IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

"A Pre-Experimental Study To Assess The Effectiveness Of Lemon Juice On Level Of Anaemia Among Adolescent Girls Of Selected Urban Slum Of Indore In The Year 2024-2025."

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ABSTRACT

In this study conceptual framework is based on **patient centered approach theory** of **Faye Glenn abdellah (1960).** The problem solving method is the basis for abdellah'model.

A pre-experimental research approach using one group pre-test post test research designs was adopted for the study. The population comprise of 60 adolescent girls between the age group of 11-18 year had haemoglobin level from 8-9.9 gm/dl. The main study was conducted at selected urban slum of Indore. The duration of study was 1 January to February 2025. Based on the objectives and hypotheses; the data was analyzed using various statistical tests.

A purposive sampling technique was used to select the samples. The study intended to measure the increase in haemoglobin level among adolescent girls after intervention. Here group was assessed before and after introducing the intervention i.e. administration of lemon juice

The key variables were lemon juice supplement. A structured interview schedule was used for socio-demographic variables and sahli's haemometer was used to assess haemoglobin. Six experts did the validation of tool. Reliability of sahli's haemometer was found to be r = 0.92, by Karl Pearson correlation co-efficient. After conducting study it was found that there is increase in haemoglobin after administration of lemon juice. There was significant difference between pre-test and post-test haemoglobin level of adolescent girls at the level of $p \leq 0.05$.

The finding of the study revel that there was significant increase in haemoglobin level at the level $p \leq 0.05$ after administration of lemon juice. And increase in haemoglobin at the level of $p \leq 0.01$ after administration of lemon juice.

The finding of the study has implication in nursing education, nursing practice, nursing administration, nursing research.

This study will help to raise awareness among nursing student, educators, and community leaders the importance of lemon juice. Nurse administrator should take initiative in adopting policies or plan with government of India or Madhya Pradesh for incorporating this type of supplement for improving the haemoglobin of adolescent girls .

BACKGROUND

Anaemia is strictly defined as a decrease in red blood cell (RBC) mass. The function of the RBC is to deliver oxygen from the lungs to the tissues and carbon dioxide from the tissues to the lungs. This is accomplished by using haemoglobin (Hb), a tetramer protein composed of heme and globin. Anaemia impairs the body's ability for gas exchange by decreasing the number of RBCs transporting oxygen and carbon dioxide. **Iron deficiency anaemia** (or **iron deficiency anaemia**) is a common anaemia that occurs when iron loss (often from intestinal bleeding or menses) occurs, and/or the dietary intake or absorption of iron is insufficient. In iron deficiency, haemoglobin, which contains iron, cannot be formed. Iron deficiency is the most common single cause of anaemia worldwide, accounting for about half of all anaemia cases. It is more common in women than men. Estimates of iron deficiency world wide range very widely, but the number almost certainly exceeds one billion persons globally.

NEED OF THE STUDY

After doing the survey of the following communities of indore, it was found that the large number of girls are suffering from anaemia . Most of them are not familiar with the anaemia and some of the girls are there who know that anaemia is not good but don't have knowledge about how to take care of themselves in order to prevent the anaemia. There is urgent need to educate them how to manage their lifestyle regarding diet, physical activity and exercises, because this may help them to improve their condition. Two billion people globally suffer from iron deficiency. India has the highest prevalence of iron deficiency anaemia among women in the world including adolescents. 60-70 percent of Indian adolescent girls are anaemic Hb <12gm%.

STATEMENT OF THE PROBLEM: -

"A pre-experimental study to assess the effectiveness of lemon juice on level of anaemia among adolescent girls of selected urban slum of Indore in the year 2024-2025.

OBJECTIVES:-

- To determine the level of anemia (mild 8 -9.9g/dl) among Adolescent girl before intervention.
- To find out the significant association with demographic variables and hemoglobin level among adolescent girls of selected urban slum of Indore

- To determine the effectiveness of lemon juice on level of anemia among adolescent girls.

HYPOTHESIS:-

1. RH1:- :- there is a significant association with level of anemia and selected demographical area of Indore.

2. RH2:- there is a significant difference in the level of anemia before and after administration of lemon juice.

CONCEPTUAL FRAMEWORK

Conceptual framework is a theoretical approach to the study of problems that are scientifically based and emphasizes the selection, arrangements and classification of its concepts. A conceptual framework states functional relationship between events and is not limited to limited to statistical relationship **(Wood and Haber 2005)**

METHODOLOGY

Research Design- the research design selected for the study was one group pre-test post- test design. figure- 2 (page no.)

SETTING

The setting for the present study is urban slum for the community health field experience.

SAMPLE

The sample for this study comprised of 60 sample receiving one month intervention

SAMPLING TECHNIQUE

Purposive sampling

TOOL

The tool for collection of data for this study comprised of three section

Section 'A' Socio Demographic Data

Section 'A' consist of a structured interview schedule to collect baseline data, which consisted of 12 items for socio demographic data for obtaining formation about selected factors such as Age, Sex, education, Religion, and dietary habits; frequency of meal, duration of menstruation, and their height and weight.

Section B

Assessment of hemoglobin by sahli's hemometer

Section c-

Section 'C' consists of clinical information, which would be assessed at the time of interview of the anaemic girls. It consisted of 7 items.

PILOT STUDY

The pilot study was conducted in urban slum of, Indore. The data were collected from 10th nov to 10th dec. among adolescent girls between 11-18 year of age to assess their hemoglobin level and to assess the effectiveness of intervention i.e. administration of lemon juice.

Study purpose was explained to the sample with the assurance of confidentiality.

PROCEDURES FOR DATA COLLECTION

The study was carried out in the same way as that of the pilot study. A total of 60 samples were selected for the studies that were in urban slum of Indore. The actual data collection period was from 1st Jan to 1st Feb. 2012. The investigator collected data from 60 anemic girls between the11-18 years of age.

The purpose of the study was explained to them about study and informed consent was obtained. Confidentiality was assured to all subject to get the co-operation.

Pre-test hemoglobin was measured by hemometer among adolescent girls. The sample were categorized into one group on the basis of the intervention i.e. administration of lemon juice to one group for one month .after one month intervention ,again hemoglobin was checked to assess the effectiveness of intervention on hemoglobin level.

A thank was given to respondent for their patience and co-operation in data collection process.

FINDINGS

- A total of 60 samples were selected in the study which were included in the study through purposive sampling based on the inclusion criteria.
- Regarding the age, most of the subjects (41.66%) were in the age group 17-18 years and (34%) were in the age group of 15-16 and (16.66%) were in the age group of 13-14 year and only (8.33%) were in the age group of 11-12 years.
- Regarding religion majority of the subjects belongs to Hindu religion, 84% belonged to Hindu religion whereas only 16% belonged to Muslim religion.
- With regards to class standard, majority 34% were studying in 9^{th} standard.
- With regards to number of sibling 59% subjects having two sibling and 41% having three or more sibling .
- It is also noted from the table that the 100% of the subject were from the urban slum of Indore.
- Regarding frequency of meal, more than half 50% in the study had a history of taking meal only two times a day whereas 34% subjects had a history of taking meal three time in a day .
- With regards type of meal majority 66% subjects were non-vegetarian and only 34% subjects were vegetarian.
- With regards taking tea after meal majority of subjects 83% were not taken tea after meal.
- With regards to majority of subjects 84% had started their menstrual cycle at the age of after 12 year and 10% had started at the age of 12 year and only 6% had not started their menstrual cycle.
- The data show in the table -2 indicates that the most of the subjects 94% having menstruation for 3-4 days
- Majority of subjects 57% had use 3-4 pad daily and 43% use 5-6 pads in a day.
- More than half 50% of subjects were under weight whereas 34% having normal
- Majority of subjects (58%) having 144-149c.m. height
- that 35% girls were feel fatigued in pre-test but in post-test only 16% girls were feel fatigued.
- In pre-test 50% girls were having shortness of breath but in post-test 91% girls were not having shortness of breath.
- Majority of girls were having difficulty to concentrate in pre-test but in post test only 5% girls were having difficulty to concentrate.
- Around 58% girls were having rapid heartbeat in pre-test but in post-test only 16% girls having rapid heart beat
- Majority of girls were having numbness or coldness in their hand or feet's but in post-test (75%) girls were not having numbness or coldness.
- Around 58% girls were irritated easily in pre-test but in post-test 83% girls were never irritate.
- 73% girls felt depressed sometimes in post-test 78% girls didn't feel depressed.

DISCUSSION

The study indented to find out the effectiveness of lemon juice on level of anaemia. The findings of the study have been discussed with the reference to the objective and hypothesis stated in the chapter one and with finding of others studies.

1. Association between pre-test and Hb level and selected demographic variables

The chi- square computed between pre-test Hb level and selected demographic variable showed that there was association found between pre-test and Hb level and variables such as type of meal, number of cloth/pads use in a day, the reason of significant association with pre-test Hb level and sociodemographic variables may be of limited sample and purposive sampling. Verma et.al (2004) reported significant association of anaemia with variables such as occupation of father, habit of post meal consumption of tea/coffee, consumption of green leafy vegetables and body mass index.

2. Effectiveness of lemon juice on level of anaemia

The finding demonstration that –

1. The mean pre-test score of Hb level was 8.71 gm/dl.
2. The pos-test score of mean Hb level 10.57gm/dl was found to be significantly higher than the mean pre-test score. ($t= 12.24$, $p<0.05$). Hence the research hypothesis is accepted. Suggesting that the gain in post test score of Hb level is due to the administration of lemon juice. The conceptual framework adopted for this study is based on **patient cantered approach theory** of **Faye Glenn abdellah (1960).** The problem solving method is the basis for abdellah'model. In this study the need of anaemic adolescent girls is to maintain normal Hb level. In order to meet the need of adolescent girls, lemon juice administration was done. Which is an affective in terms of gain in Hb level of anaemic girls

CONCLUSION

- Most of the adolescent girls found anaemic were in the age group between 17-18years.
- More than half of adolescent girls 50% were found under weight.
- There is significant effect of administration of lemon juice on level of anaemia($t=12.241$,$p<0.05$)
- There is a significant association between Hb level and selected demographical variables.

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