



Prevalence of Anemia Among Home-Makers and Working Women

Varusha Sharon Christopher¹, Gifrina Jayaraj^{*2}

¹Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai -77, Tamil Nadu, India

²Department of Oral and Maxillofacial Pathology, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai -77, Tamil Nadu, India



Article History:

Received on: 01 Jul 2020
Revised on: 02 Aug 2020
Accepted on: 10 Aug 2020

Keywords:

Anemia,
Working women,
Home-makers,
Hemoglobin,
Fatigue

ABSTRACT

Anaemia, defined as a decreased concentration of blood haemoglobin, is one of the most common nutritional deficiency diseases observed globally and affects more than a quarter of the world's population, especially the women. The haemoglobin count for the women involved in the study were determined using an auto-analyser in a private lab. As a part of subjective assessment, nine questions were asked to all the women who participated in the study. Data was imported to Excel, and tabulation was done. The values were tabulated and analysed. According to the descriptive statistics, under group-1 consisting of home-makers, 50% were anaemic, and 50% were non-anaemic. Under group-2 consisting of working-women 61.1% were anaemic and the rest 38.9% were non-anaemic, which does not show any prominent significance among both the groups. Chi-square test was done to check the significance which provided a Pearson chi-square value-0.450 with a p-value of 0.502($p \geq 0.05$), which was non-significant. As a result, the prevalence of anaemia among the groups is not significant. Within the limits of the study, it is seen that the incidence of anaemia is slightly higher in working women when compared to home-makers. However, this association was not significant since $p \geq 0.05$ ($p=0.502$, chi-square test), which denotes that women lead a compromised quality of life.

*Corresponding Author

Name: Gifrina Jayaraj
Phone: +91 99520 96111
Email: gifrina@saveetha.com

ISSN: 0975-7538

DOI: <https://doi.org/10.26452/ijrps.v11iSPL4.4253>

Production and Hosted by

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INTRODUCTION

Anaemia, defined as a decreased concentration of blood haemoglobin and red blood cells, is one of the most common nutritional deficiency diseases

observed globally and affects more than a quarter of the world's population (Weiss and Goodnough, 2005). Anaemia is a disease wherein there is a lesser amount of haemoglobin in our red blood cells (Kramer and Zygun, 2009). This eventually causes the decrease in the capacity of a cell to carry oxygen and results in many other diseases too which involves heart, kidney and other vital organs creating conditions such as cardio-pulmonary, kidney failure, increased risk of infections and cognitive disorders. (Möllmann, 1990)

Worldwide around 1.7 billion people are affected by anaemia with the global prevalence of 25.1%. The prevalence of anaemia was highest among Asian people, followed by Africans (Stevens, 2013). The prevalence rates for reproductive age group pregnant women and non-pregnant women are 29% and 38%, respectively; however, among different

age group people, reproductive age group women were commonly affected which is nearly 468 million. Compared with the global scenario, India has the highest prevalence of anaemia among reproductive age group women (WHO, 2018) (Organization and World Health Organization, 2018). As per the National Family Health Survey-4 (NFHS-4) in Tamil Nadu, the prevalence of anaemia among non-pregnant women and pregnant women were 55.4% and 44.4% respectively (Rodgers et al., 2015). Though many symptoms are more seen in our body, without knowing what it is, women's society lives an uncompromised quality of life. Women education and standard of living in households have a vital role in reducing anaemia (Switoniak and Król, 1992). Urban and well-nourished women also suffer less from anaemia (Alene and Dohe, 2014).

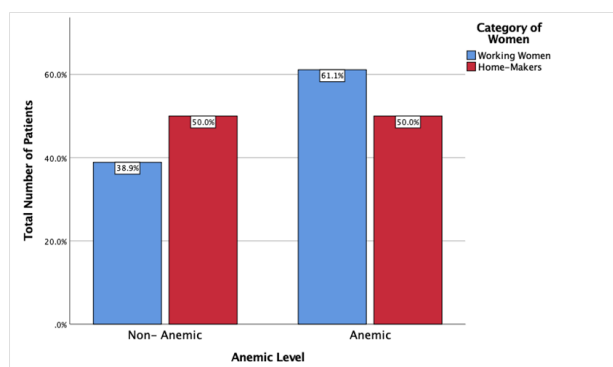


Figure 1: Working women were more anaemic when compared to Home-makers. This association was non-significant since $p \geq 0.05$ ($p=0.502$, chi-square test).

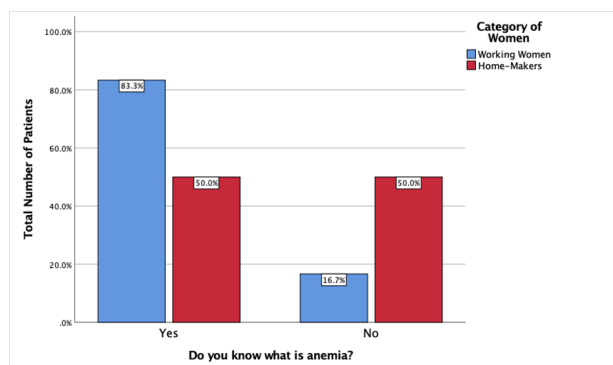


Figure 2: Working women were more knowledgeable when compared to home-makers. This association was significant since $p \leq 0.05$ ($p=0.034$, chi-square test).

Anaemia continues to be a significant public health problem worldwide, particularly among females of reproductive age in developing country settings Stoltzfus (2001). Prevalence of anaemia in South Asia is among the highest in the world, mirroring overall high rates of malnutrition (Jilani and

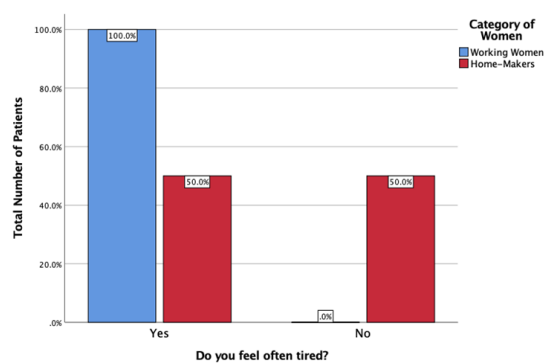


Figure 3: Working women were more tired/fatigue when compared to home-makers. This association was significant since $p \leq 0.05$ ($p=0.001$, chi-square test).

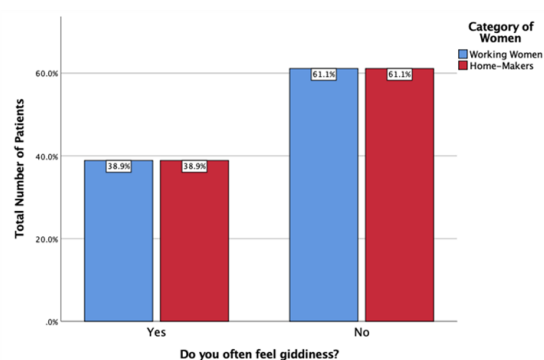


Figure 4: Both home-makers and working women express that they have giddiness feelings. This association was non-significant since $p \geq 0.05$ ($p=1.000$, chi-square test).

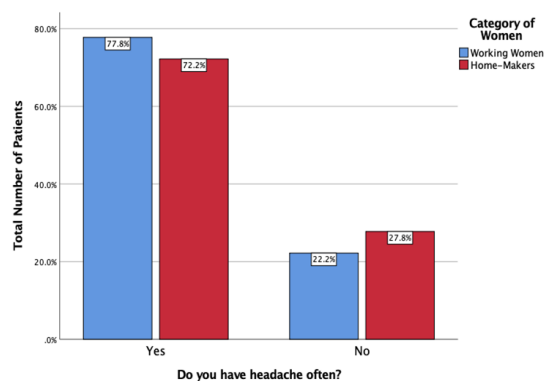


Figure 5: Working women often experience more headache when compared to home-makers. This association was non-significant since $p \geq 0.05$ ($p=0.700$, chi-square test).

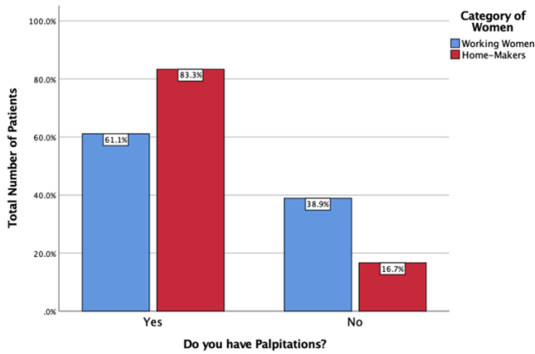


Figure 6: Home-makers experience more palpitations when compared to working-women. This association was non-significant since $p \geq 0.05$ ($p=0.137$, chi-square test).

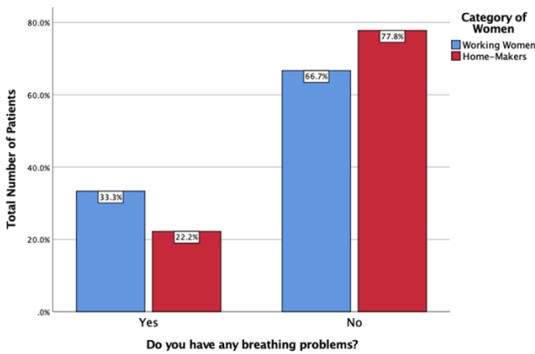


Figure 7: More working women had a history of breathing problems when compared to home-makers. This association was non-significant since $p \geq 0.05$ ($p=0.457$, chi-square test).

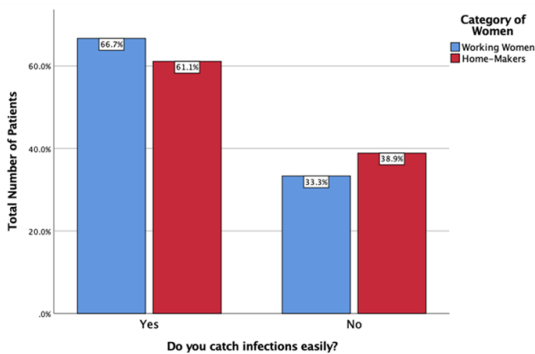


Figure 8: Working women were more highly susceptible to infections when compared to home-makers. This association was non-significant since $p \geq 0.05$ ($p=0.729$, chi-square test).

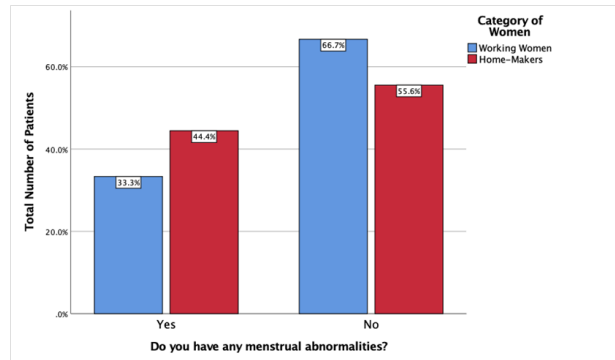


Figure 9: Home-makers were having more menstrual abnormalities when compared with home-makers. This association was non-significant since $p \geq 0.05$ ($p=0.494$, chi-square test).

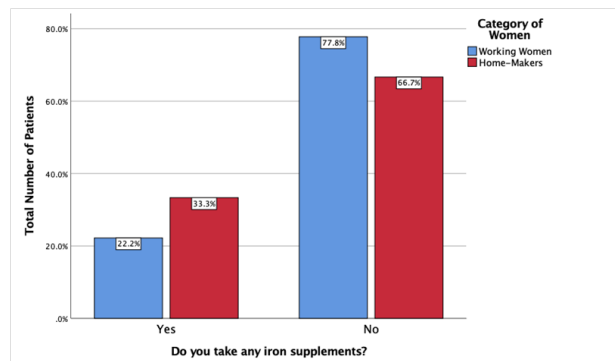


Figure 10: More number of home-makers were taking supplements when compared to working women. This association was non-significant since $p \geq 0.05$ ($p=0.457$, chi-square test).

Iqbal, 2018). While there are regional differences, prevalence across the states are remarkably similar, reflecting underlying determinants that include diets low in heme-iron and high in phytates, high levels of malaria and other infectious diseases, and frequent reproductive cycling that decreases iron stores (Haurani *et al.*, 1964).

The consequences of anaemia for women include increased risk of low birth weight or prematurity, perinatal and neonatal mortality, inadequate iron stores for the newborn, increased risk of maternal morbidity and mortality, and lowered physical activity, mental concentration, and productivity. Women with even mild anaemia may experience fatigue and have reduced work capacity (Sobrero, 2001).

Qualitative studies conducted on women’s illness and health-seeking behaviour in diverse socio-cultural settings across India report ‘weakness’ as one of the most common symptoms of ill-health that they experience, and weakness which is often attributed to poor diet and poverty women are

ranked at the top of illnesses that cause concern (Bentley and Griffiths, 2003).

MATERIALS AND METHODS

The study was conducted with the approval of the Institutional Ethics Committee [SDC/ SIHEC/ 2020/ DIASDATA/ 0619-0320]. The review was a prospective study which was done between November 2016 to January 2017. The study was designed to include 36 women in which 18 were home-makers and 18 were working women. The study was based on a non-probability consecutive sampling method.

Women belonging to the age group between 21-40 were considered because of their active menstrual period. The haemoglobin count for the women involved in the study was determined using an auto-analyser in a private lab—the normal range for haemoglobin for women, 12.0 to 15.5 grams per deciliter. Any value of fewer than 12.0 grams per deciliter was considered anaemic. As a part of subjective assessment, nine questions were asked to all the women who participated in the study. Questions were based on symptoms and their menstrual history. Data which was collected was then imported to Excel, and tabulation was done. The values were tabulated and analysed.

Descriptive statistics were performed using SPSS (SPSS version 21.0, SPSS, Chicago II, USA) by IBM on the tabulated values. Descriptive statistics were performed. The categorical variables were compared using Chi-Square test $p < 0.05$ was considered as statistically significant.

RESULTS AND DISCUSSION

Thirty-six females participated in the study. In group-1, consisting of home-makers, 50% were anaemic, and 50% were non-anaemic. In group-2 consisting of working-women, 61.1% were anaemic, and the rest, 38.9% were non-anaemic [Figure 1]. There was no significant difference in the prevalence of anaemia between the two groups. $P = 0.502 (p \geq 0.05)$, Both working and non-working women are equally affected by anaemia.

Females belonging to the age group from 22- 40 years old were included in the study because of their active reproductive stage. According to the results of subjective assessment, the patients were asked nine questions related to the symptoms of anaemia and their menstrual abnormalities. The comparative association is represented in Figures 2, 3, 4, 5, 6, 7, 8, 9 and 10.

Working women were more knowledgeable when compared to home-makers [Figure 2].

Moreover, this association was significant with $p = 0.034 (p \leq 0.05)$, chi-square test). A study conducted by George et al. (George *et al.*, 2016), working women were found to have more awareness when compared to home-makers which as per our present study.

Working women reported getting more tired when compared to home-maker [Figure 3], and this association also was significant with $p = 0.001 (p \leq 0.05)$, chi-square test). Both home-makers and working women expressed that they feel giddy at few times [Figure 4]. This association was not significant since $p = 1.000 (p \geq 0.05)$, chi-square test). Sobrero et al. Sobrero (2001) in his study found out that fatigue and dizziness were a common symptom in patients who were diagnosed with anaemia. He found that the association of fatigue and anaemia was significant, which is under the study. There are several tools available to examine different aspects of quality of life, including the Functional Assessment of Cancer Therapy-Anemia (FACT-An), which measures fatigue and other anaemia-related effects on quality of life in cancer patients (Cella, 1997).

Working women responded that they experience more headache when compared to home-makers [Figure 5]. This association was not statistically significant since $p = 0.700$ They were also asked whether they experience palpitations, home-makers experienced more palpitations when compared to the working-women [Figure 6]. This association was non-significant since $p = 0.137$. More working women had a history of breathing problems when compared to home-makers [Figure 7]. This association was non-significant since $p = 0.457$. These symptoms have been present in patients that were included in other studies where it compromised their quality of life Walters (2002). Other symptoms contributing to a diminished quality of life include dizziness, vertigo, syncopes, tinnitus or roaring in the ear, headaches, and sleeping disorders. Certainly, all other bodily symptoms occurring in anaemia may contribute to a patient's feeling of impaired quality of life (Ludwig and Strasser, 2001).

They were also questioned about their infection susceptibility, and Working women were more highly susceptible to infections when compared to home-makers [Figure 8]. This association was non-significant since $p = 0.729$. Many studies have interpreted that a lot of microbial infections cause anaemia causing susceptibility to other secondary infections (Barrett-Connor, 1972). In aplastic anaemia, infections are the primary cause of death in patients (Valdez, 2009).

Concerning menstrual abnormalities like amenor-

rhea or infrequent/missing menstruation cycles, More number of home-makers were having menstrual irregularities when compared with home-makers [Figure 9]. This association was non-significant since $p=0.494$. The population was asked whether they take any iron supplements, more number of home-makers were taking supplements when compared to working women [Figure 10]. This association was non-significant since $p=0.457$. A study done by Işık Balcı et al. (Balcı, 2012), conveyed that women who were diagnosed with anaemia had irregular menstruation and many of them were taking treatment for it. Many studies have interpreted that irregular menstruation as a symptom for anaemia (Kwak et al., 2019).

For many years, anaemia was only regarded as clinically relevant if the patient developed organic signs and symptoms. It has been shown that anaemia harms the quality of life which can be subdivided into five main domains: physical, functional, emotional, social, and spiritual well-being (Silberstein, 1989). Anaemia affects an enormous number of women of all ages, with a predilection for the less affluent. Its consequences are potentially severe at any age, ranging from possible developmental and learning problems in children and adolescents to serious maternal risks in pregnancy to mother-infant problems in the postpartum period and ultimately to increased mortality when associated with other medical conditions in older women. The vast majority of anaemia in women is nutritional, generally, iron deficiency, which is readily diagnosable and easily treated (Malay, 2018).

There have been impressive improvements in most health indicators in the last two decades, including a reduction in infant mortality rate and a drop in the fertility rate. Improvements in nutritional status, however, have been less impressive (Venkiah et al., 2002). Nutritional anaemia, especially iron-deficiency anaemia, is more prevalent among women in the adolescent and reproductive age group due to menstrual blood loss, poor diet, bleeding during parturition,

Despite greater opportunities for health care in urban areas, the urban poor is often more marginalised than rural populations in their ability to access health services because of constraints in financial and administrative resources that are necessary to access the services in urban areas Mcelmurry (1999). Likewise, although urban areas theoretically have greater access to a wide variety of food and nutrients through close access to markets, extreme poverty limits the ability of the urban poor to purchase them Bentley and Griffiths

(2003). In the study, a comparison between the home-makers and working women in an urban atmosphere has revealed that they live an uncompromised kind of life even with all requirements provided.

Most of the working women knew what anaemia was because of the exposure they have to women's health, but half of the home-makers who participated in the study didn't know what anaemia was. This shows that the home-makers population should have more exposure to women health. Same way there was a study conducted between private and government schools in Tamil Nadu which showed that most of the girls in the private schools knew what anaemia has anaemia Rati and Jawadagi (2014).

Few limitations include the limited sample size, similar ethnicity and same geographic location, to improve the significance of the study, the study should be done extensively with a large amount of sample size so that the results are reliable.

CONCLUSIONS

Within the limits of the study, it is seen that the prevalence of anaemia is slightly higher in working women when compared to home-makers. This study reveals that anaemia prevails irrespective of socioeconomic status, which stresses the need to increase awareness of the consequences of anaemia in all strata of society. Promoting awareness among home-makers will help overcome this hurdle and lead women to have a better quality of life. Awareness is more in working women than in home-makers and shows that they lead a compromised quality of life. This stresses the need for conducting awareness programs for home-makers.

ACKNOWLEDGEMENT

We don't have anyone to acknowledge.

Conflict of interest

The authors declare that they have no conflict of interest for this study.

Funding support

The authors declare that they have no funding support for this study.

REFERENCES

- Alene, K. A., Dohe, A. M. 2014. Prevalence of Anemia and Associated Factors among Pregnant Women in an Urban Area of Eastern Ethiopia. *Anemia*, 2014:1-7.

- Balci, Y. I. 2012. Prevalence and Risk Factors of Anemia among Adolescents in Denizli, Turkey. *Iranian Journal of paediatrics*, 22(1):77–81.
- Barrett-Connor, E. 1972. Anemia and infection. *The American Journal of Medicine*, 52(2):242–253.
- Bentley, M. E., Griffiths, P. L. 2003. The burden of anemia among women in India. *European Journal of Clinical Nutrition*, 57(1):52–60.
- Cella, D. 1997. The Functional Assessment of Cancer Therapy-Anemia (FACT-An) Scale: a new tool for the assessment of outcomes in cancer anaemia and fatigue. *Seminars in haematology*, 34(3):13–19.
- George, M., George, N., Ramesh, N. 2016. Awareness regarding anaemia, gestational diabetes and pregnancy-induced hypertension among antenatal women attending outpatient department in a Rural Hospital. *Research Gate*, 7(5):362–367.
- Haurani, F. I., Sherwood, W. C., Goldstein, F. 1964. Intestinal malabsorption of vitamin B12 in pernicious anemia.
- Jilani, T., Iqbal, M. P. 2018. Vitamin E deficiency in South Asian population and the therapeutic use of alpha-tocopherol (Vitamin E) for correction of anemia. *Pakistan Journal of Medical Sciences*, 34(6):1571–1575.
- Kramer, A. H., Zygun, D. A. 2009. Anemia and red blood cell transfusion in neurocritical care. *Critical Care*, 13(3):R89–R89.
- Kwak, Y., Kim, Y., Baek, K. A. 2019. Prevalence of irregular menstruation according to socioeconomic status: A population-based nationwide cross-sectional study. *PLOS ONE*, 14(3):e0214071–e0214071.
- Ludwig, H., Strasser, K. 2001. Symptomatology of anaemia. *Seminars in oncology*, 28(2):7–14.
- Malay, K. K. 2018. Awareness regarding anaemia among 1 st year dental undergraduate students. *Drug Invention Today*, pages 10–10.
- Mcelmurry, B. J. 1999. Primary Health Care in Urban Communities. 14(1).
- Möllmann, M. 1990. The Effects of Anemia. *Oxygen Transport in the Critically Ill Patient*, pages 29–31.
- Rati, S. A., Jawadagi, S. 2014. Prevalence of anaemia among adolescent girls studying in selected schools. *International Journal of Science and Research*, 3(8):1237–1242.
- Rodgers, J., Kim, R., Subramanian, S. V. 2015. Explaining within- vs between-population variation in child anthropometry and haemoglobin measures in India: A multilevel analysis of the National Family Health Survey. *Japan Epidemiological Association*.
- Silberstein, L. E. 1989. Strategies for the Review of Transfusion Practices. *JAMA: the journal of the American Medical Association. American Medical Association*, 262(14):1993–1997.
- Sobrero, A. 2001. Fatigue: the main component of anaemia symptomatology. *Seminars in oncology*, 28(2):15–18.
- Stevens, G. A. 2013. Global, regional, and national trends in haemoglobin concentration and prevalence of total and severe anaemia in children and pregnant and non-pregnant women for 1995–2011: a systematic analysis of population-representative data. *The Lancet Global Health*, 1(1):16–25.
- Stoltzfus, R. J. 2001. Defining Iron-Deficiency Anemia in Public Health Terms: A Time for Reflection. *The Journal of Nutrition*, 131(2):565S–567S.
- Switoniak, T., Król, A. 1992. Iron deficiency and anemia in professional working women. *Przegląd epidemiologiczny*, 46(4):379–387.
- Valdez, J. M. 2009. Infections in patients with aplastic anaemia. *Pubmed*, 46(3):269–276.
- Venkaiah, K., Damayanti, K., Nayak, M. U., Vijayaraghavan, K. 2002. Diet and nutritional status of rural adolescents in India. *European Journal of Clinical Nutrition*, 56(11):1119–1125.
- Walters, B. A. J. 2002. Health-related quality of life, depressive symptoms, anaemia, and malnutrition at hemodialysis initiation, American journal of kidney diseases. *the official journal of the National Kidney Foundation*, 40:1185–1194.
- Weiss, G., Goodnough, L. T. 2005. Anemia of Chronic Disease. *New England Journal of Medicine*, 352(10):1011–1023.
- WHO 2018. World Health Organization Quality of Life-100. *PsycTESTS Dataset*.