Appendix
ANNEXURE - I

Scoring technique adapted for assessing nutritional knowledge regarding sources and functions of nutrients: (E1, E2, E3, E4)

**Scoring E1: Do you think that the foods we consume have any function?**
1. Yes
2. No.

Respondents with 1 as their response scored (1) point and moved to E2 whereas women with negative response scored (0).

**Scoring E2: In your opinion how does food help to nourish the body?**
1. Provides material for body building and tissue repair.
2. Protects body from disease and regulates the vital processes.
3. It supplies energy or fuel.
4. Gives strength to work.
5. We will die if we will not eat food.
6. It helps in removing hunger.
7. It improves vision.

Those whose response was 1, 2 and 3 scored (3), those whose response was 1, 2 or 2, 3 or 3, 1 scored (2), those whose response was 1 or 2 or 3 or any other scored (1).

**Scoring E3: Do you know that food is composite of certain chemical substances called nutrients?**
1. Yes
2. No.

Those with a positive response moved to E4 and scored (1) point whereas respondents with 2 as their response scored (0).
**Scoring E4: Nutrients with whom you are familiar?**

1. Proteins
2. Carbohydrates
3. Fats
4. Minerals
5. Vitamins
6. Roughage

Those respondents who named more than three responses scored (3), those who named any three scored (2) and those who were familiar with less than three nutrients scored (1) point.

**Scoring E5: Which nutrient in your opinion is essential for body building?**

1. Proteins
2. Fats
3. Carbohydrates
4. Vitamins
5. Minerals

Those whose response was 1 or 1 and 4 scored (3) points and those whose response was other than 1 scored (1) point only.

**Scoring E6: Which nutrient in your opinion is mainly concerned with energy production?**

1. Carbohydrates
2. Vitamins
3. Minerals
4. Proteins
5. Fats

Those respondents whose response was 1 and 5 scored (2) points, those women whose replay was 1 or 5 scored (2) and
lastly women whose answer was other than 1 and 5 scored (1) point only.

Scoring E1: Which nutrients do you think are responsible for giving protection against diseases?
1. Vitamins
2. Minerals
3. Proteins
4. Carbohydrates
5. Fats

Respondents with their responses as 1 or 1 and 2 scored (3) points, those whose response was other than 3 scored (1) point only.

Scoring E2: Which food group do you think supplies energy or calories?
1. Cereals, pulses
2. Nuts
3. Roots and tubers
4. Fats and oils
5. Sugar
6. Green-leafy vegetables
7. Milk and milk products
8. Meat, fish and poultry (flesh foods)
9. Fruits

Those respondents who responded positively to 5 out of first 6 scored (3) points, those who named any four out of first 6 (including 5th and 6th positively) scored (2) points and those with any other response scored (1) point.

Scoring E3: Which foods are concerned with supply of proteins?
1. Cereals and Pulses
2. Nuts
3. Roots and Tubers
4. Fats and Oils
5. Sugar
6. Green-leafy Vegetables
7. Milk and Milk Products
8. Meat, Fish and Poultry
9. Fruits

Respondents with responses as 1, 8 and 9 scored (3) points and 9, 8 or 9 only scored (2) points and those whose response was other than above mentioned (1, 8 and 9) scored (1) point only.

**Scoring E₁₀:** Which foods supply vitamins and minerals?

1. Cereals and Pulses
2. Nuts
3. Roots and Tubers
4. Fats and Oils
5. Sugar
6. Green-leafy Vegetables
7. Milk and Milk Products
8. Flesh Food (Meat/ Fish/ Poultry)
9. Fruits

Those ladies whose response was 3, 7, 9 scored (3) points, those whose response was 3 or 7 or 10 or any combinations these scored (2) points and those with other than these responses scored (1) point.

**Scoring E₁₁:** What is a balanced diet in your opinion?

1. Rice and Sag
2. Meat / Fish / Poultry / Milk / Egg
3. Foods that provide all nutrients required for growth and health.
4. Fruits
5. Foods from all groups in proper proportion
6. Green-leafy Vegetables

Respondents with their response as 5 scored (3) points, those whose replay was 3 scored (2) points and those with other than these tow options (3, 5) scored (1) point.
ANNEXURE - II

Scoring system adopted for assessing knowledge regarding nutritional requirements: (E2)

**Scoring F₁:** Do you know there are recommended dietary allowances for each nutrient?
1. Yes
2. No
Score for Yes was (1) and for No (0). Those respondents whose response was Yes moved to F₂ and scored (1) point and those with no as their response scored (0).

**Scoring F₂:** Do you think energy requirement of sedentary, moderate and heavy worker differs?
1. Yes
2. No
Score for Yes was (1) and for No (0). Ladies with a positive response gained (1) point and moved to F₃ whereas those with negative response scored (0).

**Scoring F₃:** Who requires the maximum energy?
1. Sedentary Worker
2. Moderate Worker
3. Heavy Worker
Women whose answer was 3 scored (3) points, those with their response as 2 or 3 or 4 gained (1) point only.

**Scoring F₄:** Are there certain periods in life when extra nutrients are required?
1. Yes
2. No
Those with a positive response scored (1) and moved to $F_{ib}$ whereas those women whose response was No scored (0).

**Scoring $F_{ib}$: Specify the periods in life when extra nutrients are required?**

1. Adolescence
2. Pregnancy
3. Lactation
4. During Stress and Strain, Illness
5. During Menstruation
6. Immediately after delivery

Respondents with their responses as 2, 3, 6 plus any other scored (3) points, those with their responses as 2 or 3 or 6 scored (2) points and those with their responses other than 2, 3 or 6 scored (1) point only.

**Scoring $F_{sb}$: Do you think women require more iron than men?**

1. Yes
2. No

Respondents with 1 as their responses scored (1) and moved to $F_{sb}$ whereas those with No as their response scored (0).

**Scoring $F_{sb}$: Specify the reason for more iron requirements of women.**

1. Due to losses of blood during menstruation.
2. They bear the brunt of pregnancy and lactation.
3. They are weak
4. They have to work hard.

Women with their response as 1 and 2 or 1 or 2 scored (3) points, those with other than this response scored (1) point only.
Scoring system adapted for assessing knowledge regarding cooking practices and nutrient loss: (E3)

Scoring $G_{1A}$: Do you think vegetables and fruits should be peeled after washing?
1. Yes
2. No

Women with Yes as their response scored (1) point and moved to $G_{1B}$ whereas those with 2 as their response scored (0) points.

Scoring $G_{1B}$: Specify the reason for the above (peeling after washing).
1. Nutritive value of fruits and vegetables decreases if they are washed after peeling.
2. Nutritive value increases
3. Cooking times is reduced
4. Digestibility of fruits and vegetables increases.
5. To remove dirt and grim
6. To reduce infections

Respondents with 1 or 1 and 5 as response scored (3) points and those with any other response scored (0).

Scoring $G_{2}$: Which method of cooking results in minimum loss of nutrients?
1. Frying
2. Boiling
3. Baking
4. Roasting
5. Pressure Cooking

Those respondents whose replay was 3 or 4 or 5 or all the three scored (3), those whose response was 2 scored (2), whereas those whose response was other than 2, 3, 4 or 5 scored (1).
**Scoring G₃A:** Do you think that excess cooking water should be discarded?

1. Yes
2. No

Those with 1 as their response scored (1) point moved to G₃B while others scored (0).

**Scoring G₃B:** Specify the reason for not throwing excess cooking water.

1. Water soluble nutrients will be lost.
2. Protein content of food will decrease.
3. Foods will not be absorbed properly in the body.
4. Fats are lost through water.
5. Palatability of food decreases.

Ladies with their response as 1 or 1 and 5 scored (3) those with other than these responses scored (1).

**Scoring G₄A:** Do you think consumption of raw vegetables as salads is more nutritious than cooked vegetables?

1. Yes
2. No

Those with 1 as their response scored (1) and moved to G₄B and those with 2 gained (0) points.

**Scoring G₄B:** Specify the reason for considering salads more nutritious than cooked vegetables.

1. Raw vegetables are richest sources of minerals and vitamins
2. Cooking destroys vitamins
3. Raw vegetables are not digestible than cooked ones
4. Raw vegetables are good sources of vitamins
5. Raw vegetables contain more vitamins B₁ than cooked ones.
Ladies with the response as 1 and 1,3 scored (3) points, those with 1 as their response scored (2) where as others scored (1) point.

Scoring G5: How many times should he rice washed before cooking?

1. Thrice
2. Twice
3. Once

Women with their responses as 3 scored (3) points where as those with 2 as their response scored (2) points and lastly those with 1 as their response scored (1) point.
QUESTIONNAIRE

SECTION - A

GENERAL INFORMATION:
1. Name _______________ 3. Age _______________
2. Residence _______________ 4. Religion _______________
5. Educational Status:
   Illiterate / Primary / Secondary / Graduate / P.G.
6. Occupation:
   a) Working b) Non – Working
      i) Govt. Employee
      ii) Farming
      iii) Any other
7. Total Monthly Income:
8. Socio – Economic Status:
   Upper class/Upper-Middle/Lower-Middle Class/Lower Class
9. Type of family:
   Joint / Nuclear.
10. Family size:
11. Number of Children:
12. Physiological Status:
   Pre – pregnant / Pregnant / Lactating / Non – pregnant Non-
   lactating

SECTION – B

ANTHROPOMETERIC MEASUREMENTS:
1. Height (in cms)
2. Weight (in Kgs)
3. Wt/Ht^2 (in m)
SECTION – C

CLINICAL EXAMINATION:

1. **GENERAL APPEARANCE:**
   Normal built / Thick built / Thin built / Over Weight.

2. **HAIR:**
   Normal / Dull / Easy pluck-ability

3. **EYES:**
   Bitots Spots / Pale Conjunctiva / Poor Vision in dim light / Normal.

4. **LIPS:**
   Normal / Angular Stomatitis / Cheilosis.

5. **TONGUE:**
   Normal / Red and Raw / Pale and Flabby.

6. **TEETH:**
   Normal / Dental Caries / Poor Chewing.

7. **GUMS:**
   Normal / Bleeding gums.

8. **SKIN:**
   Normal / Dry and Scaly / Diffused depigmentation.

9. **NAILS:**
   Normal / Spoon Shaped / White Spots over nails.

*(source: "Social and Preventive Medicine" by K. Park 1997)*

SECTION – D

DIETARY HABITS:

1. **Nature of diet:**
   Vegetarian / Non vegetarian.
2. *If Vegetarian do you consume the following foods?*
   i) Eggs
   ii) Cheese
   iii) Curds

3. *Which foods do you like most?*

4. *Which foods you dislike most?*

5. a) *Do you follow any food taboos?*
   i) Yes
   ii) No

   b) *If yes, specify if any of these,*
   i) Fish and curds
   ii) Fish and milk
   iii) Curds and dal
   iv) Eggs and milk
   v) Any other, specify


7. *Vegetable commonly consumed in winter.*

8. *What is your meal pattern?*
1. *Food you often consume for various meals:*
   
i) Breakfast.
   
ii) Lunch.
   
iii) Afternoon.
   
iv) Dinner.
   
v) Any other.

10. *Do you use vegetables as salads?*
   
i) Yes
   
ii) No

11. *Do you include fruits in your daily diet?*
   
i) Yes
   
ii) No

12. *Medium of cooking vegetables?*
   
i) Mustard oil.
   
ii) Vegetable oil.
   
iii) Any other, specify.

13. *Dietary Recall (24 hours recall)*

   **DAY / DATE /**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Type of Food</th>
<th>Food Stuffs</th>
<th>Quantity in (House hold measures)</th>
<th>Quantity in gms</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Breakfast</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii.</td>
<td>Lunch</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>iii.</td>
<td>Tea Time</td>
<td></td>
<td></td>
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<tr>
<td>iv.</td>
<td>Dinner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v.</td>
<td>Any other</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. What is frequency of consumption of following food stuffs?

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Food Stuffs</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Rice</td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Wheat flour</td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>Bengal gram dal.</td>
<td></td>
</tr>
<tr>
<td>iv</td>
<td>Green gram dal.</td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>Rajmah</td>
<td></td>
</tr>
<tr>
<td>vi</td>
<td>Hak (Brussel Sprouts)</td>
<td></td>
</tr>
<tr>
<td>vii</td>
<td>Spinach.</td>
<td></td>
</tr>
<tr>
<td>viii</td>
<td>Knol-Khol greens</td>
<td></td>
</tr>
<tr>
<td>ix</td>
<td>Carrot</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td>Onions</td>
<td></td>
</tr>
<tr>
<td>xi</td>
<td>Potatoes</td>
<td></td>
</tr>
<tr>
<td>xii</td>
<td>Radish</td>
<td></td>
</tr>
<tr>
<td>xiii</td>
<td>Turnip</td>
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<tr>
<td>xiv</td>
<td>Brinjal</td>
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<td>xv</td>
<td>Cucumber</td>
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<td>Egg</td>
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</tr>
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<td>xxiv</td>
<td>Chicken</td>
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<tr>
<td>xxv</td>
<td>Milk</td>
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<td>-----</td>
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</tr>
<tr>
<td>xxv</td>
<td>Curds</td>
<td></td>
</tr>
<tr>
<td>xxvi</td>
<td>Butter</td>
<td></td>
</tr>
<tr>
<td>xxvii</td>
<td>Tea (Salt)</td>
<td></td>
</tr>
<tr>
<td>xxviii</td>
<td>Tea (Sugar)</td>
<td></td>
</tr>
<tr>
<td>xxix</td>
<td>If any other specify</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D</th>
<th>Daily</th>
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<tbody>
<tr>
<td>W1</td>
<td>Weekly Once</td>
</tr>
<tr>
<td>W2</td>
<td>Twice in a Week</td>
</tr>
<tr>
<td>W4,5</td>
<td>4-5 Times a Week</td>
</tr>
<tr>
<td>M1</td>
<td>Monthly Once</td>
</tr>
<tr>
<td>O</td>
<td>Occasionally</td>
</tr>
</tbody>
</table>

15. **Specific question for pregnant lactating women.**
   a) Do you consume any special foods during pregnancy lactation?
      i) Yes
      ii) No
   b) If yes, specify.

**SECTION – E**

**NUTRITIONAL KNOWLEDGE:**

1. Have you any knowledge about "Foods and Nutrition"?
   i) Yes
   ii) No.

2. If yes, specify the sources of information.
   i) School
   ii) College
   iii) Through Radio / T.V. / Magazines / Books and Bulletins / Relatives and Friends / Other sources

**E1. KNOWLEDGE REGARDING SOURCES AND FUNCTIONS OF NUTRIENTS:**

1. Do you think that the foods we consume have any function?
   i) Yes
   ii) No
2. *In your opinion how does food help to nourish the body?* (Tick as many options as you feel are right).
   
i) It provides material for body building and tissue repair.
   
ii) It protects the body from disease and regulates the vital processes
   
iii) It supplies energy or fuel.
   
iv) Any other specify.

3. *Do you know that the food is composite of certain chemical substances called nutrients?*
   
i) Yes
   
ii) No.

4. *If yes, tick the ones with whom you are familiar.*
   
i) Proteins.
   
ii) Carbohydrates.
   
iii) Fats.
   
iv) Minerals.
   
v) vitamins.
   
v) Roughage.

5. *Which nutrient in your opinion is essential for body building?*
   
i) Proteins.
   
ii) Fats.
   
iii) Carbohydrates.
   
iv) Vitamins.
   
v) Minerals.

6. *Which nutrient in your opinion is mainly concerned with energy production?*
   
i) Carbohydrates.
   
ii) Vitamins.
   
iii) Minerals.
7. Which nutrient do you think is responsible for giving protection against diseases?
   i) Carbohydrates.
   ii) Proteins.
   iii) Fats.
   iv) Vitamins.
   v) Minerals.

8. Which foods do you think supply energy or calories?
   i) Cereals, pulses,
   ii) Nuts,
   iii) Roots and Tubers,
   iv) Fats and oils,
   v) Sugar.
   vi) Green-leafy vegetables.
   vii) Milk and milk products.
   viii) Meat, fish and poultry (flesh foods).
   ix) Fruits.

9. Which foods are concerned with supply of proteins?
   i) Cereals, pulses,
   ii) Nuts,
   iii) Roots and Tubers,
   iv) Fats and oils,
   v) Sugar.
   vi) Green-leafy vegetables.
   vii) Milk and milk products.
   viii) Meat, fish and poultry (flesh foods).
   ix) Fruits.
10. Which foods supply vitamins and minerals?
   i) Cereals, pulses,
   ii) Nuts,
   iii) Roots and Tubers,
   iv) Fats and oils,
   v) Sugar.
   vi) Green-leafy vegetables.
   vii) Milk and milk products.
   viii) Meat, fish and poultry (flesh foods).
   ix) Fruits.

11. What is a balanced diet in your opinion?

E2. Knowledge Regarding Nutritional Requirements:

1. Do you know that there are recommended dietary allowances for each nutrient?
   i) Yes.
   ii) No.

2. Do you think that energy requirement of sedentary, moderate and heavy worker differs?
   i) Yes
   ii) No

3. Who requires the maximum energy?
   i) Sedentary worker.
   ii) Moderate worker.
   iii) Heavy workers.

4. Do you think that there are certain periods in life when extra nutrients are required?
   i) Yes
   ii) No

5. If yes, what are they specify
6. Do you think that women require more iron than men?
   i) Yes.
   ii) No.

7. If yes why?

E3. Knowledge regarding cooking practices and nutrient loss:

1. a) Do you think that vegetables and fruits should be peeled after washing?
   i) Yes.
   ii) No.

   b) If yes, specify the reason:
   i) The nutritive value of fruits and vegetables decreases if they are peeled after washing.
   ii) Nutritive value increases.
   iii) Cooking time is reduced.
   iv) Digestibility of food and vegetables increases
   v) Any other specify.

2. Which method of cooking results in minimum loss of nutrients?
   i) Frying.
   ii) Boiling.
   iii) Baking.
   iv) Roasting.
   v) Pressure cooking.

3. Do you think that excess cooking water should be discarded?
   i) Yes
   ii) No

4. If no, specify the reason:
   i) Water soluble nutrients will be lost through water.
   ii) Protein content of food will decrease.
iii) Foods will not be absorbed properly in the body.
iv) Fats are lost through water.
v) Any other specify.

5. Do you think that consumption of raw vegetables as salads are more nutritious than cooked vegetables?
   i) Yes
   ii) No

6. If yes, specify the reason:
   i) Raw vegetables are good sources of proteins.
   ii) Cooking destroys vitamins.
   iii) Raw vegetables are more digestible than cooked ones.
   iv) Raw vegetables are good sources of Vitamin D.
   v) Raw vegetables contain more Vitamin B1 than cooked ones.

7. How many times should be rice washed before cooking?
   i) Thrice.
   ii) Twice.
   iii) Once.