

“A STUDY TO FINDOUT THE PREVALENCE OF ANEMIA AND EVALUATE THE EFFECTIVENESS OF FRESH CURRY LEAVES TO IMPROVE HEMOGLOBIN LEVEL AMONG ADOLESCENT GIRLS AT SELECTED HOSTELS, KOLAR, KARNATAKA”

Mrs Gayathri K.V,¹ Mrs.Srilakshmi. G,² Rashmi Edwin³

Mrs Gayathri K.V, Professor, Department of OBG Nursing, Sri Devaraj Urs College of Nursing, SDUAHER, Kolar, Karnataka.

Mrs.Srilakshmi. G, Nursing Tutor, Sri Devaraj Urs College of Nursing, SDUAHER, Kolar, Karnataka.

Corresponding Author: Mrs Gayathri K.V, Professor, Department of OBG Nursing, Sri Devaraj Urs College of Nursing, Tamaka, Kolar.

Email:gayathrikv88@gmail.com.

Background: Anaemia is one of the major nutritional problems all over world mainly in developing countries. Adolescents group are major risk for Anaemia due to various cause irrespective of Government efforts to decrease incidence rate of Anaemia in India. The rate has increased to 59% among girls in India¹. The **Aim** of the study was to find out the prevalence of Anaemia and determine the effect of fresh curry leaves in improving Hb level among adolescent girls. **Methods:** 366 hostel inmates were included in the study. In that overall prevalence of anaemia was 104(28.4%)(classification was done according to WHO). A true experimental with pre-test, post-test control group design was used to conduct the study at girl's hostel. Probability simple random sampling technique (lottery method), was adopted to select 100 adolescent girls among 104 who were identified as anaemic. Deworming Tab. Albendazole 400mg was given to all the inmates. Participants were divided into 50 Experimental and 50 Control group randomly. Fresh curry leaves was given to experimental group for 90 days every morning in empty stomach after drinking water. The Hb level was assessed using hemometer. Data was analysed using descriptive and inferential statistics. **Results:** the major findings of the study showed that, unpaired 't'_(cal) value 4.76 was greater than 't'_(tab) value 2.01 value. Curry leaves was effective in increasing Hb level among adolescent girls at 0.05 level of significance. **Conclusion:** there was no much difference in pre and post intervention value in experimental group, but compared to control group, in experimental group there was increased Hb level. Hence curry leaves was effective in increasing Hb level.

Key words: Hostel inmates, Adolescent girls, anaemia, haemoglobin, Hemometer, curry leaves.

How to cite this article: Gayathri K.V1 Mrs.Srilakshmi. G2 Rashmi Edwin3. “A STUDY TO FINDOUT THE PREVALENCE OF ANEMIA AND EVALUATE THE EFFECTIVENESS OF FRESH CURRY LEAVES TO IMPROVE HEMOGLOBIN LEVEL AMONG ADOLESCENT GIRLS AT SELECTED HOSTELS, KOLAR, KARNATAKA”. Int J Drug Deliv Technol. 2026;16(78s):1125-1129. DOI: 10.25258/ijddt.16.78s.124.

INTRODUCTION

Anaemia affects one in four people worldwide. In age group between 10–24 years, 430 million people are affected, with low and middle income Nations having the highest prevalence.² Among adolescents who are in formative stage of life, Anaemia can reduce work capacity, impair neurocognitive and pubertal development, and increase susceptibility to Infections.³ For teenage females who become pregnant, about 21 million instances a year; Anaemia effects include Maternal and Neonatal mortality as well as unfavourable birth outcomes.⁴ Too often, the crises are triggered by the additional burden of menstrual blood loss, whether it is typical or abnormal.⁵

When compared to other developing countries, India has recorded a higher than average prevalence of Anaemia in Adolescent girls. Adolescence has traditionally been thought as the phase between childhood and maturity.⁶ Major psychological, behavioural, and physical changes occur during this stage, and because of the increased physical exercise and rapid growth spurt, Adolescence

requires extra nutrition which is not supplemented and leading to Anaemia.⁷

Adolescent girls especially hostel inmates were selected for this research because hostel inmates are not supplemented with iron rich diet. More over food prepared in mass is not nutritionally balanced and individual diet plan is out of imagine. Hence to raise awareness among them and proving cost effective, easily available remedy to cure such major condition would help to reduce anaemia among adolescents, which leads for increase academic performance, provide healthy physical, psychological, intellectual well-being of the individual which directly create societal healthy well-being. In light of the aforementioned, this research was conducted to determine the prevalence and find the effectiveness of curry leaves in improving Hb level among adolescent girls.

Title of the study

“A STUDY TO FINDOUT THE PREVALENCE OF ANEMIA AND EVALUATE THE EFFECTIVENESS OF FRESH CURRY LEAVES TO IMPROVE HEMOGLOBIN LEVEL AMONG ADOLESCENT GIRLS AT SELECTED HOSTELS, KOLAR, KARNATAKA”

“Prevalence of Anemia & Effect of Fresh Curry leaves in Improving Hemoglobin level among Adolescent Girls”.

OBJECTIVES

1. To find out the prevalence of anaemia among hostel inmates at selected hostels using Hemometer.
2. To evaluate the effectiveness of Fresh curry leaves in improving haemoglobin level among anaemic girls in experimental group compared to control group.

MATERIALS AND METHODS

An experimental, pre-test post-test, control group design was adopted. The study was conducted on adolescents' girls residing in hostels. 366 hostel inmates were assessed to know the prevalence of anaemia using Hemometer. The categorization of anaemia was done according to WHO scale. Among them the prevalence of anaemia was 104(28.4%). Among 104, 100 adolescents were selected based on inclusion criteria. By using simple random sampling technique, 50 Adolescents were allotted to Experimental group and 50 Adolescents were allotted to Control group. Deworming was done by using Tab. Albendazole 400mg in both the groups.

Formal permission was obtained from the Institutional Ethics Committee, Ayurveda doctor for quantity of leaves given & permission was obtained from the concerned institutional hostel authorities. The investigators explained the purpose, nature, duration, methodology and process of the study to the hostel inmates, gained their acceptance and written informed consent was obtained before including girls into the study. Confidentiality and privacy was maintained throughout the study. Experimental group was given fresh curry leaves every morning in empty stomach after drinking water for 90 days. And post intervention Hb level test was done after 91 days using Hemometer in both experimental and control group. Data was calculated and analyzed in terms of objectives of the study, using descriptive and inferential statistics.

RESULTS

Findings related to Socio Demographic Variable

With regard to socio demographic variable, in Experimental group, Majority 21 (42%) of the adolescent girls were in the Age group of 18 years, Maximum 28(56%) of adolescent girls belongs to Hindu religion, Maximum 32(64%) of adolescent girls belongs to Nuclear family, Majority 31(62%) of adolescent girls Family income was Rs.10, 001 - 20,000/ month, More 32(64%) of the adolescent girls were Non vegetarian , Maximum 18(36%) of adolescent girls were eating 2times/day , major 20(40%) of adolescent girls were fuel type of eating, 50(100%) all adolescent girls have not taken

tab. Albendazole and they don't have any history of medical conditions.

In control group, Majority 16(32%) of the adolescent girls were in the age of group of 18 years, 27 (54%) of adolescent girls belongs to Hindu religion, Maximum 28(56%) of adolescent girls belongs to Nuclear family, Majority 32 (64%) of adolescent girls family income was Rs.10, 001 - 20,000/ month, 38 Majority (76%) of the adolescent girls were Non vegetarian , Maximum 34(68%) of adolescent girls were eating 3 times/day, major 15 (30%) adolescent girls were fun type of eating, all 50(100%) adolescent girls didn't taken tab. Albendazole and they don't have any history of medical conditions. (Table: 1)

Prevalence of Anaemia among Adolescent girls.

Findings related to the prevalence rate of Anaemia showed that among 366 participants 104 (28.4%) hostel inmates identified as Anaemic.

Distribution of Adolescent girls Hb level in Pre and Post Intervention according to WHO classification in Experimental and Control group.

Finding in Experimental group consisting of 50 inmates showed that, during pre-intervention 21(42%) had moderate Anaemia, 29(58%) had mild anaemia. In post intervention 8(16%) had Moderate anaemia, 23(46%) had Mild anaemia, and 9(18%) were having Normal Hb.

Control group consisting of 50 inmates findings showed that, during pre-intervention 8(16%) had moderate Anaemia, 42(84%) had mild anaemia. In post intervention 10(20%) had Moderate anaemia, 40(80%) had Mild anaemia. (Table 2).

The Mean, Standard Deviation, and Mean% of the Haemoglobin of the hostel inmate before and after the Intervention between Experimental and Control group.

The study findings revealed that in experimental group, the Mean value of pre-test was 10.2, SD was 0.69, Mean% was 1.2 and post-test Mean was 11, SD was 0.81, the Mean% was 1.1. In control group, the Mean value for pre-test was 6.26, SD was 3.26, Mean% was 6.2%. And post-test Mean value was 10.38, SD was 0.48, Mean% was 1.4%. This showed that there was difference between pre and post intervention Hemoglobin levels among Adolescent girls residing in hostel at Experimental and Control group. (Table 3).

The Mean difference, Standard Error & Paired 't' test values of Haemoglobin levels in Experimental & Control group.

In Experimental group, the Mean Difference was 0.8, Standard Error was 0.11 and Paired 't' test value in Experimental group was (t_{cal}) was 0.71 and (t_{tab}) was 2.66 & in Control group the Mean Difference was 4.12, Standard Error was 0.06 and Paired 't' test value was (t_{cal}) was 1.88 and (t_{tab}) was 2.66. (Table 4).

“A STUDY TO FINDOUT THE PREVALENCE OF ANEMIA AND EVALUATE THE EFFECTIVENESS OF FRESH CURRY LEAVES TO IMPROVE HEMOGLOBIN LEVEL AMONG ADOLESCENT GIRLS AT SELECTED HOSTELS, KOLAR, KARNATAKA”

Standard error and unpaired ‘t’ value to find out the effectiveness of fresh curry leaves between experimental and control group.

The study findings regarding, the effectiveness of fresh curry leaves between Experimental and Control group showed that, the Standard Error was 0.133, the calculated Unpaired ‘t’₍₉₈₎ was 4.76 and ‘t’_(tab) value was 2.01 at 0.05 level of significance. This showed that the fresh curry leaves was effective in improving Hemoglobin level among Adolescent girls. (Table 5).

DISCUSSION

The major findings of the study revealed that fresh curry leaves was effective in improving the Hb level among Adolescent girls who are residing in hostel which was statistically significant at 0.05 level. Unpaired ‘t’ test showed that calculated value was 4.76 which was greater than tabulated value 2.01. To my surprise I didn’t get literature and research projects supporting to my study relating to curry leaves on increasing Hb level. But articles are there indicating the benefits of curry leaves and improving blood. Hence this study would be helpful for future in-depth interventional studies conducted on curry leaves across globe.

TABLES

Table 1: Distribution of Socio- Demographic Variables of Adolescent girls in Experimental and Control group. N=100

Table: 2 Frequency and Percentage distribution of Adolescent girls according to the level of Hemoglobin in Experimental group and Control group. N=100

Table: 3 The Mean, Standard Deviation, and Mean Percentage of the Hemoglobin of the Hostel inmate Adolescent girls before and after the Intervention were distributed between the Experimental and Control groups. N=100

Table 4: Mean Difference, Standard Error & Paired ‘t’ test of Hemoglobin levels in Experimental and Control group.

Haemoglobin According to WHO	Experimental group n=50				Control group n=50			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	F	%	f	%	f	%
Normal ≥ 12gm%	00	00	09	18%	0	0	0	0
Mild Anaemia 10-11.9gm%	29	58%	23	46%	42	84%	40	80%
Moderate Anaemia 7-9.9gm%	21	42%	08	16%	08	16%	10	20%
Severe Anaemia <7gm/dl	00	00	00	00	00	00	00	00

Sl.no	Areas	Experimental group n1(50)			Control group n2(50)		
		Mean	SD	Mean%	Mean	SD	Mean%
1	Pre- intervention	10.2	0.69	1.2	6.26	3.26	6.2
2	Post- intervention	11	0.81	1.1	10.38	0.48	1.4

	Mean difference	SE	Paired ‘t’ Test	
			calculated value	Tabulated value
Experimental group(n = 50)	0.86	0.11	0.71	2.66
Control group(n =50)	4.12	0.06	1.88	2.66
(p<0.05), df=49				

Table: 5 Standard Error and Unpaired ‘t’ value to find out the Effectiveness of fresh Curry leaves between Experimental and Control group.

N=100

Standard error	Unpaired ‘t’ test	
	Calculated value (t _{cal})	Tabulated value (t _{tab})
0.133	4.76	1.660
(p<0.05), df=98		

Conclusion:

Many Adolescent girls especially Hostel inmates who are staying away from home are more prone for Anaemia especially in developing countries like India. Identifying them as Anaemic is the first priority for us because it is directly affecting their physical and even academic performance. If we identify the root cause of Poor Academic performance majority are Anaemic. Addressing this issue is the responsibility of the hostel authorities since food distribution will be their in charge. And before going to medicines, changing their diet pattern and providing them iron rich diet which are easily available and organic without any side effect at initial stage can improve the adolescent health before it’s complicated. Let’s take steps to cure Anaemia at early stage and give healthy adolescents to the society. curry leaves are one among the items which are easily available, accessible & cost-effective in the list of iron rich green leafy vegetables which most of us are unaware off. Instead of running behind expensive and lavish remedy we can adopt and recommend our ancient traditional used curry leaves which were abundantly used as our health care routine to have a healthy body and mind.

IMPLICATIONS

- Fresh curry leaves can be introduced as a stimulating mode of intervention for promoting in improving the hemoglobin among adolescent girls suffering from anemia.
- Fresh curry leaves play a very effective and non-invasive intervention for treating anemia without any side effects.

“A STUDY TO FINDOUT THE PREVALENCE OF ANEMIA AND EVALUATE THE EFFECTIVENESS OF FRESH CURRY LEAVES TO IMPROVE HEMOGLOBIN LEVEL AMONG ADOLESCENT GIRLS AT SELECTED HOSTELS, KOLAR, KARNATAKA”

- Researchers should focus on non-pharmacological interventions to increase hemoglobin level.
- Extensive research can be done to identify the risk factors and methods of primary prevention on Anemia.
- Collaborative research could be initiated to try various preventive measures to control iron deficiency anemia.

RECOMMENDATIONS

Based on the experience gained during the period of the study and the interpretations made and conclusion drawn thereafter the following recommendations are made:

- ❖ Settings can be done in broad areas.
- ❖ Sample size can be increased .
- ❖ Laboratory method can be used to estimate Hb level for exact investigation.
- ❖ Volume of use of curry leaves can be increased according to severity of anaemia.
- ❖ Studies can be conducted on curry leaves powder with measurement in grams.
- ❖ Duration of study can be increased for better results.

FINANCIAL SUPPORT AND SPONSORSHIP: NIL

CONFLICTS OF INTEREST:

There are no conflicts of interest.

REFERENCES:

1. World Health Organization. Prevention of iron deficiency anaemia in adolescents. WHO Regional Office for South-East Asia.
Available from: <https://apps.who.int/iris/handle/10665/205656>.
2. Kalaivani K, Ramachandran P. Time trends in prevalence of anaemia in pregnancy. The Indian journal of medical research. [Online (2018 Mar), cited 28 Mar 2023)];147(3): 268.
Available at: <https://dhsprogram.com/pubs/pdf/fr130/12chapter12.pdf>
3. UNICEF. Adolescent development and participation. Available from: <https://www.unicef.org/india/what-we-do/adolescent-development-participation>.
4. WHO. The Global Health Observatory: WHO Global anaemia estimates. [online (f 2021), cited 2023 March 20)].
Available from: https://www.who.int/data/gho/data/themes/topics/anaemia_in_women_and_children
5. Samuel S, Anwesha L, Vani S, Arjan D W, Purnima M, Kapil Y, Mini V, William J, Sheila C. Vir, P, Hong N. Anaemia in Indians aged 10–19 years: Prevalence, burden and associated factors at national and regional levels. Journal of Maternal

and Child Health. [online (20 June 2022), Cited (Oct 2022)]; 18(4).

Available from : <https://onlinelibrary.wiley.com/doi/full/10.1111/mcn.13391>.

6. Sanjeev M C, Vasant R D. A Study of Anemia Among Adolescent Females in the Urban Area of Nagpur. Journal of Indian community medicine; [online 2008 Oct, cited (2 April 2023)]; 33(4): 243–245.

Available

from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2763695/>.

7. Zhonghai Z, Christopher R S, Yue C, Qi Q, Shaoru L, et.al. Anemia and associated factors among adolescent girls and boys at 10–14 years in rural western China. BMC Public Health; [online (26 January 2021), cited (2 April 2023)]; 21: P: 218.

Available

from:

[https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-10268-z#:~:text=Adolescent%20girls%20were%201.73%20\(95,to%20those%20in%20pre%2Dpuberty](https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-10268-z#:~:text=Adolescent%20girls%20were%201.73%20(95,to%20those%20in%20pre%2Dpuberty)