

A STUDY ON THE EFFECTIVENESS OF DRUMSTICK LEAVES (MORINGA LEAVES) JUICE ON HAEMOGLOBIN LEVEL AMONG ADOLESCENT GIRLS

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ABSTRACT:

Introduction: One of the major health issues in adolescent Girls is an Iron Deficiency Anemia, which can be reduced by consumption of Drumsticks leaves. **Objectives:** Objectives were to determine the effectiveness of drumstick leaves (moringa leaves) juice on hemoglobin level among adolescent girls and to find the association between pre test hemoglobin level score in both groups control and experimental with their demographic variables. **Methodology:** Samples were collected by convenient sampling technique. Blood samples were taken by using Hemocuemeter Analyzer 30. Intervention of 100ml Drumstick Leaves was provided for 21 days. **Results:** t test(Paired) suggested that there was a significant change in hemoglobin level obtained t test value was 4.464, table value 2.042 and p value was 0.000099 at 0.05 level of significance, t test (Independent) showed that there was a significant change in haemoglobin level in both groups Control group and experimental group obtained t value was 4.157, table value 2.000 and p value was 0.000104 at 0.05 level of significance. χ^2 test was done to find out the association between Hb level (pre test) and their demographic variables that showed that there was an significant association between Hb level (pre test) and diet, religion and number of siblings, obtained Chi-square value were, for Number of sibling, ($\chi^2=6.78$) Religion, ($\chi^2=10.26$), diet ($\chi^2=6.14$) were more than table value at 0.05 level of significance. **Conclusion:** The study concludes that the drumsticks Leaves juice was effective in improving hemoglobin level.

Key words: Hemoglobin level, Adolescent Girls, Drumstick Leaves Juice, Moringa leaves.

BACKGROUND OF THE STUDY

At the every stage of life the changes in health status takes place whether it can be physical, mental or social change. In today's era adolescent girls are facing many health

problem in that anemia is the most Prominent one due their life style modifications like eating junk food, snacking, skipping meals, etc. Some are malnourished because of lack of knowledge regarding dietary pattern, poor socioeconomic status, low income, etc. The major Health problem in Adolescent girls is Iron deficiency Anemia. As per the Guidelines of National Health Portal Normal range of haemoglobin in Women is 12.1gm/dl to 15.1 gm/dl, in Men is 13.8gm/dl to 17.2 gm/dl and in Children is 11 to 16 g/dl.^[1] Below normal level of haemoglobin will be consider as “Iron Deficiency Anemia”. According to American Society of Haematology “Iron is important element to maintaining normal body functions, that includes the Production of Hb , which helps in carrying oxygen to cells and tissues. And also necessary to maintain healthy cells, skin, hair, and nails. And According to WHO , “Anaemia is a condition in which the number of red blood cells (and consequently their oxygen-carrying capacity) is insufficient to meet the body’s physiologic needs.”^[3] So if the person is having less than normal range of haemoglobin level and may appear pale, fatigue easily, feel tired, some may develop palpitations, and will have short of breath can called anaemic. Children which are chronic anemia are mostly prone to get infection and learning issues too.

According to United States Department of Agriculture Each 100 gm of drumstick leaves contains 375 kcal Energy, 25 g protein, 50 g Carbohydrate, 2000 mg calcium and 4.50mg Iron. By consupction of Drumstick leaves iron can be increased.^[4] It is estimated that approximately 24.8 % world’s population are affected with an Anemia and 50% of an anemic case case is due to iron deficiency. Curremty 1.62 billion population is affected all over the world.^[5] In India Anemia is a severe health problem, because 74.3% population are affected by Anemia. Almost 58% of Antenatal women were having anemia. In Asia India contributed 80% of the antenatal and postnatal mothers died due to an anemia. According to the reports of NFHS-3 and the National Nutrition Monitoring Bureau Survey (NNMBS) over 55% of adolescent girls were having anemia that is alarmingly high. In Gujarat Prevelence rate of Anemia in the year 2015-16 is 54.9% in women, 21.7% in men and 62.6% in Children.^[6]

OBJECTIVES OF THE STUDY WERE

- To determine the effectiveness of drumstick leaves (moringa leaves) juice on hemoglobin level among adolescent girls and
- To find out the association between hemoglobin level (pre test) score in experimental and control group with selected demographic variables.

MATERIAL AND METHODS

Quantitative approach was utilized with quasi Experimental study . The population of students studying in selected school in Gujarat. Samples are identified through power analysis method [Formula for power analysis : $n = 2 (\sigma/\Delta)^2 (Z\alpha + Z_{1-\beta})^2$ where, n = number of samples , σ = standard deviation of pilot study (1), Δ = critical ratio (0.5), $Z\alpha$ = error (5%) that was 1.96, $Z_{1-\beta}$ = power (80%) that was 0.84].By using convenient sampling technique total 64 adolescent girls (13 -19 years) for both groups were selected and randomly assigned into two groups. The Independent variable was Drumstick Leaves Juice and dependent variable was Level of Haemoglobin. Calculation of Nutritional values of Drumsticks Leaves juice was done by dietician. Blood samples were collected by using Hemocuemeter analyzer 301. Intervention was provided for 21 days (100 ml drumsticks leaves juice daily).

FINDINGS

Demographic variables showed that Most of the girls in control and experimental group were of 14 years (80.6%) (59.4%) respectively. Most of the girls in Control group were belongs to Hindu religion (77.4%) and in experimental group were belongs to Muslim religion (71.9%). In both the groups Family of adolescent Girls are not having any history of anemia and no any girls were taking treatment of Iron Folic Acid. Majority of Girls in control group were taking vegetarian diet (64.5%) and in Experimental group were taking Non vegetarian diet (81.3%). Most of the girls in control group were has attained menarche at the age of 12 years(80.6%). Most of the girls in control group and experimental group were having the duration of menstruation of 27 – 29 days (71.0%) and (69.0%). Most of the girls in control and experimental group were having amount of blood loss medium (83.9%) and (96.6%). Paired t test suggested that there was a significant change in hemoglobin level of experimental group obtained t value 4.464 was more than table value (t =2.042) with p value 0.000099 at 0.05 level of significance, thus Research hypothesis was accepted. Independent t test revealed that there was a significant change in haemoglobin level in both groups Control and experimental , obtained t value was 4.157 more than table value (t =2.000) with p value 0.000104 at 0.05 level of significance. χ^2 test was done to find out the association between Pre test Hb level and demographic variables that revealed that there was an association between pre test Hb level and diet, religion and number of siblings, obtained Chi-square

value were, for Number of sibling, ($\chi^2=6.78$) Religion, ($\chi^2 =10.26$), diet ($\chi^2=6.14$) were more than table value and at 0.05 level of significance.

CONCLUSION

The study concludes that The Drumstick Leaves Juice is Effective in improvement of Haemoglobin level.

ETHICAL CLEARANCE

Ethical consideration was taken from ARIP- Institutional ethical Committee(2017-2019), Charotar University of Science Technology on 10th May 2019. Proposal ID : ARIP/IEC/19/25

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