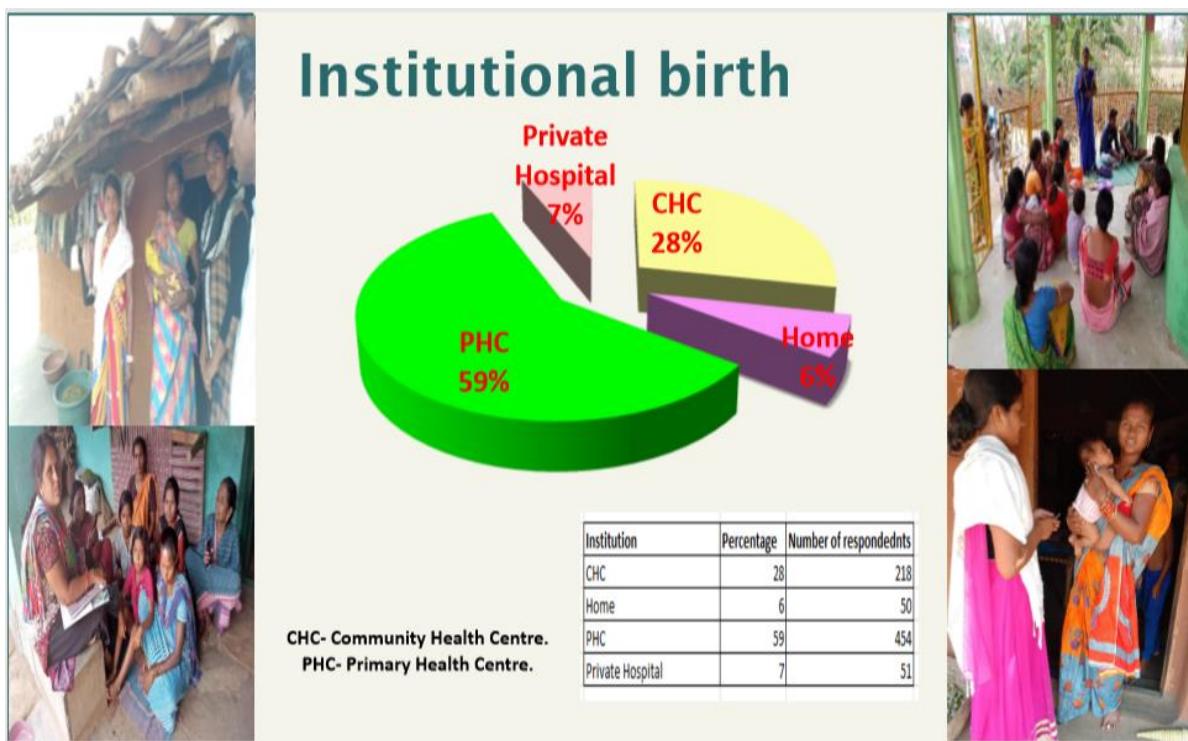
774 respondents participated in the study from 5 districts covering 163 villages and Kandhamal showing the highest percentage of respondents and Balangir with lowest percentage of 6% only. Variation in coverage is due to the presence of CRY in those operational areas. As per CRY programme strategy, the coverage area different in district wise.

Results:

1. Status of Institutional Birth:-

Overall status of Institutional birth in all the five districts:

Districts	Numbers	Percentage
CHC	218	28
PHC	454	59
Private Hospital	52	7
Home	50	6
Total	774	100

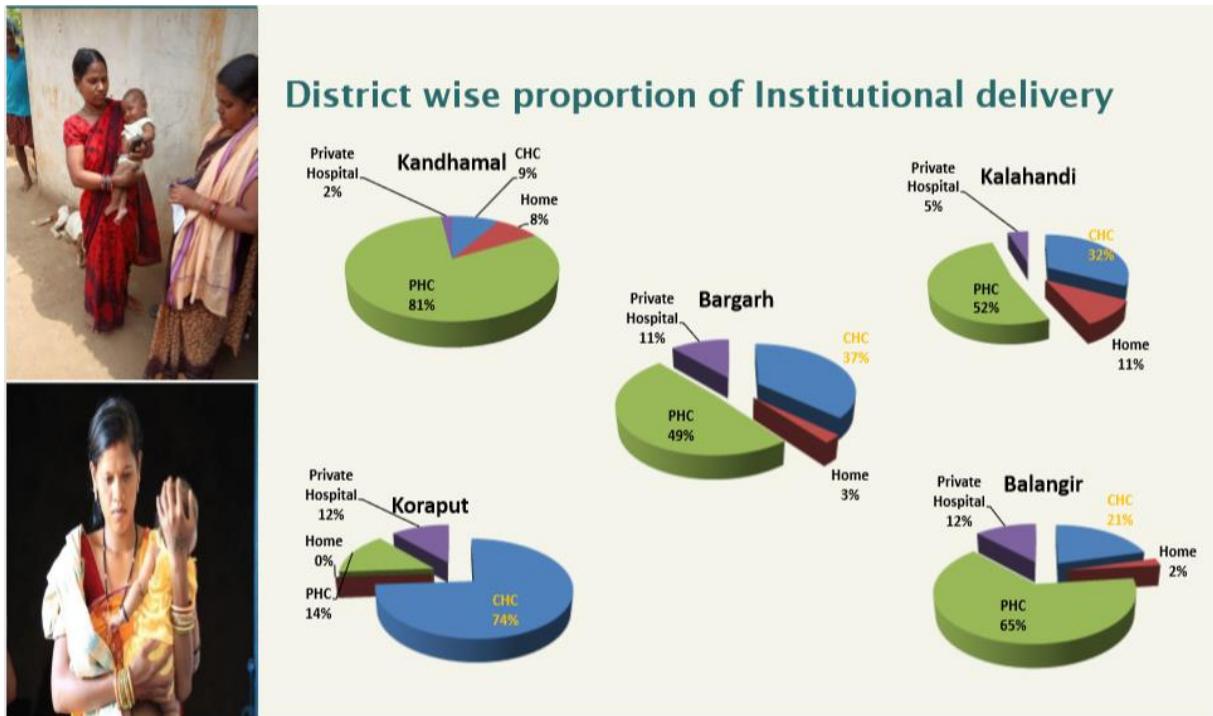


The study shows that 59% avail the services from the Primary Health Centres (PHC), 28% from the Community Health Centres (CHC) and 7% from Private Hospitals. There are 6% of women who still deliver at home. Hence, 94% of the births taking place have been institutionalized; since the practice of home delivery still prevails in the community hence the focus would be to sensitize the remaining 6% for institutional birth.

District wise status of Institutional Delivery:

In the study we see that there are still home deliveries (birth at home) taking place in Kalahandi (11%) and Kandhamal (8%) respectively which is alarming since the prevalence of the practice in the areas can influence others hence the improvement of the quality of

services provided at the PHC and CHC and sensitization of the community for institutional delivery will reduce the home delivery rates. Besides Koraput, in other districts PHC is playing greater role for institutional delivery. Bargarh, Balangir and Koraput also offer delivery in private institutions (Like missionary hospital, private hospital) is with 11%, 12%



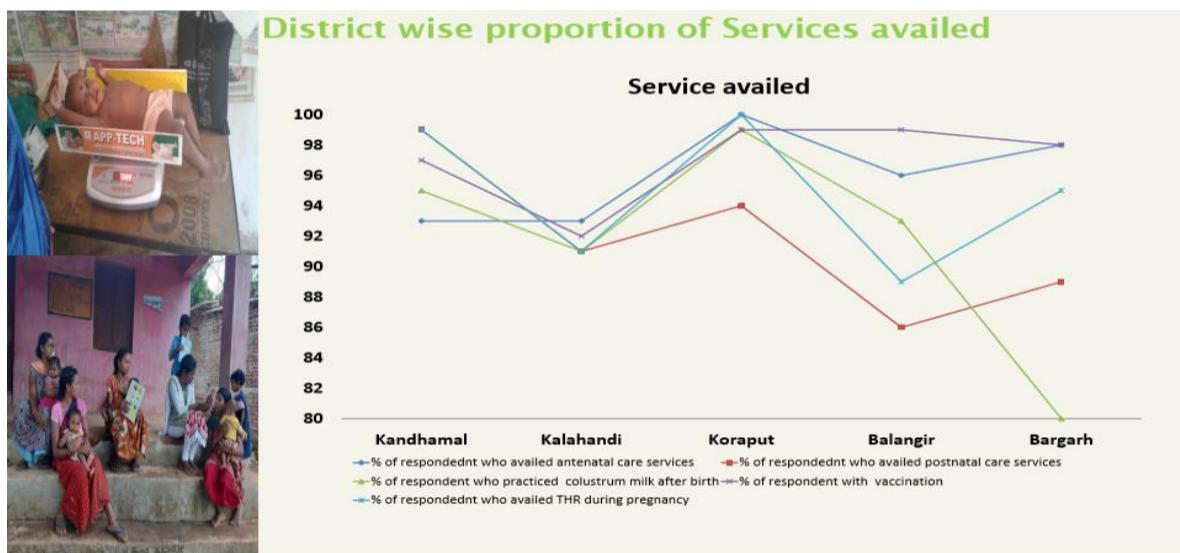
and 12% respectively. Bargarh is highest with 37% birth delivery in CHC (Community Health Centre), particularly in Paikmal Block.

Services offered and availed:-

A pregnant women is supposed to register with the Anganwadi centres so that all the necessary Ante natal Check-ups are done. This comprises of 4 visits during which the weight, blood pressure, HB count, Urine Albumin and Urine Sugar is examined along with which the IFA tablet is provided and identification of the mother as high risk is done and referral to made the nearby hospital. The nutritional requirements of the mother are also identified and are provided with ration to improve their nutritional status. The Anganwadi centres also provide 4 Post Natal Care (PNC) visits by the ANMs to ensure the healthy status of the mother and the child. Apart from ANC and PNC services the centres also are responsible for the immunization of children and to counsel the mothers on colostrum feeding and exclusive breastfeeding.



95% of the respondents agreed that they are getting THR from Anganwadi centre during their pregnancy. 97% of the respondents agreed that the immunization has been done during the immunization day at village level. 95% respondents availed the four antenatal care check-ups at VHND (village health and nutrition day) whereas there is a gap of 2% in antenatal and postnatal care check-ups.



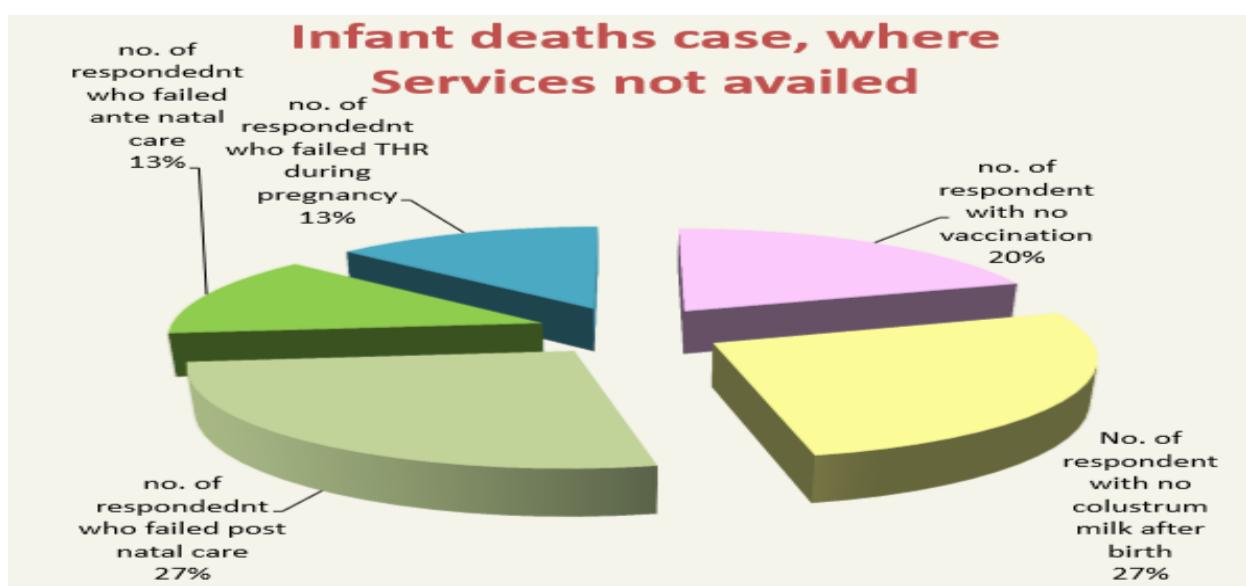
In the study it has been found that in terms of providing services, Koraput shows a steady rise. However, post-natal care needs to be focused on. Kalahandi shows a dip as compared to the rest of the districts. All the services are complementary to each other and none of services shows any major dip. There is a sharp decline in the PNC services on the overall hence as compared to the other services Post Natal care for the mothers needs to be focused on. Colostrum feeding practice also shows a sharp decline in Kalahandi, Balangir and Bargarh along with the PNC hence, in this area the post delivery services needs to be strengthened while Balagir and Bargarh both have a good immunization status. Bargarh is on the lower side in terms of services availed on postnatal care and feeding of colostrum milk as compared to other districts.

Status of Infant Death where services are not availed:

The Anganwadi centre has been provided with service providers such as the ANM, ASHA and the Anganwadi workers, who are responsible to ensure the healthy and safe delivery of the child and the health of the mother. However, due to the remoteness of the districts and the villages, not all the women can reach the Anganwadi Centres. As a result of this, they do not receive the services from the centres and under these circumstances runs the chance of High Risk for both the mother and the child.

The chart above shows that 27% of infant deaths have taken place where the mother has not availed the post-natal care and has failed in colostrum feeding. Hence, the post delivery services have been one of the major contributors to the death of infants. Along with PNC and Colostrum feeding, children with no vaccination have also accounted for the 20% of the cases where the infant could not survive.

Among the cases of infant deaths, 13% of the mothers were not able to avail the THR (Take home ration) during the pregnancy period and the same percentage of mothers avoided the antenatal care.



Discussion:

- 1> Out of the 6% of the cases of home delivery registered out of 774 samples, maximum were from kalahandi (11%) and kandhamal (8%). They are mostly from the Golamunda and Phiringai block of edistricts. These two blocks are remote blocks; there are concerned with communication and accessibility to the nearest hospitals. In both the places, around 10% of pregnant mothers are denied with 4 effective antenatal care services. The reason of non-registration of pregnant mothers is very simple because of increased numbers of hamlets and these villages are tag villages with main ICDS centre. Therefore, VHND not covering the mothers who are belonging to those hamlets and tag villages. There is a need for expansion of the services of VHND, sanctioning on new ICDS centres so that all mothers can be covered under the services.
- 2> 59% delivery happens in Primary Health Centres (PHC) and 28% delivery in Community Health Centres (CHC). Koraput district is at the highest with 74% birth delivery in CHC, whereas Bargarh and Kalahandi were at 37% and 32% respectively. CHC is with better facility than the PHC. There are issues with the availability of doctors in PHC and also the presence of gynaecologists. Sometime, due to criticality of the pregnancy and non-availability of all the services at PHC level, doctors at PHC refer the mothers to the CHC. In case of Paikmal Block of Bargarh, PHC is not functioning well, therefore mothers preferred to go for CHC for delivery. In hilly regions like Koraput, PHC is not equipped with all the facilities, therefore mothers preferred to go CHC or district hospital where they are getting better facilities. Though near about 60% birth delivery in PHC is good proportion in tribal areas, where govt. is able to ensure the presence of doctors and other facilities in the hospital.
- 3> Although the ante natal check-ups account for more than 90% in all the districts, which is much higher than the state performance of 62% as per NFHS-4, the prevalence of a 5% of gap in the non-availing of the service contributes to the infant death numbers. In case of institutionalized births, we find that there is a 6% gap where the deliveries are taking place at home and not in institutions. There is also a gap identified in case of availing of Post Natal care in the range of 15-10% which can be the major reason for infections and subsequently lead to the transfer of the infections to the infant resulting in infant death which is a major concern.
- 4> There are issues with infant deaths and the low birth baby weight (less than 2.5 kg). 29% of the cases where it was observed that the baby birth weight is below than 2.5 kg and this is responsible for 33% of total infant deaths. Analysis also suggests that among the cases of all infant deaths, 13% mothers avoided the THR during the pregnancy, 13% did not go through the complete 4 antenatal care and 27% mothers did not go for postnatal care services. And the same percentage of mothers are feed their new born children the colostrum milk. This clearly shows that the non-

availability and non-accessibility of basic services from the VHND are major factors of low birth baby weight and infant deaths in the tribal area.

Conclusion:

The infant mortality rate is one of the major concerns of the districts and in order to address the issue of services in the Anganwadi centres, the services need to be delivered to all pregnant women. In order to ensure that all women are covered by the ICDS centres, the existence of centres within the reach of the women should be present. Hence, the focus would be on mapping the requirement of Anganwadi to be done and request for opening of new centres along with service providers to be placed with the concerned department through the village Panchayat. The home visits by the service providers are to be regularised and special focus needs to be given to the post delivery services. VHND not organised with the entire Anganwadi centre. Tag villages are with poor accessibility and availability of services in the tribal villages. Therefore, attempts should be made to cover all the beneficiary with THR, antenatal and postnatal, exclusive breast feeding, and colostrum feeding and timely registration of the mothers in the anganwadi centre with periodic check-ups.

Acknowledgements:

We would like to extend our thanks to the organizations like Palli Alok Pathagar, Society for Promotion of Rural Education and Development (SPREAD), Chale Chalo and Social Welfare Agency and Training Institute (SWATI) for their on ground intervention with the mothers and the service providers and to all the field staffs for facilitating the entire response collection and cleaning process.

References:

- <http://rchiips.org/NFHS/NFHS-4Reports/India.pdf>
- <http://rchiips.org/nfhs/data/or/orchap7.pdf>
- <http://rchiips.org/NFHS/NFHS-4Reports/Odisha.pdf>

Anaemia among pregnant mothers in tribal districts of Odisha- Reference to the sample study of Kandhamal district

Introduction

Odisha is a state where maximum number of tribal groups are residing; they are mostly in northern, southern and KBK region of the State. These regions are hilly and covered with forests. Access to quality primary health care services is troublesome for the community, primarily because of the remoteness and lack of proper infrastructure to reach those villages.

Anaemia during pregnancy is very common and also very critical in India. Anaemia is characterized by a low level of haemoglobin in the blood. Haemoglobin is necessary for transporting oxygen from the lungs to other tissues and organs of the body. Anaemia usually results from a nutritional deficiency of iron, foliate, Vitamin B12, or some other nutrients. This type of anaemia is commonly referred to as iron-deficiency anaemia. Iron deficiency is the most widespread form of malnutrition in the world, affecting more than two billion people (Stolzfus and Dreyfuss, 1998). In India, anaemia affects an estimated 50 percent of the population (Seshadri, 1998).

Anaemia may have detrimental effects on the health of women and children and may become an underlying cause of maternal mortality and perinatal mortality, and results in an increased risk of premature delivery and low birth weight (Seshadri, 1997). Early detection of anaemia can help to prevent complications related to pregnancy and delivery, as well as child-development problems. Information on the prevalence of anaemia can be useful for the development of health intervention programmes designed to prevent anaemia, such as iron-fortification programmes.

According to a WHO report, the global prevalence of anaemia among pregnant women is 41.8%. In India, the prevalence of anaemia among pregnant women ranges from 58.7% to 87%. The prevalence of anaemia at national level or state level cannot be generalised.

As per the NFHS-4 fact sheet published in the year 2015-16, for the nation, it says “Anaemia varies by maternity status- 58% of women who are breastfeeding are anaemic compared with 50% of women who are pregnant and 52% of women who are neither pregnant nor breastfeeding. Same report for the Odisha, it is about half (51%) of women in Odisha have anaemia, including 41% with mild anaemia, 10% with moderate anaemia, and 1% with severe anaemia. Anaemia is particularly high for scheduled tribe women.

Methods

In Odisha for the tribal area, Government of Odisha under National Health Mission set up the “Ma Gruha” (maternity home) for ensuring the safe institutional delivery and to reduce the infant and maternal mortality. It is a temporary home for expecting mothers where they can wait for safe delivery preferably 7 -10 days before EDD. On onset of labour, they are to be shifted to a nearby health facility having at least BeMOC facilities for delivery. No post-partum cases will be allowed to stay at home. Ideally, it should be located nearer to the hospital.

Study has been done with the available data of the “Balandapada Ma Gruha” Phringia Block of Kandhamal district, run by a local NGO, SWATI under the support of the district administration, government of Odisha. This Ma Gruha covers 6 Panchayats (Balandapada, Pahiraju, Luising, Kuermandu, Krandibali, Pakari) of the Phirnigia Block of the districts. A total of 231 samples have been collected for the period January 2019 to July 2019. This covers more than 100 surrounding villages of the Periphery of Ma Gruha. Information related to the age, sex, number of pregnancy's, caste, HB, weight of baby and sex of baby has been collected from the 231 sample to assess the Haemoglobin level of these pregnant mothers and the status of the new born child. The minimum age of the mothers was recorded as 16 years and maximum age is 49 years. 231 samples cover 69% (159) of Schedule Tribe, 14% (33) Schedule Caste and 17% (39) are from Other Backward Caste. 11 mothers i.e. 5% are among 16-18 years age group and 220 (95%) are in between 19 to 49 years.

Results

Table 1: Demographic profile of study participants (n=231)

Parameters	Numbers	Percentage
Schedule Tribe	159	69%
Schedule Caste	33	14%
Other Backward Caste	39	17%
16-18 years of age	11	5%
19-25 years of age	95	41%
26-35 years of age	102	44%
36-49 years of age	23	10%
Gravida-1	78	34%
Gravida-2	55	24%
Gravida-3	47	20%
Gravida- 4 to 8	51	22%

In the present study, there were 231 study participants aged between 16 to 49 years, with the mean (SD) age being 26.83 (4.76%) years. 41% of the study participants are between the ages 19 and 25 and 44% of the study participants are among 26-35 years of age. 11 mothers are from the age groups of 16 to 18 years of age and they are contributing 5% of the sample size. 58% of mothers are with gravida 1 and 2. And 22% of the mothers are from gravida 4 to 8.

Table 2: Haemoglobin status of the participants

Category	Numbers	Percentage
> 10.1 gm/100ml (Control group)	0	0
8.1-10.0 gm/100ml (Mild anaemia)	177	76.6%
6.5-8.0 gm/100ml (moderate anaemia)	54	23.4%
<6.5 gm/100ml (severe anaemia)	0	0

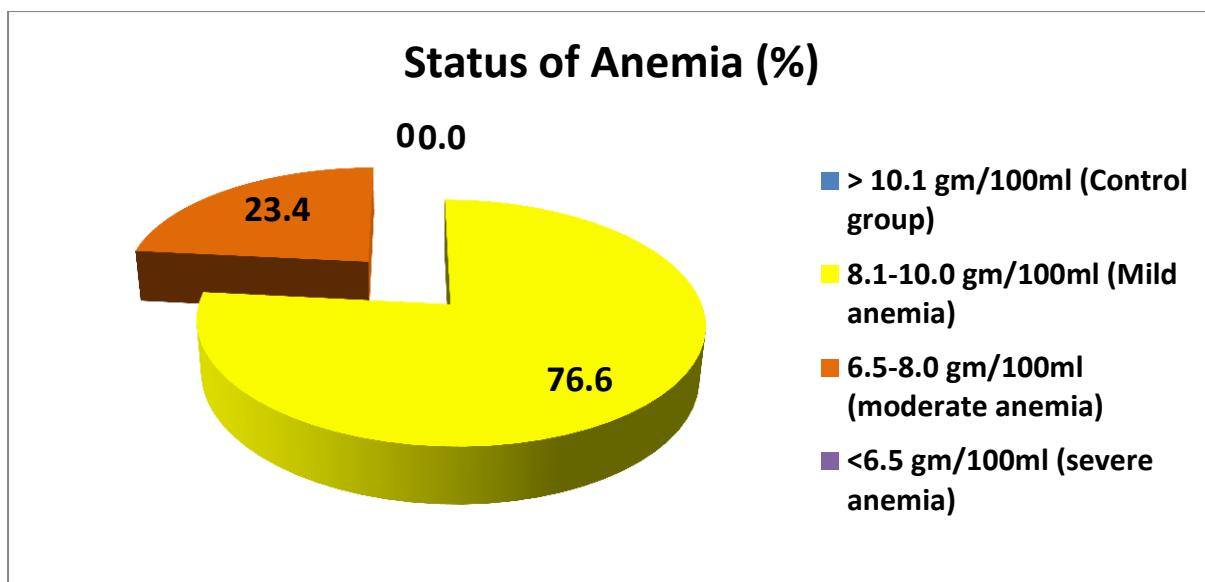


Figure 1: Distribution of status of Anaemia among the participants

A single mother neither falls in the above 10 gm/100ml haemoglobin count nor in the severe anaemia category (less than the 6.5 gm/100ml). 100% of the mothers are registered under mild and moderate anaemia category in between 6.5 to 10.0 gm/100ml. 76.6% of the study participants fall under the mild anaemia category and 23.4% of the study participants are falling under the category of moderate anaemia ie. 8.1-10.0 gm/100 ml.

Table 3: Baby weight at Births

Category	Numbers	Percentage
less than 2.5	50	22%
2.5 and above	176	76%
Still birth	5	2%

There are 5 births registered as still births ie. 2% of total birth, 50 births are with baby birth weight less than 2.5 kg ie. 22% around, and 76% births are more than 2.5 kg of baby birth weight. There are 11 births from the child mothers, whose age is 16 to 18 years. In those cases 73% of the births are low birth baby weight. In 2 cases, where child mother were with the gravida-2, they were with second time pregnancy. They are with 7.6 HB counting. Out of 5 still births, 4 study participants are from Schedule Tribe community.

Table 4: Haemoglobin status as per age category

Category	Age (16-18 years)	Age (18-25 years)	Age (26-49 years)
> 10.1 gm/100ml (Control group)	0 (0%)	0 (0%)	0 (0%)
8.1-10.0 gm/100ml (Mild anaemia)	6 (3.39%)	76 (42.94%)	95 (53.67%)
6.5-8.0 gm/100ml (moderate anaemia)	5 (9.26%)	19 (35.19%)	30 (55.56%)
< 6.5 gm/100ml (severe anaemia)	0 (0%)	0 (0%)	0 (0%)

53.67% (95) of the study participants are in the mild category of Anaemia and fall under the age group of 26-49 years. 55.56% (30) of the study participants in the category of Moderate anaemia are fall under the age groups of 26-49 years, whereas under the moderate category of anaemia, child mothers are contributing nearly 9.26% (5).

Table 5: Haemoglobin status and the baby birth weight

Category	Baby weight below 2.5 kg	Baby weight more than 2.5 kg	Still birth
> 10.1 gm/100ml (Control group)	0 (0%)	0 (0%)	0 (0%)
8.1-10.0 gm/100ml (Mild anaemia)	29 (16.38%)	147 (83.05%)	1 (0.56%)
6.5-8.0 gm/100ml (moderate anaemia)	21 (38.39%)	29 (53.70%)	4 (7.41%)
<6.5 gm/100ml (severe anaemia)	0 (0%)	0 (0%)	0 (0%)

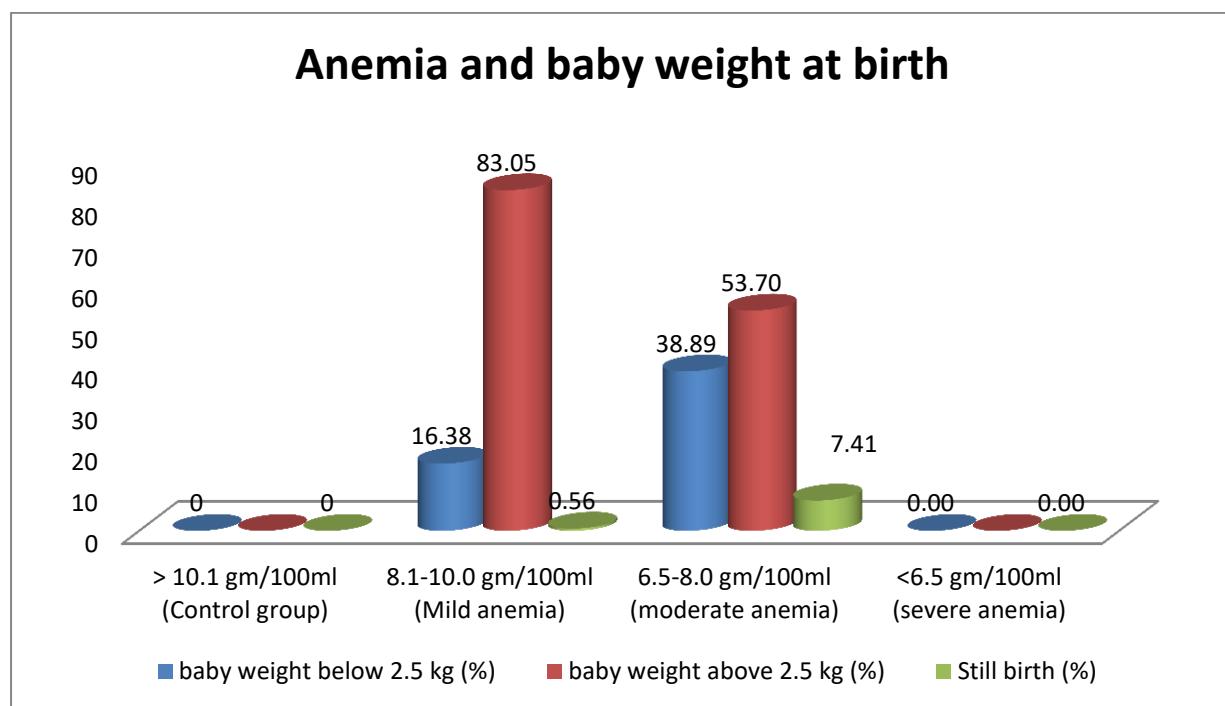


Figure 2: Anemia and baby weight at birth

Under the moderate category of anaemia (6.5-8.0) gm/100ml, 21 (38.39%) births are with baby birth weight is below than 2.5 kg. 29 (53.70%) births are with baby weight more than 2.5 kg and 4 (7.41%) births are still birth under the same category of moderate anaemia.

Under the mild category of anaemia (8.1-10.0) gm/100ml, 29 (16.38%) births are with low birth weight (less than 2.5kg) and 147 (83.05%) births are with baby weight more than 2.5 kg.

Discussion

Anaemia in pregnancy is very critical and it adds to the vicious circle of malnutrition predominately. The present study was undertaken in a rural tribal community of one of the

backward district of Odisha. Infant mortality of the Kandhamal district is higher than the state average of 43 deaths out of 1000 live births. The study revealed that 11 children whose age is in between 16-18 years, they are with 5% of total sample. Among them 3.29% are under the category of Mild Anaemia among all the mothers of the same category and 9.26% are under the moderate category of anaemia among the same category of anaemia.

As per the NFHS-4, all women aged 15-19 years who were already mothers or pregnant at the time of survey is 8% at State level, whereas in the Kandhamal district it is 9%. All women age 15-49 years, who are anaemic in Kandhamal is 52.9% and at State level it is 51.8%.

Analysis of the data indicates clearly that child marriage and early motherhood is a big concern. All pregnant mothers are falling under the category of mild and moderate category of anaemia. It results the prevalence of high risk mothers, low birth of baby at birth and still births.

Conclusion

In order to control malnutrition and anaemia among the children and adolescent, one needs to focus on anaemia during the pregnancy as well. Study spells clearly that 100% pregnant mothers are falling under the category of the (Mild and moderate) anaemia. Number of pregnancy's also needs to be addressed. 22% of the pregnant mothers are with Gravida to 8. Child marriage and early motherhood needs to stop immediately, as it is a threat for mothers and children as well. These mothers are contributing to 73% of low birth weight. If we consider the age of pregnant mothers between 16 to 19 years, there are a total 24 child births which comprises 10.38% of the total sample study participants and 70.83% births are the low birth weight. This is critical and needs to stop immediately.

Acknowledgement

We would like to extend thanks to the SWATI NGO, who is running the “Matru Gruha”- maternity home and provided the information from their record for the study. We will also extend thanks to the team members who facilitate the process of field visits in those mothers and given opportunity to interact with the mothers.

Reference

<https://www.ijcmph.com/index.php/ijcmph/article/view/832/716> (prevalence and factors influencing anaemia among pregnant women in rural Mysuru, India)

<http://www.ijph.in/printarticle.asp?issn=0019-557X;year=2011;volume=55;issue=4;spage=317;epage=320;aulast=Panigrahi> (Nutritional Anemia and its epidemiological correlates among women of reproductive age in an Urban slum of Bhubaneswar, Orissa)

<http://rchiips.org/NFHS/NFHS-4Reports/India.pdf>

<http://rchiips.org/nfhs/data/or/orchap7.pdf>

<http://rchiips.org/NFHS/NFHS-4Reports/Odisha.pdf>

Stories of Change

Early marriage prevented to deny Early motherhood

Chumki, the 13 year old adolescent girl, lives in Kuanrimandu village of Kandhamal district. The financial condition of the family is very disgraceful. Chumki studies in class 9th at the village school and most of the time she has to discontinue the classes to support her parents in home work. Her parents have arranged a life partner for her. She could not think how to manage the situation and got depressed. Chumki came in contact with the SWATI Social workers and discussed her problem with them. They sent her for a TOT training at Bandhagada on life skills, where she came to know about all the problems of child marriage and also learn how to tackle the situation. She decided to continue education.



After returning from the training she started to convince her parents to stop the marriage. At first they did not listen her. But when she repeatedly discussed the future problems of an early marriage with her mother, she was convinced. SWATI Social workers also supported her in counselling her father to stop the marriage and to continue her studies. At last they were convinced and decided to deny the marriage proposal and she continued school education.

Home based counselling becomes boon for Amarjit

Amarjit Pradhan was born on 12th December 2018. Tareswar and Sulochan are his parents. They are the residents of the Pahiraju village of Kandhamal district. His body weight was 3.4 kg, when he born. 8 months after his birth he weighed 5.5kgs and measured 11 points on MUAC. Her mother is an Anaganwadi worker. Child was referred to the NRC with mother. Unfortunately as per the role of the AWW is concerned, she was not able to go to the NRC for malnutrition treatment of child. Campaigner reached to the family and discussed about the status of the child and helped family members for improving in the food diversity in the diet of Amarjit. Follow up visit has been made by the campaigner for three months and in the



month of November 2019, Amarjit was once again measured with the improved weight of 7.3 kg and 12.7 MUAC. Change in the diet and practices of diversified food helped Amarjit to move from SAM to MAM.

Home based care support helped Badri....to upgrade in moderate anaemia

Badrinath Kanhar is the son of Ramchandra and Jungubati Kanhar of Kuarimandu village of Kandhamal district of Odisha. He is only 6 months old, born on 9th May, 2019. At the time of his birth, his weight was less than 2.5 kgs; he was critical and unhealthy during birth. A campaigner identified this child as belonging to the severely underweight category. They approached the family and suggested regular follow ups with the ASHA and AWW. A joint meeting was organised between the ASHA/ANM/AWW and the parents about the anaemic condition of the child. They referred the child to NRC (Nutritional Rehabilitation centre) for further treatment. The parents denied leaving home for 15 days for treatment. The campaigner made repetitive visits and guided mothers on home based care. In November 2019, when once again the child was measured during VHND, he weighed 6.5 kg and measured 11.8 cm MUAC. The child is still in moderate category of Anaemia. Home based care support and counselling is continued by the grass root campaigner. Mother quoted "*Mu Jungubati kanhar, Mo ghara Kuarimandu re. Mo pua janmaheba samayare bahuta durbala thila. Mu ghara kama jongun taku dekhiparuna thili. Kintu sir o didi mane mote bujeithile mo pua durbala achi o taku bahuta jatna darakara. Semane bujheibapare mu mo puara jatna tik bhabare neithili. Abe mo pua bhala achi*".



Regular Take Home ration (THR) helped Keshaba to upgrade in Normal category

Deheja village is in Kuarimandu G.P of Kandhamal district. The village is situated at a distance of 66 kms from the district and 59 kms from Phiringia Block. There are a total of 26 SC families and 20 ST families are staying in the village. Keshaba Nayak is a 19 month child, son of Angada Nayak and Sujata Nayak. When he was born he was very weak and identified with severe acute Malnutrition. Parents were very worried about the growth of their child. They were unaware about the nutritional management. Suggestion was given by the campaigners to attend the VHND (Village Health and Nutrition day) on regular basis. Child with mother were referred to the NRC (Nutrition rehabilitation Centre) but they denied going the NRC due to the distance and 15 days stay. Home based counselling has been provided to the family. Health and hygiene related education given to the family members. THR has been provided by the AWW, campaigner briefed parents how to use the Take home ration. After 19 months once again growth monitoring was done and changes were observed. Now the health of a child is good and his weight is 7.8 kg and MUAC is 12.7 cm in normal zone.



Diversified diet for Khusirani helped her to get the non-anaemic status

Tetelpada village is in Lusing Panchayat. This village is situated at a distance of 59 kms from Kandhamal district and 52 kms from Phiringia block. There are a total 3 ST families are staying in the village. Khusirani Kanhar is a 20 months old child, daughter of Purnachandra Kanhar and Manjukta Kanhar. When she was born, she was very weak and severely underweight (red Zone). She was not eating as much quantity as her body needed. When the campaigner identified her in Severe Underweight in red zone weight 6.8 kg and MUAC 11.7cm, they counselled them that they refer to the NRC. Unfortunately, they hesitated to go the NRC. Home based counselling started was started with the help of the campaigner and a diversified diet was suggested for the Khusirani. The mother started to give her different types of vegetables and nutritional food every day and she showed interest in eating the food. After further counselling, mother took more care of the child. She gave different



types of food every day such as:- boiled potato, papaya, different leafy vegetable etc. Now the child is in the yellow zone and her weight 7.3 kg and MUAC 12.1.

Story of change for Laba and Khusa- grade movement for twins

Tetelpada village is under the Lusing Panchayat. The village is situated at a distance of 59 kms from the Phulbani district and 52 kms from Block head Quarter Phiringia. Laba and Kusha Digal, are the 2 years and 5 month's old twins of Rama and Santi Digal. They are 5th number gravid of his mother. At the time of their birth, they were very weak and both of them are in the red zone (severe underweight category). During this phase, they were not getting mother's milk adequately, which is why they became weaker as the days passed. Their mother was too busy doing housework to pay attention to them. When a campaigner identified them they were in red zone, the AWW, ASHA, ANM and campaigners started counselling the family members. They suggested admitting in NRC for malnutrition treatment but family members denied to go as they were all busy in daily earnings and household load. They suggested mother how to give them THR, nutrition food, how to maintain hygienic, always give them boil water etc. After the counselling, the mother is giving more care to the babies and changed the food practices of the babies. Now the babies are growing and are active. They are both in yellow zone.



Rahul Kanhar got well after NRC treatment

Kilukumpa village is situated at a distance of 60 kms from District head Quarter Phulbani and 53 kms distances from Phiringia Block. There are a total of 12 ST families, 8 SC families and 9 OBC families are staying in the village. Rahul Kanhar is the 16 month child of Raghunath and Rasanti Kanhar. His weight at birth was 1.9 kgs. He was severely underweight. AWW referred them to NRC but they did not go. Mother cared for the child at home but there was no improvement in his condition. One day, AWW, ASHA, ANM and campaigners went for home based counselling, they provided a nutritional education session at home. The mother understood and agreed to go for NRC. They went to NRC on 03.10.2019 at which time the child weighed 6.7 kgs and had a MUAC of 12.2. They stayed for 15 days in NRC. They return from NRC 19.10.2019. After their return, the child weighed 7.1 kgs and had a MUAC of 12.7. Now Rahul has an improved nutritional status.



Tulasi Kanhar denied marrying at the age of 13 years

Tulasi Kanhar, a 13 year old girl, daughter of late Digambara and Kunti Kanhar, belongs to a poor agrarian family staying in the village of Kandhamal district. Tulasi has one brother. She is studying in 7th standard. The financial condition of her house is not good. After her father's death, her family suffered a lot. She is very studious. She was pressurised by her relatives to marry someone. During the life skill programme organised in the village, she shared her stress. The campaigner went to her house and started counselling the mother and other relatives. The consequences of child marriage and early motherhood were shared with the family members. After knowing the facts, the mother decided not to marry her daughter and to continue her school education.

Quote from Tulasi...

“Mu Tulasi Kanhar, mo bapa Digambara Kanhar o mo maa Kunti Kanhar. Mora bayasa 13 barsa. Mora gotia sana bhai achi. Mo gaon ra nama Taladangnam. Mu saptama class re padhe. Ame bahut gariba. Mo bapa chalijiba pare ame bahuta asubidhare rahuchu. Mote pua ghara loka dekhiba pare mo pain prastaba anithile o ama ghare bahaghara pain raji madhya heithile kintu Golapi didi janiba pare didi o sir kan saha asi balyabibaha bisayare bujhaithile. Ame balya bibahara samashya janiba pare mora bahaghara band kara jaechi”.



High Risk pregnant mother gives birth of a healthy child

Chhualiudar is a village under Balangir district of Dangabahal Panchayat. The total population of the village is 402. There are 79 households in the village. There is an Aganwadi centre in the village. 45 children are enrolled in the centre with lactating and pregnant mothers. MAMATA DIWAS used to be organised at centre level. Malti Bhoi was pregnant and identified as a high risk mother due to low Hemoglobin. Campaigner and health workers used to visit their home on a regular basis for health check-ups. They have suggested regular consumption of IFA tablets and leafy vegetables during the days of pregnancy. Campaigner also tracked mothers with all antenatal care at VHND. Doctor advised her to get admitted to the hospital 15 days before the delivery date. Doctor's suggestions were followed by the family and she was admitted to the hospital 15 days before the date of



delivery. She delivered a healthy child (weight 2.750) and extended thanks to the campaigner for counselling and support.

Kitchen garden in courtyard helped to improve the haemoglobin

There are 443 people in the Dangbahal village of Balangir district. Every year, the campaign with the help of Health department organised health check-up camps for adolescent girls at the community level. During the health camps, blood tests are done to know the anaemic status of the girl child. In Dangabahal village, 70% of the adolescent girls were registered with low iron content in the blood. Ms. Bhoi also identified with 8% haemoglobin level during the camp. There was an adolescent group meeting at the village level during which the findings of the blood tests were discussed with all. After the meeting, the adolescent girls decided to practice kitchen garden at the household level. Ms. Bhoi planted Munga and other vegetable plants with the Kaduli. She used to consume Sajana leafs and other green vegetables from her garden on a regular basis. During the year 2019, once again, the campaigner measured the haemoglobin levels and found her HB increased 12% from 8% in the previous year. She is grateful to the campaigners for improvement of her status. Like her, other adolescent girls also practiced and improved.



Adolescent girls of Gunchadihi village improved in nutritional status after practicing nutritional food from kitchen garden

Gunchadihi village is under the Patnagarh Block of Balangir district. There are 75 households in the village with the total population of 315. Villagers mainly depend on the food which they collect from forest. The campaign on nutrition started in these villages in the second half of 2017. In the year 2018, health camps were organised at the village level with the help of the health department, Government of Odisha. Out of 30 adolescent girls, 5 were found with the haemoglobin rate less than 8%. Life skill sessions, nutritional education, food demonstration and interface meeting with the government service providers were held at the community level. They have been sensitized to kitchen garden. Horticulture department also



provided saplings and seeds at the village to grow a kitchen garden. They have provided with Sajana plant seeds, papaya plant, Guava saplings, and seeds for green vegetables. When in the year 2019, the health camps were organised and haemoglobin check-up was done by the government, it was found that all the girls scored 11% HB in their blood.

Hygienic condition with regular growth monitoring at ICDS centre and school is pre-requisite for improved nutritional status....

Gadiajor is a village under the Patnagarh Block of Balangir district. There are 80 households and an Anganwadi centre. There were issues with non-hygienic condition and lack of weighing machines for regular growth monitoring of children at the Centre, therefore, low participation of pregnant and lactating mothers at VHND. Most of the families in villages are daily wage earners and migrant workers.

Campaigners organised a meeting of Janch and Matru committee, which used to be irregular. The purpose and the role of the committee was discussed with all the members. They have also discussed about GKS (Gaon Kalyan Samittee). They all decided to mobilise fund from GKS to purchase a weighing machine. GKS sanctioned money to purchase the weighing machine and now, growth monitoring is done on a regular basis.



Panduripani village under Patnagarh block of Balangir district. There are 95 households in the village; there is a primary school in the village. Classes are running for grades 1 to 8. There was no urinal in the school, due to which there was a high probability of drop out of the girls from the school. Campaigners discussed the issue of non-availability of urinals in the school in Gram Sabha Meetings and an application was submitted. Gram Sabha, in consultation with the School Management committee, constructed Urinals in the school which benefited the students.

Gunchadihi village is under the Dangbahal Panchayat in Balangir district with 75 households. 23 children are enrolled in Anganwadi centre. But there is an issue of non-availability of drinking water in the centre. Children used to walk 0.5 km to get drinking water. Again, the meeting of the Janch and Matru committee was organised and an application was drafted for the Zila Parisad members through Sarpanch. After a period, Zila Parisad sanctioned a bore well for the ICDS centre and now the children of the AWC are getting bore well water at the centre.

Rita Jal improved her HB from 7% to 11% in a span of a year

Rita is an adolescent girl and a member of Gunchadihi adolescent children's group of Pantagarh Block of Balangir district. There are 30 adolescents in the group. During 2018, there was a HB test conducted in the village under the campaign in collaboration with the health dept. Government of Odisha. Rita measured with 7% Haemoglobin. And 15 adolescents out of 30 measured with 8% haemoglobin, which is lower than the normal category and anaemic status.



A series of sessions were organised with adolescent girls on nutrition education with the help of nutritionist. Kitchen garden was promoted among all the adolescent girls in the village. Campaigners also monitored the diet diversity through IVR survey on nutrition. Food demonstration programme was one of the most significant programmes organised at the community level with the support of Anganwadi workers. In the year 2019, HB test conducted in the village for the second time with the help of district medical hospital office. Rita scored 11% HB this time and other adolescent girls improved too. Promotion of kitchen garden, diet diversity and the nutritional education with the adolescents helped to improve the status of Anaemia among the adolescents.

VHND regularised in Sulaimal village, mothers are getting benefit of the Govt. programme

Suliamal is a village of Patnagarh Block of Balangir district. There are 108 families in the village. There is an Anganwadi centre and primary school in the village. Economic condition of the families in the village is pitiable. They are the daily earners, migrant workers. Primary Health centre is at a distance of 8 kms from the village and Community Health Centre is about 12 kms from the village.

The problem was with no regular HVND (Village Health and Nutrition day) in the village, as there was no regular participation of the mothers in the VHND. Campaigners organised several



rounds of meetings with the Janch and Matru committee at the community level. Interface meetings were organised with the service providers. In these meetings, there was a detailed discussion on the purpose of village health and nutrition day. Now all the registered pregnant and lactating mothers are regular with VHND, immunization and growth monitoring type of activities are now been conducted in the village in every Village health and nutrition day. Participation of mothers in the meeting also activated the GKS (Gaon Kalyan Sammittee) and three years balance sheet has been shared with the villagers.

Motivated Sarpanch of Dangabhal took charge of the repair of dilapidated centres and health check-up camps continued

Campaigns on nutrition ensured the participation of all stake holders for activation of grass root institution and the participation of villagers in the service delivery mechanism of Government programme. Damkipali village is under the Patnagarh Block of Balangir. The condition of ICDS centre was in poor condition. Lactating and pregnant mothers were neglecting to attend the village health and nutrition programme. The matter was discussed in the village meeting. Sarpanch was invited to the meeting and discussed the matter. After persuasion the Sarpanch, he sanctioned the amount for the repair of the building. Construction work started with the community participation. Janch and Matru committee also participated in the process. After the repair of the dilapidated building, the mothers became regular in the centre with their children for regular health check-ups. Growth monitoring is regular for the children below the age of 6 years in the centre.

There are primary, middle and high schools in the Damkipali village. Campaigners organised the Haemoglobin test camps for the adolescent girls of the village with the support of the health department. Parallel campaign also started the IVR (interacting voice record) survey on health and hygiene with the adolescent girls in the same village. After the survey, adolescent girls raised the issue of non-functioning of Khushi programme (Khushi programme is an initiative of the Odisha Government to provide sanitary pad to the school going children). ASHA and ANM were asked questions by the the girls about the scheme. They approached the BPM (Block Programme manager) and PHEO (Public health Engineer office). After the alert at the Block level, within two days time, 18 packets of the sanitary pad were distributed in the school amongst the girls.



Sangeeta ensured increase of HB from 10 to 14 after consumption of Moringa leaf on regular basis.

Sangeeta is an adolescent girl of Suliamal village of Balangir district. In 2018, when HB test was conducted among all the adolescent girls in the village, none of the girls recorded more than 10 percentage of Haemoglobin. There was an iron deficiency in their blood. After getting to knowing this, the campaign started the Moringa movement in the village. All households started plantation of Moringa plant and the consumption of leaf for improving Calcium and Iron deficiency in the blood. Food demonstration was organised in the village with the help of nutriment. Recipe of Moringa was shared with the mothers and the adolescents in the community meeting. Regular monitoring was done through the IVR survey about the use of IFA (Iron Folic tablets) and the Moringa leaf. After the regular use of Papaya, Moringa, green leaf and fresh vegetable, it was found in the year 2019, when second round of HB test was conducted among all the adolescents, that a large chunk of girls showed improvement in iron levels in their blood. Sangeeta improved with 4 points and now she is at an HB rate of 14%.



Diet diversity impacted Prabhati to enhance HB from 9.6 to 11.6



Prabhati is the daughter of Akadisha and Maharangi of Gunchadihi village of Dangabhal Gram Panchayat of Balangir. In August 2018, she was tested for HB which was at 9.6 and the second time in August 2019, she improved to 11.6. This was done through the efforts of the programme organised in the village on nutrition. The campaign promoted kitchen garden among the households of pregnant, lactating mothers and the adolescent girls. Saplings of Moringa, papaya, Guava and seeds of green vegetables were mobilised from the horticulture department of the Government of Odisha. IFA tablets were distributed among all the adolescents and close monitoring has been done for all the adolescents in the village meetings of the adolescents in children's club. IVR tool has been used for the mapping the uses of green vegetables, Moringa leaf and IFA among the adolescent girls. Most of the adolescent girls in this village showed an improved nutritional status and an increased HB from 8 to 10 points.

Electric Fan, Plates and Glass purchased by the GKS for Anganwadi children

Hirapur village is under Kechodadar Panchayat of the Paikmal Block of Bargarh district. The village is 120 kms from the district headquarters. 50% of the people belong to schedule tribes. There are 35 children in an Anganwadi centre. There were issues with the Anganwadi centre; there is a shortage of plates

(available only for 20 children), glasses and



no electric fans. Centre was also not electrified. Village meetings have been conducted with the help of Gaon Kalyan Sammittee, Matri committee and Janch Committee about the concern issues. Three rounds of meeting were organised by the campaigners with the stake holders and finally a decision was passed by the Gaon Kalyan Sammittee to purchase plates, glasses and

the electric fan. In this process, Matri committee and Janch Committee also played a vital role to mobilise the members of the GKS. Community also ensured that in the future, if anything is required for the development of children, they will contribute to the village fund.

Villagers contributing papaya and drum stick in Anganwadi centre for nutritious food for children

Campaign during the year 2017, collaborated with the horticulture department at district level. Department from Bargarh district conducted a camp in the Hirapur village and distributed the seeds and saplings of the fruit plants to the villagers for promotion of kitchen garden. After a period of two years, the plants grew and started to bear fruits. Mr. Premananda Hans, a daily wage earner, was registered as belonging to the Below Poverty Line category. He planted papaya and Moringa plants in his kitchen garden two years back. Premananda is giving papayas every month to the village Anganwadi centre with Moringa leaves. Anganwadi Sevika wss used to provide papaya to every child of the centre and moringa leaves in Dal (pulses). Like Premananda, other villagers are also



providing fruits to the children through hot cooked meals to the children through Anganwadi centre. Like him, all the villagers who planted papaya plants are serving papaya to their kids on a regular basis.

Barsa gained raised Haemoglobin level from 7.2 to 11 within a year

The village Nagdihi, falling under the GP Bhengrajpur, Block Paikmal and District Bargarh, has a population of 616 with 70% of the population depending on agriculture and daily wage labouring for their incomes. The majority of the families in the village belong to the SC and ST castes. There is only one primary school running in the village. Due to the backwardness of the village, intervention on health and nutrition has been running in the village since 2012 and in due course of time, child clubs and adolescent groups have been formed in the village in which the children and the adolescents can discuss their health issues and other social issues that they face. In 2017, a campaign was launched to understand the status of haemoglobin in the adolescent girls. All the girls who had HB below 8 were then counselled along with their families and they were told about all the various foods and vegetables which if consumed can impact the HB level of the girls. Barsa Das, daughter of Radhakanta Das and Gayetri Das, was found to have Haemoglobin at 7.2. Her parents were called and informed about her HB level and what impact it can have on her. She was advised to take IFA tablets regularly and a Kitchen Garden was set up in her home, growing Munga and papaya. The team regularly followed up with Barsha on the consumption of the IFA tablets and the intake of papaya and Munga. After a year her HB was again tested and was found to be 11. She is now a role model for her village and leads the adolescent group, where she advises other girls and their families about the consumption of IFA tablets and the benefits of growing and consuming of Munga and papaya in their kitchen garden.



Practice of Kitchen garden and nutritious food helped Suryasree Hans and Rinki Das to gain non anaemic status

In the village of Hirapur, falling under the GP Kechhodadar, Block Paikmal and District Bargarh, has a total population of 180 people where most of the families belong to the ST caste and depend primarily on daily labouring to support their family. The village is 120kms away from the District Headquarters and a majority of the families live below the poverty line. As a result of the economic conditions, most of the families in the village are deprived of the basic health and nutritional needs.

The situation is more or less the same in Nagdihi village of Bhengrajpur Panchayat where 70% people are agricultural daily wage earners and belong to the ST and SC community.



In 2018 a health camp was organized and HB test was done for all the adolescent girls. After the tests had taken place, all the adolescent girls who had HB less than 8 were counselled on the consumption of IFA tablets and intake of Munga leaves which would impact their HB level. Suryasree Hans, daughter of Nepal Hans and Pankajini Hans, studying in class 9 was identified with HB 10.4 and after the practice of the regular consumption of IFA tablets Munga and papaya her

HB increased in a year from 10.4 to 12.

Rinki Das, daughter of Dasrathi Das and Chanchala Das, was of the adolescent girls of the village. Her HB was 9 in the last year but after follow ups by the campaigner, it is now 11. Her parents are happy with the improvement and she is a role model in the adolescent groups.

Success Story of VHND

VHND is one of the grass root initiatives which establishes the coordination among the health service providers and the mothers. There are concerns related to non-functionality of VHND in Koraput villages. Concern was from both the sides, service providers as well as the beneficiary groups.

Campaign was started to organize the joint meeting of service providers and the beneficiaries and to generate awareness. It has developed a tool to monitor the programme. The purpose was to ensure the participation of the beneficiaries and the services provided by the govt. PRI and GKS was empowered to monitor the VHND and they started to attend the programme on a regular basis.

Gradually, the process of VHND has strengthened and community participation has increased. The VHND is monitored by the GKS and PRI members. ANM also creates some awareness by creating banners and taking sessions on personal hygiene, nutritional food, use of sanitary napkin, new born care etc. during VHND. Last month, 54 mother had



complete ANC and 32 mother were referred to Maternity Home by the ANM. 1st trimester registration recorded 100%. During this year, 52 out of 81 pregnant mothers, 236 out of 263 0-3 year children and 141 out of 362 Adolescent girls participated in VHND. Earlier it was less than the present status.



tests, HB test pregnancy registration, urine test etc. An increasing number of beneficiaries are benefited from VHND.

Even now, different needful materials like medicine rack testing kit, medicines are supplied to each VHND point. Mothers are benefitted through health check-ups, pregnancy

Progress in Hemoglobin status

Pangiput is a small hamlet in Koraput district. The village comes under Gunaipada GP of Lamtaput Block. The main livelihood of the villagers is agriculture labor and migration. People of this village migrated to Bangalore, Andhra Pradesh etc. in search of livelihood. Due to this reason, child health care needs are neglected.

In 2017, the campaign organized a camp for Haemoglobin checkup for adolescent girls. There are 14 adolescents in the village. After HB testing it was found that a girl name Kamala Khilla, daughter of Jagu Khilla and Daimati Khila aged 12 and studying in 6th class, came under severe anemic status. They are 3 siblings. In 2018, her BMI was 15.1 and HB is 7.9 and she was under the Severe category in HB level.



Kisori Mandal has been formed in the village with the objective to involve adolescents in VHND. Interaction and capacity building sessions have been organized with the adolescents. Kitchen garden was promoted among all 35 households in the village with special focus on iron heavy foods like deep green spinaches, banana, lemon etc. A session was taken with them on the use of moringa leaves in different way like, moringa juice, power, curry, pakoda etc. It seems that gradually, the use of moringa has increased amongst all the adolescents. Kamala Khila's family also involve in this process they have a kitchen garden having all above mention tree. She was also involved in Kishori Mandal meeting. She changed her eating pattern. She started to consume moringa leaves weekly twice by her, weekly IFA consumption was regularized. And the status as on 6th September 2019 is BMI 15.3 and HB is 9.



2019/10/23 12:18

Every adolescent of this village has a changed HB label as per last testing report and is trying to maintain the present status.

Success Story of A SUB Centre

Health sub-centre is situated in the village but no staff used to stay in the centre. 11 \ tag villages depend upon this sub centre. As per data from 2017-18, around 3000 people were excluded from the SUB centre service due to non-availability of staff.

In the year 2018, a campaigner conducted a Village Development Committee meeting. In that meeting the most important topic for discussion was the permanent staying of ANM at Guneipada Sub-centre. Resolution has been passed at the Panchayat Nodal meeting and Gram Sabha meeting for permanency of ANM at Guneipada Sub-centre. This was presented by Sarpanch Srimati Jamumati Khillo and Panchayat Samiti Member Sri Rama Padal at the Block Nodal meeting.

After regular meetings and discussions, the issue was orally conveyed to the BDO and Chief District Medical officer by Villagers and by the ward member. In ASHA sector, meeting issue was again raised about the permanent stay of ANM at the centre point.

Impact of assessment:

After assessment of the issues, Ms. Susila Kumari Sisa joined as an ANM and she permanently stayed at Guneipada Sub-Centre and is doing her job timely. She is doing regular check-ups of pregnant women and lactating mothers. She is also attending the VHND on regular basis. Now, 11 tag villages are getting benefits from the centre.



Success story of High-risk Mother

Damai Kirsani is the wife of Budra Kirsani from Village Guneipada, Lamtaput block, Dist-Koraput. They belong to Scheduled Tribe. Gunaipada is a tribal revenue village with 71 household out of them SC 24 family, ST 44 family, & 03 OBC family.

Damai was pregnant and not registered under the ICDS centre. She did not have any periodic check-ups by the doctors and the health staff of the Government. Campaigners reached to her house and updated her about the Government scheme. They also mobilised the ASHA workers to visit her house and give her counselling.

She ultimately registered her name in the Anganwadi centre. She was immediately provided with the TT vaccination at VHND.

At the time of registration her weight was 45



KG and HB was 7. She got a Red card which defined her motherhood as high-risk.

Though she is a high-risk mother, she was regularly observed by the campaigners and ICDS workers. She has completed 3 ANC and was referred to the maternity home. At the delivery, her HB was 9.3 and finally on 26th June 2019, she normally delivered a baby boy at Lamtaput CHC. The child weighed 2.8 kgs and both were fine after delivery.

It gives a lesson to all mothers that how much the ANC are important for us and our upcoming child.

Access to MAMTA scheme encouraging mothers towards timely registration of pregnancy and availing of pregnancy check-up services

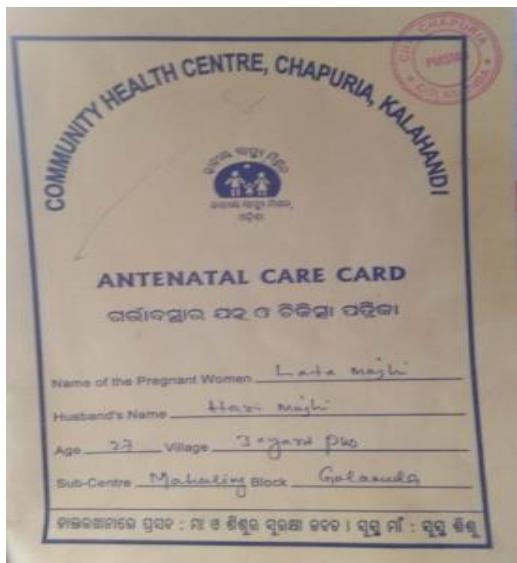
Srimati Mamta Dash aged 27, wife of Nabin Dash and permanent resident of Makraguda village, falling under the G.P Leter, Block Golamunda and District Kalahandi was registered under the Anganwadi centre in the village. After the delivery of the child in the PHC she received the first instalment of the money from the scheme. However, even after repeated submission of application along with the Bank passbook, MCP Card, Adhar Card and MAMTA form to the ICDS centre, she did not receive the second instalment of the Scheme. This situation was shared by the beneficiary during the VHND attended by her to get the benefit of PNC service. Finally,

the documents were submitted to the Sarpanch, who made a personal visit to the CDPO's office and submitted the application and after one month of this application Mamta received the instalment in her bank account. This incident has helped the women in the village to share their problems with the sarpanch whenever one does not receive the money from the MAMTA scheme and this has also helped in impacting the health status of pregnant mothers, since the mothers are more alert in registering their pregnancy with the ICDS centres and are becoming more regular in the availing of the ANC and PNC services.



CHC referral has helped in improving the status of high risk mothers and has resulted in the safe delivery.

Srimati Lata Majhi, aged 27 years and wife of Sridhar Majhi and a resident of Jayantapur village,



G.P. Mahalinga, Block Golamunda and District Kalahandi was diagnosed to be a high risk mother while attending to her 3rd ANC service during VHND.

She was then advised to make changes in the food plate and was also encouraged to practice growing certain vegetables in the form of Kitchen Garden for her consumption. She practiced growing moringa and kadali, papaya and drum stick, which she consumed regularly in the daily diet. In addition to this, she was also counselled to take a regular dosage of Iron Folic Acid and Calcium Tablets. In the next VHND however her status did not improve much and hence she was referred to nearby CHC at Chapuria to receive her ANC treatment.

Lata attended CHC Chapuria for three

days and completed the full treatment after which her status improved and finally after 18 days she delivered a healthy baby girl weighing 3.2 kgs at the PHC in Bordi. At present, both the mother and the child are healthy. This has encouraged the rest of the high risk mothers to avail the referral services and have impacted life risks of mothers and child during birth.

Counselling on the food plate helped in changing the mind-set of the parents and have positively impacted the nutritional status of children

In the village Kanakpur, falling under the Khaliapalli G.P of Golamunda Block, district Kalahandi, majority of the population is illiterate and due to the remoteness of the village the government facilities are very minimum. Most of the people in the village are ignorant about malnutrition and related issues and hence don't have the awareness to identify the issue and work towards its improvement. As a result of this, there are many children who suffer from malnutrition and one such child was Hinjraj Tandi.

Hinjraj Tandi, son of Debarchan Tandi and Saraswati Tandi, was born as an underweight child weighing 1.5 kg at birth. His condition was very severe but his parents were unaware about his status. During the village meetings, the child was identified and his parents were regularly counselled on the use of green vegetables in the mother's diet and the continue practice of exclusive breastfeeding. After one month of continuous counselling,



the family finally set up a kitchen garden in the house and consumed drum stick and Munga leaves in the diet. Food demonstration was also done with the take home rations that the mother received from the Anganwadi Centre. After one year of continuous monitoring, the child moved from red zone of the growth chart to orange zone, weighing 6 kg. On looking at the status of the child the parents were advised to refer the child to NRC but the parents were reluctant to take the child to NRC. However, in the next one year the family focused more on the consumption of green leafy vegetables and finally the child moved from the orange zone to the green zone weighing 7.1 kg in one year.



Collective action of parents for setting up of a new ICDS centre in the village using the locally available resources:

Gantiabedha is a village falling under the G.P Ranipokhri and District Mayurbhanj. The village is at a distance of 8.5 kms from the G.P having 63 households and a total population of 411 people. The nearby Anganwadi centre is located at a distance of 4 kms from the village and the primary school is located at a distance of 3 kms. There are 23 children in the age group of 0 to 3 years and 33 children in the age group of 3 to 6 years who were supposed to get the benefits from the Anganwadi centres but as the center was far off from the village, the parents were reluctant to drop their children at the centre. Since most of the parents of the children belonged to the labour community, it was not possible for them to pick and drop their children regularly to the Anganwadi centre. These issues eventually led to the children being deprived of the basic facilities from the Anganwadi centres. This scenario and the situation of the children was discussed during the community meeting and in order to mitigate the issue, the community started running



SNP in the village with all the 56 children. The SNP was run in the premises of the house of the ASHA worker, Laxmi Samad but eventually it was found that 56 children could not be accommodated in the small space available. It was then that Laxmi ji motivated the mothers in the janch and matru committee to voice their opinion during the community meeting and demand for space for the construction of the Anganwadi centre for the children. The matru and janch committee members lead by Laxmi ji, placed their request to the sarpanch and finally a

space was allotted to the children within the premises of the village. The parents then contributed their labour and with the help of the locally available resources in the village they started constructing the ICDS centre. In addition to the centre, they also have space for growing kitchen garden and a playground for the children attending the centre. This entire initiative

would not have been possible without the efforts and leadership taken by Laxmi ji who is the ASHA worker in the village. She was born in the village and was married in the village at a very young age. She understood the importance of education for children and although she herself completed her education only till class five, her daughter and two sons are studying in higher secondary residential schools outside the village. She is a role model for her village and guides all the mothers on parenting. It is due to her



that the mothers could voice out the need for an Anganwadi centre for the children which eventually will benefit all the children in the village.

The journey to a healthy life

Balema Hembram, is the 2.5 year old daughter of Rauta Hembram and Jana Hembram. She is a first born to her parents. The family lived in the village named Dilesore, falling under the G.P Ranipokhri, District Mayurbhanj. Her mother, Jana Hembram, was married at the age of 15 and had been a high risk mother when she delivered Balema. Hence, since birth she had been undernourished but the parents were unaware about her nutritional condition. Soon after, her younger sibling was born and the family started taking care of the new born. As a result, Balema could not get all the proper attention that she was supposed to get from her parents. Balema was enrolled in the Anganwadi centre of Dilesore and in the month of July her height, weight and MUAC was measured, during which it was found that she was underweight and was in the red zone with her weight being 8.5 kgs and MUAC 11.3. She was referred to the nearby NRC and her parents were counselled to take the child to the nearby NRC at Udalai for treatment. The parents were reluctant in the beginning but constant counselling and persuasion and the support of the Anganwadi supervisor convinced the parents to finally complete her treatment at the NRC. After one month of treatment, Balema's weight increased to 11 kgs and MUAC to 13.5 and she recovered from the Red to the Green zone.



Conclusion

Child malnutrition is the single biggest contributor to under-five mortality due to greater susceptibility to infections and slow recovery from illness.

Children who do not reach their optimum height or consistently experience bouts of weight loss during childhood are affected in the long term in numerous ways. They do not reach their optimum physical capacity for work, their brains are affected (resulting in lower IQs) and they are at greater risk of infection (which kills many children during their early years).

Child malnutrition impacts education attainment. The degree of cognitive impairments is directly related to the severity of stunting and Iron Deficiency Anaemia. Studies show that stunted children in the first two years of life have lower cognitive test scores, delayed enrolment, higher absenteeism and more class repetition compared with non-stunted children. Vitamin A deficiency reduces immunity and increases the incidence and gravity of infectious diseases resulting in increased school absenteeism.

In order to create a long lasting change among the lives of children, there is a requirement of convergence among women and child, health and education department at community level. Panchayat as grass root Institution to be strengthen with the involvement Women & Child Development, Health, and education, of agriculture, water and sanitation, nutrition, horticulture. Focus should be on the migrant population of state - they must be engaged with the programmes and schemes of the State Government. In the Tribal areas, uncovered children must be covered with ICDS and Supplementary Nutrition Program (SNP) benefits, community based SNP centre can be initiated as innovation for defeating the malnutrition. On an average, villagers have to travel a good distance to reach NRC centre. Efforts can be taken to reduce the distance of NRC. Secondly, the function and role of NRC should be introduced with the orientation programme with ASHA, AWW and ANM. Effective Nutrition policy needs to be worked upon with the mechanism to assess the impacts of the programme and scheme in the geographical location in the State, how the policy is touching the ground in the most vulnerable spaces. Development of Girl child focused school health programs, focusing on other drivers of malnutrition like water & sanitation, menstrual health and hygiene, anaemia control intervention and most importantly the Mid-Day Meal (MDM) should be executed properly. Gender empowerment as an integrated, comprehensive package in the rendered by ICDS while engaging with the adolescent girls and women mostly focusing on the structural drivers of malnutrition like access to quality food care, autonomy in domestic decisions making and moreover choice over the age of marriage can be a game changer. Evidence based & SMART data backed state and national level strategies and high impact intervention focusing on children below 2 years, adolescent and pregnant women.. Improve the capacity of human resources across the levels towards bridging the capacity gaps. Strengthening community based interventions with the partnership of GO- NGO & CSO, WSHG, decentralised governance structure. Organic Convergence with proper administrative structure and scaling up inputs from other schemes meant to address the malnutrition issues creating platform for cross learning amongst the state and non-state actors to scale up the success strategies and nutritional outcome.

