**LIFESTYLE INTERVENTION THROUGH MODIFICATION IN FOOD, MOOD AND EXERCISE AMONGST ADOLESCENT GIRLS IN KANCHEEPURAM DISTRICT OF TAMIL NADU**

****

**“Healthy habits adopted during adolescence remain for life”**

**By**

**ASSOCIATION OF HEALTH, FOOD, NUTRITION AND DIETETICS (AFND)**

(Registered Under the Tamil Nadu Societies Registration Act, 1975)

No. 25, Santhome high road, Mylapore, Chennai, Tamil Nadu, India – 600004

Date of registration: 1st June, 2012

Telephone: +91-9600099967

Email: [info@afnd.in](mailto:info@afnd.in)

Website: www.afnd.org

Name of the representative: Mrs. Radhika G, M.Sc., R.D., (PhD)

**About AFND:**

Association of Health, Food, Nutrition and Dietetics (AFND)is a registered non-governmental organization started in 2012 bearing the number 81/2012. It has been formed by a group of researchers, food technologists, registered dietitians, public health nutritionists, and other health care professionals to empower the interlinking of food, nutrition and public health. The members of the association are all experienced in the field of development and health promotion and have come together as an alliance to encourage health and wellness - with the vision to promote optimal health for all, irrespective of caste, creed, color and religion.

Since its inception, the association has been providing scientific, holistic support to help people attain optimal health; educate them on the prevention of disease and maintenance care; inspire them to take proactive approach in taking care of their body, mind and spirit; and also translating research into community (translational research).

**Organization goals:**

* To generate awareness and sensitize people on various diseases, health related issues and healthy choices
* To provide assistance to people in screening, diagnosis and further intervention to combat the disease
* To standardize resources (questionnaires, tracking tools and screening programs )for better accuracy
* To conduct epidemiological research and translate facts and evidences to the community
* To publish health related research papers and books
* To develop and disseminate healthcare related information, education and communication (IEC) material
* To interface with stakeholders and media on the healthcare-related facts and evidences, through debate and dialogue on various forums, so as to create/modify health and nutritional policies in the state
* To interlink & collaborate with persons from different areas of expertise in food, nutrition and dietetics (consultants, advisors, entrepreneurs, educationists, researchers and healthcare professionals) to promote greater transparency, sharing of thoughts and exchange resources that can further improve the health and nutritional care

**PROJECT DETAILS**

**SECTION A**

**1. SUBMISSION DATE: 2. COUNTRY/REGION:**

India/Tamilnadu/Chennai/Chunampet

17/08/2012

**SECTION B**

**3. PROJECT TITLE**

**LIFESTYLE INTERVENTION THROUGH MODIFICATION IN FOOD, MOOD AND EXERCISE AMONGST ADOLESCENT GIRLS IN KANCHEEPURAM DISTRICT OF TAMIL NADU**

**4. PERSON RESPONSIBLE FOR PROJECT**

## Name/Title : MRS RADHIKA G, M.SC RD (PHD),

## Dr. MANJULA DUTTA (PHD)

## Street address : ASSOCIATION of HEALTH, FOOD, NUTRITION & DIETETICS

No. 25, Santhome high road, Mylapore, Chennai, Tamil Nadu, India – 600004

Date of registration: 1st June, 2012

Telephone: +91-9600099967

Email: [info@afnd.in](mailto:info@afnd.in)

**5. PROJECT PERIOD**

**INTERVENTION PERIOD:** 1 year

**Start:** Immediately after approval of project

**End:** 1 year from approval of project

**1. Project background and justification**

Adolescence is a journey from the world of the child to the world of the adult. It is a time

of physical and emotional change as the body matures and the mind becomes more questioning and independent. World Health Organization (WHO, 2007) defines adolescents as young people aged 10-19 years, whose 20% of the adult height is attained and 50% of the adult bone mass is gained. Many boys and girls in developing countries enter adolescence undernourished, making them more vulnerable to disease and early death. Conversely, overweight and obesity - another form of malnutrition with serious health consequences - is increasing among other young people in both low and high income countries. During the transition to adulthood, lack of knowledge and awareness about reproductive organs, physiological changes, or sexuality can promote psychosocial stress. This is particularly so for girls, who also face gender discrimination. As per WHO (2007), one in every five people in the world is an adolescent, and 85% of them live in developing countries. Nearly two thirds of premature deaths and one third of the total disease burden in adults are associated with conditions or behaviors that began in youth, including tobacco use, a lack of physical activity, poor choice of food, unprotected sex or exposure to violence. Moreover, at least 20% of young people will experience some form of mental illness - such as depression, mood disturbances, substance abuse, suicidal behaviors or eating disorders. Promoting mental health and responding to problems if they arise requires a range of adolescent-friendly health care and counseling services in communities. Among 15-19 year olds, suicide is the second leading cause of death, followed by violence in the community and family. Promoting nurturing relations between parents and children early in life, training in life skills, and reducing access to alcohol and lethal means such as firearms can help prevent violence. Thus, promoting healthy practices and efforts that better protect this age group from risks will ensure longer, more productive lives for many.

India is home to around 243 million adolescents and constitute about one-fifth of the population. It is followed by China, with around 200 million adolescents. However, despite adolescents being a huge segment of the population, policies and programs in India have focused very little effort on the adolescent group. Unfortunately, the special needs of adolescents are rarely addressed by the educational, health, and family welfare programs in India. The [UNICEF (2012) Global Report Card](http://www.siliconindia.com/news/life/WHO-Takes-India-off-Polio-Endemic-List-nid-107333-cid-51.html?utm_source=clicktrack&utm_medium=hyperlink&utm_campaign=linkinnews)on Adolescents states that the number of adolescents in India has crossed 22 per cent of the total population ;[47 percent adolescent girls](http://www.siliconindia.com/news/general/Nearly-Half-of-Worlds-Child-Marriages-Occur-In-India-nid-107872-cid-1.html?utm_source=clicktrack&utm_medium=hyperlink&utm_campaign=linkinnews) in India are underweight with a body mass index of less than the prescribed level of 18.5. Such under nutrition leaves adolescents vulnerable to consequences. The report also suggested that [anemia is a severe public health problem in 16 countries](http://www.siliconindia.com/shownews/2_Million_children_die_in_India_every_year-nid-54824-cid-.html?utm_source=clicktrack&utm_medium=hyperlink&utm_campaign=linkinnews), but the largest number of cases being found in India, where more than half of girls aged 15–19 years are anemic. India also displays very glaring gender disparities - while 30% of boys between the ages of 15 and 19 years are anemic, 56% girls in the same age group suffer from the condition. Moreover, high levels of psychiatric morbidity in females increase the risk of developing eating disorders by sevenfold. This is of concern as anemic girls being undernourished are the first to drop out of school and are married off early. India is also listed as a prime destination for adolescent girls to bear children, as some communities in India still go for early marriages which results in early pregnancy. The report found out that 22 percent of women aged 20-24 years gave birth before the age of 18 in India. In adolescent mothers, [under nutrition is related to slow fetal growth and low birth weight](http://www.siliconindia.com/news/business/Tata-Chemicals-Launches-AntiAnaemia-Fortified-Salt-nid-111388-cid-3.html?utm_source=clicktrack&utm_medium=hyperlink&utm_campaign=linkinnews). The adolescent birth rate also stands at 45 - the number of births per thousand women between the ages of 15 and 19 years. More than half of them (56%) are anaemic and 43% are married off before the age of 18. HIV is also emerging as another threat. The risk of HIV infection is considerably higher in young females than young males. While 35% of boys had knowledge of HIV and AIDS, only 28% girls are adequately informed.

Adolescence girls, specifically, are shrouded in myths and misconceptions about sexual health and sexuality. In Indian culture, talking about sex is taboo. Consequently, little information is provided to adolescents about sexual health. Instead, young people learn more about sexual and reproductive health from uninformed sources, which results in the perpetuation of myths and misconceptions about puberty, menstruation. There are approximately 10 million pregnant adolescents and adolescent mothers throughout India at any given time. In girls, poor nutrition can delay puberty and lead to the development of a small pelvis. Malnourished adolescent girls who have babies at a young age are more likely to experience, and will be less able to withstand, complications because the body has not yet reached maturity. Even when they survive, poorly nourished adolescent mothers are more likely to give birth to low birth-weight babies, perpetuating a cycle of health problems which pass from one generation to the next.

|  |
| --- |
| **India's appalling figures**   * 56% girls are anemic, on par with Congo, Burkina Faso & Guinea * 47% girls in the age group of 15 - 19 year are underweight - the highest underweight adolescent girl population * 43% of girls were married off before the age of 18. Only Bangladesh, Niger and Chad have higher figures * 22% gave birth before they turned 18 * 6,000 adolescent mothers die every year. * School attendance dropped from 86% at primary level to 64% for secondary schooling * For girls, school attendance dropped sharply as they move from primary to secondary school - from 83% to 59% |

Thus, the future of adolescent girls in the country seems dismal with a vicious cycle of underweight adolescence, child marriage and maternal mortality. And it is essential to assess the specific health and development needs of adolescent girls, especially in rural India, where they face many challenges that hinder their well being, including poverty, a lack of access to health information and services, and unsafe environments. Henceforth, interventions in their lifestyle with respect to adequate nutrition and healthy eating; physical exercise habits and positive mood state, can save lives and foster a new generation of productive adults who can help their communities progress.

**2. Project aim and objectives**

Vision

Adolescence is a period with the optimal mix of physical, psychological and behavioral potential, and thus the opportune time for laying the foundations for a healthy, responsible, and productive life ahead. With this view and the concerns discussed above, AFND aims at empowering the adolescent girls of Kancheepuram district of Tamil Nadu through positive stimulation and a congenial environment with respect to their lifestyle modification (food, mood and exercise) , which would help the adolescents to turn up into dynamic future representatives of the country.

Goals and Objectives of the Project

* To sensitize adolescents and community on adolescent health and healthy lifestyle
* To encourage families and communities to promote and protect the adolescents’ need for a safe and supportive environment as outlined in the Convention of the Rights of the Child
* To promote adolescent health in the target areas and district as a whole
* To prevent and manage diseases & improve the health status of adolescent girls through baseline assessment, followed by alteration in their dietary pattern and choices; psychological counseling , psychotherapy; exercise prescription and postural care
* To provide life-skills training that is age-appropriate and culturally-acceptable, enabling adolescents to cope with their health and development including reproductive health
* To change their mind set towards a positive outlook for their body, mind and soul
* To sensitize them on self-care and self –management of health
* To provide assistance during the course of intervention followed by post-assessment and follow-up
* To initiate formation of adolescent girls’ health network and strengthen it
* To collaborate this network with other health networks in the district

**3. Project Design**

*Beneficiaries & expected outcome*:

10,000 (ten thousand rural girls) adolescent girls of rural area, living in villages in Kancheepuram district of Tamil Nadu state in Southern India (geographical representation of the location is shown below) will be educated about health, food, nutrition and its link with infectious and non-communicable diseases (NCDs), thus increasing their capacity to take decisions about improving their health and take preventive steps to decrease the prevalence of infectious and NCDs in the community, thereby improved quality of life.

15 community health workers and 15 village health workers will also be trained as basic health educators, particularly from the area of health, food, & nutrition, to provide social support for prevention of infectious and NCDs in the area.

*Time Duration*: 1 year

*Geographical representation of the location for intervention:*





This area is chosen for the intervention because of:

* lack of implementation of such program in the district
* geographic convenience
* availability of local support, which would facilitate future intervention and research

**4. Project Sustainability**

With the initiation of lifestyle modification amongst adolescent girls along with community involvement, Association of health, food, nutrition and dietetics (AFND) aspires to **set up a centre for food, mood and exercise** for the prevention and management of diseases in the Kancheepuram district – run by healthcare professionals (nutritionists, physiotherapists, psychologists, exercise physiologist, yoga therapist & medical lab technicians) & **managed by adolescent girls of the district**. The future plans also include providing the services efficiently in the centre and prove it as a ‘Model Centre for prevention and management of diseases through interference in the lifestyle’; so that the project can be started in other districts with greater acceptability. Additionally, expanding the **‘adolescent girls’ health network’** to other districts in the state and finally linking it with the State Health Network, so that these girls get a platform to raise their voices.

Henceforth, AFND aim to sustain this project minimum for the next 5 years, so as to interface with stakeholders on various forums regarding issues and concerns on adolescent health in the rural area of Tamil Nadu and build movement towards demand for **health rights of adolescent girls in the state**. Also, the project will not only empower those girls but also benefit the community as a whole.

**5. Project Methodology**

AFND will identify target areas in the Kancheepuram district and will follow “**participatory methodology”,** because it is a new attempt and intervention with adolescent girls is a sensitive issue. Thus along with AFND, adolescent girls and community members will participate in planning and implementation of the project in their target area, the major activities are as follows:-

* AFND will organize community level meetings (adolescent girls, their family members, members of Panchayati Raj Institution, leaders etc.) - to generate awareness on adolescent health and sensitize them on healthy lifestyle
* Then, a group of adolescent girls and family members will be selected from the target area who will assist in preparing profiles of adolescent girls; preparing Information, Education & Communication materials (IEC); organizing focus group discussions, workshops, adolescent friendly clinic; maintaining beneficiaries’ tracking sheet; assist in promoting health through rally/demonstration; assist in strengthening the adolescent girls’ health network by adding more girls to it
* AFND along with the group of adolescent girls and family members will conduct focus group discussion with their parents to identify quality of life and socio-cultural beliefs and myths related to adolescent health and hygiene
* They will apply Behavioral Change Communication (BCC) strategy to combat such socio-cultural beliefs and myths in the community
* They will plan the schedule and arrange adolescent friendly clinic which will be a ‘preventive and management program’ based on alteration in their dietary pattern and mood states along with exercise prescription, which will include:

1. **Baseline assessment**

* Anthropometric measurements (height, weight, body fat, body mass index, metabolic testing)
* Pulse, respiration, Blood pressure measurement
* Biochemical testing (Thyroid function test, fasting blood sugar, post-prandial blood sugar & lipid profile, hemoglobin etc.)
* Food, Mood & Exercise assessment
* Baseline report generation

1. **Goal setting**

Group counseling of adolescent girl with nutritionists, physiotherapists and psychologists on basis of baseline report, followed by setting of the goal for intervention

1. **Primary Intervention**

**Food**:

* Modification of grocery lists
* Sensitization on portion control
* Healthy recipe sheets
* Meal plan for healthier alternatives
* Portion tool kit
* Healthy cookery demonstration

**Mood:**

* Behavioral Modification program
* Life skills education
* Stress management therapy
* Cognitive therapy
* Meditation etc.

**Exercise:**

* Cardio exercises
* Muscle toning & strengthening exercises
* Relaxation & stretching exercises through Yoga
* Postural care
* Physiotherapist guided therapeutic exercises
* Exercise Kit (stepper, dumbbells, swiss ball, thera band, pedometer)

1. **Behavioral change program:**

* Post assessment
* Self care and self maintenance tips
* Education material
* Personal diary for self-assessment
* Intervention report
* They will follow-up the cases (adolescent girls) who have undergone the intervention program
* They will form a network of adolescent girls, which will discuss/share their health-related issues and concerns, promote adolescent health through various means (role plays, drama, competition etc.) in their target area, raise their healthcare- related needs, wants and rights
* They will conduct workshops with adolescent girls and their parents on life skill education, physical and psychological impact in adolescence, gender disparity, child/early marriage, teenage pregnancy, sexual health, adolescent hygiene, adolescent acts and laws, youth policies and schemes
* They will strengthen the network by frequent meetings with the members of network formed in other target areas and promote adolescent health in a broader way by rally, demonstrations etc. in the district.
* Finally, they will collaborate adolescent girls health network with the other networks already present in the district

**6. Project Timeline and Activities:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activities** | **Months** | | | | | | | | | | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| Baseline survey | **\*** |  |  |  |  |  |  |  |  |  |  |  |
| Community level meetings |  | **\*** |  |  |  |  |  | **\*** |  |  |  |  |
| Formation of group for assistance |  | **\*** |  |  |  |  |  |  |  |  |  |  |
| Preparation of profile of adolescent girls | **\*** | **\*** |  |  |  |  |  |  |  |  |  |  |
| Preparation & pilot testing of IEC material | **\*** | **\*** |  |  |  |  |  |  |  |  |  |  |
| Capacity building of health workers | **\*** | **\*** |  |  |  |  |  |  |  |  |  |  |
| Focus group discussion with parents |  |  | **\*** |  |  |  |  |  |  |  |  |  |
| Application of BCC strategy |  |  | **\*** |  |  |  |  |  |  |  |  |  |
| Implementation of preventive and management program |  |  |  | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** |  |  |  |
| Follow-up of the cases |  |  |  |  |  |  |  |  |  | **\*** | **\*** | **\*** |
| Conduct workshops on adolescent health and issues |  |  |  | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** |
| Formation of adolescent girls health network |  |  | **\*** |  |  |  |  |  |  |  |  |  |
| Action by the network - discussion, sharing; health promotion & raising voices |  |  |  | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** |
| Strengthening the network by collaboration with other networks |  |  |  | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** | **\*** |
| Development of software to track all the activities | **\*** |  |  |  |  |  |  |  |  |  |  |  |
| Monitoring, evaluation & reporting |  |  | **\*** |  |  | **\*** |  |  | **\*** |  |  | **\*** |

**7. Project Outcome & Impact:**

**Input Process Output Outcome Impact**

-Empowerment of adolescent girls; increased levels of competence to utilize services and make healthy choices

-Adolescent rights promotion & gender equity promotion

-Reduced risk of multiple health morbidities through comprehensive programming;

maternal mortality and complications during childbirth

-Reduced HIV incidence and unwanted pregnancies among adolescents

-Reduced sexual risk-taking

-Reduced engagement in violent behavior

-Engagement in pro-social behavior

-Increased involvement in youth leadership activities at community Level

-Improved human resource development and capacity to serve adolescents in health information and service provision

-Improved physical, intellectual, emotional, civic and cultural development

-Healthier lifestyles, improved health status & decision-making for adolescents in the present & future

-Realization of adolescent rights

-Advocacy for inclusion of adolescent-specific programs into national health priorities and plans

-Promotion of protective factors and reduction of risk factors

-Research & knowledge sharing of best

practices in adolescent health and policies at State Level

-Ongoing government support of adolescent-specific programs

-Ongoing commitment to improve the health and education of youth

- Sustenance of “enabling policies” that

promote adolescents’ wellbeing

-Integrated preventive, promotive and management of health services

-Life skills programs focusing primarily on health but also violence, substance abuse prevention etc.

-Providing supportive environment which enhances their development and capacity to participate

-Access to basic health education, relevant information, health services and adolescent girls’ network

-Participation in program assessment, design, implementation and monitoring

-Sensitization and strengthening of community as a whole towards adolescent girls’ concerns and health

-Provision of a platform to adolescent girls to share issues and raise voices for their health rights

-Enable adolescent girls to cope up with their health and development

-Life skills development such as

critical thinking and decision making

-Engagement of family and

community members in adolescent

programs

-Reduction in risk factors and

negative risk behaviors by

adolescents

-Staff

-Software for tracking the activities

-Time for planning and implementation

-Finance

-Other resources (exercise equipments, portion tool kits, IEC material, BP instrument, pedometer, body composition analysis machine, goniometer, spirometer etc.)

**jjjdss**

**8. Project Monitoring**

The indicators will be framed on the basis of the above Input-Impact framework; monitoring will be an on-going process and evaluation will be done quarterly by the team of AFND members and adolescent girls.

At the end, an external evaluation of the project will be performed.

**9. Project Budget: beneficiaries – 10,000 adolescent girls; time period – 1 year**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.NO** | **BUDGET LINE ITEM** | **BUDGET BREAK UP** | **PROPOSED BUDGET (INR)** |
| 1 | **Manpower**   * Project holder * Monitoring, evaluation & communication officer * Documentation officer * Research nutritionists (5) * Research psychologists (5) * Research physiotherapists (5) * Yoga therapist (3) * Medical lab technician (3) * System analyst * Adolescent health specialist * Consultants (3) * Accountant | **Budget head – Salary; honorarium**    Rs.17000\*12 months  Rs.20000\*12 months  Rs.20,000\*12 months  Rs.10000\*5\*12 months  Rs.10000\*5\*12 months  Rs.10000\*5\*12 months  Rs.8000\*3\*12 months  Rs.5000\*3\*12months  Rs.15000\*12months  Rs.3000\*12months  Rs.3000\*3\*12months  Rs.20000\*12months | 204000  240000  240000  600000  600000  600000  288000  180000  180000  36000  108000  240000 |
| 2 | **Activities**   * Baseline survey * Lifestyle intervention program * Health promotion * Networking | **Budget head - Travel with lodging and boarding, venue & refreshment; laboratory investigations**  Lump sum of Rs. 4500000 | 4500000 |
| 3 | **Materials**   * Software development * Publication of IEC * Sphygmomanometer, weighing scale, exercise kit, portion tool kit, body composition analysis machine, spirometer, goniometer * Printing of formats & Registers * Computer, printer, scanner, LCD projector * Office stationary, Photostat & postage * Telephone, fax & internet | Rs.50000  Rs.100000  Rs.150000  Rs.1000\*12 months  Rs. 92,000  Rs. 2000\*12 months  Rs.3000\*12months | 50000  100000  150000  12000  92000  24000  36000 |
| 4 | **Miscellaneous**   * Audit Fees * Med claim & Insurance * Office rent * Local travel in Chennai * Travel to attend workshop/meeting on related issues | Rs. 30000  Rs.300\*45\*12months  Rs.20000\*12months  Rs.2000\*12months  Lump sum of Rs.10000 | 30000  162000  240000  24000  10000 |
| **TOTAL INR 89,46,000** | | | |