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Research Article

A Descriptive Study to Assess the Level of Awareness Regarding Anaemia Among Females Between the Age Group of 12-60 Years in Selected Community Of Mehrauli, Delhi

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A B S T R A C T

Background: Anaemia remains a major public health problem among women in India, adversely affecting health, productivity, and quality of life. Adequate knowledge regarding anaemia is essential for its prevention and management.

Objectives: To assess the level of awareness regarding anaemia among females in selected community of Mehrauli, Delhi and to determine the association between awareness level regarding anaemia with selected demographic variables.

Methods: A quantitative descriptive cross-sectional study was conducted among 103 females aged 12–60 years residing in selected community areas of Mehrauli, Delhi. Convenient sampling technique was used. Data were collected through a pre-validated structured interview schedule comprising demographic information and a knowledge questionnaire on anaemia. Descriptive and inferential statistics were used for data analysis.

Results: Among the participants, 43.68% belonged to the age group of 19–35 years, 56.13% were housewives, and 51.45% lived in nuclear families. Nearly 43.68% reported a previous history of anemia. Regarding awareness, nearly half of the females i.e., 47.5% of women had poor awareness, 35.9% had average awareness, and only 16.5% had good awareness regarding anemia. Chi-square analysis revealed a statistically significant association between awareness levels with age and educational status. ($p < 0.05$), whereas no significant association was found with age, occupation, or previous history of anaemia ($p > 0.05$).

Conclusion: The study revealed poor awareness regarding anaemia among females residing in selected community areas of Mehrauli, Delhi. Educational status was significantly associated with awareness levels. The findings emphasise the need for targeted health education programmes, awareness campaigns, and community-based interventions to improve knowledge and promote anaemia prevention among women.

Keywords: Anaemia, Awareness, Female, Community

Introduction

Anaemia is a widespread health threat characterised by a reduction in the number of circulating red blood cells or haemoglobin concentration, leading to insufficient oxygen delivery to tissues and organs. Developing countries bear the disproportionate impact of anaemia, especially among rural communities, economically weaker households, and individuals without formal education. According to the World Health Organisation (WHO), around 40% of children aged 6-59 months, 37% of pregnant women 30% of women 15–49 years of age are affected by anaemia worldwide. In 2019 alone, anaemia took fifty million years of healthy life due to disability. The main reasons were poor iron intake, blood conditions like thalassaemia and sickle cell trait, and malaria.[1]

Around 1/4th of the world population is affected by anaemia, with sharply rising cases among women, expectant mothers, young girls, and children younger than age 5. In 2021, anaemia affected 1.92 billion of cases, with an increase of 420 million cases over the past three decades. Anaemia tends to be the third leading cause of years lived with disability (YLDs) in the world. While iron deficiency is the leading cause of anaemia, focusing only on iron supplements and modifications of diet is not sufficient.[2]

Anemia caused by several interrelated factors and most common are nutritional gaps - especially deficiencies in iron, vitamin B12, and folate. Chronic illnesses, infections such as malaria and tuberculosis, and blood disorders such as thalassemia and sickle cell disease also plays major role. Recently noncommunicable diseases (NCDs) including diabetes, heart disease, and chronic kidney disease have been increasingly recognized as significant contributors to anemia. The connection between NCDs and anemia is complex, with chronic inflammation and decreased red blood cell production being central mechanisms that link these conditions. Children suffering from anemia can slow their brain development and learning. That's why treating it early is so important.[3]

In pregnancy, anaemia increases the incidence of preterm labour, postpartum bleeding, lowbirthweight babies, shorter gestation, stillbirth, and infections that can affect both mother and child. Children suffering from anaemia are linked with slow brain development, impaired cognitive and motor development and also increased risk of infections and mortality, whereas in older adults (>65 years) it is identified as a risk for frequent hospitalisations, poor recovery rate post surgery and increased all-cause mortality.[4]

As per the National Health Survey- 5 (2019-2021), the prevalence is highest among young children aged 6 to 59 months, with 67.1%; adolescent girls (15–19 years) also show alarmingly high rates at 59.1%, followed closely by women aged 15 to 49 years at 57%, whereas pregnant women face a 52.2% anaemia rate. These figures highlight the urgent need for targeted interventions across age and gender groups, especially among women, girls, and children in vulnerable settings. Recognising the burden of anaemia across various population groups, the Government of India has taken strong, targeted action to combat it through the National Health Mission (NHM). The Anaemia Mukt Bharat strategy is implemented to reduce anaemia among six beneficiary age group that includes Iron-Folic Acid supplementation, deworming, fortified nutrition, and behaviour change communication.[5]

Need for the Study

In India, anaemia remains a serious health issue, particularly for women, children, and teenage girls. Children's anaemia rose between 2015 and 2021, primarily as a result of an increase in cases of moderate anaemia, while levels in other groups barely changed. Only a small percentage of pregnant women regularly take iron supplements, and many do not consume enough nutrient-dense foods like animal protein and green leafy vegetables. Health services provide iron and deworming medications, but many women and children do not take full advantage of them. Better nutrition, increased awareness, and routine health monitoring are required to lower anaemia.[6]

A study conducted by Delhi University to find the prevalence of anaemia in early reproductive age (2025) found that mild anaemia was more common in the 19–21 years age group, while the 16–19 years group had a lower prevalence of anemia, also significant association ($p< 0.05$) observed between age and mild anemia.[7] Anaemia's high prevalence among Indian women adversely affects their physical health, work productivity, and quality of life, and increases risks during pregnancy such as low birth weight and maternal morbidity.[8]

Aim

A descriptive study to assess the level of awareness regarding anaemia among different females in selected community areas of Mehrauli, Delhi**.**

Objective

- To assess the level of awareness regarding anaemia among females residing in selected areas of Mehrauli, Delhi.
- To find the association of awareness level regarding anaemia among females with selected demographic variables.

Material and Methods

Research Approach and Design

A quantitative research approach with a descriptive cross-sectional study was conducted over a period of

three months (July– September 2025) in selected areas of Mehrauli, Delhi, to assess the awareness level regarding anaemia among females.

Study Setting

The study was conducted in selected areas of Mehrauli, Delhi. These areas were densely populated urban settlements with mixed socioeconomic backgrounds where females were vulnerable to malnutrition, anaemia, and inadequate health practices.

Study Population and Sampling

The study population comprised females of different age groups residing in selected areas of Mehrauli, Delhi.

Sample Size and Sampling Technique

A total of 103 females of different age groups (12-60 years) were included in the study. The sample was selected using a convenient sampling technique based on the availability and willingness of females to participate during their visits.

Inclusion and Exclusion Criteria:

The study included females who were aged between 12 and 60 years and willing to participate in the study. Females who were very ill or didn't understand Hindi were excluded from the study.

Data Collection Tools and Procedure

A face-to-face interview was conducted to gather the data. A pre-validated structured interview schedule was used to assess the awareness level of females on anaemia. This tool consists of two parts: information on sociodemographic details, menstrual history and anaemia history, and a knowledge questionnaire on anaemia.

Ethical Considerations

The study was conducted in accordance with ethical principles. Administrative approval was obtained from the M.L.A. Written informed consent was obtained from all participants prior to the study.

Statistical Analysis

Data were entered into Microsoft Excel and analysed using SPSS Version 28 IBM Corp. statistical software. Descriptive statistics were used to summarise the data. Categorical variables were expressed as frequencies and percentages**.** Inferential statistics were used to determine association of awareness level with selected demographic variables.

Result

Section 1- Description of demographic variables of study subjects

This section consists of data regarding demographic variables of such as age, education status, occupation, monthly income, types of family, menstrual history, and history of anaemia.

The data presented in Table 1 show that the majority (43.7%) of the females belonged to the age group of 19–35 years. Most (27.18%) of the females had attained secondary education. The majority (56.35%) of the females were housewives, and 51.45% were living in nuclear families. Most of the families had a moderate (39.82%) monthly income. A large (75.73%) number of females were in their reproductive age group, as most reported having regular or irregular menstruation. Nearly half (56.32%) of the females had a previous history of anaemia, indicating that anaemia is a common health problem among this group.

Section 2 - Description of females based on their awareness level.

Table 2 depicts that nearly half of the females (47.6%) had a low level of awareness about anaemia. About one-third of the females (35.9%) had an average level of awareness, while only a small proportion (16.5%) had good awareness. This indicates that the majority of females lack adequate awareness about anaemia, highlighting the need for health education and awareness programs.

Section 3: Possible range of obtained scores, mean, median and SD

The data presented in Table 3 shows that the possible score ranged from 0 to 10, and the obtained scores also covered the full range from 0 to 10, indicating a wide variation in participants' awareness levels. The mean score is nearly equal to the median, indicating a normal distribution of the obtained scores. The standard deviation of 2.43 reflects a moderate spread of scores around the mean or moderate variability**.**

Section 4: Association Between Knowledge and Selected Demographic Variables

Data presented in Table 4 shows the association between the level of awareness regarding anaemia and selected demographic variables among the study participants (). Chi-square analysis was performed to assess these relationships. The findings revealed a statistically significant association between age group and awareness level (, ,), indicating that awareness varied significantly across age categories, with young adults aged 19–35 years demonstrating better knowledge compared to other age groups. A statistically significant association was also found between educational status and awareness regarding anaemia (, ,), suggesting that participants with higher levels of education possessed significantly better awareness than those with lower educational attainment. However, no statistically significant association was observed between

awareness levels and other demographic variables such as age group ($p > 0.05$). This suggests that age did not significantly influence participants' awareness levels. Therefore, educational status was identified as the key demographic factor associated with knowledge levels in the study.

Table 1.Frequency and percentage distribution of females according to their demographic variables

n= 103

S No	Variables	Frequency	Percentage (%)
Age Group (in years)			
1.	12 -18	11	10.70
	19-35	45	43.70
	36- 50	33	32.01
	51 – 60	14	13.59
Educational Status			
2.	Illiterate	24	23.30
	Primary	25	24.28
	Secondary	28	27.18
	Higher Secondary	13	12.62
	Graduate and above	13	12.62
Occupation			
3.	House wife	58	56.35
	Student	8	7.78
	Employed	18	17.47
	Daily wage worker	9	8.7
	Others	10	9.7
Monthly family income (in rupees)			
4.	Below 5,000	5	4.85
	5001- 10,000	26	25.24
	10,001- 15000	41	39.82
	Above 15000	31	30.09
Types of family			
5.	Nuclear	53	51.45
	Joint	44	42.73
	Extended	6	5.82
Menstrual History			
6.	Irregular/ regular	78	75.73
	Menopause	25	24.27
Previous History of Anaemia			
7.	Yes	45	43.68
	No	58	56.32

Table 2.Frequency and percentage distribution of women according to their awareness level

n= 103

S No	Awareness level	Frequency	Percentage
1	Good (above 75%)	17	16.5%
2	Average (74%to 50%)	37	35.9%
3	Low (below 49%)	49	47.6 %

Table 3.Possible ranges of scores

n= 103

Possible range of scores	Range of obtained Scores	Mean ± SD	Median
0-10	0-10	4.9 ± 2.43	5

Table 4.Association between the level of awareness regarding anaemia and selected demographic variables among the study participants

n= 103

Demographic variables	Level of knowledge			Chi-square value	'p'- value
	Good	Average	Poor		
Age Group (in years)	-	-	-	16.15	0.0129*
12 -18	2	2	7		
19-35	10	23	12		
36- 50	5	8	20		
51 – 60		4	10		
Education					
Illiterate	1	7	16	19.19	0.0139*
Primary	1	10	14		
Secondary	7	10	11		
Higher Secondary	3	3	7		
Graduate and above	5	7	1		
Occupation					
House wife	11	19	28	10.27	0.246
Student	2	2	4		
Employed	1	11	6		
Daily wage worker		3	6		
Others	3	2	5		
Previous History of Anaemia					
Yes	8	23	27	1.14	0.567
No	9	14	22		

Discussion

The present study revealed that 47.5% of women had poor knowledge regarding anaemia, whereas only 16.5% had good knowledge. This finding is consistent with the National Family Health Survey-5 (NFHS-5), which reported a persistently high prevalence of anaemia among Indian women despite ongoing national programs. Poor awareness regarding causes, symptoms, prevention, and treatment may contribute to the continued burden of anaemia among women.[9]

The study found that educational status was significantly associated with knowledge levels regarding anaemia ($p < 0.05$). Women with higher educational attainment demonstrated better knowledge than illiterate or less educated women. Similar findings were reported by Gupta et al., who observed that education plays a vital role in improving awareness and adoption of preventive health practices related to anaemia. Educated women are more likely to access health information and utilise healthcare services effectively.[10]

Nearly 43.68% of participants reported a previous history of anaemia. However, a previous history of anaemia did not show a significant association with knowledge levels. This finding indicates that personal experience with anaemia alone may not improve awareness unless accompanied by adequate counselling and educational support from healthcare providers.[11]

The mean knowledge score of 4.9 ± 2.43 indicates moderate variability in participants' knowledge. Similar observations were reported in studies conducted among urban women in India, where knowledge regarding dietary sources of iron, risk factors, and preventive measures was found to be inadequate. The findings emphasize the need for regular awareness programmes, nutrition education, and behaviour change communication strategies at community and primary healthcare levels. [12]

Similarly, Chaudhary et al. found that age was significantly associated with knowledge regarding anaemia among rural women, where women aged 30 years and above had significantly higher knowledge scores compared to younger women. The study attributed this difference to greater exposure to maternal and child health programmes. [13]

Limitations

The study has certain limitations. The study was conducted among 103 females, which may limit the generalizability of the findings to the wider population. The study was carried out in selected community areas of Mehrauli; therefore, the findings may not represent females residing in other urban or rural areas.

Conclusion

The study revealed that awareness regarding anaemia among females residing in selected community areas of Mehrauli in Delhi was inadequate, with nearly half of the participants having poor awareness. Age and Educational status were significantly associated with awareness levels, while other demographic variables showed no significant association. Considering the high prevalence of anaemia among Indian females reported in NFHS-5, the findings emphasise the need for regular health education, awareness programmes, and community-based interventions to improve knowledge and promote anaemia prevention among females.

Recommendations

Health education sessions should be conducted regularly in community areas to improve female awareness regarding anaemia, its causes, symptoms, prevention, and treatment. Community-based awareness campaigns should be organised through schools, community centres, Anganwadi centres, and primary healthcare facilities to promote anaemia prevention. Special attention should be given to adolescent girls, women of reproductive age, and menopausal women through age-specific educational interventions.

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