

A Supporting Endeavour to Raise Knowledge of Sickle Cell Anaemia in Higher Secondary School Students of Gujarat's Navsari District

Mohd. Younus Javeed

Research Scholar - Pharmacy, Shri JJT University, Jhunjhunu, Rajasthan, India.

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ABSTRACT

Therefore, through communicating via person-to-person and student-to-student channels, information on the haemoglobin disease sickle cell anaemia would be developed, and it also aids in spreading awareness in the community. Higher secondary school students are at a great age for comprehending the fundamentals of disease, as well as the significance of genetic and premarital counselling sessions.

Keywords: Sickle cell; Phenotypically; Haemoglobin; Haemoglobin problem.

Introduction

Sickle cell fragility is a phenotypically diverse autosomal passive haemoglobin disorder. In this haemoglobin problem, some sickle cell patients experience ongoing vaso-impediment and challenges, whereas others are only minimally affected and lead normal lives. Therefore, it is unquestionably a big global health concern that poses serious challenges to our social insurance systems. Undoubtedly, more government-funded education, guidance, and awareness regarding sickle cell fragility are needed in India, especially in the country's tribal regions. The main goal of the current research is to support legislation remotely to regulate sickle cell disease and the haemoglobin problem.

The goal of the poll-based study was to create a pilot size database on how aware or ignorant understudies fitting within a common range are.

Government will get insight from this study on the current state of students' mindfulness, what should be achievable in the future, and how to prepare the populace for legitimately producing mindfulness after everything is said and done. This ongoing work will also result in another method of control for children with sickle cell disease. There was no mention of mental anguish because the survey was based on basic general data evaluation from students.

Basic issues covered in the study included knowledge of blood types, knowledge of sickle cell anaemia, its prevalence rate, contingency, average patient lifespan, preventive measures, knowledge of the autosomal nature of the disease, and knowledge of the government facilities currently available to people with sickle cell anaemia.

Previous studies indicate that the disease mostly affects the tribal population (Kar 1983). Although the HbS gene was initially considered as a "tribal gene" but its wide distribution in the different general caste of different population groups has also been detected. Densest cells are least flexible and more susceptible to intracellular polymerization due to greater levels of sickle haemoglobin accumulation. Adjustments in red cell shape or blood consistency may not be as relevant for vaso-occlusive events as the odd interaction between sickle cell and vascular endothelium.

The sickle-shaped cell may affect the local control of arterial tone. In individuals with sickle cell weakening, a peculiar condition of vasodilation and low vascular resistance occurs during regular state times, substances like incendiary intermediaries, such as prostacyclin, and a rise in chemicals that constrict blood vessels, such endothelin and prostaglandin. These changes in equilibration, such as arterial flow and further obstruction, are more important when sickle cells lack oxygen.

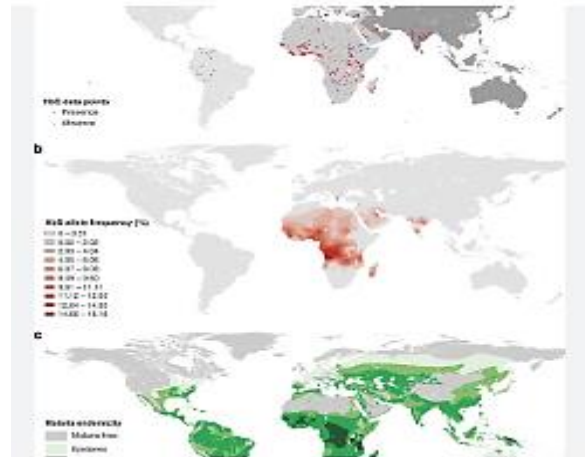


Figure 1. Raster Map Showing the Prevalence of HbS Allele in the World

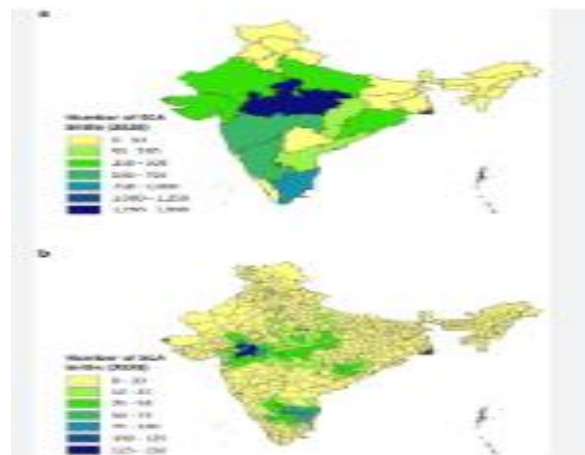


Figure 2. Raster Map Showing the Prevalence of HbS Allele in India.

Red platelet attachment to endothelial cells alters the vascular flow specifically, which may interfere sickle red blood cells' connection to the endothelium. Free radicals, prostaglandins PGI₂, PGD₂, and endothelin are additional vasoconstrictors that can tighten the grip of sickle cells on the endothelium. Inflammatory cytokines, such as the tumour corruption variable, can intensify erythrocytes' binding in response to contamination or tissue inflammation.

Change in number and capacity of white platelets may include in vaso-occlusive events.

For most part, attachment and build stickiness of neutrophils to layer are additionally seen in this condition. Leucocytes might likewise meddle with small scale vasculature stream by hotel in capillary. Additionally, the growth of platelets with sickle haemoglobin may cause platelets to become involved in the process.

This is most widely recognized watched pathogenesis in sickle cell patients. All difficulty because of vaso-impediment can straightforwardly connected with sickle cell paleness. Like leg ulcer and heart failure are most exceedingly bad difficulty in light of vaso-impediment in sickle cell pallor patients. Taking after figure will clarify pathogenesis of vaso-impediment.

From the Hospital and epidemiological based studies it was observed that the sickle gene prevalence in the population of Central India was at 22.5-44.4%, while in Western India it was 0-33.5%, Southern India showed 1-40% and North-eastern India at 0-18% (Balgir 2005; Colah et al. 2014).

❖ **Clinical Phenotypes of SCD**

The patients with SCD phenotype are categorized into three types - hemolytic phenotype (chronic hemolytic anemia), VOC (painful crisis) phenotype, and multi-organ failure (variable clinical) phenotype.

Study design: Questionnaire based survey.

Study type: Cross sectional Survey method.

Sample: Higher secondary school students of Gujarati medium of Gujarat board.

Target sample: Youth or teen agers so higher secondary school students are better option.

Gender: Both male and female.

Sample size: 300.

Informal approval

Students are requested to sign informed permission forms in order to make it apparent that there is no mental tension or obligation to complete the survey. This is because the ethical perspective is the most crucial one for any stress-free survey.

Education session

One informational lecture was given on sickle cell anaemia to provide all the necessary details, fundamental knowledge, and comprehension of the condition. All schools are also provided a banner and pamphlet to promote ongoing student awareness.

Study's metric

All survey responses were put into a database on GraphPad and classified using a numeric method. Participants were asked to choose from the following racial identification groups on the questionnaire:

- (1) Open;
- (2) Other backward classes;
- (3) Schedule backward classes and tribes.

The gender codes were:

(1) Male and

(2) Female.

When filling in the blanks, pupils noted their age. Students' current understanding of sickle cell anaemia was examined using statistically significant p values ($p < 0.05$). Students' answer rates were categorised by gender using the chi square test.

Discussions

Results from a survey done in several schools across five distinct talukas in the Navsari district were acquired in order to reflect an appropriate awareness study. 3000 pupils took part in the awareness research.

When the knowledge of sickle cell anaemia in higher secondary students was evaluated, the study's findings on autosomal nature and the students who said they had heard of sickle cell anaemia ($P = 0.000$, so $P < 0.05$) were obtained.

This finding suggests that there was a statistically significant difference between those who had heard of sickle cell anaemia and those who were already aware of it. This indicates that it's important to know about and be informed of diseases because they might vary greatly and need to be evaluated.

The current study also shown that there was a substantial difference in knowledge between the prevalent disease sickle cell anaemia and the current effective Polio programme ($P = 0.0000$, so $P < 0.05$).

This distinction may also suggest that ongoing public knowledge of any disease is important over the long run.

Students' knowledge of sickle cell anaemia is a crucial factor in the acceptance of the condition, the effectiveness of premarital genetic counselling and screening, and enhanced practise. In the current survey, the majority of students had heard of sickle cell anaemia, however only 27.8% knew that the condition is autosomal recessive and had some basic symptoms.

Regular education about sickle cell anaemia is now given to the public community as part of studies in schools, albeit it is restricted in rural schools, in many countries where it is widely prevalent.

Therefore, the current study encourages ongoing awareness-raising and assessment activities in remote schools, which must be done to educate the indigenous community.

There are several means available now to raise awareness in tribal communities, including Facebook and Whatsapp on the internet, newspapers, television, chemists and other health experts, friends, and family members.

The lack of background support and knowledge from family and the immediate environment, as well as the respondents' lack of exposure to opportunities like mass communication and professional communication that might have improved their knowledge and perception of sickle cell anaemia, may be the causes of the low level of awareness among school students.

As a result, the latest research supports the idea that schools are the only places where children may acquire information and possibilities, thus all schools must concentrate on raising awareness as well. The outcome also implies that secondary schools need to be alerted by community chemists.

According to an assessment of student awareness, research on medical students' perceptions of sickle cell anaemia and health care personnel working in tribal areas for sickle cell control programmes need to be conducted.

This study is only on a small scale, and further research on how the general population views genetics in tribal communities is still needed for diseases like sickle cell anaemia.

A few studies that evaluated people's understanding of sickle cell anaemia in a particular community came to the same conclusion: communities and policymakers need to be made aware of sickle cell anemia, including its screening and consciousness. Therefore, in places where sickle cell anaemia is common, continuing education among upper secondary school students and others is crucial. by gender e scores.

Conclusion

According to the study, few students were aware of their blood group and sickle cell pallor as a haemoglobin issue, and there was little widespread knowledge of sickle cell iron deficiency among high school students, paying little attention to general student awareness.

These findings suggested that there is a clear need for increased general health awareness and education to inform people about autosomal disorders like sickle cell anaemia and to emphasise support for hereditary guidance at the state and federal levels for its prevention and control.

It is advised that higher secondary school kids, in particular, be tested for sickle cell anaemia if our government's sickle cell anaemia control programme is to have any meaningful results. Schools performed screening based on student responses, however they did not adequately teach pupils about the government programme and sickle cell anaemia.

Constant awareness campaigns for diseases like Polio and sickle cell anaemia have considerable differences, according to comparative results. This leads us to the conclusion that ongoing awareness campaigns have only ever had good results, as was the case with polio.

Declarations

Source of Funding

The study has not received any funds from any organization.

Competing Interests Statement

The author has declared no competing interests.

Consent for Publication

The author declares that he consented to the publication of this study.

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