

Haemoglobin Status and Awareness for Anaemia Prevention: A Community Survey in Karmala

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Abstract

Haemoglobin deficiency is a common public health problem that can lead to anaemia and affect overall health and productivity. Early detection and awareness are important for the prevention of anaemia in the community. This study was conducted in Karmala area to assess haemoglobin status among the population. Data was collected through a structured questionnaire and health survey. The result showed that several participants had haemoglobin level below the normal range, indicating the presence of anaemia. The study concludes that regular screening and improved nutritional awareness are necessary to prevent anaemia.

Keywords: Haemoglobin, survey, anaemia, prevention

Introduction

Haemoglobin, a protein molecule found in human red blood cells, has long been known as a key in the process of oxygen transport in the body. The percentage of Hb varies depending upon the age, sex, ethnic background, body fluid and social, nutritional and environmental factors. Abnormal level of haemoglobin causes disorders (Yandamuri Ayyanna et.al 2013). Focus on the role of haemoglobin in maintaining health. The population studied includes humans of various age groups and health conditions. Factors such as nutrition, environment and health conditions affect a person's haemoglobins levels (Nireza Agasti et.al 2024).

The World Health Organization [WHO] estimates that in 2019, approximately 1.62 billion people were affected by anaemia with iron deficiency being the most common cause. The impact of Iron Deficiency Anaemia (IDA) is particularly evident in regions like India, where the Indian Council of Medical Research [ICMR] highlights concerning trends and the need for targeted interventions to address iron deficiency, particularly among women and children (Abhinav Manish et.al 2024).

Therefore, creating awareness about haemoglobin, its normal range and the importance of iron-rich foods is essential for preventing anaemia. This study was conducted to assess the level of awareness about haemoglobin and anaemia prevention among Karmala city people and to promote knowledge about maintaining healthy haemoglobin levels through proper diet and lifestyle.

Literature Review

Researchers highlight that haemoglobin is essential for oxygen transport and overall health, with iron playing a key role in its function. Factors like nutrition and health conditions influence haemoglobin levels, and imbalances can lead to disorders such as anaemia. Iron deficiency causes fatigue, weakness, and reduced cognitive ability, while low haemoglobin—especially in women and pregnant individuals—can result in serious health issues like low birth weight and premature delivery.

Methodology

Study Design

The present study was conducted as a descriptive survey-based study to assess awareness about haemoglobin and anaemia prevention among students and members of the general public. The study also aimed to educate participants about the importance of maintaining normal haemoglobin levels and anaemia control through proper nutrition and lifestyle practices.

Study Area

The study was carried out in Karmala, Maharashtra, India. Data collection was conducted over a specific period during the awareness campaign. The study included participants from educational institutions and local community members who voluntarily participated in the survey.

Study Population

The study population consisted of students and members of the general public. Individuals from different age groups were included in order to understand the general level of community awareness on haemoglobin and anaemia control.

Sample Size and Sampling Method

A total of 80-90 participants were included in the study. Participants were selected using a random sampling method to ensure that different individuals from the community could participate in the survey.

Data Collection Tools

Data were collected using a structured questionnaire prepared in simple language to ensure easy understanding by the participants. The questionnaire consisted of both closed-ended and multiple-choice questions related to awareness and

prevention of iron deficiency anaemia.

The questionnaire included questions such as:

- Do you know about haemoglobin?
- Do you know the normal haemoglobin range?
- Has a doctor ever told you that your haemoglobin level is low?
- Do you know about iron-rich foods?
- Do you know the symptoms of anaemia?

Awareness Activity

After the survey, participants were given basic information about assessment of awareness about haemoglobin levels and anaemia prevention. They were informed about the importance of a balanced diet and iron-rich foods such as spinach, jaggery, dates and non-veg.

Awareness and Educational Activity

After collecting the responses, an awareness session was conducted to educate participants about haemoglobin and anaemia prevention. Participants were informed about the importance of maintaining normal haemoglobin levels and the role of proper nutrition. Information about iron-rich foods such as green leafy vegetables, jaggery, dates, pulses and other nutrients foods was shared. The aim of this activity was to 'improve participant's knowledge and encourage healthy dietary habits.

Data Collection Procedure

Data was collected through two methods

- **Online Survey:** A Goggle form was created and shared through social media platforms.
- **Offline Survey:** Printed questionnaire was distributed among local peoples. Before collecting responses, participants were informed about purpose of the study.

Data Analysis

The collected data were organized and analyzed using simple statical methods. The responses calculated in the form of percentages and presented using pie charts and graphs to clearly show the level of evaluation of knowledge regarding haemoglbin and anaemia among participants.

Observation

The survey, based on 80–87 participants aged 18–60 years, revealed that most people have basic awareness of haemoglobin and its importance for health. However, detailed knowledge—such as the need for regular haemoglobin check-ups—is limited, and not all participants undergo routine testing. Some individuals reported low haemoglobin levels in the past, indicating the presence of

deficiency. While there is some awareness of anaemia symptoms like weakness and fatigue, understanding of proper dietary practices and normal haemoglobin levels remains inadequate, highlighting the need for improved health awareness.

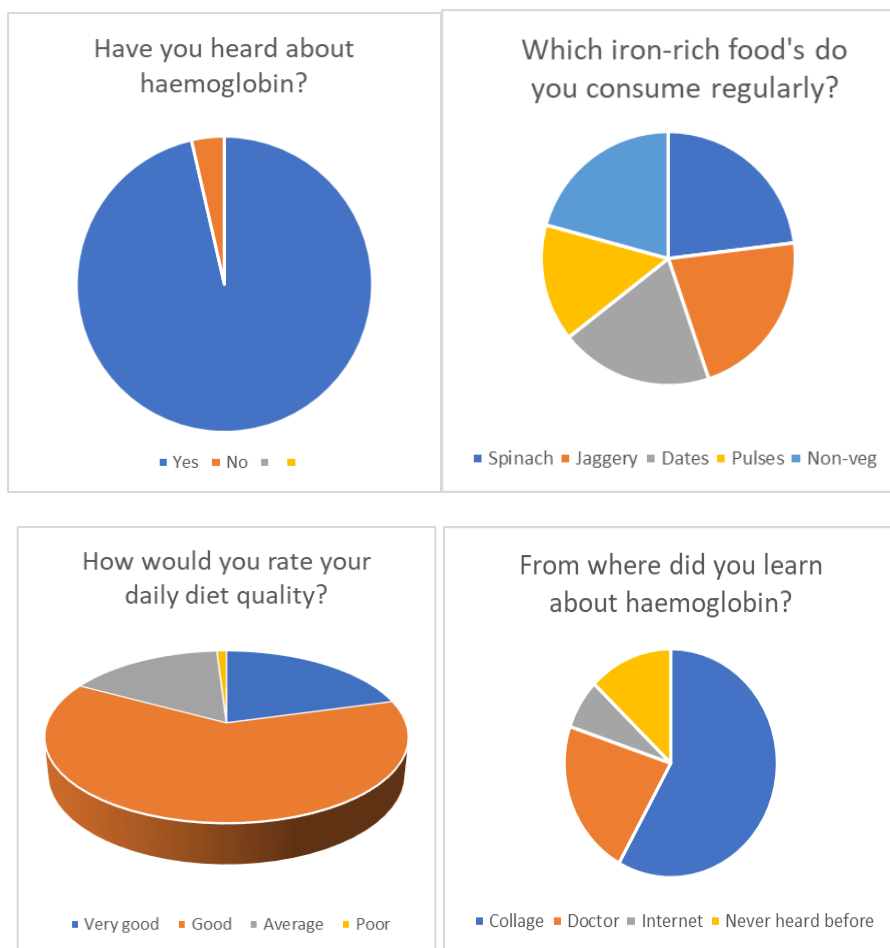
Results and Discussion

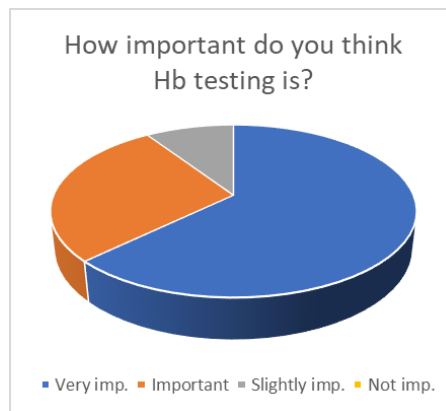
This study involved 80–87 participants aged 18–60 years, and their responses were analyzed to assess knowledge about haemoglobin levels and anaemia prevention. The results showed that while some participants were aware of haemoglobin and anaemia, many lacked knowledge about normal haemoglobin levels and the importance of regular testing. The data were organized into tables and presented using pie charts to clearly illustrate the proportion of participants who were aware or unaware of haemoglobin levels, anaemia, and its prevention.

Sr. No.	Question	Option	Number of Responses	Percentage
1	What is your gender?	Female Male	60 27	69% 31%
2	Have you heard about haemoglobin (Hb)?	Yes No	75 12	86.2% 13.8%
3	Have you ever checked your haemoglobin level?	Yes No	69 17	80.2% 19.8%
4	What type diet you follow?	Vegetarian Non-vegetarian Mixed	43 8 36	49.4% 9.2% 41.4%
5	Do you include iron-rich foods in your daily diet?	Yes No	67 20	78.8% 21.2%
6	Which iron-rich foods do you consume regularly?	Spinach Jaggery Dates Pulses Non-veg	20 19 17 13 18	23% 21.8% 19.5% 14.9% 20.7%
7	How would you rate your daily diet quality?	Very good Good Average Poor	54 18 14 1	20.7% 62.1% 16.1% 1.1%
8	From where did you learn about haemoglobin?	School Doctor Internet	50 19 6	58.1% 22.1% 7%

		Never heard before	11	12.8%
9	Have you ever told by a doctor that your Hb is low?	Yes	37	
		No	50	
10	How important do you think Hb testing is?	Very important	54	62.8%
		Important		
		Slightly important	24	27.9%
		Not important	9	9.3%
			0	0%

Graphical Representation of Results





Conclusion

This study showed that many people have heard about haemoglobin and anaemia, but their complete knowledge is limited. Some participants did not know the normal haemoglobin range, symptoms of anaemia, and the importance of iron-rich foods. The awareness activity helped participants understand the importance of maintaining healthy haemoglobin levels. They also learned that eating iron-rich foods such as green leafy vegetables, jaggery and pulses can help control anaemia. Therefore, it can be concluded that awareness programs are very important to improve people's knowledge about haemoglobin and anaemia prevention. Proper nutrition, regular health check-ups, and awareness can help in reducing the risk of anaemia and improving overall health.

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