Protein: Program to Revitalize the Overall health of Tribals’/Teenagers by Ensuring Intake of Nutritious food

1. Urban areas: canteen for teens – a program to address malnutrition in urban teenagers.
2. Rural areas initiatives

A program by

The Energy and Resources Institute

Sponsored by

GKN Sinter Metals Pvt. Ltd., Pune

Project Highlights
Acknowledgments

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Project Activities

Part A: Urban Initiatives

- Baseline survey

Know your Food

- Awareness Workshops
- A guest lecture on “Childhood obesity and ways to tackle it”

Grow your Food

- Mushroom cultivation workshops

Cook your Food

- Healthy recipe making competition
  - Introduction and Distribution of nutritious food hamper to the winners
Part B: Outreach Activities

- Poster presentation in Bio-processing Conference – 2014 organised by ICT (Institute of Chemical Technology) and IIT (Indian Institute of Technology) Bombay.
- Half day event in collaboration with Rotary Club Mumbai
  - Skit performance
  - Distribution of healthy kits

Part C: Rural Initiatives

- Awareness workshops
- Capacity building through demonstration of nutritious recipes
- Distribution of nutrition supplements
Project highlights and outreach

1. Skit performance on healthy eating habits
2. Hands on training – Healthy recipe making competition
3. Poster presentation @ Bioprocessing Conference
4. Capacity Building workshops for parents of SAM & MAM children
5. Hands on training – Mushroom cultivation activity
6. 6 schools covering Pune, Mumbai and Navi Mumbai
7. 7 villages in Mokhada Block under Botoshi gram panchayat
8. 12 Awareness workshops
9. 15 varieties of nutrition supplement to promote healthy food options
10. 50 teachers
11. 125 Distribution of Nuti-Kits including healthy recipe booklet, other books and packets of pulses and soyabean
12. 300 parents
13. 300 children in selected villages (Including total of 51 SAM, MAM and SUW)
14. 700 Students from Urban schools
Part A: Urban Initiatives
Baseline Survey

- Survey helped in analysing the level of awareness about malnourishment amongst the students.
- It also helped in understanding their preference of food and dietary habits.
- Around 700 students participated from all the selected schools.

Delhi Public school, Pune

Yashwantrao Chavan Madhyamik Vidyalaya, Municipal School, Pune

30th September 2014

10th November 2014
Around 125 students participated from Ganpatrao Kadam High School, Lower Parel, Mumbai

13th February 2015

Around 120 students participated from Navi Mumbai Municipal School, Turbe

11th February 2015
Students survey analysis
As seen in Figure No. 1, around 60% students are of opinion that a person is called malnourished only when he is underweight. Similarly, it is observed in Figure No. 2 that majority of students think that people having less access to nutritious food and the poor are more susceptible to malnutrition.
More than 50% students take nutrition supplements recommended by the doctor. This indicates that they are aware about requirement of essential nutrients like calcium and iron.

This explains the need of introducing the teenagers to better and natural way of consuming the essential nutrient like Iron and calcium. The easiest way is to introduce innovative ways of consumption of rich natural sources like Spinach, Nachni (Ragi), broccoli, soybeans, pulses, nut and so on.
Parent survey analysis
Majority of parents think that Television and advertisements have a great impact on the food choices of their children.

Thus there is a need to increase the awareness about the health disorders of consuming fatty/junk food. Along with this it is also important to sensitize parents and students about the informative programs about food and nutrition that get broadcast through mass media.
Parents strongly believe that increased consumption of junk food along with inadequate physical activity has increased the risk of life style related health disorders at a young age.

![Bar chart showing parents' opinions on reasons behind teenagers' vulnerability towards lifestyle related disorders. The chart includes reasons such as increase in consumption of junk food/outside food, stay indoors with electronic gadgets, irregular timings of meals, food consumption in irregular quantities, not particular about their breakfast, eating alone and watching TV, and frequent consumption of aerated drinks. The percentages are as follows: increase in consumption of junk food/outside food (70%), stay indoors with electronic gadgets (53%), irregular timings of meals (46%), food consumption in irregular quantities (45%), not particular about their breakfast (42%), eating alone and watching TV (33%), and frequent consumption of aerated drinks (26%).]
Know your Food
The aim was to explain severity of malnutrition in India along with the importance of consuming simple and nutritious vegetables like sweet potato, spinach, beet green and salad.

This was effectively presented through detailed and interactive presentation.

Dr. Parasnis explaining the motto of the program - “Know your Food, Grow your Food and Make your Food”
Awareness workshop
• Workshop and survey at Municipal School was conducted in Marathi language.

Around 80 students participated from Yashwantrao Chavan Madhyamik Vidyalaya, Municipal School, Pune

10th December 2014
Around 120 students participated from Navi Mumbai Municipal School, Turbe

11th February 2015
Students during the session, a small quiz on childhood obesity was undertaken. The lecture was interactive and based on the use of "NEW AUDIENCE RESPONSE SYSTEM", a tool that makes learning easy and exciting. Using the same students were answering the questions.
Nutrition assistance workshop held at DPS, Pune

- A guest lecture on “Childhood Obesity and Ways to tackle it” was arranged.
- **Ms. Tushima Mashelkar, Chellaram Diabetes Institute, Pune** was invited to conduct the session.
- The *lecture* was focused on:
  - *Obesity and facts about obesity*,
  - *Its causes, effects and contributory factors*,
  - *Nutritional management related to obesity and*
  - *Interventions to prevent and treat obesity*.
- Students participated with great zeal and were excited by the educational talk.
- The consciousness about their daily eating habit was stimulated through this activity.
Highlights of the nutrition assistance workshop

- The answers were recorded to assess the awareness of obesity amongst the students.

- A detailed discussion of the facts and causes of obesity was rightly explained to the students with the help of examples and attractive slides.

- Later on same questions were asked and the change in the pattern of responses were evaluated.

The results showed 25% increase in the understanding level of students about childhood obesity and ways to tackle it.
Grow your Food
Nutritional value and benefits of adding mushrooms to the diet was explained to the students.

Different recipes of mushrooms were showcased during the workshop.

Around 280 students participated in the demonstration workshop and around 50 mushroom bags were prepared.
Hands-on training of preparing and displaying of mushroom bags

- These bags were kept in a safe, clean and dark compartment in the school laboratory.
- The area of incubation was maintained clean by the school authority.
- The incubated Mushroom bags showed growth of mushrooms in 25 days.

Students showed great interest in cultivation of mushroom at their home/school backyard. Schools have also requested to carry out demonstration of other nutritious fruits and vegetables which are easy to grow in the school backyard and at home.
Students took the mushroom bags to their respective home.

They have also requested TERI to provide them with spawn of mushroom to cultivate Oyster mushrooms at home.
Along with the live demonstration of mushroom cultivation, samples of dry Oyster mushroom were also distributed. Various healthy recipes were demonstrated to promote and encourage them to adopt healthy eating habits.

Yashwantrao Chavan Madhyamik Vidyalaya, Municipal School, Pune

Demonstration workshop and distribution of mushrooms in the municipal school, Pune

11th December 2014
Cook your own Food
Parents along with their ward were invited to participate in “Recipe Making Competition”.

Students displayed their recipes through posters by presenting the nutritional value of the recipe.

14th November 2014

Student- Parent displaying their “Easy to make” nutritious recipes.
Students were well read and aware about the nutritional status and food ingredients used during preparation of the food items.

Judges were delighted to see the performance of the students.

14th November 2014

Student- Parent displaying their “Easy to make” nutritious recipes.
Nutritious food hamper – An apt prize to the winners

TERI gifted nutritious food hamper to the winners of the recipe making competition

The hamper included Jowar based food items like Jowar flakes, vermicelli and Idli mix

A book titled “The Original Organics Cookbook: TERI Recipes for Health and Happiness” on nutritious organic recipes published by TERI was also given to the winners of the competition

14th November 2014
Rationale of: Nutritious food Hamper

• Through parent survey it has been observed, that the consumption of millets like ragi, jowar is considerably less and children generally prefer having ‘wheat’ or ‘all-purpose flour (Maida)’ roti and other related products.

• Through this hamper TERI wanted to create the awareness that nutritious food products are not always costly and tasteless. It is easy to integrate them through some innovative ways and methods.
Part B: Outreach
Poster presentation in Bio-processing Conference -2014 organised by ICT (Institute of Chemical Technology) and IIT (Indian Institute of Technology) Bombay.
The participation received a very positive response. Everyone agreed to the fact that health status of the teenagers is an important issue which needs immediate action.

The conference focussed on issues related to energy, nutrition and healthcare.

TERI participated through poster presentation and a talk in technical session.

The poster highlighted the salient findings of the study and attracted attention of research professionals from diverse fields.

While in the technical session, Dr. Anjali Parasnis, further elaborated on the objectives of the program and the way forward.
2. Half day event at Ganpatrao Kadam High School, Lower Parel

In collaboration with Rotary Club of Mumbai, TERI organized azealous event under this project on 14th February 2015 for theinvolvement of BMC school children for “Canteen for Teen”program
Half day event at Ganpatrao Kadam High School, Lower Parel

Around 125 students of 6th to 9th standard from 2 municipal schools participated.

14th February 2015
Invited dignitaries

From left: Sr. Sous Chef. Raghu Deora, The Taj Palace, Shri Vinod Shelar, Chairman of Education Committee, BMC (Bombay Municipal Corporation); Dr. Anjali Parasnis, Associate Director, TERI-WRC; Mr. Ramesh Narayan, Rotary Club
Inauguration ceremony
A theme related token of appreciation was presented to the dignitaries and the head mistress, of Ganpatrao Kadam High School by Dr. Anjali Parasnis

14th February 2015
Bhavishya yaan– Students presented an overview of different activities conducted in the school under the project

14th February 2015
While congratulating TERI and Rotary Club for their initiatives, Mr. Shelar, through citing several examples of highly successful professionals, emphasized upon inculcating good values and food habits for a life time. His speech was highly motivating and convincing for the students.

Senior Chef Raghu Deora was also delighted to be on board and especially encouraged the students adopt healthy and balance dietary habits. He stressed upon the point that even teenagers should indulge into simple cooking as the food could be made healthy and attractive using simple ingredients in their own kitchens.
Skit performance @ Ganpatrao Kadam High School, Lower Parel, Mumbai
Chintu ne jana khana hai khazana
A skit performed by TERI

In order to develop a strong connection the characters were woven around real life situation which included,

- A typical teenager fussy about his food,
- His mother worried about his dietary habits and his preference for junk food,
- Their neighbour who provides expert advice about balanced diet,
- A television set, personified, which relayed the advertisements influencing the food choices as well as provide details about programs emphasizing upon the use of nutritive food. It also highlighted the global status of malnourishment through a film made by TERI,
- An organization: TERI, as an important link between the concerned stakeholders.
The objectives of the skit

- Educate about different food groups
- Discuss health disorders related to unhealthy eating food habit.
- To reach out to maximum number of students and talk about malnutrition and its types
- Inform about nutrient rich vegetables which are of low-cost and easily available

14th February 2015
Encourage teenagers to recognize nutritious food and involve them in buying fresh fruits and vegetables and other food items.
Make your healthy snack basket

14th February 2015
Demonstration on how to make sprouts
Explaining the importance of healthy dietary habits
Distribution of health kit

- Small packets of green moong and masoor to make sprouts
- Protein rich supplements – Soya meal
- A booklet in Marathi based on the recipes collated by TERI through various sources.
- TERI’s publications–titled “The story of food”, “Get well soon: Stomach Problems”, Water (Hindi), and books on Wind Power, Solar Power and Hydropower.
Book stall organized by TERI– Press at the event

14th February 2015
Part C: Rural Initiatives

Approach and Strategies

• TERI targeted the villages for nutrition interventions where already LaBL (Lighting a Billion Lives) was implemented with the support from GKN Sinter Metals Pvt. Ltd. selected
• More than 300 children with their parents and anganwadi sevikas were being targeted for spreading the awareness.
• Out of the 300, total 51 SAM ( Severely Acute Malnourished), SUW (Severely Underweight) and MAM (Moderately Acute Malnourished) children were being selected for further immediate interventions.

23rd January 2015
Part C: Rural Initiatives
Primary Focus—SAM and MAM Children

Approach and Strategies

• Strategic interventions for the improvement of health which include:
  • Awareness workshops for their parents and anganwadi sevikas.
  • Providing them with the health supplements as immediate interventions based on their condition (As shown in figure)
The importance of simple and healthy food items was explained to the parents of SAM, SUW and MAM children from the selected villages.

The nutrition booklets were provided to the anganwadi workers.

The booklets comprised of easy to make healthy recipes from locally available ingredients like spinach, sweet potato and papaya.

23rd January 2015
Providing supplements like protein powder as an immediate aid to the malnourished children at the hands of Mr. Hemant Nighojkar, MD and CEO (Fig. 1) and Dr. Ujjal Bhattacharjee, Human Resources Director, (Fig. 2) of GKN Sinter Metals Private Limited

Apart from the selected children, a nutri kit including an apple, an orange and Rajgira Chikki was also distributed to other children present on the occasion.
Effective consumption of Nutri Suppliments—Demonstration workshops at anganwadis

• After the first visit and data analysis it was noticed that maximum children are in underweight categories.
• To address the same, Sago* was selected as immediate carbohydrate rich supplement which will help in weight gain.
• Easy to make healthy recipes made from Sago and other local items were explained and demonstrated.
• PROTINE–X, a protein supplement is usually consumed with milk. As milk is not affordable, alternative options which could be used as base for easy consumption such as sago, rice and daliya (porridge) were introduced through demonstrations.

*Sago is cheap and easily available material in those areas. However as a general practice they only consume it during fast.
TERI representatives demonstrating and explaining the recipes using Sago to Anganwadi sevikas and parents of SAM & MAM children at Botoshi village

27th February 2015
Feedback

- Feedback from schools and students helped in assessing the impact of the program.
- The results showed positive response of students towards the program. Few of the responses are as follows:
  - More than 80% expressed that they would further inform their friends and family about the importance of having a healthy diet.
  - More than 50% said that the workshops helped in understanding the severity of malnourishment in a better way.

After the program as follow up study, we did two activities 1. sprouts formation and beetroot plantation in the school premises and 2. students tried some of the recipes from the booklet. The session was very informative for all the students. – A Municipal School Teacher...
• About 80% students agreed that knowing the nutrition value of food is important and they have now started taking interest in the same.
• Most of them agreed upon the fact that it is important to make changes in their snacking pattern.

Presentations helped them to understand the severity of malnourishment in India

- Strongly Agree: 56%
- Agree: 41%
- Neutral: 3%

Compliment from a Private school teacher:
It was a good program to attend. It fascinated students to take part and know more about malnourishment. There was interaction with students in many ways which allowed the students to be active in the program. Overall, it was a nice experience!! =)
Way Forward...

- Conducting the second phase of the program in 4 selected schools.
- Creating an online questionnaire – to create optimal automated results.
- Creating a year long live display of mushroom cultivation in the school and provide training to the students.
- Setting up of a nutri–garden and give training to the students to cultivate nutritious vegetables like beetroot, sweet potato, spinach and so on.
- Making a Diet Chart in few selected schools– A diet chart will be displayed in the class room which will introduce them to different food groups and daily requirements of the essential nutrients
- Planning an Event where in students can display their “Nutri–Canteen” showcasing various simple recipes.
- Conducting a competition on “My healthy snack basket” along with the various competitions such as essay writing, drawing, quizzes and so on.