EFFECTIVENESS OF DRUM STICK LEAVES JUICE ON HAEMOGLOBIN LEVEL AMONG ANAEMIC WOMEN – A REVIEW

Mrs. Jayashri A.* | Dr. Savithri K.**
* Ph.D. scholar at Himalayan University at Itanagar, Arunachal Pradesh, India.
** Research Guide, Himalayan University at Itanagar, Arunachal Pradesh, India.

ABSTRACT
Drumstick, or moringa, has been part of Indian cuisine for ages. The chewy vegetable is known for its very important amino acids, vitamins, and minerals and medicinal benefits. It is one of the green leafy vegetables which are rich and natural source of iron. The drum stick leaves juice is considered as a source of many medicines. The present review article helped to see other people’s views and perspectives regarding the drum stick leave juice. It helped in identifying recent research and significant advances in this the drum stick leaves juice. It helped in knowing the other people working in related field. Review of related literature was done by means of a careful perusal of researches already done and write ups published or lectures delivered on issues directly or indirectly connected with the drum stick leaves juice.

Key word: drum stick leaves juice, anaemic women, review.

ABOUT AUTHORS:

Author Mrs. Jayashri A. is Ph.D. Scholar at Himalayan University at Itanagar, Arunachal Pradesh, India. She is active researcher and has attended various Seminars and conferences.

Author Dr. Savithri K. is Research Supervisor in Himalayan University, Itanagar. She has attended and organised Workshops, Seminars and Conferences. She has published various research articles in National and International Journals.
INTRODUCTION

Good review from the critics is just another stay of execution” - Dustin Hoffman. Analysis of literature is a key research process. According to Nancy Burns, the review of literature is a research report and it is a synopsis of current knowledge about the problem. The literature is received to summarize knowledge for use in practice or to provide basis for conducting a study.

In this study the relevant literature assessed has been organized and presented under the following headings:

1. Literature related to prevalence of anemia.
2. Literature in reference to drumstick leaves in improving hemoglobin level.
3. Factors associated with anemic women with reproductive age group.

1. Literature related to prevalence of anemia:

Gautam, S., Min, H., Kim, H., & Jeong, H. S. (2019). Conducted a cross sectional study to determine the prevalence of anemia among reproductive age group females in the age group of (12-15yrs) in a village school and to know the prevalence of iron deficiency in both anemic and non-anemic school going adolescent females in a village school at Maharashtra. A sample of hundred adolescent girls was taken for the study. The study concluded that iron deficiency is the major cause of anemia and most general nutritional disorder in our country and remains an alarming health challenge.

Kamath R, Majeed JA, Chandrasekaran V, Pattanshetty SM. (2013) in a community based cross sectional study estimated the pervasiveness of anemia among tribal women (age - 15 to 49 years) at Udupi district, Karnataka. A sample size of 170 was calculated and taking 18 into consideration as a relative error of 15% and the dominance of anemia in Karnataka as 51% (as per the NFHS-The result has established that the study sample had a mean Hemoglobin value of 11.3 g/dl with 95% CI of (11 - 11.6), with a standard variation of 2g/dl. The study concludes that in the sample of tribal women in the age group of 15-49 years, the frequency of anemia was 55.9%. Among the subjects, 6 (3.5%) were severely anemic, 33 (19.4%) were somewhat anemic and 56 (32.9%) were mildly anemic. The study concluded that suitable action and involvement should be practiced in this tribal population to treat and prevent anemia.

A fractious segmental population based study was carried out on anemia among 272 pubescent girls in an city area slum under Urban health training centre, Nagpur. The study was conducted from June 2009 to February 2010. By using simple random sampling method out of five areas one area was selected. Data collection was obtained by asking Questionnaire. Hemoglobin level was recorded by Sahli’s haemoglobinometer. The result showed that number of anemic adolescent girls was very high (90.1%). Greater part of the adolescents were having mild or moderate anemia (88.6%).

Chaudhary, S. M., & Dhage, V. R. (2008) did a traverse fragmental study to assess the presence and severity of anemia among juvenile girls in rural area slum under Urban health training centre, Nagpur. The study was conducted from June 2009 to February 2010. By using simple random sampling method out of five areas one area was selected. Data collection was obtained by asking Questionnaire. Hemoglobin level was recorded by Sahli’s haemoglobinometer. The result showed that number of anemic adolescent girls was very high (90.1%). Greater part of the adolescents were having mild or moderate anemia (88.6%).

2. Literature in reference to drumstick leaves in improving hemoglobin level:

Ramzi, M., Haghpanah, S., Malekmakan, L., Cohan, N., Baseri, A., Alamdari, A., & Zare, N. (2011). Conducted a traverse fragmental study to probe the dominance of iron deficiency anemia and related risk factors in young school girls in Kavar urban area of southern Iran’s sample of 363 teenager girls were selected for the study by using two stage random sampling design. Interviewed biophysical method of data collection. The results shows that there were 21 cases of anemia (5.8%), 31 (8.5%) iron deficiency and 6 (1.7%) iron deficiency anemia. Most of anemic girls (85.7%) had mild anemia. The study concluded that the prevalence of anemia were considerably less than what reported in many other regions of Iran as well as other developing countries.

Mishra, V., Verneker, R., Gandhi, K., Choudhary, S., & Lamba, S. (2018) conducted a study on Menstrual disorder accounts for 5%–10% of the women presenting with iron deficiency anemia (IDA) in the perimenopausal age group. Heavy menstrual bleeding in this age group leads to severe anemia and frequently requires blood transfusion which has its own adverse effects. We today have ferric carboxymaltose (FCM) as a safer alternative to blood transfusion. Objective: The objective of the study is to evaluate the safety and efficacy of FCM in treating
anemia in patients of menorrhagia, thus avoiding blood transfusion. Menorrhagia was controlled by medical
treatment till Hb improvement was achieved and definitive surgical intervention was done. Result: Most of the
women were in the age group of 40–50 years. Conclusion: Intravenous FCM is an effective and a safe treatment
option for IDA with a single administration of high dose without serious adverse effects obviating the need for
blood transfusion before surgery.
Kamath, R., Majeed, J. A., Chandrasekaran, V., & Pattanshetty, S. M. (2013). Studied a section to check the
Prevalence of Anemia among Tribal Women of Reproductive Age in Udupi Taluk, Karnataka during July 2012 to
August 2012 among tribal women aged 14-49 years. A sample size of one seventy was calculated taking into
consideration a relative error of 15% and the prevalence of anemia in Karnataka as 51% .Result shows that
hemoglobin value of 11.3 g/dL with 95% CI of (11 – 11.6), with a standard deviation of 2g/dl. The study reveals
that in the sample of tribal women in the age group of 15-49 years, the prevalence of anemia was 55.9%. Among
the subjects, 6 (3.5%) were severely anemic, 33 (19.4%) were moderately anemia and 56 (32.9%) were mildly
anaemic. Study conclude that an appropriate action and intervention in this tribal population to treat and prevent
anaemia.
2. Literature related to drumstick leaves in improving hemoglobin Level.
T. Chandra, Dr. Mrs. KarolineKarunagari and Dr.A. J.W.Felix (2015) conducted A cross-sectional study on women
with reproductive ages with the intention of finding an efficient substitute in the form of non-haem iron of
vegetable origin drumstick leaves by administering as supplementation to treat anemia. One group pre-test and
post-test pre experimental design was used. Women belonging to lower socio-economic status in rural area
Pichavaram aged between 15-45 years were target Population. Using convenient sampling method of 65 women
suffering from Iron deficiency anemia was selected. Depending on the signs and symptoms, anemia was diagnosed
using cymmethaemoglobin method. As intervention 100gm of cooked drumstick leaves poriyal was given on
alternate days for three months. After three months the hematological levels were analyzed and recorded. At the
end of the supplementation period (90 days).The results showed a significant improvement in Hb level.
group pre-test post test research study conducted that the effectiveness of moringa leaves extract on hemoglobin
level among adolescent girls with anemia in selected schools at Mangalore in 51 adolescent girls were selected
based on the inclusion criteria by using non probability, purposive sampling technique. After pretest hemoglobin
Moringa leaves extract was given for 21 days, and on 22 day post test hemoglobin was assessed by using shal’s
method. Majority 19(37.3%) of adolescent girls belongs to a family income of less than Rs.5000. The mean pre-test
score (10.82) is less than the mean post-test score (12.26). The table (13.5) value is higher than the t tab(2) value
and p value less than 0.05 level of significance.
Angela E. Susan F. Stell (2019) A social interventional study has proved that Moringa oleifera leaves are rich in iron
and other essential nutrients necessary for iron metabolism enrolled 95 anemic children who were followed for
6 months. The intervention communities received M. oleifera leaf powder and nutrition education, while control
communities only received nutrition education .Changes on mean hemoglobin (Hb) concentration and anemia
prevalence were compared between the two groups using t test and relative test were suitable. At baseline, the
mean Hb concentrations of control and intervention groups were 7.9 g/dl? (SD = 1.3) and 8.3 g/dl (SD = 1.6) g/L,
respectively (p-value = 0.0943). After 6 months, anemia prevalence significantly decreased in the intervention
group by 53.6% (100%–46.4%; p < 0.001) compared to 13.6% (100%–86.4%; p = 0.005) in control community. The
mean Hb was 10.9 g/dl (95% CI: 10.2–11.4) for intervention and 9.4 g/dl (95% 7.8–10.1) for control (p-
value = 0.002). The effect was also observed in the reduction of the prevalence of moderate and severe anemia in
the intervention communities by 68.2% and 77.9%, respectively, and by 23.3% and 56.9%, respectively, in the
control communities. Increasing amount and time of using M. oleifera supplementation resulted to significant
reduction in anemia cases therefore can be used as complementary solution in addressing anemia among children
especially when the use of infant formulas and fortified food product is very poor.
Chrysholite Jenisha C, Rajitha Sr. A pre experimental study was conducted that the to assess the hemoglobin level
before and after administration of drumstick leaves soup, to find out the effectiveness of drumstick leaves soup in
improving hemoglobin level and to associate the hemoglobin level with selected demographic and clinical variables
among antenatal mothers. The study was conducted in selected rural areas at Kanyakumari District. Pre
experimental with one group prêt-test –post test design was used in this study. The samples consisted of 30
antenatal mothers and selected by purposive sampling technique on the basis of their pre-test hemoglobin level.
The tools used for data collection were Demographic Variables, Clinical Variables and Hemoglobin Estimation Tool. Among the subjects, 60% had moderate anemia and 40% had mild anemia. At post-test, 53.33% had mild anemia, 40% had normal hemoglobin level and 6.67% had moderate anemia. The study revealed that, the pre-test mean score of hemoglobin level was 10.17±1.04 and post-test was 12.12±1.09. The obtained ‘t’ value was 13.54 was very high than the table value. Hence, it was highly significant at <0.05 level.

3. Factors associated with anemic women with reproductive age group

L Rakic, D Djokic, Mb Drakulovic (2013) conducted a cross-sectional, multistage cluster survey on six hundred seventy seven households in Serbia. A total of 708 females 20-49-year-old were recruited. Socioeconomic, anthropometric, dietary and reproductive data have been collected and hemoglobin levels were determined. The result showed that the overall prevalence of anemia was 27.7% (196/708) [95% Confidence Interval (CI), 24.5-31.1%], and more precisely mild (21.9%), moderate (5.1%) and severe (0.7%) anemia. Belgrade residential area [odds ratio 2.11 (95% CI 1.27-3.50), p=0.004], shortage of living space per person (<16m2) [2.18 (1.17-4.03), p=0.014], body mass index (<25) [1.55 (1.04-2.29), p=0.029], alcohol intake [0.52 (0.33-0.81), p=0.004], lack [2.48 (1.31-4.70), p=0.005] or fruit juice consumption 1-2 [2.76 (1.46-5.23), p=0.002] times a week and previously diagnosed, but treated [2.62 (1.29-5.35), p=0.008] or not treated [3.57 (1.71-7.45), p<0.001] anemia were independent predictors of low hemoglobin levels. Deficit of electricity supply and insufficient living space in households, increased risk of moderate anemia, while likelihood of being mild and moderately anemic, augmented with previously diagnosed but, treated or not treated anemia and lack or juice consumption 1-2 times a week. The study concluded the High prevalence of anemia among non-pregnant women and its association to casual factors needs continuous monitoring and control efforts for anemia in Serbia.

A Cross-sectional study was conducted to identify the prevalence of iron-deficiency anemia and associated factors in women at reproductive age in the city of Vitoria de Santo Antão, Pernambuco with a representative sample of 322 women aged between 15 and 49 years. Anemia was diagnosed by measuring hemoglobin below 12 g/dl. The independent variables were: demographic and socioeconomic conditions (age, race/color, education, literacy, presence of children aged < 5 years in the household, regime of residence occupation, ownership of assets, and per capita income), housing conditions (number of people in the household, number of bedrooms, and basic sanitation), food and nutrition security and women’s health conditions (menarche, number of pregnancies, history of miscarriages, body mass index, and ferritin). Poisson regression was used to analyze the factors associated with anemia. That result shows that the mean age of women surveyed was 31.1 ± 6.61 years old (standard deviation - SD) and the prevalence of anemia was 18.6% (95%CI 14.7-23.3). After multivariate analysis, anemia was significantly associated with age = 19 years and low ferritin. Study concluded that the prevalence of anemia is characterized as a mild public health problem and follows the world trend in developing countries.

Adrianaguimarãesnegromonte Bezerra Vanessa Sá Leal, (2018) conducted a cross-sectional study among 257 adolescent girls of ettumanoor panchayat, the field practice area of Government Medical College, Kottayam. A pre-designed and pre-tested Performa was used to obtain data regarding socio-demographic details and factors associated with anemia. Relevant clinical examination of participants was done. Blood samples were analyzed using an auto-analyzer and stool examination for ova or cyst was done under microscopy. Diagnosis of anemia was established when hemoglobin was less than 12gm/dl. Association between Categorical variables was tested with Chi-square test and continuous variables independent t-test was used. Logistic regression was used to find out independent risk factors. The level of implication was fixed at p-value of < 0.05. The result shows that the presence of anemia was 21%. Risk factors allied with anemia in the univariate study were presence of ova or cyst in stool (p = 0.003, OR = 2.94) and number of pads per day during menstruation (p = 0.004). Protective factors were hand washing after toileting (p = 0.021, OR = 0.311), hand washing before food intake (p = 0.026, OR = 0.5), foot wear usage (p = 0.022, OR = 0.25) and jaggery consumption (0.042). The factors which were noteworthy in logistic waning were worm invasion, number of pads per day, washing hands before food intake and foot wear usage. Study proved that the Worm influx and number of pads per day during menstruation were found to be threat factors for anemia. Personal hygiene practices like hand washing and foot wear usage were found to be protective factors.

P.M. Siva, A. Sobha, And V.D. Manjula (2016) carried out a fractious sub divisional community based study in Hadinaru primary health centre (PHC), of Mysore district was to assess the incidence and factors associated with anemia among expecting women in rural field practice area for a period of 6 months (June to November 2011). Pregnant women who delivered between Januarys to December 2010 and were stable residents of the villages...
under Hadinaru PHC were incorporated in the study. These mothers were visited at their home and information was collected using prepared questionnaire. Lab reports and antenatal check-up details were referred wherever available. The result exhibited that the out of 314 mothers who were covered in the study 196 were anemic (62.4%). Mild anemia was prevalent in 52.0% women and 11.0% had moderate anemia. Weight gain during pregnancy and menstrual problems of mothers were considerably associated with anemia during pregnancy. Study concluded that the dominance of anemia among pregnant women was found to be 62.4%. Though no cases of severe anemia were detected, mild and moderate degree anemic were in significant number.

CONCLUSIONS:
The related literature studied by investigator shows in clear terms that the many studies have been undertaken on various aspects the drum stick leaves juice on haemoglobin level among anaemic women. It helped in identifying recent research and significant advances in this drum stick research. It helped in knowing the other people working in related field. Review of related literature was done by means of a careful perusal of researches already done and write ups published or lectures delivered on issues directly or indirectly connected with drum stick leaves juice on haemoglobin level among anaemic women while going through those studies researcher got advantage of the knowledge.

REFERENCES
3. Chrysholite Jenisha C, Rajitha Sr. Effectiveness of drumstick leaves soup on hemoglobin level among antenatal mothers pages: 43-49; 810