INDIAN INSTITUTE of PUBLIC HEALTH
ESTABLISHED BY PHFI
HYDERABAD

To whomsoever concerned

04 April 2025

Subject: Evaluation of "Project Iron Healthy Child"

The Indian Institute of Public Health Hyderabad was commissioned to evaluate Rohini Foundation's programs, especially one of their flagship programs called "*Project Iron Healthy Child*." It is an oral screening and haemoglobin assessment camp that aims to identify and address anemia and oral health issues among children.

The program had the following **Objectives:**
(1) To evaluate the changes in oral hygiene index after providing oral health interventions
(2) To estimate the proportional improvement of children in haemoglobin levels after the intervention.
(3) To determine the associated factors for the improvement of haemoglobin levels.

Study Area: Medchal-Malkajgiri district
Study Population: School/College going children where Schools/Colleges are located in Medchal-Malkajgiri district
Study Duration: June 2024 to March 2025

Methods
The project approach involved a two-phase process:
Phase 1 (Baseline): Initial Screening and Intervention (June 2024 to November 2024)

- Screening & Assessment: Conducted dental screenings and haemoglobin assessments to identify children with anaemia and oral health issues.
- Oral Health Promotion: Provided oral hygiene kits and delivered oral hygiene instructions information to encourage good habits.
- Nutritional Counseling: Guided children on healthy eating habits to combat anemia and promote overall well-being.
- Supplementation: Followed WHO guidelines for weekly Iron and Folic Acid supplements (WIFS).
- Referral: Referred children with severe anemia and complex health issues to Rashtriya Bal Swasthya Karyakram (RBSK), a government initiative under the National Health Mission for early detection and intervention.

Phase 2 (Endline): Follow-up and Reassessment (December 2024 to March 2025)

- Ongoing Monitoring: Maintained contact with the child and school, sending reminders every two weeks for adherence to supplements and oral hygiene practices.
- Reassessment: Conducted haemoglobin reassessments after three months from period of baseline assessment to measure improvement.
- Additional Support: Provided continued supplementation to children who did not show sufficient improvement.
- Parental Involvement: Collected parents' contact numbers to ensure follow-up and encourage family support in maintaining children's health.
- Oral Health Outcomes: Assessed Oral Hygiene Index (OHI), to enable observing significant improvement in children's oral health due to better hygiene habits and awareness provided in Phase 1.

The main study variables were the Hemoglobin level and Oral Hygiene Index (OHI).

Data analysis:
The study data was entered in Microsoft Excel and analyzed using STATA version 14. Summary statistics for continuous variables included the minimum, maximum, range, and mean ± standard

deviation (SD), while categorical variables were presented as frequencies and percentages. Improvements in study variables were assessed by calculating the difference between baseline and endline values. A paired t-test was used to compare continuous variables between baseline and endline, and the mean difference with a 95% confidence interval (CI) was reported. The association between categorical variables was evaluated using the Chi-square test and p-value < 0.05 was considered statistically significant.

Main results

A total of 25,000 children were screened during Phase 1 (baseline), out of which 10,272 children were identified with oral hygiene issues at Index 1, 2, or 3.

Following Phase 1 screenings, children identified with calculus and poor oral hygiene were provided with targeted oral health education to reinforce proper hygiene practices. After the 3 months follow-up of the interventions, the change in the oral hygiene index was reported.

A notable improvement in oral health index is observed, with the proportion of children in the severe category decreasing from 32% (n=3,287) at baseline to 10% (n=1,024) at endline.

- The number of children in the normal category increased to 12.4% (n=1,273), indicating overall better oral hygiene.
- Among those classified as moderate at baseline (n=5,445), a significant proportion 58% (n=3158) showed improvement on the oral hygiene index.

In summary, for oral health, a majority of children 68.2% (n=7,007) showed an improvement in their oral hygiene index scores, indicating better oral hygiene due to the program.

For Haemoglobin levels, a total of 25,000 children were screened during Phase 1 (baseline), out of which 6634 children were identified and included in the follow-up analysis. The evaluation found that at baseline only 9.4% (n=626) had normal haemoglobin levels. However, at the endline assessment (n=4578), there was a notable improvement, with the proportion of participants with normal haemoglobin levels increasing to 47.1% (n=2154).

In summary, for Haemoglobin levels, the majority of participants 74.2% (n = 3394) showed an increase in haemoglobin levels, with a mean increment of 1.4 ± 1.3 g/dL. The substantial increase in the proportion of children with normal haemoglobin levels suggests a positive impact of the intervention provided through the program to the children.

Conclusion and recommendation

The "*Project Iron Healthy Child*" intervention has led to improvements in the oral hygiene index and haemoglobin levels. To keep up these good levels, it is recommended that training of data collectors and data managers is essential to be done, at regular intervals, to ensure systematic data entry and management. A standard module on myths and misconceptions, health education on maintaining good oral health and anemia prevention through proper dietary habits will be important to conduct, for students and teachers.

The evaluation team members from IIPHH were Dr Varun Agiwal, Ms Subhashini Sivasankaran and Dr. Shailaja Tetali.

Sincerely

Dr. Shailaja Tetali,
MBBS, MPH, MMS (Karolinska-Sweden), PhD (LSHTM-UK)
Professor & Dean-Research & Policy Support
Indian Institute of Public Health – Hyderabad (Public Health Foundation of India)
https://iiphh.org/shailaja-tetali/