

**INFLUENCE OF BALANCED DIET ON THE  
NUTRITIONAL STATUS OF THE CHILDREN  
BETWEEN 1 TO 3 YEARS**

**Vijayalakshmi Gopalan Nair**

**M Sc, R.N.R.M, PGDCA, (Ph.D.)**

**Lecturer,**

**University of Nizwa, Sultanate of Oman**

# Introduction

- Children grow rapidly and need adequate nutrient containing food.
- Prepare food in palatable and consumable form as requirement varies from first year of age to second year.
- Preschool children are vulnerable and special risk group in any population.
- Nutritional surveys are helpful in improving the nutritional status as they are more susceptible for malnutrition.

# Aim of the Study



- To evaluate the nutritional status of children between 1 to 3 years (pre schoolers) and also to investigate the improvement of weight and hemoglobin level through administration of balanced diet.

# Theoretical Model on Promotion of Children's Nutritional Status

- Pender's health promotion model is adopted with 3 components
  - ▣ Cognitive perceptual factors
  - ▣ Modifying factors
  - ▣ Cue to action which promotes nutritional status of children
  
- Mothers perceived importance of balanced diet and also the benefits by overcoming barriers in preparation and administration of balanced diet.

# Research Questions



1. What is the nutritional status of the children between 1 to 3 years?
2. What are the factors influencing the mothers on preparation and administration of the balanced diet to children between 1 to 3 years?
3. What is the influence of balanced diet on the nutritional status of the children between 1 to 3 years?

# Methodology

## PRE – TEST

**Nutritional Assessment**  
**Dietary intake**  
**Anthropometric measurements**  
**hemoglobin level the children**  
**between 1 to 3**



**De-worming the children**

**Demonstration to mothers on preparation and administration of balanced diet to children**



## POST -TEST

**Reassessment of the nutritional status,**  
**dietary intake**  
**anthropometric measurements**  
**and hemoglobin level**

# Sample size



- ❖ The samples selected for the study are children between 1 to 3 years from Dhanalakshmi Nagar, Coimbatore.

## **Sample size determination:**

- ❖ All the samples should be between 1 to 3 years
- ❖ The mother should stay at home (House wives)
- ❖ The children should not be sent to balawadi.
- ❖ 15 children fulfilled the inclusion criteria henceforth data was collected from their mothers.

# Sample size

---

**Total Number of houses in which children  
between 1 to 3 years are 30**



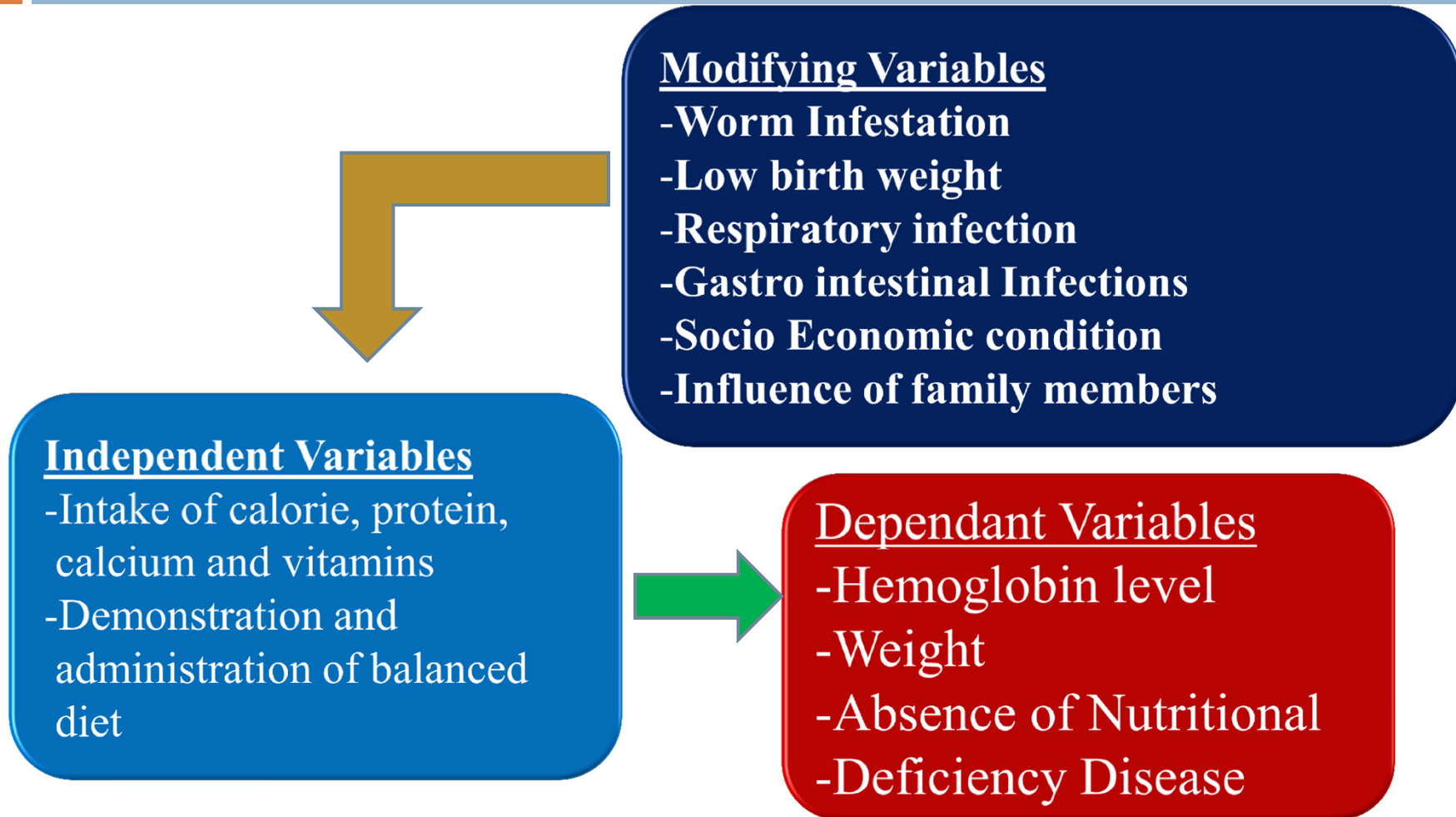
**Total number children between 1 to  
3 years are 25**



**Number of samples selected  
are 15**



# Relationship of Variables



# Data collection procedure

---

- The data collection **was done for a period of 45 days.**
- Physical assessment, Nutritional assessment, Dietary intake (pattern), Nutritional deficiency diseases, Anthropometric measurements like height ,weight, head circumference, chest circumfrence, mid-arm circumfrence and heamoglobin levels were assessed.
- Education was given to the mothers on balanced diet and demonstrated individually in their home setting on their daily dietary menu planned for their children.

# Results

- Among **96% of children**, there was a **significant increase in the weight (from 0.5 to 1.2 kg), mid arm circumference and hemoglobin level (0.6 to 1.2 gms dl)**.
- None of the child reported to have nutritional deficiencies.
- There was **no significant difference in height, chest circumference and head circumference** of the children (not increased to the ICMR scores).
- **All the mothers perceived the importance of balanced diet and were able to prepare and feed the prescribed diet to their children** (*which comprised of rice, raaggi, beef, egg, fish, milk, daal, vegetables including green leafy, roots and tubers and locally available fruits*).

# Demographic Characteristics of Children

- **The mother's belong to the age group of 22-30 years. None of the mothers have undergone any kind of formal education.**
- **Birth History of Children:** All 15 children were born in Hospital. The birth weight of the children ranged from 1.5Kg to 3.5Kg. Birth weight of 12 children ranged from 2.5 to 3 Kg. 2 children had birth weight of 3.25Kg and 3.5Kg respectively. Only one child was underweight whose birth weight was 1.5 Kg.
- **Health problem of children** during First year of Life: 10 children had acute respiratory infection, 5 children had suffered from diarrhea, 3 children with viral fever and 2 children with scabies.

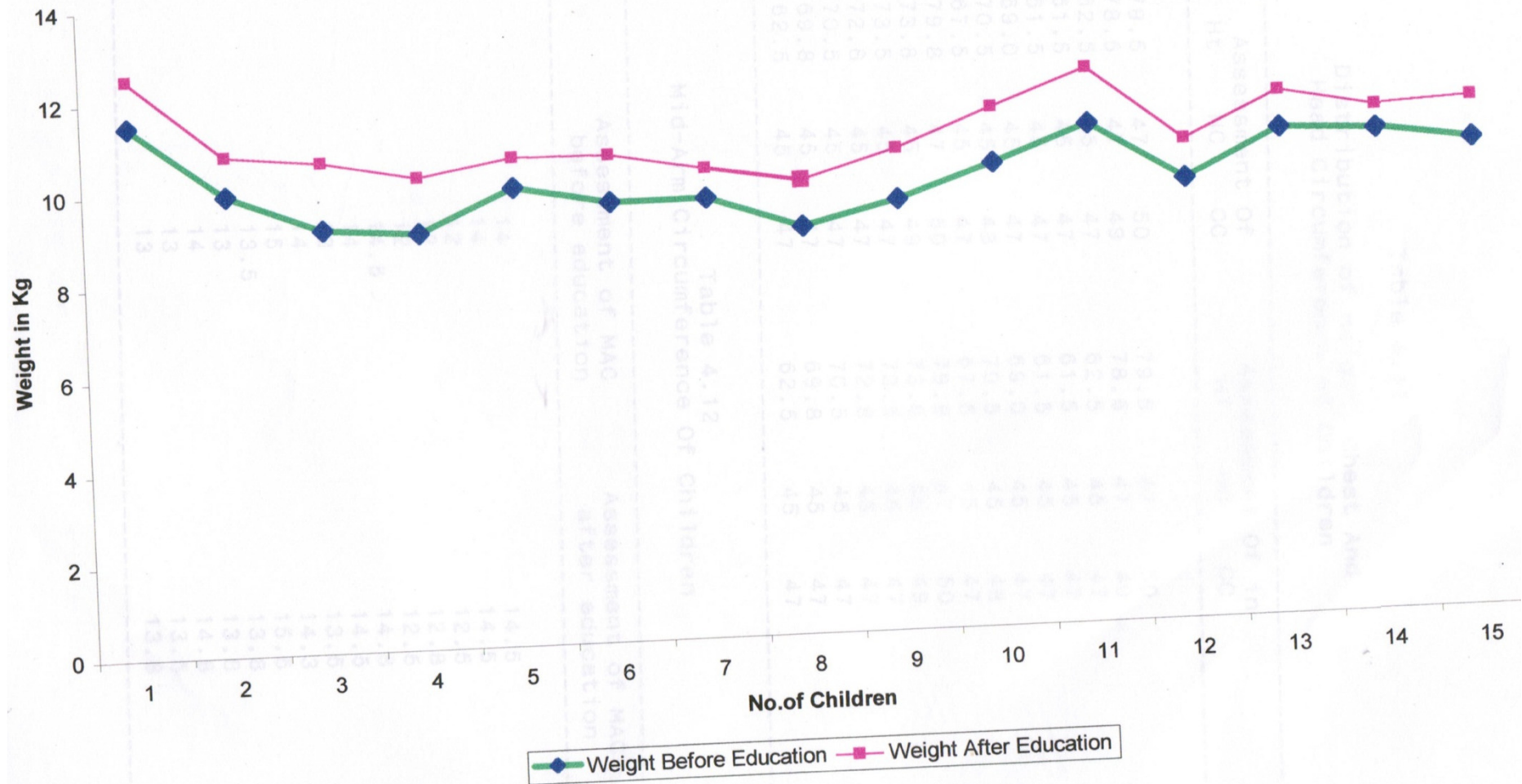
# Nutritional Assessment of Children:

- None of the children had any signs of deficiency.
- Weight of the children ranged between 8.8 Kg to 11.5 Kg. out of which 13 children ranged from 9.3 Kg to 10.75Kg and one child with 8.8Kg and the other child with 11.5Kg.
- After administration of balanced diet the weight of all children increased to **0.5Kg to 1.2Kg**. But there is a deficit when compared with ICMR recommended allowances.

# Influence of balanced Diet in weight

S. No	Weight of the Children before administration of balanced diet in Kg	Weight of the Children after administration of balanced diet in Kg	Difference in weight before and after administration of balanced diet
1	11.500	12.500	1.000
2	9.950	10.800	0.850
3	9.150	10.600	0.450
4	9.000	10.200	1.200
5	9.900	10.550	0.650
6	9.500	10.520	1.020
7	9.500	10.150	0.650
8	8.800	9.800	1.000
9	9.300	10.400	1.100
10	10.000	11.200	1.200
11	10.750	11.950	1.200
12	9.500	10.350	0.850
13	10.500	11.300	0.800
14	10.400	10.900	0.500
15	10.100	11.000	0.900

# Magnitude of Increase in Weight

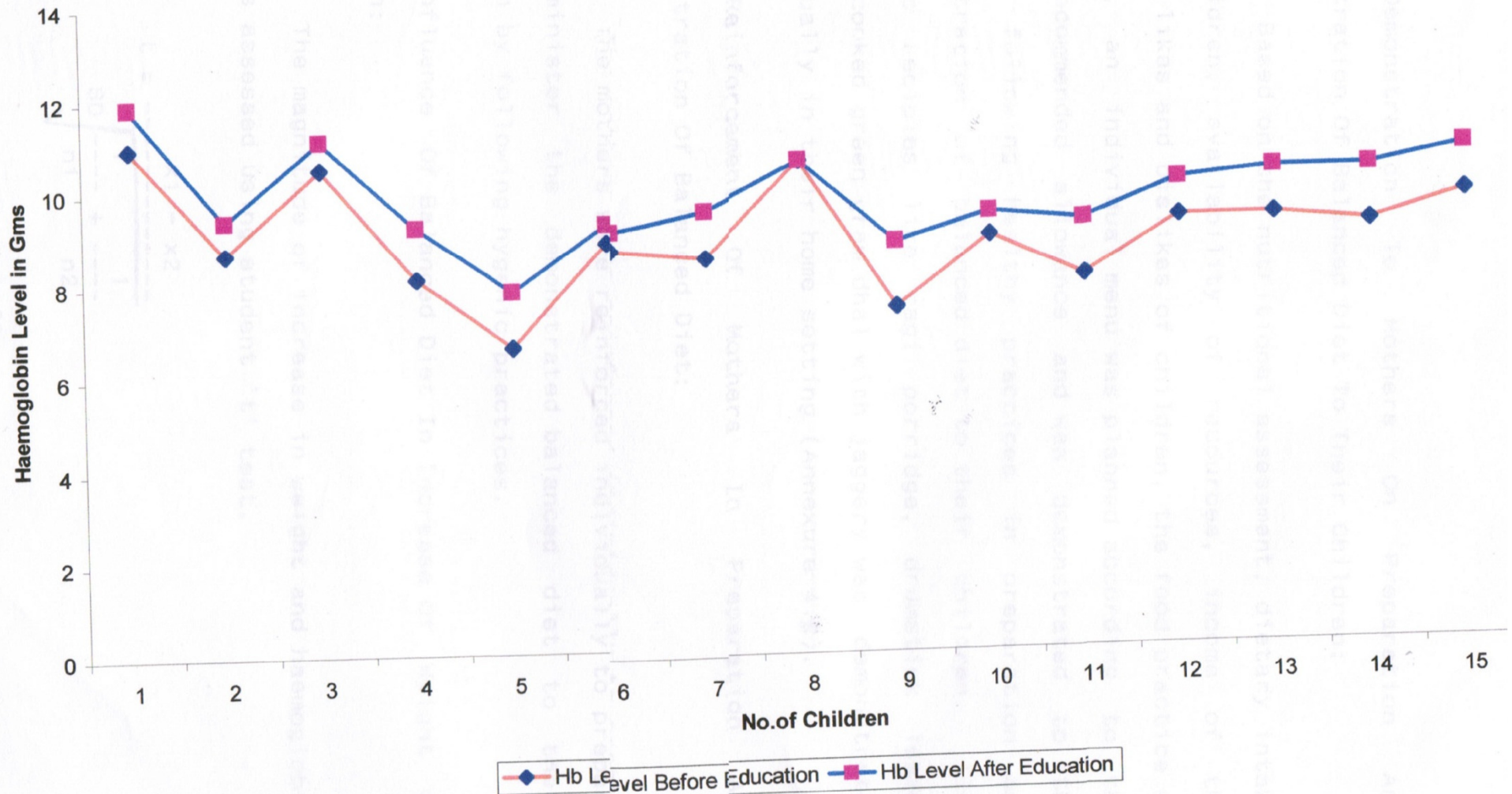


# Nutritional Assessment of Children

- Low hemoglobin level was identified among all the children.
- Children on specific iron rich food items like ragi porridge, drumstick leaves vadai, cooked green gram dhal with jaggery.
- As a result of which **there was an increase in hemoglobin level of 0.6 to 1.2 gms/dl.**
- There is deficit when compared with ICMR recommended allowances.



# Magnitude of Increase in Hemoglobin



# Influence of Balanced Diet on The Nutritional Status of the Children

- All the mothers prepared and feed the prescribed diet to their children which comprised of (*ragi, rice, beef, fish, vegetables, egg, milk, dhal, green leafy vegetables, roots and tubers, fruits, sweets and locally available snacks like bajji, bonda and vadai*) which has **improved the child's weight and hemoglobin level.**
- Studies have identified that growth and development improves by intake of balanced diet (Robello, 1996). Hemoglobin concentration below 10gms/dl is associated with decrease work capacity and mental performance and probably with impaired resistance to infections (Kumar Ashok, 1997).

# Influence of Balanced Diet on The Nutritional Status of the Children



- **Administration of balanced diet helped to promote the well being of the children.**
- Good nutrition during the toddler period helps the children to improve their nutritional status, health and overall performance (Dickoson et al., 1996).

# Demonstration of Preparation and Administration of Balanced Diet to Mothers

- Based on the clinical assessment weight, mid-arm circumference, hemoglobin, dietary intake of the children, the available resources, income of the family and the likes and dislikes of children, the mothers were demonstrated individually in their home setting on the preparation and administration of balanced diet to their children.
- The **demonstrated balanced diet was then reinforced to each mothers individually** emphasizing on the importance and need to administer it to their children regularly.

# Implications for future practice



- Repeated reinforcement and time to time assessment should be done to mothers in practice of administering balanced diet to their children.
- It can be established in balwadies to create awareness and prevent all associated complications.
- The teachers in the balwadi should be enriched with knowledge of low cost balanced diet for the children.
- This study can be done by adopting one to one child approach among school children.

# Conclusion

---

- The study brings to the attention that proper preparation and administration of balanced diet assures satisfactorial growth and development for children, prevention of infectious disease, nutritional deficiencies and thereby promoting well being of the children.

# Selected Bibliography

- Ashok Kumar, Role of Nutrients in child's development", Health for Millions (9) 2007
- Bakru. R, "Need for child nutrition", Health 80 (5) 1998
- Geetha Subramaniam. K, "Diet schedule for under-five children", Health 82 (7) 2009
- Joint WHO/UNICEF statement, Protecting, Promoting and Supporting child nutrition", The nursing journal of India LXXX IV (91,2,3,5)1993 pp20-21, 35- 37, 79-80, 107,108

---

*Thanking You all for the  
support & attention*

