# STUDY ON KNOWLEDGE AND ITS ASSOCIATED FACTORS REGARDING ANEMIA AMONG WOMEN AGED 18-45 IN AN URBAN SLUM IN BANGALORE, KARNATAKA.

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*Abstract:* **Background of the study: Anemia is a significant health issue worldwide. Iron Deficiency Anemia is one of the most common forms of anemia. A cross-sectional study was carried out to evaluate the awareness and related factors among women aged 18-45 regarding anemia in an urban slum in Bangalore, Karnataka.**

**Methods: A cross-sectional descriptive research approach was adopted in this study. The systematic random sampling technique was used to select 200 women of reproductive age (18-45 years), and a structured interview schedule was used to collect the data. Data analysis was done using SPSS version 20.0**

**Results: The results showed that the overall knowledge mean score was 21.53 (SD± 3.722), which showed that women of reproductive age (18-45 years) had inadequate knowledge regarding anaemia, out of 200 women, 184 (92.0%) had inadequate knowledge, 16 (8%) had moderately adequate knowledge, and none of them had adequate knowledge. There was significant association between knowledge and socio-economic status of women (P = 0.01).**

**Conclusion: The study concluded that study participants had inadequate knowledge and lack of knowledge about anaemia, which may be the main causes for the increasing prevalence of anaemia among them. the study emphasises the urgent need for comprehensive and inclusive public health initiatives to address the widespread lack of anemia awareness among women of reproductive age, ultimately contributing to better maternal and child health in the broader community.**

## I. INTRODUCTION

Anemia is a major health problem throughout the world, in that iron deficiency anemia is one of the commonest forms of anemia[1.] The prevalence of iron deficiency anemia is higher in developing countries like India, especially affecting toddler, adolescents and women of childbearing age[2,3].

The manifestations of iron deficiency anemia differ in different age groups, such as increased risk of infectious diseases, affect the cognitive and motor development and mortality in children and adolescents. It will cause premature delivery, low birth weight and also increased risk of maternal mortality rate during pregnancy[3]. Among women in reproductive age the symptoms may not be noticeable in the beginning it is like an iceberg, but paleness, fatigue, low blood pressure can be manifested later. In severe cases, there will be shortness of breath and chest pain, which is an evidence of inadequate perfusion and oxygenation of the major organs[5]. These factors can worsen the health conditions of women such as lung diseases, cardiovascular diseases and heart attack, ultimately death[4,13]. And also result in obstetrical risk such as foetal complication and increased infant and maternal mortality[21].

In India, two-third of women of childbearing age are estimated to suffer from iron deficiency anemia[9,30]. Reports from National Nutrition Monitoring Bureau 2017 indicate that 15% of all maternal deaths are attributed to anemia. The highest prevalence of anemia among women in India is a burden for them, for their families, and for the economic development

and productivity of the country [21]. Iron deficiency anaemia occurs more often in women than in men; the main reason is excessive loss of iron or demand of iron associated with menstruation and pregnancy [10,28].

Nearly 400 million women worldwide suffer from iron deficiency anaemia. In India, according to the National Family Health Survey 5, which was undertaken between 2019 and 20, the Prevalence of anaemia among women increased from 53% in NFHS-4 to 57% in NFHS-5. In Karnataka, the incidence of anaemia among married women was about 47. 7% among rural married women and 46.7% among urban married women, which seems to be very high [6,7].

In developing countries like India, where iron deficiency anaemia is more prevalent and high, many women conceive shortly after marriage[5],[27]. It is well known that pre-conceptional iron deficiency has adverse effects on pregnancy outcomes. A research study done by the Department of Medicine, St. John's Medical College Hospital, reported that the occurrence of restless leg syndrome was significantly higher among those who had iron deficiency anaemia[7].

The initial symptoms of iron deficiency anemia in women can go unnoticed. In severe cases, inadequate oxygen supply to major organs can lead to health problems such as kidney failure, lung diseases, and cardiovascular diseases, ultimately leading to death [1,4,8]. In India, iron deficiency anemia is influenced by poverty, illiteracy, and lack of knowledge about dietary requirements. Measures to prevent iron deficiency anemia include consuming iron-rich foods from both animal and plant sources, and fortifying food with iron at the community leve[9,15,22.] The present study was undertaken to enhance women's understanding of health-related factors and identify critical influences, ultimately fostering a positive shift in their attitudes toward health.

## II. MATERIAL AND METHODS

**Sample and Sampling Technique:** The present study's sample comprises married women aged 18-45 who were able to understand and speak Kannada and English. Antenatal and postnatal mothers and women who were under treatment for anaemia were excluded from the study. In the present study, 200 women of reproductive age (18-45 years) were selected using a systematic random sampling technique.

**Description of Instrument:** The instrument used in this study consists of two sections, which are as follows. Section I consisted of Demographic variables, including women's age, marital status, number of children, type of family, religion, dietary habits, education, occupation, and family income. Section II consisted of a structured knowledge questionnaire for assessing knowledge regarding anaemia. It consisted of 27 items, each with 3 options, and the total score was 50. The classification of knowledge scoring is given below

**Table 1 Classification of Knowledge Scoring**

| SL. NO | Content | Score | Percentage | Total Score |
|---|---|---|---|---|
| 1 | Inadequate | <27 | <50% | |
| 2 | Moderately adequate | 27-36 | 50-75% | 50 |
| 3 | Adequate | >36 | >75% | |

**Reliability:** The reliability of the tool was established using the split-half method, and coefficient correlation was done with the help of Karl Pearson's formula. The reliability score obtained was r="0.8448" for the knowledge questionnaire, which showed that the knowledge questionnaire was highly reliable. Hence, the tool was considered statistically reliable for the main study.

**Procedure For Data Collection:** Data were collected during June and July 2020 in an urban slum in Bangalore, Karnataka. Using systematic random sampling, every fifth household was selected for the study purpose, and only one eligible, willing respondent from each household was included in the study. Overall, 200 women of reproductive age (18-45 years) from 200 households were interviewed face to face.

**Methods of data analysis:** The data obtained was analyzed on the basis of the objectives of the study using SPSS 20.0 version

## III. RESULT

**Description of demographic variables of women of reproductive age (18-45 years).**

For the current research, 200 women of childbearing age (18-49 years old) were chosen. Of the 200 women, the largest group (41.5%) fell within the 18-25 age range, totaling 83 women. 36% (73 women) were between 25-35 years old, and the remaining 22% (44 women) were aged 35-45. The majority, 94.5%, were married (189 women), while 4.5% were widows (9 women) and 1% were divorcees (2 women). Regarding children, 30% (60 women) had more than 2, 28% (56 women) had 2, 25% (50 women) had one child, and the remaining 17% (34 women) had no children. In terms of family structure, 67.5% (135 women) were from nuclear families, and 32.5% (65 women) were from joint families. Religion-wise, 70.5% (141 women) were Hindu, 27.5% (55 women) were Muslim, and 2% (4 women) were Christian. When it came to socioeconomic status, 91% (182 women) were from lower class families, 4.5% (9 women) were from lower middle-class families, and 4% (8 women) were from upper lower class families, while 0.5% (1 woman) was from an upper middle-class family.

**Knowledge level of women of reproductive age (18-49 years) regarding anemia**

**Table 2 Knowledge Score obtained**

**n=200**

| Variable | N | Mean | SD |
|---|---|---|---|
| Score | 200 | 21.53 | 3.742 |

The results of this study showed that the overall knowledge mean score was 21.53 (SD± 3.722), which showed that women of reproductive age (18-45 years) had inadequate knowledge regarding anemia. Out of 200 women, 184 (92.0%) had inadequate knowledge, 16 (8%) had moderately adequate knowledge, and none had adequate knowledge.

**Table 3 Knowledge level of women of reproductive age (18-45 years) regarding anemia**

n=200

| Sl no | Content | Max scores | Knowledge Level | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Inadequate | | Moderately adequate | | Adequate | |
| | | | No | % | No | % | No | % |
| 1 | Meaning of anemia | 2 | 34 | 17 | 91 | 45.5 | 75 | 37.5 |
| 2 | Causes of anemia | 3 | 184 | 92 | 13 | 6.5 | 3 | 1.5 |
| 3 | Risk factors | 2 | 17 | 8.5 | 170 | 85 | 13 | 6.5 |
| 4 | Signs and symptoms of anemia | 6 | 165 | 82.5 | 34 | 17 | 1 | 0.5 |
| 5 | Diagnosis of anemia | 3 | 186 | 93 | 9 | 4.5 | 5 | 2.5 |
| 6 | Ill effects of anemia on | 8 | 123 | 61.5 | 76 | 38 | 1 | 0.5 |
| 7 | Treatment of anemia | 5 | 183 | 91.5 | 0 | 0 | 17 | 8.5 |
| 8 | Prevention of anemia | 16 | 127 | 63.5 | 73 | 36.5 | 0 | 0 |
| 9 | Daily requirement of iron | 3 | 91 | 45.5 | 95 | 47.5 | 14 | 7 |
| 10 | Complications | 2 | 47 | 23.5 | 143 | 71.5 | 10 | 5 |

Data reveals that the majority i.e., 184 (92%) women of reproductive age of them had inadequate knowledge regarding the causes of anemia. Majority i.e., 165 (82.5%) of them had inadequate knowledge regarding signs and symptoms of anemia, 183 (91.5%) of them had inadequate knowledge regarding treatment of anemia and 127 (63.5%) had inadequate knowledge regarding prevention of anemia. Only 17 (8.5%) of them had adequate knowledge regarding treatment of anemia

### IV.DISCUSSION

**Demographic Characteristics and Their Implications**

The study found that among the 200 women, there was a diverse range of ages. The largest group (41.5%) was between 18 and 25 years old, a critical time for a woman's reproductive health. This suggests that efforts to prevent anemia and other health issues should focus on this age group. Most participants (94.5%) were married, indicating a strong link between marital status and reproductive health needs. 30% of the women had more than two children, which increases the risk of anemia. This shows the importance of providing nutritional

support and education, especially for women with multiple children. Prioritizing these interventions can improve anemia prevention and overall reproductive health outcomes.

The study revealed a noteworthy contrast in the educational achievements of the participants. Notably, 31% were found to be illiterate, while only 3% had completed graduate-level education. This disparity is concerning, as literacy plays a critical role in health literacy—the capacity to obtain, comprehend, and utilize information to make well-informed health decisions. The observed association between lower educational attainment and insufficient knowledge about anemia aligns with existing literature underscoring the pivotal role of education in health awareness and outcomes[14,17, 25.] The high prevalence of illiteracy among the participants underscores the necessity for health education programs that cater to diverse educational levels, potentially through visual aids, community workshops, and non-text-based educational tools[19,30,34].

**Anemia Knowledge Deficits**

The study outlined a noteworthy deficiency in knowledge regarding anemia among the participants. The average knowledge score was 21.53 (SD± 3.722), indicating an overall inadequacy of knowledge about anemia among the women. A substantial 92% of the participants demonstrated a lack of sufficient knowledge about the causes of anemia, while 91.5% were uninformed about effective treatment options. This widespread lack of awareness raises concerns as it directly impacts the participants' ability to prevent and manage anemia, posing significant implications for maternal and child health. Furthermore, 82.5% of the participants displayed inadequate knowledge about the signs and symptoms of anemia, potentially leading to delayed diagnosis and treatment, thereby increasing the risk of severe health outcomes.

Additionally, the study revealed that none of the participants possessed adequate overall knowledge about anemia, highlighting a critical gap in health education. This dearth of knowledge likely contributes to the high prevalence of anemia observed in similar populations. The findings correspond with previous studies reporting low levels of health literacy and awareness about anemia, particularly among women of reproductive age in low-resource settings. This knowledge gap underscores the need for comprehensive educational interventions focusing on improving awareness and understanding of anemia's causes, symptoms, treatment, and prevention [13,18,23].

**Association Between Knowledge and Demographic Variables**

The research investigated the relationship between levels of knowledge and specific demographic factors. It was found that family income was significantly linked to knowledge levels ($P < 0.05$). This underscores the influence of socioeconomic elements in determining health knowledge and access to healthcare resources. It was observed that women from higher-income households demonstrated greater knowledge about anemia, likely attributed to improved access to educational resources, healthcare services, and nutritional information. This aligns with global studies that highlight income as a key determinant of health knowledge and outcomes [29,30,32].

In contrast, other demographic variables such as age, number of children, education, and hemoglobin levels did not display a significant association with anemia knowledge. This suggests that while socioeconomic status plays a crucial role, other variables may not independently predict anemia knowledge to the same extent. Notably, the lack of substantial association between education and anemia knowledge is significant, considering the well-established connection between education and health literacy. This may indicate that factors beyond education, such as the quality of education or access to health information, exert influence on health knowledge even within educational categories [24].

**Public Health Implications**

The study highlights the need for tailored educational initiatives to address the gaps in knowledge about anemia among women of childbearing age. It emphasizes the importance of prioritizing public health interventions to raise awareness about anemia, particularly among women with lower income and educational attainment. Additionally, the study underscores the significance of addressing socioeconomic barriers to healthcare access and the necessity for culturally sensitive and readily accessible interventions for effective anemia prevention and management, particularly in underprivileged communities.

## V.CONCLUSION

Addressing these knowledge deficits through targeted educational interventions is crucial for improving anaemia awareness and management. Public health strategies must focus on creating accessible, culturally sensitive educational programs that cater to the needs of women across all socioeconomic strata. By empowering women with the necessary knowledge and resources, we can significantly reduce the prevalence of anaemia and enhance the overall health outcomes for women in this population. This study also emphasizes the urgent need for comprehensive and inclusive public health initiatives to address the widespread lack of anaemia awareness among women of reproductive age, ultimately contributing to better maternal and child health in the broader community.

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