

Effectiveness of Amla Juice with Honey on Moderate Anemia Among Adolescent Girls

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Abstract

Anemia in adolescent girls, attributes to future in high maternal, perinatal mortality and incidence of low-birth-weight babies. This study intended to evaluate the effectiveness of amla juice with honey in improvement of hemoglobin level among adolescent girls. The pre-experimental one group pre -posttest design was adopted. The 30 adolescent girls with moderate anemia were selected through purposive sampling technique. In pretest, the mean & SD value was 9.56 ± 0.66 whereas in posttest 10.37 ± 0.70 respectively. The calculated paired 't' value of 20.36* was statistically significant at $p < 0.05$. i.e., after one month of administration of amla juice with honey 27% samples were changed to moderate to mild anemia. The findings of the study showed that, amla juice with honey supplementation can significantly improve hemoglobin levels of adolescent girls and thereby prevent mortality and morbidity rates due to anemia of adolescents.

Keywords: Effectiveness; Amla juice; Honey; Anemia and Adolescent girls.

Introduction

Adolescents (10-19 years) in India, accounts for one-fifth of total world's population and are significant human resource that needs to be given an opportunity for holistic development towards achieving their full potential. Adolescence is a period of hasty physical growth and activities.¹ Anemia makes several physical, physiological, and behavioral changes in all the people especially in adolescent girls. The

physical changes such as tiredness, pallor in nail beds, palm & conjunctiva, physiological changes such as tachycardia, feeling of palpitation, bounding pulse, low blood pressure & low immunity as well as behavioral changes such as tiredness, lethargic, lack of concentration & irritability.²

In developing countries, the projected prevalence of anemia is 39% in children below 5 years, 48% in children between 5 to 14 years, 42% in women 15-59

years, 30% in men 15-59 years and 45% in adults more than 60 years of age group.³ According to World Health Organization (WHO), Universal 1.62 billion people (95% CI: 1.50–1.74 billion) affected with anemia, which resembles to 24.8% of the population (95% CI: 22.9–26.7%). Among this, the greatest number of individuals i.e., 468.4 million (95% CI: 446.2–490.6) adolescent girls affected by anemia.⁴

India has the world's highest prevalence of iron deficiency anemia among the women. According to National Family Health Survey (NFHS -2016) has reported, the prevalence anemia among adolescent girls were 56% and this accounts to an average 64 million girls at any point in time; 54.7% of pregnant women aged 15-49 years and 53.2% of all adolescent girls aged 13-19 years are anemic i.e., every 55 out of 100 women in Tamil Nadu are anemic.⁵

Need for the study

Anemia is a universal public health problem distressing both developing and developed countries with foremost consequences for human health as well as social and economic development. The nutritional anemia continues to be a key public health problem in worldwide, particularly among growing children, females of reproductive age and elderly people, especially in the developing countries.⁶ In worldwide, India has one of the fastest rising youth population with a projected 190 million of which 22% are girls. According to WHO, in India there are 2 billion people affected with anemia, i.e., approximately 43,904,406 people are affected. The adolescents constitute > 21% of our population in India and 50% suffer from Iron deficiency anemia; both urban and rural and being more in girls than boys.⁷

Anemia in adolescent girls, attributes to future in high maternal, perinatal mortality and incidence of low birth weight babies. The various reasons for the anemic are poor economic status, faulty dietary pattern, lack of awareness and education, urbanization, prevalence of malaria, hookworm and other infestations, repeated bacterial infection also influence the incidence and nature of Anemia among growing children and adolescents but most common form anemia is due to malnutrition. There are numerous types of treatment for anemia, depending on the severity and primary causes.⁸ In evidence-based practice, the moderate to severe anemia iron supplements may be given with the recommended doses along with vitamin C in order to increase the efficacy of iron absorption.⁹ Hence the researcher realized the need to assess the effectiveness of amla juice with honey have significant improvement in treating with moderate anemia among the adolescent

girls.

Materials and Methods

The necessary ethical and administrative permission was obtained. The one group pretest- posttest research design was carried out in Arun Educational trust at Vellore. Based on inclusion criteria, the non-randomized purposive sampling technique was used to select 30 adolescents with moderate anemia in the age group of 18 and 19 years. The informed consent was obtained from adolescents before proceeding the study.

Description of Instrument

The structured interview questionnaire was prepared, based on the extensive review of literatures, the experts' opinions and the investigators personal experiences. The Performa has II sections. They are, **Section I:** It consists of demographic variables such as age, education, type of family, residential area, occupation of parents, family Income & religion, and background variables of diet consuming pattern type of food and menstrual history.

Section II: It consists of the biophysiological variables, the investigator checks the level of anemia by using the Sahli's Hemometer and categorizes the anemia as mild (10-10.9 gm/dl), moderate (8-10.8 gm/dl) and severe (Less than 7 gm/dl) and the hemoglobin value of 11 - 13 gm/dl considered as healthy.

Data collection procedure

The formal permission for data collection was attained from the director of Arun Educational trust, Vellore. Through purposive sampling technique, 30 adolescent girls with moderate anemia were selected by with Sahli's Hemometer. All the adolescents made to drink the amla juice in an empty stomach every day morning. It is prepared by grinding chopped amla in the mixer and blend it for 5 minutes and add 100ml of water then strain the liquid and add one teaspoon of honey and makes a juice and administered to the adolescent girls of 100ml per day before breakfast for one month. The posttest was estimated by using the same Sahli's Hemometer.

Results and Discussion

The collected data were analyzed by using descriptive and inferential statistics and based on the objectives, the results were discussed below, Regarding the demographic and background variables of adolescents Out of the 30 samples, 53% were in the age group of 18 years, nearly half of samples i.e., 43% of them were DGNM I Year and 57% belongs to

nuclear type of family. In relation to residential area of the adolescent girls similarly 40% are residing in Urban and semi urban area and majority 80 % were Hindus. Considering with occupation and income, 60% of the adolescents' parents were cooley and nearly half of samples i.e., 57% had monthly income upto Rs. 5000. Regarding the background variables, majority 83% consuming the food three times a day and 87% were non-vegetarian. All the participants had irregular menstrual history with minimum of 75 -90 days cycle.

To assess the level of anemia among adolescent girls before and after the giving of Amla juice with honey.

In post-test, after giving of Amla juice with honey 27 % adolescents were improved from moderate to mild level of anemia. Hence the Null hypothesis H1 stated that, "There will be no significant difference between pre and posttest hemoglobin level among adolescents" was rejected. The figure 1 shows, the level of anemia among adolescent girls before and after intervention. The study findings were supported by similar study conducted in Bangalore by Joy J(2018) et al., revealed that among 25 samples, the pretest score in experimental group, 72% of adolescent girls were mild anemic, 28% were moderate anemic and no one in severe anemic status. After consumption of amla juice with honey for 21 days, the post test score in experimental group 92% of adolescent girls were mild anemic and 8% were only moderate anemic.¹⁰

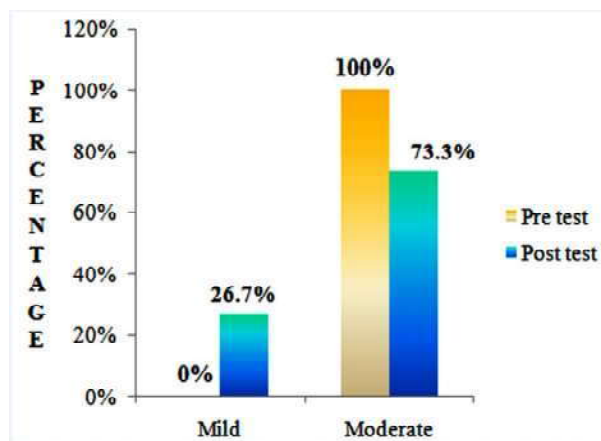


Fig. 1: Shows the level of anemia among adolescent girls before and after the giving of Amla juice with honey.

To assess the effectiveness of amla juice with honey in improvement of hemoglobin level among adolescent girls. When comparing the hemoglobin level, the table 1 revealed that the pretest mean value was ± 9.56 with standard deviation of 0.66 and the posttest mean value was ± 10.37 with standard deviation of 0.70.

The calculated paired 't' value was 20.36* was found to be statistically significant at $p < 0.05$. It significantly indicates that, amla juice with honey was effective in improving the hemoglobin level among adolescent girls.

Table 1: Effectiveness of amla juice with honey in improvement of hemoglobin level among adolescent girls. N=30

Haemoglobin level	Mean	SD	"t" value	
			Calculated value	Table value
Pre test	9.56	0.66	20.36*	2.05
Post test	10.37	0.70		

$P < 0.05$ * = statistically significant

The study findings were congruent with another study conducted by Kumar S et al., (2019) in Madurai identified that, the mean pre-test score was improved from 9.35 to 10.11, the t-value of 6.05 was significant at 0.001. He concluded that, amla juice with elemental iron was effective in rising the hemoglobin level among adolescents' girls.¹¹ In another comparative study conducted by Akilaooran A et al., (2019) concluded that eating amla with honey can increase the Hb levels within a short period of time rather than dates and also improve the overall body mechanism.¹²

To find the association between the post test hemoglobin level of adolescent girls with their selected demographic variables.

There was no association between the demographic and background variables of posttest hemoglobin level of adolescent girls. Hence the Null hypothesis is H_0 stated that "There will be no significant association between the posttest hemoglobin level among adolescent girls with their selected demographic and background variables." was accepted. In contrast view, the socio-demographic variables analyzed in experimental group, father's educational status (9.008*), mother's educational status (7.176*) were found significant with post test scores at 5% level.¹⁰ The present study findings revealed that, the adolescent girls needed help in increasing their hemoglobin level by dietary counselling and supplementation. The researcher also found that, the review of literature and the statistical findings of the study revealed that amla juice with honey was an effective intervention in improving the hemoglobin level among adolescents' girls.

Recommendations

1. A descriptive study can be conducted to find the causes for anemia among college

students.

2. The longitudinal study can be conducted with a larger sample size in covering many areas in the state as well as in the country.
3. A comparative study can be conducted among urban and rural adolescents.
4. A comparative study can be done on nurses' knowledge and attitude regarding anemia who are working in adolescents' clinic.
5. A comparative study can be done involving the pharmacological and non-pharmacological methods of management especially dietary supplementation and counselling.

Conclusion

Adolescent is the period, when the individual can be molded and shaped into great adult psychologically. In the adolescence stage, starts progress towards young adulthood; moved from dependency to the beginning of the independence and metamorphically change their behaviors. The present study significantly proved that, amla juice with honey was an effective intervention to improve the hemoglobin level among adolescents' girls. Amla juice with honey are found to have no side effects when compared with other pharmacological treatment. Hence, the knowledge regarding the dietary modification and counselling to be needed to impart among the adolescents as behavior modifications aids to prevent mortality and morbidity rates due to anemia of adolescents.

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