



EFFECTIVENESS OF BEETROOT JUICE WITH JAGGERY ON HAEMOGLOBIN LEVEL AMONG THE ADOLESCENT GIRLS.

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ABSTRACT

The main purpose of this research study is to assess the effect of beetroot juice with jaggery on Hb level amongst the adolescent girls. Multiple databases were searched focusing on effect of beetroot juice with jaggery on haemoglobin level. It was concluded through this literature review that beetroot juice is very helpful in increasing the level of haemoglobin among adolescent girls.

KEYWORDS : effectiveness, beetroot juice, jaggery, adolescent girls, haemoglobin.

INTRODUCTION

Human is passed through out the life in different stages like infant, children, adolescent, adult and older. Adolescent is a period where number of changes take place. The adolescent age is between 12-19 years. In that period changes occur in physiological, hormonal, fast growth and development in reproductive organ and some mental changes like making groups, self-identity etc. Anaemia is clinically defined as a condition that shows that an inadequate supplement of RBCs, the amount of packed red blood cells &/or the total number of haemoglobin. Anaemia may be caused by less production of normal RBCs, more RBCs despoilment & lack of blood.^[1]

The WHO given the normal value of haemoglobin level for different age groups for the diagnosis of anaemia. For Children 6 months - 6 yrs : 11 g/dl, Children 6 yrs - 14 yrs : 12 g/dl & Above 14 yrs : Male- 13g/dl and Female - 12g/dl.^[2]

The review of literature was taken from different informative sites or data base like CINAHL, MEDLINE, Pub Med, Pro Quest and Google scholar.

MATERIAL METHOD

The study is aimed mainly on effectiveness of beetroot juice with jaggery on hb level amongst the adolescent girls.

By reviewing around 30 literature, researcher divided them into 3 categories as mentioned below.

1. ROL related to Effectiveness of beetroot to increase Hb level.
2. ROL related to Effectiveness of natural therapy to increase Hb level.
3. ROL related to prevalence of anaemia.

FINDINGS : Study shows that beetroot juice is useful intervention for improving the haemoglobin level.

1. Rupal Patel, Mr. Francis Luke, Mr. Jeenath Justin Doss. K had been executed an interventional research study on effect of beetroot juice with jaggery on anaemia amongst the girls in the urban place at Rajkot. Sample size for this find out about was forty by way of using non probability purposive sampling technique. The sahli's method was the usage for assessing the level of haemoglobin. The records had been analysed with the use of descriptive and inferential statistics. The "t" test used for assessing the relationship b/w before and after level of haemoglobin. The findings shows that improvement in beetroot juice with jaggery on iron deficiency anaemia after given an intervention. Study result indicated that out of 40 samples 4(10%) were having severe anaemia, 16(40%) were having normal haemoglobin level. This study was more considerable at $p < 0.001$ because the md was 0.757, standard error was 1.078 in pre test and for post test 1.149, standard error 0.071 and t-test value 8.703.^[3]

2. Dr. N. Gayathri Priya, Mrs. M. Malarvizhi, and Mrs. Annal Jega Jothi were conducted True experimental study on effect of beetroot juice on hb level amongst girls. Research purpose was to identify the effect of beetroot juice on hb level. Total 60 adolescent girls with age between 15 to 17 years, in that 30 were in study group and 30 were in control group taken from Aringar Anna Govt Higher Secondary School, Chennai, Tamilnadu by adopting simple random sampling technique. For 20 days, fresh beetroot juice was given to each adolescent girls in the mid morning. The cyanmethemoglobin method was using for assessing the haemoglobin level and prepared checklist

was using for evaluating the sign and symptoms of anaemia. The study findings shows that after given intervention a more significant effectiveness in hb level ($p < 0.001$) in experimental group.^[4]

3. G. Manjulavanthi was conducted an interventional research study on the effectiveness of beetroot juice on hb level among middle age women in Sree Balaji Teacher Training Institute Chromepet, Chennai. The aim of the study was to determine the haemoglobin level among middle age women before the giving of beetroot juice and after the giving of beetroot juice. Non randomized convenient sampling technique method had been adopted. The sample size was 60. The observational checklist, structured interview and sahli's haemometer method was used. The result shows that the mean scores of pre test was 9.7 (SD=0.6) and post test was 10.5(SD=1.2). Thus the mean difference was 1.2. In study findings, overall pre test mean percentage was 16.166, where as the post test mean percentage was 17.5 pre test level of anaemia mean score was less than the post test score. Patient's value was 30.0 which were significant at 0.001 level.^[5]

4. Ms. Ananthalakshmi and Prof. Rosaline Rachel was conducted interventional research study on impact of beetroot juice on hb level among the adolescent girls. The goal of research study was to find out the effect of beetroot juice on haemoglobin level among the adolescent girls. Research design was true experimental research design. A total of 60 adolescent girls were taken, in that thirty samples in experimental group and thirty samples in control group by adopting a simple random sampling technique and samples were taken from government girl's higher secondary school, Avadi, Chennai. In mid morning fresh beetroot juice was given to experimental group for twenty days. The findings were shows that the increasing the level of Hb in experimental group after giving the beetroot juice. In the 't' value was 12.633 at $p = 0.001$.^[6]

5. Mrs. J Jeba Saranya was conducted quasi experimental study on assessing the effect of beetroot extract upon iron deficiency anaemia amongst adolescent girls. The main focus of research was to evaluate the effect of beetroot extract upon iron deficiency anaemia amongst adolescent girls. 60 participants were taken by non probability purposive sampling technique, who fulfilled the inclusion criteria in that 30 samples were in study group and 30 sample were in control group, study setting was government higher secondary school, Kanyakumari, Tamilnadu. Beetroot juice was given for 20 days in each girls in experimental group in mid morning. Tool cyanmethemoglobin method was using for assessing the hb level. "p value < 0.001" was shows that more significant improvement in hb level after administering the beetroot juice in experimental group.^[7]

6. Resmi S. Fathima Latheef, R. Vijayaraghavan were conducted study on effectiveness of herbal extract in increasing the level of hb amongst adolescent girls with iron deficiency anaemia at gangothri international public school, bangalore district. Main goal of study was assessing the effect of herbal extract on increasing the level of hb. True experimental research design was used, with 20 adolescent girls were age group between 14-17 yrs who were having iron deficiency anaemia. The herbal extract was given for a time of 1 month. The data tool was include structured interview, check list questions and sahli's method for assessing the diagnostic findings and blood test for assessing hb level. Pre test was done before giving the herbal extract and post test was done at the end of one month. The findings includes in pre test mean score was 9.7, standard error was 1.218 & in post test mean score was 11.03 & standard error was 1.685. The 't' value was

2.9759 and $df=18$, the mean difference of pre and post test was significant level at p less than 0.05. Study findings conclude that herbal mixture was helping in increasing the level of hb.^[8]

7. Mrs. L. Aslin Johnsi, was conducted study on effect of amla juice on hb level amongst young adult female with anaemia. The study purpose was to evaluate the impact of amla juice on hb level among the young adult female with anaemia. Study design was 1 group pre test-post test design. Total sixty participants were chosen by purposive sampling technique from Sree Mookambika College Of Nursing, Kulasekharam. The data tool includes digital haemoglobinometer and demographic data. In the first day of pre test hb level was estimated. Amla juice was given for period of 1 month. The study it proves that the level of hb was improved after providing the amla juice with 't' value was 19.33, df was 59 and $p < 0.05$.^[9]

8. S. Resmi, Fathima Latheef and Vijayaraghavan was conducted an experimental study on effect of amla, jaggery and pumpkin leaves extract on the level of hb, vit C and iron amongst girls with iron anaemia. The study purpose was to find the effect of amla, jaggery and pumpkin leaves extract on the level of hb, vit C and iron amongst girls with iron anaemia. A total of 120 adolescent girls, age group between 14-17 years selected by using the simple random technique. 60 samples in experimental group were taken from Gangothi public school and 60 samples in control group were taken from Srigandhadakaval public school. Study result indicate that significant differential in the pre & post test level of hb, vit C from 4.302 to 5.63 and iron from 77.6 to 99.58 in experimental group.^[10]

9. B Sudhagandhi, Sivapatham Sundaresan, W Ebenezer William, A Prema was conducted study on prevalence of anaemia in the school children. The study was start from September 2009 to end with February 2010. The major research study purpose was to identify the prevalence of anaemia among school children and its correlation with demographic variables like age, gender, and body mass index. The study was conducted at government school of Kattangulathur, TamilNadu, India. Total 900 samples were taken from government school in age group between 8-16 years. Thus, study findings conclude that prevalence of anaemia among overall children with age group 8-16 years was 52.88% or (476/900).^[11]

10. Siddhram S M, Venketesh G M, Thejeshwari H L was conducted a cross sectional descriptive research on anaemia among girls in selected anganwadi centres of rural area of Hassan district, Karnataka, South India. The major goal of study were to find out the prevalence rate of anaemia amongst girls, to find the socioal demographic variables correlated with anaemia. The result of study was total prevalence rate of anaemia was 45.2% . In that findings 40% were mild anaemia, 55% were moderate anaemia and 5% were severe anaemia. The study findings were proves that anaemia prevalence rate was highly shows in adolescent girls, which gives proves that anaemia was mainly shows in lower socio economic family. It conclude that nutritional factors or status of adolescent girls was major impacting factors for causing anaemia.^[12]

11. Sathya P, Gandhimathi R, Viruthasarani K was held a descriptive study to find the prevalence rate of anaemia amongst women. The major objectives of research was to assess the prevalence rate of anaemia amongst women. Sample size was 245 women, by using the purposive sampling technique. The study was done at selected urban areas of coimbatore district. Tallquist method was using for determine the hb level among women. Thus, the study findings clearly shows that total of 250 women, in that 10(4%) had severe anaemia(<8.0 g/dl), 145 (58%) had moderate anaemia (8-10.9 g/dl), 6 (2.4%) had mild anaemia (11-11.9 g/dl), and 89 (35.6%) had their normal hb level (>12.0 g/dl). Conclusion of this study was shows that prevalence and incidence of anaemia was more in developing countries like India. Study was mainly focused on to determine the anaemic women in this research study setting.^[13]

12. A cross sectional study on hb level of non school going girls. Study was conducted by Gandham Bulliyya, Gitanjali Mallick, Girija Sankar Sethy, and Santanu Kumar Kar. The study purpose was to identified prevalence of anaemia among no school going girls. To identified the correlation b/w hb concentration, socio demographic variables & nutritional factors. Sample size was total 1937 healthy adolescent girls with age group between 11-19 yrs. Sample technique was probability proportionate to size cluster sampling. The study setting includes Bargarh, Khurda and Jaipur district in Orissa. Study findings was

clearly shows that mean hb concentration value was 9.7 ± 1.4 g/dl (range, 4.5–13.4 g/dl). In that, overall 1,869 (96.5%) adolescent girls were anaemic with hb value was <12.0 g/dl. It also includes 4.4% adolescent girls were severe anaemia, 46.9% adolescent girls were moderate anaemia and 45.2% adolescent girls were mild anaemia.^[14]

13. A cross sectional study on prevalence rate of anaemia & its related risk factors amongst girls of central kerala was conducted by P.M.Siva, and V. D Manjula. The study purpose was to identify prevalence rate of anaemia and its risk factors related with girls. Total 257 adolescent girls were taken from ettumanoor panchayat, the field area of govt medical college, Kottayam. Pre test & post test was done during the study. Data were collected related to demographic variables and factors correlated with anaemia. The result of p -value was <0.05 , which indicated that level of significance was fixed.^[15]