APPENDIX - VI

SECTION: A

PART I A – SOCIO-DEMOGRAPHIC DATA

1. Name of the child

2. Age
   a. 5-6 years
   b. 7-9 years
   c. 10-12 years
   d. 13-17 years

3. Standard
   a. 1 – 3
   b. 4 - 6
   c. 7 - 9
   d. 10 - 12

4. Sex
   a. Male
   b. Female

5. Birth Order of the child
   a. First Child
   b. Second Child
   c. Third Child
   d. Fourth Child

6. Type of the family
   a. Joint
   b. Nuclear

7. Family Income
   a. Less than Rs. 1,000/-
   b. Rs. 1,001/- to Rs. 1,000/-
   c. Rs. 5,001/- to Rs. 10,000/-
   d. Rs. 10,001/- to Rs. 15,000/-
   e. > Rs. 15001
8. Religion
   a. Hindu
   b. Muslim
   c. Christian
   d. Others

9. Education of father
   a. Illiterate
   b. Primary
   c. Secondary
   d. High School
   e. Higher Secondary
   f. College

10. Education of mother
   a. Illiterate
    b. Primary
    c. Secondary
    d. High School
    e. Higher Secondary
    f. College

11. Occupation of father
    a. Employed
    b. Unemployed

12. Occupation of Mother
    a. Employed
    b. Unemployed
PART I I – CLINICAL DATA

1. Weight

2. Height

3. BMI(Percentile):

4. Birth Weight
   a. Less than 2.5 Kg
   b. 2.5 to 3.5 Kg
   c. More than 3.5 Kg
   d. Don’t know

5. Gestational age at birth
   a. Full term
   b. Pre term

6. Breast feeding duration
   a. Nil
   b. > 6 m
   c. 6m <

7. Family history of obesity
   a. One obese member
   b. Two obese member
   c. Three obese member
   d. No obese member

8. How the child is going to school?
   a. By walk
   b. By vehicle
   c. By cycling

9. How many hours the child used to have active physical play/exercise at home per day?
   a. Less than half an hour
   b. Half to one hour
   c. More than one hour
   d. None
10. Duration of TV watching by your child
   a. 1hr/day
   b. ≥ 2hrs/day
   c. ≥ 3hrs/day on holidays

11. Do your children suffer with any physical / psychological problems at present due to obesity?
   a. Yes
   b. No

12. If yes, what is/are the problem(s)?
   a. Chest pain
   b. Leg pain
   c. Breathing difficulty
   d. Hypertension
   e. Separation from peer
   f. Chest pain and breathing difficulty

13. Previous exposure to health education on obesity
   a. Yes
   b. No

14. If yes, Source:
   a. Mass media
   b. Doctor
   c. Nurse
   d. Dietician
   e. Doctor and dietician

15. Diet
   a. Vegetarian
   b. Non – Vegetarian

16. High energy foods taken
   a. Once a week
   b. 2-3 times
   c. Daily

17. 3 days diet diary

18. Normal expected calorie intake
SECTION- B
(i) QUESTIONNAIRE ON KNOWLEDGE

1. Do you know your child’s current weight?
   a. Yes
   b. No

2. Do you know your child is obese?
   a. Yes
   b. No

3. What is childhood obesity?
   a. When the child’s weight is above 97th percentile line according to his/her age in the growth chart
   b. I don’t know

4. Do you know in which situation parents will force children to eat more?
   a. If the child is born earlier than the expected date of delivery
   b. After some sickness
   c. After operation
   d. I don’t know

5. Do you know in which situation children are prone to eat more?
   a. Happy mood
   b. Depressed mood
   c. After the death of a parent or a relative
   d. After the separation from loved ones
   e. Unstable family situations
   f. I don’t know

6. What is the genetic cause for childhood obesity?
   a. Family history of obesity among parents, grand father, grandmother, uncle and aunt
   b. Childhood obesity is not caused by family history
7. What are the diet related causes for obesity in children?
   a. Over eating of the regular meal itself
   b. Taking more than one snack in between the meals
   c. Eating high fat food items like fried foods, creams, butter, ghee, etc.
   d. I don’t know

8. What are the physical activity related cause for obesity among children?
   a. Limited or no outdoor physical activities like play, Cycling, etc.
   b. Watching TV most of the time
   c. Going to school by vehicle
   d. I don’t know

9. What are the physical problems that can occur due to Childhood obesity?
   a. Leg pain
   b. Back pain
   c. Joint pain
   d. White marks on the skin due to over stretching of skin
   e. Less active
   f. Sleeping more than 10 hours per day
   g. I don’t know

10. What are the psychological problems that can occur due to Childhood obesity?
    a. Poor impression about himself/herself
    b. Separation from friends
    c. Child will not be willing to participate in any outdoor activities
    d. I don’t know

11. What are the physical complications that can occur in obese children?
    a. Breathing difficulty
    b. Repeated respiratory infections
    c. Heart problems
    d. Increased blood pressure
    e. Weakness of one side of the body
    f. Constipation
    g. Diabetes mellitus
    h. Cancer
    i. I don’t know
12. Why is it important to control or prevent obesity in children
   a. To reduce the change of obesity larger in adulthood
   b. To prevent above said complications in childhood
   c. I don’t know

13. Do you know which type of foods to be completely avoided to control obesity?
   a. Oil containing foods such as deep fried chips, vegetables, fish & meat
   b. Milk products like creams, ice creams, condensed milk, Puddings.
   c. Oils and dalda
   d. Sugary items such as jam, sugar, honey, sweets, chocolates, cakes and biscuits
   e. Sweetened and carbonated bottle drinks like Pepsi, Coco cola, Fanta, Limca etc.
   f. I don’t know

14. Which type of foods can be taken by obese child moderately?
   a. Cooked fish, meat, with less fat, egg.
   b. Nuts and pulses
   c. Cheese, milk and skimmed milk
   d. I don’t know

15. Which type of foods obese child can ear freely
   a. All vegetables in different forms like raw, boiled or steamed
   b. Salads and fruits
   c. Tea and coffee with no or less sugar
   d. I don’t know
16. What are the exercise measures an obese child can do to control it?
   a. Encourage the child to have half an hour walking exercise in the morning and in the evening.
   b. To identify and treat the above mentioned complication as early as possible.
   c. Advice the child to do some of the household activities like sweeping/washing their clothes.
   d. Encourage the child to participate in active outdoor play at least 1 hour per day by minimizing TV watching time.
   e. I don’t know.

17. Why obese children need to have regular follow up?
   a. To identify and treat the above mentioned complication as early as possible.
   b. To make necessary changes in the treatment if it is needed.
   c. I don’t know.
### ATTITUDE SCALE

<table>
<thead>
<tr>
<th>SI.NO</th>
<th>STATEMENT</th>
<th>SD</th>
<th>D</th>
<th>U</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Children with obesity will have normal healthy life (P)</td>
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<tr>
<td>2</td>
<td>Childhood obesity is not a serious disease (N)</td>
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<td>3</td>
<td>A high incidence of obesity is posing a real threat among children (P)</td>
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<td>4</td>
<td>Once obese weight reduction is impossible (N)</td>
<td></td>
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<td>5</td>
<td>Obesity runs in families (P)</td>
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<td>6</td>
<td>Diet is the most important factor causing childhood obesity (N)</td>
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<td>7</td>
<td>Childhood obesity can be prevented (P)</td>
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<td>8</td>
<td>Childhood obesity can be treated even though the result may show slowly (P)</td>
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<tr>
<td>9</td>
<td>It is very difficult to follow the weight reducing regimen (N)</td>
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<tr>
<td>10</td>
<td>After the initial weight loss the weight may be maintained static for months/years (P)</td>
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</tr>
</tbody>
</table>

P – Positive statement  
N – Negative statement  
SD – Strongly Disagree  
D – Disagree  
U – Uncertain  
A – Agree  
SA – Strongly agree
(iii) QUESTIONNAIRE ON COMPLIANCE

DIET:-

1. Are you following the weight reducing dietary regimen correctly? Yes/No
2. Are you avoiding prescribed fat containing food items? Yes/No
3. Are you giving high fibre containing diet, like vegetable and fruits to your child? Yes/No
4. Does your child take snacks frequently other than meal time? Yes/No
5. Does your child take food even when he/she is not hungry? Yes/No
6. Does your child take food items other than mealtime? Yes/No
7. Does your child eat while he/she is sitting in front of TV? Yes/No

EXERCISE:-

1. Are you making the child to do exercises at regular times? Yes/No
2. Are you encouraging the child to have physical play therapy regularly? Yes/No
3. Are you encouraging your child to walk minimum one hour in the morning and evening daily? Yes/No
4. Is your child lazy to do the normal physical activities, which consume energy? Yes/No

FOLLOW UP:-

1. Do you think that follow up of diet and exercise is necessary for your child? Yes/No
2. Do you think your child need to have a regular checkup? Yes/No
IEC ON CHILDHOOD OBESITY AND WEIGHT REDUCING MEASURES

Topic : Childhood obesity and weight reducing measures
Receiver : The parents of obese children (Study group only)
Languages : English & Tamil
Duration of teaching : 30 – 40 minutes
Methods of teaching : One to one Laptop assisted teaching, Booklet and Personal Interaction

Central Objective :

Help the parents of obese children to children and gain knowledge on childhood obesity, develop positive attitude towards childhood obesity and more compliance with weight reducing measures.

Specific Objective :

After attending the teaching programme each parent would be able to

1. Define childhood obesity
2. Enumerate various predisposing factors that can lead to obesity
3. Enumerate the causes of childhood obesity
4. List the problems that can occur due to obesity
5. Enumerate the complications that can occur due to obesity
6. Identify the importance of controlling or preventing obesity in children
7. Enumerate the dietary measures that can be used to control obesity
8. List the exercise that can be done by children
9. Understand the need for regular follow up
**TEACHING MODULE ON WEIGHT REDUCING MEASURES**

<table>
<thead>
<tr>
<th>OBJECTIVE</th>
<th>CONTENT</th>
<th>QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction:</td>
<td>Good morning. Obesity among children, considered a problem in developed countries, is now an increasing problem also in developing countries like India. Obese children can lead normal healthy lives in spite of ever present risks of their health. It doesn’t mean that the obese child cannot achieve normal weight. But after the initial weight loss, the weight can be maintained static for months or even years. The result may show very slowly but still obesity among children can be controlled or prevented. For controlling obesity good co-operation is needed from parents as well as children.</td>
<td></td>
</tr>
<tr>
<td>Parents are able to define childhood obesity</td>
<td>When a child’s weight is above 95th percentile according to his or her age in the growth chart, it is called childhood obesity</td>
<td>What is childhood obesity?</td>
</tr>
</tbody>
</table>
Parents are able to enumerate various predisposing factors that can lead to obesity in children:

- Parents who force children to eat more when they are:
  - Born earlier than the expected date of delivery (Premature babies)
  - After some sickness like Typhoid, Jaundice, etc
  - After an operation like Tonsillectomy
  - Over eating related to psychological factors such as
    - Happy mood
    - Depressed mood
    - Death of a parent or relative
    - Separation from a loved one
    - Unstable family situation

What are the predisposing factors that can lead to obesity in children?

Parents are able to enumerate the causes of childhood obesity:

- Some of the factors which can cause childhood obesity are:
  - Genetic family history of obesity among parents, grand parents, uncles and aunts and siblings
  - Over eating of the regular meal itself
  - Taking more than one snack in between meals
  - Eating high fat or fried food items like deep

What are the causes of childhood obesity?
<table>
<thead>
<tr>
<th>Parents are able to list the problems that can occur due to obesity</th>
<th>Childhood obesity can cause problems mainly in two ways</th>
<th>What are the problems that can occur due to obesity?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fried foods, creams, butter, ghee etc</td>
<td>Physical problems like:</td>
<td></td>
</tr>
<tr>
<td>Limited or no outdoor physical activities like play and cycling.</td>
<td>Leg pain</td>
<td></td>
</tr>
<tr>
<td>Going to school by vehicle</td>
<td>Joint pain</td>
<td></td>
</tr>
<tr>
<td>Watching TV most of the time</td>
<td>Back pain</td>
<td></td>
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<tr>
<td></td>
<td>White marks on the skin due to overstretched</td>
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<tr>
<td></td>
<td>Fatigue</td>
<td></td>
</tr>
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<td></td>
<td>Sleeping more than 10 hours per day</td>
<td></td>
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<tr>
<td></td>
<td>Psychological problems like:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poor impression about oneself (low self-esteem)</td>
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<tr>
<td></td>
<td>Separation from friends</td>
<td></td>
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<tr>
<td></td>
<td>Not willing to participate in outdoor activities</td>
<td></td>
</tr>
</tbody>
</table>
| Parents are able to enumerate the complications that occur due to obesity | Physical complications like:  
Breathing difficulty  
Repeated respiratory infections  
Heart problems  
Increased blood pressure  
Paralysis or weakness on one side of the body  
Constipation  
Diabetes mellitus  
Cancer | What are the complications that can occur due to obesity in children? |
| --- | --- | --- |
| Parents are able to identify the importance of controlling or preventing obesity in children | To reduce the change of obesity later in adulthood  
To prevent the above said problems and complication in childhood | Why is it important to control or prevent obesity in children? |
| Parents are able to enumerate the measures that can be used to control obesity. | **DIET**  
Take___________ calories and _________ grams of fat (calorie and fat will be calculated for each child depending upon his/her age) | What are measures that can be used to control obesity? |
The expected calorie and fat intake for children according to their age and sex are:

<table>
<thead>
<tr>
<th>Age</th>
<th>Calorie</th>
<th>Fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-6 years</td>
<td>1500 kcl</td>
<td>50gms</td>
</tr>
<tr>
<td>7-9 years</td>
<td>1800 kcl</td>
<td>60gms</td>
</tr>
<tr>
<td>10-12 years</td>
<td>2100 kcl</td>
<td>70gms</td>
</tr>
<tr>
<td>13-15 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>2500 kcl</td>
<td>83gms</td>
</tr>
<tr>
<td>Girls</td>
<td>2200 kcl</td>
<td>73gms</td>
</tr>
<tr>
<td>16-18 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>3000 kcl</td>
<td>100gms</td>
</tr>
<tr>
<td>Girls</td>
<td>2200 kcl</td>
<td>73gms</td>
</tr>
</tbody>
</table>

Avoid completely fatty foods such as fried items like, chips, fried fish and meat, butter, ghee, dalda, oils, cream, condensed milk, sugary foods like jam, sugar, honey, sweets, chocolates, icecream, coffee, cakes, biscuits, puddings, sweetened drinks and carbonated drinks like Cococola, Fanta, Pepsi, Mirinda, 7up, Limca etc.

Take moderate amounts of the following foods necessary for growth.
Cooked fish, meat with less fat, egg, cheese, pulses, nuts milk, skimmed milk.

Food that can be eaten freely are:
All vegetables cooked or uncooked salads and fruits
Tea and coffee with less sugar and no milk
Avoid eating while watching TV

**EXERCISE**
Restrict watching TV to one hour daily
Encourage the child to walk at least half an hour in the morning and evening
If the school is within one kilometer distance, advise the child to walk to school and back.
Advise the child to participate in some of the household activities like sweeping or washing clothes
Encourage children to participate in outdoor games for at least one hour per day by reducing T.V. watching time.
Parents are able to understand the need for regular follow up.

| Parents are able to understand the need for regular follow up. | Follow up necessary for obese children because They are more prone to develop the serious complications mentioned above. So they should be identified early and treated. To make necessary changes in the treatment regimen if needed. | Why do obese children need to have regular follow up? |

**CONCLUSION**

Now I hope that you would have understand the various factors that lead to obesity in children and the measures that can be taken to prevent or manage it. So it is important that you encourage your children to follow a proper diet and get more exercise. If possible make exercise a family affair. I expect to see good results when you come back after two weeks Thank you.
### 2 to 20 years: Girls

**Body mass index-for-age percentiles**

<table>
<thead>
<tr>
<th>Date</th>
<th>Age</th>
<th>Weight</th>
<th>Stature</th>
<th>BMI</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

*To Calculate BMI: Weight (kg) = Stature (cm) + Stature (cm) x 10,000
  or Weight (lb) = Stature (in) + Stature (in) x 703*

Published May 31, 2000 [Modified 10/16/05]

SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).

http://www.cdc.gov/growthcharts/
2 to 20 years: Boys
Body mass index-for-age percentiles

<table>
<thead>
<tr>
<th>Date</th>
<th>Age</th>
<th>Weight</th>
<th>Stature</th>
<th>BMI*</th>
<th>Comments</th>
</tr>
</thead>
</table>

*BMI = Weight (kg) / (Stature (cm) ^ 2) x 10,000

To Calculate BMI: Weight (kg) / (Stature (cm) * Stature (cm) x 10,000)

Published May 30, 2000 [modified 10/16/06].
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

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