

# Exceptionally High Prevalence of Iron Deficiency Anaemia in Children Residing in Rural Areas in Pakistan

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## INTRODUCTION

Despite a reduction in the global prevalence of anaemia over the past three decades (from 28.2% to 24.3%), anaemia in children aged  $\leq 15$  years remains a major public health challenge in sub-Saharan Africa and south Asia. In these regions, there is substantial variation in anaemia burden by age, sex, and socioeconomic status – the highest prevalence is observed in children aged  $\leq 5$  years and females. The condition is attributed to a complex interplay of several interconnected causes, including nutritional deficiencies (i.e., iron, vitamin B12, folate), poor and/or cultural child feeding practices, parasitic infections, high birth rates, and short birth intervals.

## AIM

We examined children presenting with signs/symptoms of anaemia at SHINE Humanity primary healthcare clinics in rural settings in the Sindh province, Pakistan, to ascertain the prevalence of anaemia in children aged  $\leq 15$  years to inform the development of targeted interventions to reduce the associated morbidity – [e.g. impaired development, years lived with disability (YLDs)] and premature mortality.

## METHODS

All children aged  $\leq 15$  years, presenting with pallor and complaints from parents of weakness, fatigue, and decreased concentration were subject to laboratory investigation for complete blood count examination. A haemoglobin (Hb) level of  $\leq 11.4$  g/dL was considered diagnostic for anaemia. Informed consent was obtained from all parents.

## RESULTS

- During the study period (July-November 2023), a total of 593 children aged  $\leq 15$  years (45.9% males, 54.1% females) were examined for anaemia – of these, 74.4% (n=441) were diagnosed with anaemia (mean Hb 10.3 g/dL; standard deviation=1.8; range, 4.7-15.0).
- The prevalence of anaemia was 73.5% in males and 75.1% in females.
- With regard to age, the highest prevalence (86.5%, 64/74) was observed in children aged  $\leq 5$  years (mean Hb 9.7 g/dL; standard deviation=1.7; range, 6.3-13.6), followed by 75.8% (266/351) in those aged 6-10 years and 66.1% (111/168) in those aged 11-15 years.

## CONCLUSION

- Compared with the World Health Organisation (WHO) Global Anaemia estimates (2021 Edition) for South-East Asia, this is the highest recorded prevalence of anaemia in children (86.5% in those aged  $\leq 5$  years) in the region.
- Considering the morbidity (e.g. poor cognitive and motor development) associated with the duration and severity of anaemia and subsequent YLDs, this study informs formulation of targeted multifaceted interventions, including early diagnosis, combating iron and nutrient deficiencies, promoting hygiene, and health education to reduce the burden of anaemia in children residing in rural areas in Pakistan.

## ACKNOWLEDGEMENT

We thank Murshid Hospital, Karachi, Pakistan for their support.

