

# **Geographic and Demographic Distribution of Hemoglobinopathies in Bangladesh: A Comparative Study among Urban and Rural Populations by Gender**

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## **Abstract**

Hemoglobinopathies are a group of inherited blood disorders that create a huge public health burden in Bangladesh, affecting populations with differing prevalence rates. This study accordingly utilizes data from the National Thalassemia Survey 2024 performed by the Bangladesh Bureau of Statistics to investigate the prevalence of hemoglobinopathies among major divisions, taking a more comprehensive look at urban-rural areas and comparing genders. We compare trends across urban and rural areas, as well as between males and females, to estimate prevalence using cross-sectional survey data from the regions of Barishal, Chattogram, Dhaka, Khulna, Mymensingh, Rajshahi, Rangpur and Sylhet. The findings indicate that the prevalence rates across divisions are not constant, and some rural areas exhibit high prevalence rates, thus implying poor access to health care. Such differences can only be justified by the presence of socioeconomic factors, which seem to have overburdened some rural communities. There were also minor, consistent gender-based differences with clear variations in prevalence rates between males and females across divisions. These findings indicate the need for region-specific health care interventions with demographic sensitivity. High rural prevalence shows the requirement for the improvement of health infrastructure and creation of awareness among people in remote areas, while observed gender-based disparities raise the importance of gender-sensitive approaches in managing hemoglobinopathies. It therefore extends the current knowledge on the geographical distribution of hemoglobinopathies in Bangladesh and directly supports public health programs toward improved diagnostics, optimized resource allocation, and increased treatment availability to improve outcomes among the affected populations.

## **Keywords**

hemoglobinopathies, gender, health, prevalence, Bangladesh