



ORIGINAL RESEARCH PAPER

A STUDY TO ASSESS EFFECTIVENESS OF BEETROOT JUICE ON CLINICAL FEATURES AMONG NURSING STUDENTS WITH IRON DEFICIENCY ANEMIA IN SELECTED COLLEGE OF JALANDHAR CANTT

Nursing

KEY WORDS: Effectiveness, Iron Deficiency Anemia, Clinical Features

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ABSTRACT

According to WHO, adolescent age group is defined as life span between 10-19 years. This period is characterized by rapid physical, psychological and cognitive development. This is a vulnerable period in the human life cycle for the development of nutritional anemia. This study aimed to evaluate the efficacy of beetroot juice in improving clinical features levels among nursing students with IDA in Jalandhar Cantt. Utilizing a quasi-experimental pre-test post-test design, 46 nursing students with self-structured clinical features rating scale score ranging between 1-40 were randomly selected. Participants in the experimental group consumed 100 ml of beetroot juice daily for 60 days, while the control group received no intervention. Pretest and post-test data were collected to measure the outcomes. Results indicated a significant difference in clinical features between the groups, showcasing notable improvements in the experimental group. The study concludes that beetroot juice effectively alleviates clinical features of iron deficiency anemia in nursing students.

INTRODUCTION

Iron deficiency anemia primarily affects clinical features by causing extreme fatigue, weakness, pale skin shortness of breathe, dizziness, headache, cold hands, and feet, brittle nails and in severe cases a craving for nonfood items(pica).

Various types of anemia prevalent in India such as Iron deficiency anemia, Thalassemia, Aplastic anemia, Hemolytic anemia, Sickle cell anemia, Pernicious anemia.

But the iron deficiency anemia is major issues among nursing students due to chronic blood loss caused by excessive menstruation. Increased demands for iron, such as children undergoing rapid growth in adolescence.

During Adolescent various physiological changes occurs as a result, nutritional requirements of the body increase tremendously, therefore important to consume a balanced diet at this stage and also starts menstruation so need to consume foods rich in iron, calcium, etc.

Anemia during adolescence has significant long-term effects, including stunted growth, poor academic performance, reduced immunity, and adverse reproductive health outcomes for females, such as irregular menstruation and complications in pregnancy. The prevalence of anemia is particularly alarming among Indian adolescents, where dietary inadequacies, coupled with infections (e.g., malaria, hookworm), exacerbate the issue.

Anemia Database Among Reproductive Age Group

General Details

- 1) Non pregnant women age 15 -49 years who are anemic (<12.0 g/dl) in Urban -72.1% and rural -86.1
- 2) Pregnant women age 15-49 years who are anemic (<11.0 g/-dl)
- 3) All women age 15 -49 years who are anemic in urban - 70.6% and rural -86.6%

Objectives Of Study

1. Assess the pretest and posttest level of clinical features nursing students among control and experimental group
2. Assess effectiveness of beetroot juice on clinical features nursing students among control and experimental group.

HYPOTHESIS

There will be significant difference between the level of

clinical features before and after the administration of beetroot juice among nursing students in experimental group.

Methodology

Research Approach

A quantitative approach is used to determine the effectiveness of beetroot juice upon Clinical Features, among nursing students with iron deficiency anemia

Research Design

A Quasi-experimental pretest posttest design is adopted for conducting the study.

Symbolic Presentation Of Quasi-experimental Research Design

Experimental Group:

Pretest	treatment	posttest
01	X	02

Control Group:

Pretest	treatment	posttest
01	-	02

KEY:

01-Pretest assessment of clinical features in experimental group

01- Pretest assessment of clinical features in control group

02- Posttest assessment of clinical features in experimental group

02- Posttest assessment of clinical features in control group

X - Nursing Intervention - Administration of beetroot juice for the experimental group.

Research Setting

The study was conducted in Jalandhar Cantt. The experimental group and control group were selected from Army College of Nursing, Jalandhar Cantt.

Population

In the present study, the accessible population is nursing students with iron deficiency anemia residing in Army College of Nursing, Jalandhar.

Sample

Sample is the number of individuals from whom the required information is obtained. In the present study the sample was 46 nursing students having iron deficiency anemia divided into two groups 23 control group and 23 experimental group residing in Army College of Nursing.

Description OfTools
Tool 1:Demographic Characteristics
 In the demographic characteristics total 9 items.
Tool 2:Self-structured Clinical Features Rating Scale
 It contains the self-structured clinical features observation rating scale. The tool has 20 items with total scoring of 40 and based on that population was divided into 4 categories i.e., no anemia,mild ,moderate and severe.

ranging between 1-40 in self structured clinical feature rating scale were selected for the study. Sample size was 46 nursing students and their pre posttest clinical features were assessed. The beetroot juice was by 100gm of beetroot powder mixed with 1000ml of water, 100gm of sugar, 100ml of lemon juice and 10ml of ginger juice. Each participant in experimental group was given 10ml of beetroot juice for 60 days and no intervention was given to control group. The pretest data was collected for both group one day prior to the study and posttest conducted in 61st day of pretest.

Data Collection Process
 The study was conducted at Army College of Nursing Jalandhar and written permission and consent were obtained. The selection of sample was done by lottery method and the students whose Hb level was less than 11.9GM/DL were investigated for clinical features and students with scores

RESULT
 This section deals with the description of alleviation of clinical features in experimental group and is explained in frequency and percentage distribution.

S.NO.	CHARACTERISTICS	EXPERIMENTAL GROUP		CONTROL GROUP	
		F	%	F	%
1	Age(in years)				
	18 – 19	3	13.04	4	17.39
	20 – 22	15	65.22	12	52.18
	22 – 24	5	21.74	5	21.74
	24 – 26	0	0	2	8.69
2	Educational class				
3.	2nd Semester	00	00	10	43.48
	4th Semester	09	39.13	05	21.74
	6th Semester	14	60.87	00	00
	4th Year	00	00	08	34.78
	Have you attained menarche				
	Yes	23	100	23	100
	No	00	00	00	00
4	Age at menarche				
	12	03	13.04	04	17.39
	13	10	43.48	09	39.13
	14	10	43.48	07	30.44
	15	00	00	03	13.04
5	Menstrual regularity				
	Regular	17	73.91	21	91.31
	Irregular	06	26.09	02	8.69
6	Monthly family income				
	<5001	00	00	00	00
	5001-10000	00	00	01	4.35
	10001-15000	05	21.74	01	4.35
	>15000	18	78.26	21	91.30
7	Type of family				
	Joint family	08	34.72	04	17.39
	Nuclear family	15	65.28	19	82.61
8.	Religion				
	Hindu	22	95.65	20	86.96
	Muslim	00	00	01	4.35
	Others	01	4.35	02	8.69
9	Diet				
	Vegetarian	18	78.25	17	73.92
	Non vegetarian	05	21.75	06	26.08

SR.NO.	PARAMETER	DEGREE OF IRON DEFICIENCY ANEMIA	FREQUENCY(f)	PREVALENCE (%)
1.	Clinical Features			
		No Anemia (0)	192	80.68
		Mild Anemia(1-13)	35	14.70
		Moderate Anemia(14-27)	10	4.20
		Severe Anemia(28-40)	01	0.42

Level of Parameter	Max. Score	EXPERIMENTAL GROUP						Total (%)	CONTROL GROUP						Total
		Mild		Moderate		Severe			Mild		Moderate		Severe		
		f	%	f	%	f	%		f	%	f	%	f	%	

Clinical Features	23	14	60.87	9	39.13	-	-	100	21	91.30	1	4.35	1	4.35	100
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Table 4: Frequency And Percentage Distribution Of Posttest Clinical Features Of Nursing Students With Iron Deficiency Anemia N= (23+23=46)

LEVEL OF PARAMETER	MAX. SCORE	EXPERIMENTAL GROUP								Total	CONTROL GROUP								Total
		No		Mild		Moderate		Severe			No		Mild		Moderate		Severe		
		F	%	f	%	f	%	f	%		f	%	f	%	f	%	F	%	
Clinical Features	23	0	0	19	82.61	4	17.39	0	0	100	0	0	21	91.30	1	4.35	1	4.35	100

Table 5: Mean, Mean Difference, Standard Deviation And Unpaired T Test Of Posttest Of Control And Unpaired T Test Of Posttest Of Control And Experimental Group For Clinical Features Among Nursing Students With Iron Deficiency Anemia

CLINICAL PARAMETER	EXPERIMENTAL GROUP POSTTEST		CONTROL GROUP POSTTEST		MEAN DIFFERENCE	"T" VALUE	P-VALUE
	Mean	SD	Mean	SD			
Clinical features	8.91	5.97	6.30	4.34	2.61	2.24	0.0354

CONCLUSION

The level of clinical features nursing students who received beetroot juice was significantly improved than those who did not received beetroot juice.

The beetroot juice has significant effect on improving the clinical features of iron deficiency anemia among nursing students.Thus, it can be concluded that beetroot juice can be used to improving the clinical features of iron deficiency anemia.

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