

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/mjafi

Original Article

Low prevalence of anaemia among the wives of serving personnel in a military station: A community-based study



Lt Col Puja Dudeja^{a,*}, Col Rohit Tewari^b, Amarjeet Singh^c,
Capt S.D. Roy, (Retd)^d

^a Assistant Professor, Department of Community Medicine, Armed Forces Medical College, Pune 411040, India

^b Assistant Professor, Department of Pathology, Armed Forces Medical College, Pune 411040, India

^c Professor, Postgraduate Institute of Medical Education and Research, Chandigarh, Punjab, India

^d Ex RMO, 14 JAK LI, C/o 56 APO, India

ARTICLE INFO

Article history:

Received 13 June 2014

Accepted 18 July 2016

Available online 5 September 2016

Keywords:

Anaemia

Haemoglobin

Ferritin levels

Prevalence

Health promotion

ABSTRACT

Background: Various studies in India have reported the prevalence of anaemia to be more than 50% among women of the reproductive age group. A community-based study was done to find out the prevalence of anaemia in non-pregnant, non-lactating wives of serving soldiers in a military station.

Methods: It was a cross-sectional study. The sample size was 600. Venous blood was collected for haemoglobin and ferritin levels. Analysis was done by SPSS 20.

Results: The mean age at marriage was 19.8 years (SD + 2.76). The average age at first childbirth was 20.88 years. Major symptoms reported were weakness (24.34%), giddiness (23.47%), fatigue (20.17%) and heavy bleeding (3.13%). Prevalence of anaemia in our study was 13.9%, which is much below the national prevalence. Prevalence of iron-deficient status was reported in 153 (26%) individuals. Out of these, 81 subjects were non-anaemic (Hb > 12d/dL) but were iron deficient (ferritin < 15 µg/L). Sixty out of these 81 subjects reported presence of fatigue and 36 had weakness. Statistically significant associated observations of anaemia were low Body Mass Index, irregular menstrual pattern, shortened menstrual cycle and increased duration of bleeding ($p < 0.05$). Low ferritin levels were significantly associated with low BMI, not using Oral Contraceptive Pills and bleeding for more than 3 days during menstrual cycle ($p < 0.05$).

Conclusion: The scenario of low prevalence of anaemia in women under the cover of the Armed Forces Medical Services represents an 'island of excellence'.

© 2016 Published by Elsevier B.V. on behalf of Director General, Armed Forces Medical Services.

* Corresponding author.

E-mail address: puja_dudeja@yahoo.com (P. Dudeja).

<http://dx.doi.org/10.1016/j.mjafi.2016.07.008>

0377-1237/© 2016 Published by Elsevier B.V. on behalf of Director General, Armed Forces Medical Services.

Introduction

Anaemia is a major public health challenge in the world, both in rich and poor countries.¹ This ubiquitous problem has major consequences for human health and thereby on social and economic development of a country. It is estimated that about 20% of maternal deaths are directly related to anaemia and another 50% of maternal deaths are associated with it.² WHO estimates the number of anaemic people worldwide to be a staggering two billion. Half of all anaemia cases can be attributed to iron deficiency.³ Approximately, 600 million people in South-East Asia suffer from iron deficiency anaemia (IDA), which predominantly affects adolescent girls, women of reproductive age and young children.⁴ Prevalence of anaemia in the region ranges from 13.4% in Thailand to 87% in India. About 74% of pregnant women in Bangladesh, 63% in Nepal, 58% in Sri Lanka and Myanmar and 51% in Indonesia suffer from anaemia.⁵

Over a third of the global burden of this menace occurs in India. Prevalence of anaemia among non-pregnant women in India is higher than that in Bangladesh, Nepal, Sri Lanka and Pakistan and other South-East Asian countries.³ Various studies in India have reported its occurrence in more than 50% of the women of the reproductive age group. Despite being the first country to launch the National Nutritional Anemia Prophylaxis Programme (NNAPP) in 1970, the problem of IDA remains widespread. Data from the latest National Family Health Survey (NFHS-3) estimate the prevalence of anaemia at 55.3% among women of reproductive age (and 53.2% in non-pregnant, non-lactating women).⁶ These values have worsened over the years as the prevalence in NFHS - 2 survey was 51.8%.⁷ Data from District Level Household Survey (DLHS) and surveys of the National Nutrition Monitoring Bureau (NNMB) and Indian Council of Medical Research (ICMR) have also shown consistently high prevalence of anaemia in preschool children, pregnant and lactating women and adolescent girls.⁸⁻¹⁰ These findings indicate that NNAPP has not yielded desired results. Hence, there is a need to find out the reasons as to why the strategies are not working.

A wide variation in prevalence rates of anaemia is reported from different parts of the country with the lowest burden of 32.8% being reported from Kerala to the highest of 69.5% in Jharkhand and Assam. In hill areas also low prevalence rates have been reported.¹¹

Pilot studies and routine testing have highlighted that the prevalence of anaemia in the armed forces is lower as compared to overall national levels.¹² In view of these findings, a research project was undertaken with an objective to estimate the prevalence of anaemia in married, non-pregnant wives of serving armed forces personnel and to compare it with prevalence elsewhere in India. The results are expected to give a lead in identifying the factors responsible for differential prevalence of anaemia in various settings. This will also help us in identifying the strategies that have worked so that the same can be replicated elsewhere.

Material and methods

It was a cross-sectional community-based point prevalence study. The unit of study was a non-pregnant, non-lactating wife of serving armed forces personnel in the age group of 15-49 years. The total sample size (using single proportion formula and 95% CI) was 594 females. Multistage sampling was done. In the first stage, number of families from each zone of station was calculated using Probability Proportion to Size (PPS) method (Table 1). Line listing of families was done in these zones and subjects were selected randomly using random number table method. Informed consent was obtained from the participants. An interviewer administered closed-ended pretested schedule to assess various determinants of anaemia. A physical examination was carried out that included measurement of height, weight and waist circumference. Venous blood was collected for all females under aseptic precautions in EDTA vacutainers. Slide for peripheral blood smear was made at the time of sample collection and labelled. Separate blood samples were collected for serum ferritin. Blood sample was analyzed using automated cell counter for detection of haemoglobin levels. Serum test was separated on the same day and kept in a refrigerator at 2-8 °C. Serum ferritin levels were estimated by Enzyme Linked Immunosorbent Assay (ELISA). Slides were stained with Leishmann stain to study staining characteristics and morphological abnormalities of RBCs. All the females were educated in small groups (5 each) about prevention and control of anaemia with special emphasis on iron rich foods. **Inclusion criteria:** All married females of serving personnel in the age group of 15-49 years were included in the study. **Exclusion criteria:** All females who were pregnant or had delivered in the last six months, all females who were staying in Separated Family (SF) quarters and females who had consumed iron tablets in the past 3 months were excluded from the study. Statistical Analysis was conducted using SPSS 20 software. Cut-off values for anaemia, which are haemoglobin level of 12 g/L in non-pregnant females and serum ferritin levels less than 15 µg/L, were taken from WHO guidelines.^{3,13}

Results

A total of 600 subjects staying with their husbands in an Army Cantonment participated in the study. Samples of 25 females were spoiled before reaching the lab. Hence, data were analyzed for 575 females. Fertility parameters of the subjects are given in Table 2. The mean age at marriage of the wives of serving

Table 1 – Sampling of subjects in the station.

S.No	Location	Approximate number of families staying	Number of subjects selected
1	A	600	228
2	B	350	133
3	C	500	190
4	D	130	49
	Total	1538	600

Download English Version:

<https://daneshyari.com/en/article/5642245>

Download Persian Version:

<https://daneshyari.com/article/5642245>

[Daneshyari.com](https://daneshyari.com)