MATERIALS AND METHODS

1. **Study design:** A Cross sectional study was adopted for the present study which was undertaken for a period of 6 months i.e. October 2015-March 2016

2. Sampling Frame and Size

a) Study area: The study was conducted at Guwahati city in Handique Girls' College, a premium Girls' College situated at Dighali Pukhuri, Guwahati so that the entire city is represented.

b) Size of the sample: Three hundred students from Handique Girls' College was selected by simple random sampling method. The participants were informed about the study and consent was obtained from them as well as the head of the instituton.

3. Tools of Data Collection

a) **Questionnaire**: A pre-structured questionnaire covering the socio-demographic and dietary habits of the subject was developed and was pre-tested. These structured questionnaires were then given to the students and were informed of the objectives of the study.. The students were also instructed on how to fill up the questionnaire.

4. Anthropometric measurements: Standard techniques of measurements described by Hooton (1946) Weiner and Lourie(1981) and Sen (1994) were followed while taking the anthropometric measurements of children. These may be briefly described as follows:

a) Height : A steel vertical graduated rod graduated in centimeter as used. Reading were taken bare footed in a fully erected position. It measures the vertical distance from the floor to the vertex. The subject was made to stand as erect as possible with his/her arms hanging at the sides with thumbs forward, heels holding together and eyes directing towards the horizon

(Hooton, 1946). The anthropometer was placed at the back and between the heels of the subject, taking care that it is kept absolutely vertical. The sliding sleeve of the anthropometer was then lowered down towards the middle of the head (Sagital line) so that it would touch the vertex lightly. Reading in centimeter and its fractions was recorded.

b) Weight: Bathroom scale was used to record the weight of the students. Reading were taken bare footed with minimum clothing. The body weight was taken with a spring weighing machine, asking the subject to stand on it with an erect posture and light apparel. The weighing machine was checked from time to time with a known standard weight. No deduction was made for the weight of light apparel while taking the final reading

c) Body Mass Index (BMI): The of weight in kg/ Height^2 in meter is referred to as Body Mass Index. The obtained index values of the students were classified as per WHO (1995) Standards and the average estimated.

Table 2. BMI in relation to Energy Status.

Presumptive diagnosis	BMI
Chronic energy deficiency-grade III severe	< 16.0
Chronic energy deficiency-grade II moderate	16.0-17.0
Chronic energy deficiency-grade I mild	17.0-18.5
Low weight normal	18.5-20.0
Normal	20.0-24.9
Overweight	25.0-29.9
Obesity	>30

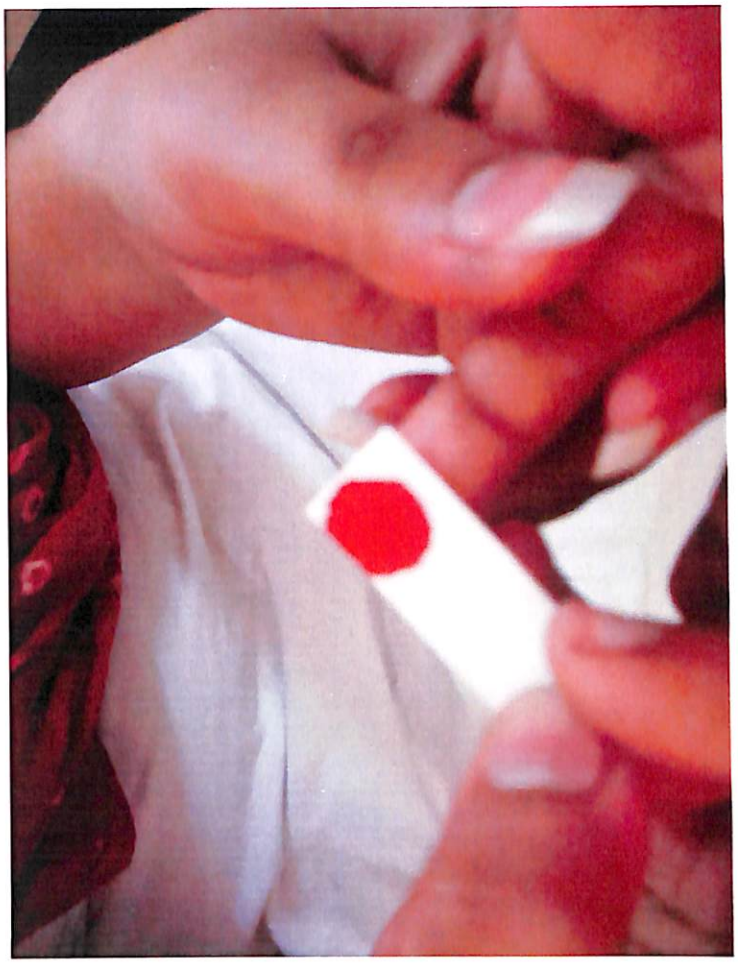
5. Estimation of iron deficiency Anemia:

To estimate the prevalence of iron deficiency anemia among the college going girls the WHO developed Heamoglobin colour scale would be used.

Haemoglobin Colour Scale: Level of hemoglobin was obtained using WHO Hemoglobin color scale.. After cleaning with 70% alcohol, blood drops were taken after puncturing the ring finger with a sterile lancet. First two drops were discarded and the third drop was used for hemoglobin estimation. HCS comprises of a small card with six shades of red that represents hemoglobin levels of 4,6,8,10,12 and 14gm/dl respectively. The test strips were kept dry, clean and protected from direct sunlight at all times. A 5cm length of test-strip was torn off for the use. A single drop of the blood was taken at one end of the test-strip, so that it formed a stain large enough to spread beyond the area of aperture in the color scale (about 1 cm in diameter) and after 30 seconds the blood spot is put against one of the hues on the scale for color matching. The anemia was defined when hemoglobin levels were less than 11.9 gm/dl.Hemoglobin levels between 11 – 11.9 gm/dl were classified as mild anemia, 8–10.9 gm/dl as moderate and less than 8gm/dl as severe anemia. Ethical approval was obtained from the college officials and the girls.

MEASURING WEIGHT OF THE SUBJECT

MEASURING THE HEIGHT OF THE SUBJECT WITH MEASURING RODS



ESTIMATION OF HAEMOGLOBIN LEVEL USING WHO COLOUR SCALE.