



A STUDY TO ASSESS THE EFFECTIVENESS OF BEETROOT JUICE WITH JAGGERY ON HAEMOGLOBIN LEVEL AMONG THE ADOLESCENT GIRLS IN SELECTED SCHOOLS OF ANAND DISTRICT, GUJARAT.

Ms. Damini B. Patel*

2nd year M.Sc. Nursing Student, Manikaka Topawala - Institute Of Nursing – A Constituent Of Charotar University Of Science & Technology, Changa, Taluka : Petlad, District : Anand, Gujarat 388421 India *Corresponding Author

Dr. Anil Sharma

Principal and HOD Of Medical Surgical Nursing, Manikaka Topawala Institute Of Nursing, A Constituent Of Charotar University Of Science & Technology, Changa, Taluka : Petlad, District : Anand, Gujarat 388421 India.

ABSTRACT

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 WHO, defines adolescents as young people age between 10 to 19 years. In today's era the young adolescent girls faces many health related issues due to their life style changes. The cause of health problem in adolescent girls is a heavy menstrual period. Which can lead to low haemoglobin level.

OBJECTIVES: To assess the haemoglobin level of adolescent girls in both experimental and control group. To determine the effect of beet root juice with jaggery on haemoglobin level of adolescent girls. To find out the association between the haemoglobin level with selected demographic variables.

METHODOLOGY: Research approach was a quantitative with quasi experimental two group pre test post test study design. The population comprised of adolescent girls at selected schools of Anand District. Samples were identified through power analysis method and total 60 adolescent girls were selected for this study, in that 30 were in an experimental group and 30 were in control group by using non probability purposive sampling technique. The independent variable was beetroot juice with jaggery and dependent variable was haemoglobin level. Data collection tool includes socio demographic variable and biochemical test in that assessment of haemoglobin level checked by haemocumeter 301 analyzer.

RESULT: The findings of the study shows that, an early increase in the haemoglobin level of adolescent girls in the experimental group by following the administration of beetroot juice with jaggery, in compare with the control group. Calculated chi square value was more than 0.05 level of significance for all the selected demographic variables, hence it concludes that there was no considerable association between haemoglobin level of adolescent girls and selected demographic variables. Study concludes that the beetroot juice with jaggery can be tremendous on haemoglobin level among the adolescent girls.

KEYWORDS : Adolescent Girls, Beetroot Juice, Jaggery, Haemoglobin

INTRODUCTION

The definition of health according to WHO, "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity".^[1] Human is passed through out the life in different stages like infant, children, adolescent, adult, and older. Adolescent is a duration that has been a variety of modifications take place. The WHO defines adolescents as young people age between 10 to 19 years. In today's era the young adolescent faces many health issues due to their existence style modifications. The cause of health problem in adolescent girls is a heavy menstrual period. Which can lead to low haemoglobin level. **National Health Portal** Normal range of haemoglobin in Women is 12.1 - 15.1 gm/dl, for Men is 13.8 - 17.2 gm/dl and for Children is 11 - 16 g/dl.^[2] According to WHO, "Anaemia is a clinical 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] Beetroot juice with jaggery is particularly advantageous as home remedy for children, teenagers and pregnant women. Number of research studies proved that beet root juice with jaggery play an integral function to extend the haemoglobin level in the blood. Thus, a study was held to assess the effectiveness of beet root juice with jaggery on hemoglobin level among the adolescent girls. It is estimated that according to WHO, approximately 24.8 % world's population are affected with an anaemia and 50% of an anaemic case is due to iron deficiency. Currently 1.62 billion population is affected all over the world.^[4] Anaemia is a major health burden issue in India, because 74.3% population are affected by anaemia. Almost 58% of pregnant women are anaemic. In South Asia India, because of anaemia 80% of the maternal mortality may occur. According to the reports of NFHS-3 (2015 - 16) and the **National Nutrition Monitoring Bureau Survey (NNMBS)** over 55% of adolescent girls are having anaemia that is alarmingly high. In Gujarat Prevalence rate of Anaemia in the year 2015-16 is 54.9% in women, 21.7% in men and 62.6% in Children.^[5]

PROBLEM STATEMENT

"A study to assess the effectiveness of beetroot juice with jaggery on haemoglobin level among the adolescent girls in selected school of

Anand district, Gujarat"

OBJECTIVES

- To assess the haemoglobin level of adolescent girls in both experimental and control group.
- To determine the effect of beet root juice with jaggery on haemoglobin level of adolescent girls.
- To find out the association between the haemoglobin level with selected demographic variables.

HYPOTHESIS

HO :

There is no significant difference between the pre test and post test level of haemoglobin in adolescent girls at 0.05 level of significance.

METHODOLOGY

Quasi experimental two group pre test - post test design was used and study conducted at selected schools of Anand District. The sample size selected for this research study was total of 60 adolescent girls, in that 30 in experimental group and 30 in control group, age between 14 to 17 years who fulfilled the inclusive criteria by using non probability purposive sampling technique. The beetroot juice with jaggery was prepared by cutting a fresh beetroot into small pieces which were blended well. 50 ml of pulped diluted in 50 ml of boiled cool water and add 15 grams of jaggery. 100 ml of beetroot juice with jaggery was given to each adolescent girls for 15 days in mid morning. The tool used for this study was sociodemographic variables (age, type of family, number of family members, monthly family income, diet, diet frequency, menstrual history includes age of menarche, duration and interval) and bio chemical test in that checking of haemoglobin level by haemocumeter 301 analyzer.

VALIDITY AND RELIABILITY OF TOOL

The validity of the tool was established in consultation with five experts in the field of Medical Surgical Nursing. The reliability was established by to check the level of haemoglobin by haemocumeter 301 analyzer. Throughout the study same instrument was used, there

were no variation determined in results. The haemocumeter 301 analyzer calibrated before study began.

DATA COLLECTION METHOD

Research study was conducted from 21st May 2019 to 21st June 2019 in Vinay Mandir High School, Ta : Petlad, Anand and Sanskruti Higher Secondary School, Ta : Petlad, Anand. An administrative approval was obtained from the principal of school to conduct the study. A total of 60 adolescent girls were selected in that 30 in experimental group and 30 in control group by using non probability purposive sampling technique. The investigator introduced her self to the students to maintained good communication. Before collecting data the investigator has informed about the importance of this study and ascertained the willingness of the participants. The haemoglobin level was assessed by using haemocumeter 301 analyzer in both groups. The researcher thanked and appreciated all the participants for their cooperation.

RESULT

SOCIODEMOGRAPHIC VARIABLES

Majority of the adolescent girls in the experimental group 26(86.7%) & in the control group 26(86.7%) were aged 16 years. With regard to type of family, 17(56.7%) in experimental group and 19(63.3%) in control group were from joint family. With regard to no. of family members, 23(76.7%) in experimental group and in the 26(86.7%) in control group were more than four family members. With regard to monthly income, 15(50.0%) in experimental group and in the 19(63.3%) in control group had income of >Rs.15.000/-. With regard to diet, 16(53.3%) in experimental group and in the 14(46.7%) in control group were vegetarian. With regard to diet frequency, 17(56.7%) in experimental group and in the 14(46.7%) in control group were taken diet three times per day. With regard to Age of menarche, 15(50.0%) in experimental group and in the 16(53.3%) in control group were attained menarche in the age of 14 years. With regard to Duration, 11(36.7%) in experimental group and in the 13(43.3%) in control group having 28 days of cycle. With regard to Interval, 21(70.0%) in experimental group and in the 20(66.7%) in control group having regular interval.

ASSESSMENT OF HAEMOGLOBIN LEVEL IN BOTH GROUP (EXPERIMENTAL AND CONTROL GROUP)

In experimental group mean was 10.50 and SD 1.36 on the 1st day, mean 10.60 and SD 1.35 on the 7th day, mean 10.73 and SD 1.26 on the 15th day, mean 10.93 and SD 1.26 on the 30th day, and in control group mean was 10.60 and SD 0.81 on the 1st day, mean 10.60 and SD 0.81 on the 7th day, mean 10.57 and SD 0.86 on the 15th day, mean 10.57 and SD 0.86 on the 30th day.

COMPARE RESULT BETWEEN EXPERIMENTAL AND CONTROL GROUP

Findings reveals that paired t-test has shown significant difference in experimental group between 1st day pre-test to post-test at 15th and 30th day along with 7th day pre-test to 15th and 30th post-test and 15th day pre-test to 30th day post-test, whereas in control groups paired t-test reveals all result not significant.

Group		Mean	SD	t	df	p Values	Sig/Non sig
Experimental	Pre test (1 st day)	10.50	1.358	1.361	29	0.184	Non Significant
	7 th Day	10.60	1.354				
	Pre test (1 st day)	10.50	1.358	2.971	29	0.006	Significant
	15 th day	10.73	1.258				
	Pre test (1 st day)	10.50	1.358	4.709	29	<0.001	Significant
	Post test (30 th day)	10.93	1.258				
	7 th day	10.60	1.354	2.112	29	0.043	Significant
	15 th day	10.73	1.258				
	7 th day	10.60	1.354	3.808	29	0.001	Significant
	Post test (30 th day)	10.93	1.258				
	15 th day	10.73	1.258	2.693	29	0.012	Significant
	Post test (30 th day)	10.93	1.258				

Control	Pre test (1 st day)	10.60	.814	1	29	0.326	Non Significant
	7 th day	10.60	.814				
	Pre test (1 st day)	10.60	.814	1	29	0.326	Non Significant
	15 th day	10.57	.858				
	Pre test (1 st day)	10.60	.814	1	29	0.326	Non Significant
	Post test (30 th day)	10.57	.858				
	7 th day	10.60	.814	1	29	0.326	Non Significant
	15 th day	10.57	.858				
	7 th day	10.60	.814	1	29	0.326	Non Significant
	Post test (30 th day)	10.57	.858				
	15 th day	10.57	.858	1	29	0.326	Non Significant
	Post test (30 th day)	10.57	.858				

MAJORITY OF FINDINGS

The study findings shows that, paired t-test has shown significant difference in experimental group between 1st day pre-test to 30th day post-test, whereas in control groups paired t-test reveals all result not significant. Chi square was used to association of demographic variables and haemoglobin level. In that, value of all variables were more than 0.05, so that demographic variables has no association with hemoglobin level of experimental group as well as control group. So findings conclude that null hypothesis was rejected by researcher.

CONCLUSION

Researcher felt beetroot juice with jaggery can be effective on improvement in haemoglobin level among the adolescent girls.

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