



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 10, Issue, 07(G), pp. 33739-33741, July, 2019

**International Journal of
Recent Scientific
Research**

DOI: 10.24327/IJRSR

Research Article

TO ASSESS THE PREVALENCE OF ANAEMIA AND EFFECTIVENESS OF IRON SUPPLEMENTATION IN IMPROVING THE LEVEL OF HAEMOGLOBIN AMONG ADOLESCENT GIRLS

Samridhi Pokharel*¹ and Pauline Sharmila²

¹School of Nursing Science and Research, Sharda University, Greater Noida

²School of Nursing Science, Sharda University, Sharda University, Greater Noida

DOI: <http://dx.doi.org/10.24327/ijrsr.2019.1007.3738>

ARTICLE INFO

Article History:

Received 13th April, 2019

Received in revised form 11th May, 2019

Accepted 8th June, 2019

Published online 28th July, 2019

Key Words:

Iron supplement, Adolescents girls.

ABSTRACT

Introduction: The term anemia indicates a low red cell count and a below normal hemoglobin or hematocrit level. Anemia can be defined as a reduction in hemoglobin concentration, hematocrit or red cell mass. According to the WHO grading of anemia, hemoglobin level (Hb) between 10gm/dl to 12gm/dl is known as mild anemia, Hb level between 7gm/dl and 10gm/dl is known as moderate anemia and Hb level below 7gm/dl is known as severe anemia. **Aim:** The aim of this narrative review is to find information on the effectiveness of iron supplementation in improving the level of hemoglobin among adolescent girls. **Methodology:** **Intervention-** Effectiveness of iron supplement. **Types of studies:** Quasi experimental, Pre experimental, True Experimental study. **Types of participants:** Adolescents girls (12-18years) **Setting:** Government Schools of Greater Noida, Uttar Pradesh. **Outcome:** This narrative review result has appeared that Iron supplement will be effective to increase the level of haemoglobin.

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INTRODUCTION

Adolescence is the period that starts from puberty till the time of sexual maturation is completed. 'On this period, the desire for independence and autonomy increases whereas, a healthy adult emerges from a healthy child. So, a child's nutritional status has great impact on their growth and development. In the absence of proper nutrition, many nutritional problems may occur.

Anaemia can be defined as a reduction in haemoglobin concentration, hematocrit or red cell mass. According to the WHO grading of anaemia, haemoglobin level (Hb) between 10gm/dl to 12gm/dl is known as mild anaemia, Hb level between 7gm/dl and 10gm/dl is known as moderate anaemia and Hb level below 7gm/dl is known as severe anaemia. A cross-sectional study was conducted on 443 randomly selected school adolescent girls. Data were collected using pretested structured questionnaire and anthropometric measurements. Blood sample was also collected to assess the haemoglobin (Hgb) value of study participants. SPSS version 20 was used to analyze data.

Descriptive statistics were used to describe data. Bivariate and multivariable logistic regression models were used to identify

the associated factors with the outcome variable. Crude and adjusted odds ratios with 95% confidence interval (CI) were calculated to identify the variables significantly associated with the outcome variable. The prevalence of anaemia was 11.1%, duration of menstruation flow 95% CI (1.08- 5.44)], and BMI for age 95% CI (1.43-7.05)] were the predictors of anaemia. Anaemia was a mild public health problem among school adolescent girls in the study area. (Mengistu, Azage,& Gutema, 2019)

A Quasi experimental study was conducted among 50 female medical undergraduate students. They randomly received oral nutritional supplement (jaggery balls - 5 g and raisins - 5 g) once daily in the morning for 8 weeks. Body weight and complete blood count were assessed before and at the end of 8 weeks of intervention. After 8 weeks of daily supplementation of jaggery and raisins, we observed that there was a significant rise in the mean haemoglobin (Hb) level to 11.79 ± 1.07 ($P < 0.0001$) and also a significant rise in the mean red blood cell count to 4.22 ± 0.30 ($P < 0.0001$) compared to baseline values. The outcome of this study proved the effective role of the nutritional supplementation in improving the Hb status in IDA. Combination of jaggery with raisins proved to be a better natural food supplement to overcome IDA without prominent

*Corresponding author: Samridhi Pokharel

School of Nursing Science and Research, Sharda University, Greater Noida

side effects as observed with oral and parenteral iron preparations. (Sakthibalan .M, 2018)

A Experimental study was conducted by using Non-probability purposive sampling technique to select the desired samples and the sample size was 40. The data was collected by using sahli's method to assess the level of haemoglobin among adolescent girls who have iron deficiency anaemia. The collected data were analysed by using both descriptive and inferential statistical methods'' test was used to evaluate relationship between pre test and post test of level of hb. The effectiveness of beetroot juice with jaggery on iron deficiency anaemia shows in post-test.. The Post-test revealed the improvement in Hb level with the use of beetroot juice with jaggery. Out of 40 samples 6(15%) were having normal haemoglobin level and 14(35%) were having mild iron deficiency anaemia and 16(40%) were having moderate iron deficiency anaemia and 4(10%) were having severe anaemia. It also revealed that the mean difference was 0.757, standard deviation of pre- test was 1.078, standard deviation of post-test was 1.149, standard error was 0.071 and t-test was 8.703. Hence it was highly significant at $p < 0.001$. (Patel, Luke, & k, 2017)

A Quasi experimental study was conducted on the prevalence of anaemia and effectiveness of iron supplementation among 350 anaemia adolescent girls. All subjects received a single dose of anti helminthic and the participants who were anaemia received iron and folic acid tablets for every day. Hemoglobin was estimated after three months. The overall prevalence of anaemia in adolescent girls was found to be 55%. There was a significantly increased haemoglobin level from 10.57 ± 1.09 to 11.78 ± 0.99 . (Jawarkar, Lokare, Kizhatil, & Jawarkar, 2015)

A Quasi experimental study was done to assess the prevalence of anemia among 220 adolescents aged between 10- 19yrs (both male and female) was conducted in Bangalore. The hemoglobin was estimated by 3 using Sahli's hemoglobinometer. The overall prevalence of anemia was 47.7%. The majority of the adolescents had moderate anemia (60%), mild anemia (38.1%) and severe anemia (1.9%). There was a significant association between anemia and its factors such as menorrhagia, history of passing of worm in the stools which were statistically significant. (Damayanthi, S, JK. et al, 2015)

A Quasi experimental study was conducted to assess the effectiveness of beetroot juice on the hemoglobin level among adolescent girls. By using simple random sampling technique, 60 subjects were selected for the study and divided into experimental and control group. The freshly prepared beet-root juice was given to the subjects for 20 days. Hemoglobin level was estimated by sahil's hemoglobin method. In experimental group, 60% had mild anemia, 40% had moderate anemia in the pretest. After supplementation of beet-root juice, 90% had normal hemoglobin level and 10% had moderate anemia in the post test. The result showed a highly significant improvement in hemoglobin level at $p < 0.001$ in the experimental group. (Priya, Malarvizhi, & Jothi, 2013)

METERIAL AND METHOD

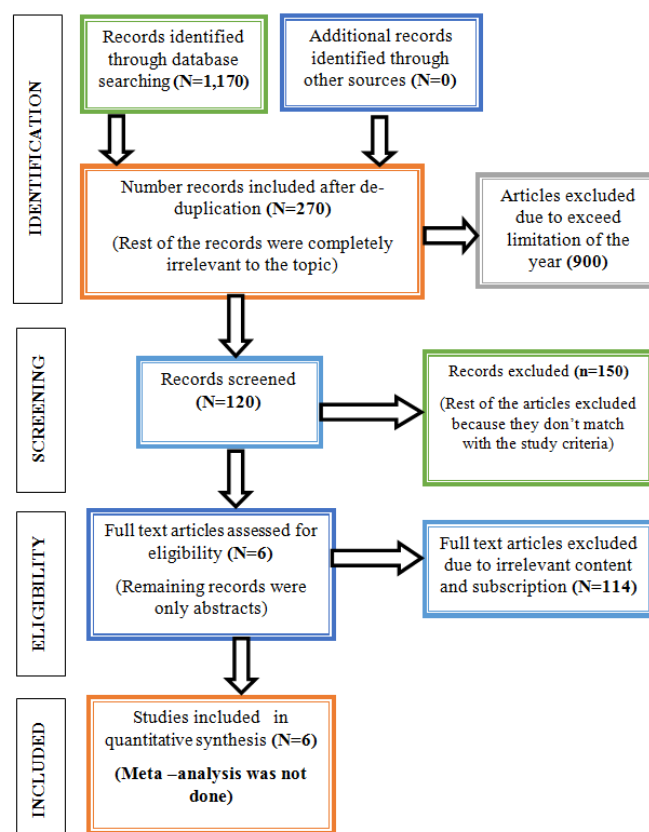


Figure 1 Prisma flow diagram of narrative review

Findings

The systematic search was conducted by formulating the terms separately and in integration with all synonyms, also according to the database. Likewise, a manual Google scholar search was undertaken using the keywords and search synonyms from already articles. An addition of 6 articles was found in the database. Initial search recovers 1170 articles over which 270 articles were selected manually. 150 articles were rejected as a result of replication in the database. Replication was removed and reviewed 120 articles for acceptability. 114 more studies were rejected because of unreachable of the full text. Hence 6 articles were screened which includes quantitative study.

DISCUSSION

These findings are supported by a study conducted by an experimental study conducted by L Sruthi reported that after 8 weeks of daily supplementation of jaggery and raisins, they observed that there was a significant rise in the mean hemoglobin (Hb) level to 11.79 ± 1.07 ($P < 0.0001$) and also a significant rise in the mean red blood cell count to 4.22 ± 0.30 ($P < 0.0001$) compared to baseline values. Combination of jaggery with raisins proved to be a better natural food supplement to overcome IDA without prominent side effects as observed with oral and parenteral iron preparations.

CONCLUSION

There was a significant reduction in iron deficiency anemia on the adolescents girls after administrating the iron supplement to them, thus it has shown to be an effectiveness in increasing the

haemoglobin level. Therefore, this intervention should be encouraged as iron supplement i.e jiggery and raisins, beetroots proved to be a better natural food supplement to overcome IDA without prominent side effects as observed with oral and parenteral iron preparations.

Source of Funding: Self-funding

Conflict of Interest: Nil

Reference

- Dutta,p.(2008). *A textbook of pediatric nursing*(2nd ed.). Jaypee brother medical publication, 124
- Priya, N.G., Malarvizhi, M., &Jothi, A.J. (2013).Beet root juice on heamoglobin among adolescent girls. *SR Journal of Nursing and Health Science*, 2(1), 9-13.
- Jawarkar, A.K., Lokare, O.P., Kizhatil, A., Jawarkar, J.A. (2015). Prevalence of anemia iron effectiveness of iron supplementation in anemic adolescent school girls at Amaravati city, Maharashtra. *Journal of Health Research and Reviews* 2(1), 7-10.

- Patel,R., Luke, F., & K,J. D.(2017). A study to assess the effectiveness of beetroot juice and jiggery on anemia among adolescents girls in the selected urban area. *International journal of nursing education and research*, 5(2)
- M,S.,E,S., & Meher, B.R.(2018).Efficacy of jiggery and raisins as supplements in iron deficiency anemia among medical undergraduate students in south India .*National journal of physiology, pharmacy and pharmacology*, 8(10).
- Mengistu,G., Azage, M., & Guterna, H.(2019, December 21).Iron deficiency anemia among in school adolescents girls in rural area of Bahir Dar city.
- Patel,R.,Luke, F., & K, J. D.(2017). A study to assess the effectiveness of beetroot juice and jiggery on anemia among adolescents girls in the selected urban area. *International journal of nursing education and research*, 5(2).

How to cite this article:

Samridhi Pokharel and Pauline Sharmila.2019, To Assess The Prevalence of Anaemia And Effectiveness of Iron Supplementation In Improving The Level of Haemoglobin Among adolescent girls. *Int J Recent Sci Res*. 10(07), pp.33739-33741. DOI: <http://dx.doi.org/10.24327/ijrsr.2019.1007.3738>
