
A Study To Evaluate The Effectiveness Of Beetroot Extract with Jaggery In Improving The Level Of Hemoglobin Among Late Adolescent Girls With Anemia.

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Abstract:

Objective- to determine the effectiveness of beetroot extract with Jaggery on the level of hemoglobin for the treatment of anemia of adolescent girls. **Method-** The research design selected for the study was two group pre test-post test control group design Purposive sampling technique was adopted for selection of samples. **Result:** The finding showed that there was a significant improvement in level of hemoglobin at $p < 0.05$ among experimental group who were administered beetroot extract. **Conclusion:** Beetroot juice and jaggery can be used as a cost effective nursing intervention in improving the level of hemoglobin.

Keywords: Beetroot Extract, Hemoglobin, Late Adolescent Girls, Anemia.

INTRODUCTION

Anemia is one of the most common nutritional deficiencies affecting various social and socio-economic status. It is more common in developing countries among children and adolescents. Anemia is usually defined as a decrease in amount of red blood cells (RBC) or the amount of hemoglobin in the blood. It can also be defined as a lowered ability of the blood to carry oxygen. Iron deficiency anemia affects over 60% of the adolescent girls in India. Anemia in adolescent girls has far-reaching implications. The anemic adolescent girls grow into adult women with compromised growth, both physical and mental. These women have low pre-pregnancy weight, and are more likely to die during childbirth and deliver low birth weight babies. Iron is one of the micronutrient. It is used for formation of hemoglobin, oxygen transportation, brain development, regulation of body temperature and muscle

activity. When the iron is decreased in human body, it is called as iron deficiency (UNICEF, 2012).

Adolescent girls are at high risk of micronutrient malnutrition especially Iron Deficiency anemia. Globally the most important cause of anemia is believed to be iron deficiency due to inadequate dietary intake, rapid growth & iron losses due to parasitic infection. Other prevalent causes of anemia include malaria, chronic infection, and nutritional deficiencies of vitamin A, folate & Vitamin B12. (Hodges et al (2009)). Global database by WHO 2007 on National family health survey in India, had suggested that young adults in urban semi urban in India are found to be anemic and prevalence rate between 61.9 to 88.9% begin highest among rural adolescent of higher order as compare to urban poor girls.

Prevention is better than cure. There is less focus on assessment and management of anemia among adolescent girls. Several interventions play a vital role in treating anemia. Of those beetroot juice has significant effects on human blood and blood forming qualities due to its higher iron and folate content. Drinking beet juice helps in regeneration of red blood cells and reactivates the red blood cells and also it supplies fresh oxygen to the body. The iron in beetroot is easiest to absorb into the bloodstream, making it a great natural therapy for those with low blood hemoglobin and anemia, irrespective of their age.

The healing effects of beetroot juice with jaggery. He reported that, Beetroot juice is a healing juice. It acts as a blood building herb that detoxifies blood and renews it with minerals and natural sugars. The iron content in beetroot juice is easily assimilated and gives more nutritive value than manmade forms of iron supplements. Beetroot is a good choice for correction of anemia. It is cost effective, easily available, no side effects and it can be easily stored. So the investigator felt the need to conduct the present study among the adolescent girls (John, (2010)).

OBJECTIVES OF THE STUDY

- To assess the level of hemoglobin among adolescent girls in the experimental and control group.
- To determine the effectiveness of beetroot extract with jaggery on hemoglobin level among adolescent girls in the experimental group.
- To find out the association between the level of hemoglobin with selected demographic variables

HYPOTHESES:

H1 – There will be a significant improvement in hemoglobin level among adolescent's girls with anemia after administration of beetroot extract in experimental group.

H2-There will be a significant difference in the post test level of hemoglobin between the experimental group and control group.

H3-There will be a significant association between the hemoglobin level of adolescent girls with selected demographic variables

MATERIAL AND METHODS

Quasi experimental pre test post test control group design was used. The study participants were selected by using purposive sampling technique. A sample of 30 adolescent girls was selected after initial screening for hemoglobin level on basis of inclusion criteria.

On the first day demographic variables were assessed and then the hemoglobin level was checked by digital hemoglobin meter in both the experimental and control group. 100 ml of beetroot extract was given for 7 days for the experimental group.

After that post hemoglobin level was estimated for both the experimental group and control group by using the same digital hemoglobin meter. Collected data was analyzed by using descriptive and inferential statistics.

RESULTS AND DISCUSSION

Distribution of pre and post test level of hemoglobin among experimental group and control group.

N=30

Table 1-: Shows that among 15 adolescent girls 9(60%) had mild anemia, 6(40%) had moderate anemia.

Group	Level of Hemoglobin					
	Mild		Moderate		Severe	
	F	%	F	%	F	%
Experimental Group	9	60%	6	40%	-	-
Control Group	10	66.7%	5	33.3%	-	-

Table: 2 It shows that the level of hemoglobin in experimental group out of 15 adolescent girls 12(80%) had mild anemia, 3(20%) had moderate anemia with regard to the control group out of 15 adolescent girls 10(66.7%) had mild Hemoglobin level 5(33.3%) had moderate Hemoglobin level.

GROUP	LEVEL OF HAEMOGLOBIN					
	Mild		Moderate		Severe	
	F	%	F	%	F	%
Experimental group	12	80%	3	20%	-	-
Control group	10	66.7%	5	33.3%	-	-

Effectiveness of pre and posttest level of hemoglobin among experimental group.

N=30

Variable	Experimental group				M D	“t”	P
	Pre test		Post test				
	Mean	SD	Me an	SD			
Level of hemogl obin	8.85	0.63	10.57	1.37	1.72	4.641	<0.05

It shows mean, standard deviation & t test, to compare the pre and post test level of hemoglobin among adolescent in experimental group. The mean pre test score (8.85%), was lesser than the post test mean score (10.53%). The standard deviation was 0.63 in pre test and 1.37 in the post test. The calculated t value was 4.64 which is greater than the table value and showed a significant difference between pre and post test level of hemoglobin among adolescent girls at $p < 0.05$ level. The findings revealed that there was a significant improvement in level of hemoglobin among experimental group after administration of beetroot extract.

Comparison of posttest level of hemoglobin among experimental and control group

N=30

Variables	Experimental Group		Control group		Mean diff ere nce	Un-paired 't' Value		P Value
	Post test		Post test				't'	
	M	SD	M	SD				
Level of hemoglobin	10.57	1.37	9.62	1.14	0.95	2.51	2.021	<0.05

Table 4 shows the unpaired 't' test to compare posttest level of hemoglobin among adolescent girls in experimental and control group . The posttest mean score of hemoglobin in experimental group was 10.57 with standard deviation 1.37 and the post mean score of hemoglobin in control group was 9.64 with standard deviation of 1.14. It showed that after the administration of beetroot juice ,there was significant improvement in the level of hemoglobin among adolescent girls with a 't' value of 2.21 .The finding revealed that there was

a significant improvement in level of hemoglobin among experimental group and control group after administration of beetroot extract.

CONCLUSION

- Beetroot juice and jaggery are found to be an effective nursing intervention in increasing level of hemoglobin.
- The findings of the study enlighten the fact that Beetroot juice and jaggery can be used as a cost effective nursing intervention in improving the level of hemoglobin.

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Parkinson's Medications

"**A**li **L**oves **B**oxing **M**atches"

A - Amantadine

L- Levodopa

B- Bromocriptine

M - MAO inhibitors