

Iron Strong Study – Risk of Anemia Among Middle Eastern Children

#1142

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INTRODUCTION

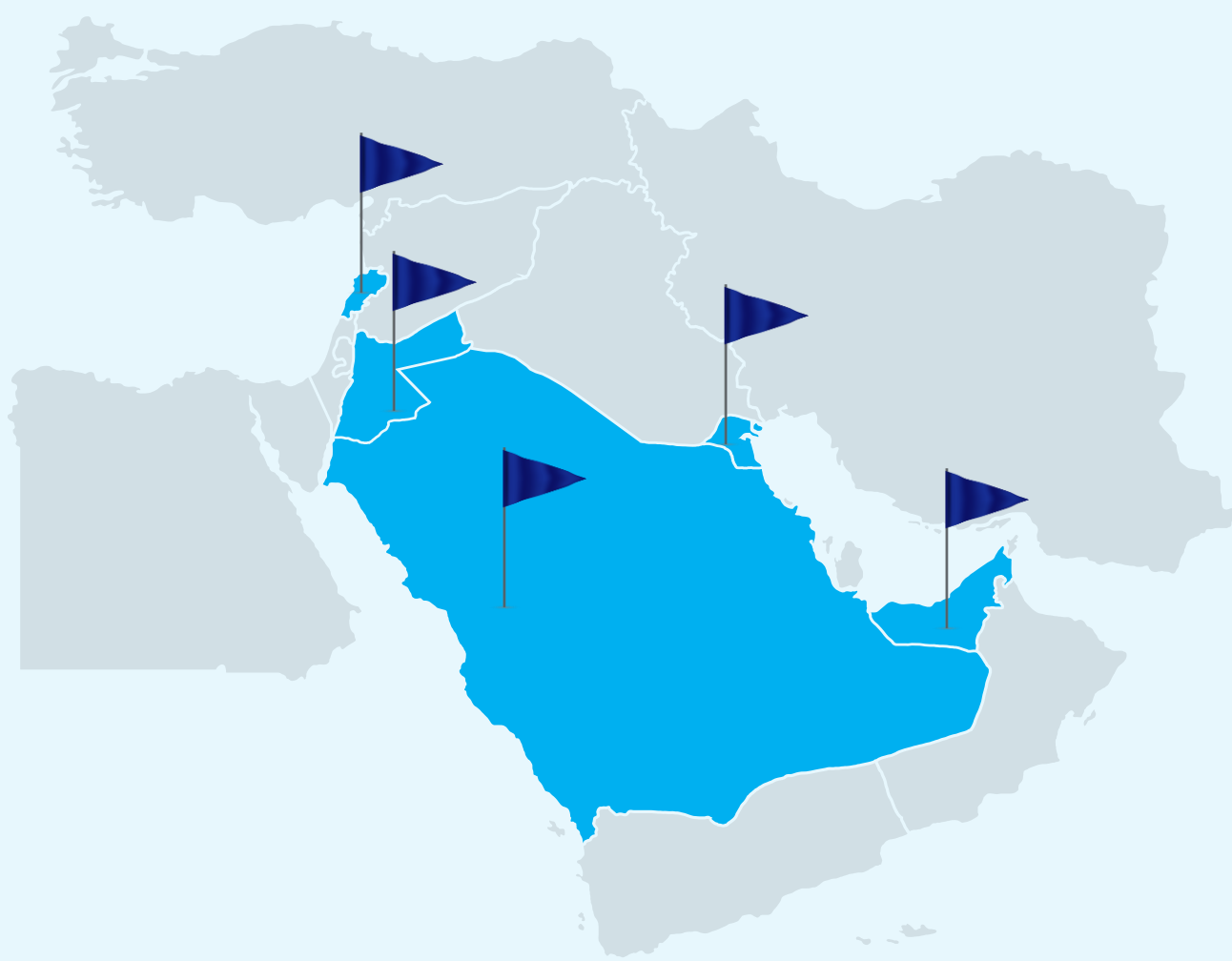


Anemia can impact cognitive, immune, and physical development in children,¹ highlighting the need for early detection and management.

Primary objective

Assess the prevalence of risk of anemia (SpHb <12 g/dL) among children aged 12–72 months in

- Jordan
- Lebanon
- United Arab Emirates
- Kuwait
- Saudi Arabia



Secondary objective

Compare the following parameters among children with and without risk of anemia



Socio-demographic characteristics



Nutritional status



Dietary intake

Figure 1. Objectives of the study. SpHb, total hemoglobin; UAE, United Arab Emirates.

METHODS



This was a cross-sectional, multicenter, observational study conducted across medical centers and hospitals in Jordan, Lebanon, Kuwait, Saudi Arabia, and United Arab Emirates.

Generally healthy outpatient children aged 12–72 months were enrolled in the study if the parent/caregiver consented.

ASSESSMENTS



Demographic details, individual and family characteristics, medical history, and nutritional information of the participants were assessed.

Hematological parameters were assessed non-invasively with Masimo Rad-67 Pulse CO-Oximeter.

RESULTS



The mean age of the participants was 41.6 months (12–35 months: n=386; 36–59 months: n=414; 60–72 months: n=186) and comprised 474 females and 510 males (missing, n=2).

Overall, 251 (25.5%) participants had risk of anemia and 733 (74.3%) had no risk of anemia (missing, n=2), with overall mean SpHb of 12.6 g/dL (Figure 2).

986

participants were included in the study

SpHb <12 g/dL: n=251* (95% CI, 22.8–28.3)

25.5%

→ Risk of anemia

SpHb ≥12 g/dL: n=733*

74.3%

→ No risk of anemia

Females with SpHb <12 g/dL: n=125/474*

26.3%

Males with SpHb <12 g/dL: n=126/510*

24.7%

Figure 2. Overview of study outcomes.*Missing, n=2.

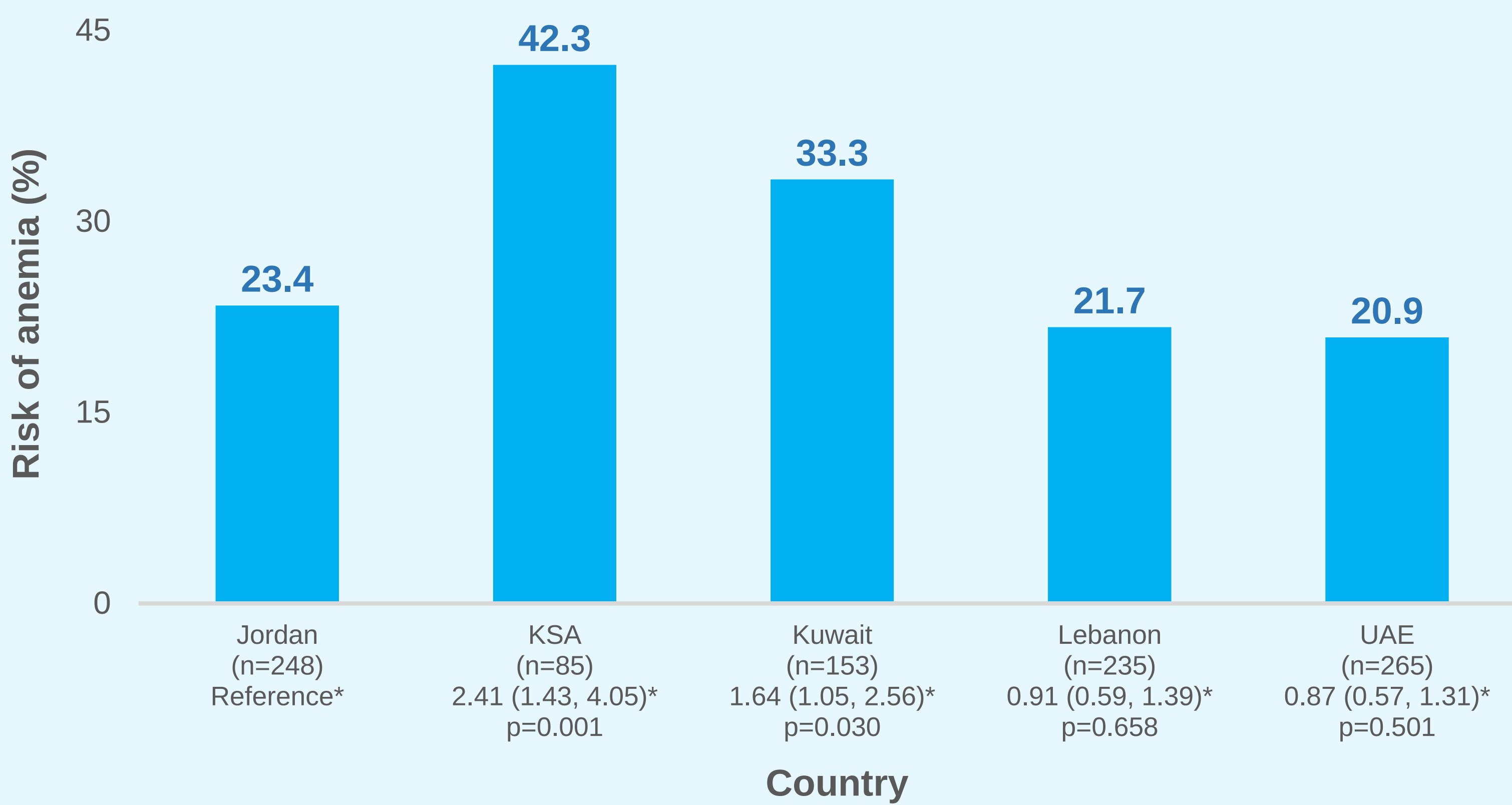


Figure 3. Prevalence of risk of anemia by country (N=986). *Crude OR (95% CI). CI, confidence interval; OR, odds ratio; UAE, United Arab Emirates.

Statistically significant proportion of participants had no risk of anemia if:

- they were from an urban setting (p=0.005)
- parent/caregiver received secondary education (p=0.002)
- they were from a high socio-economic level (p=0.009)

Those who consumed iron-fortified milk, more meat/fish, or received iron supplementation had significantly lower risk of anemia (p<0.05; Figure 3).

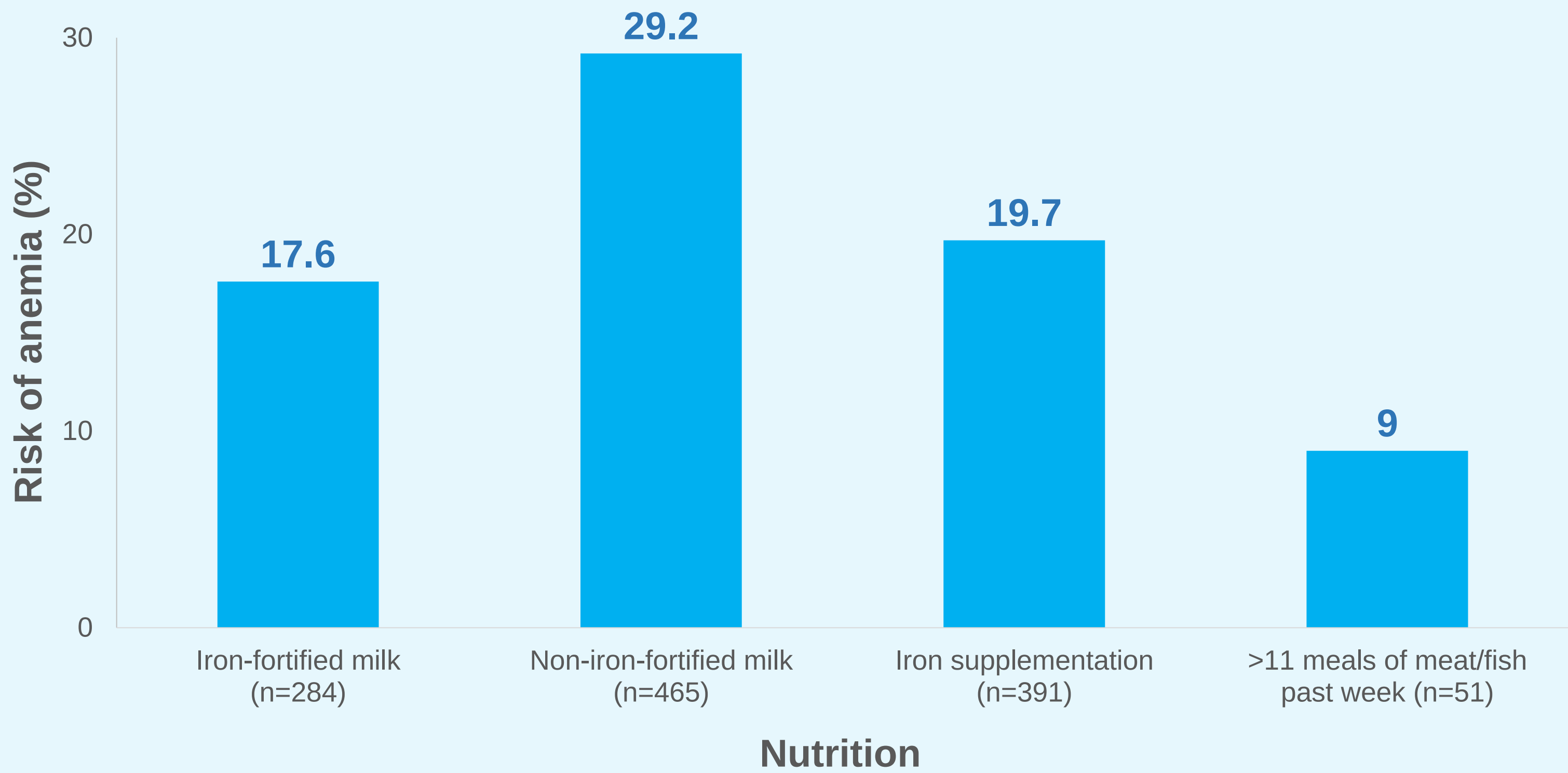
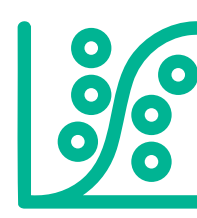


Figure 4. Prevalence of risk of anemia by iron supplementation and nutrition.

Based on multivariate regression, history of gestational maternal anemia and no history of iron supplementation were associated with increased risk of anemia.



CONCLUSION



There is a need to screen infants and children for anemia. The Masimo Rad-67 Pulse CO-Oximeter is efficient and non-invasive for screening in the outpatient setting. While the device has been validated against conventional modalities in adults, data in children is limited, warranting the need for future research.^{2,3}

REFERENCE

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ACKNOWLEDGEMENT

Medical writing support was provided by Eric Mario of Connect Communications, Dubai, United Arab Emirates, and was funded by Danone.