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Problem statement: In Benin, 58% women aged 15 to 49 years are affected by anemia (INSAE, 2018). In the department of Zou, the prevalence of anemia among women of childbearing age is estimated at 48.7% (INSAE, 2018).

Activities: Lucky Iron Fish Enterprise, Université d'Abomey-Calavi, CARE Benin/Togo and FADeC tested an innovative solution aimed at reducing iron deficiency anemia (IDA) in women using digital tools - WhatsApp, Speaking Books & radio programming. The organizations worked to address IDA in Benin by promoting the use of the Lucky Iron Fish, a scientifically proven tool used to fortify meals with natural iron and reduce the prevalence of IDA in women and children.

Methodology: The project was set up as a 15 month longitudinal experimental research study from July 2021-September 2022. The study explored the impact of the Lucky Iron Fish® to reduce IDA in women. Fish were distributed to 2,250 households and women provided with education on adequate nutrition, the importance of iron and use/care of the Fish, and education on gender equity. A further group of women (n=250) were randomly selected to measure impact of the interventions on iron status and level of nutritional knowledge. Half the women were randomly assigned to receive education and the Fish (experimental) and half were only provided with education (control). Data collected at three time points included: measurement of hemoglobin (Hb) in pin-prick blood samples (HemoCue 201+) and completed surveys assessing nutritional knowledge.

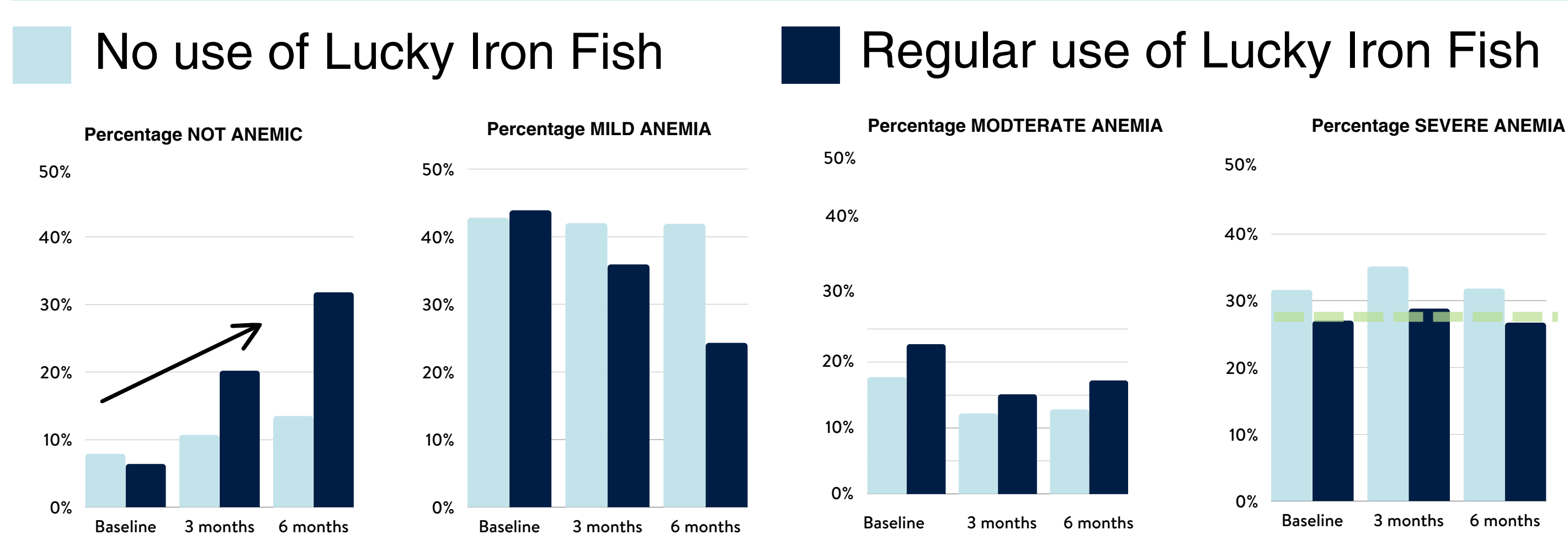


Figure 1: Impact of regular use of Lucky Iron Fish on severity of anemia in women in Benin

Figure 1: These four graphs show the impact of regular use of the Lucky Iron Fish over a six-month period compared with no treatment. At baseline, midline and end line, the percentage of women in the control (women not using the Fish) and experimental group (women using the Fish) are categorized into one of four classifications of anemia based on their hemoglobin levels: (a) not anemic; (b) mildly anemic; (c) moderately anemic; or (d) severely anemic was determined. The data are shown as percentages. The percentage of women who were not anemic significantly increased (arrow).

Outcomes: Despite health restraints, nutritional education improved the iron status of women in the control group but in the experimental group the additional, regular use of the Fish significantly ($p < 0.001$) improved iron status compared with the controls. Overall, the severity and prevalence of anemia in the experimental group was reduced by >25%. However, anemia was not resolved in the most severe cases (<70 g/L Hb). In the control group, the severity and prevalence of anemia was reduced by 6%.

There was a significant improvement in knowledge of anemia. At baseline only 20% reported hearing about anemia but by end line 100% had. Knowledge of iron rich foods and ways to enrich meals with iron increased from 8% to 86%. The level of women's decision-making roles for better household nutrition increased from 11% at baseline to 21% at end line.

Conclusion: The data shows that overtime, regular use of the Fish reduces the prevalence of iron deficiency anemia. However, in both the experimental and control groups the percentage of women suffering from severe anemia remained relatively constant over time (black dotted line). This suggests that either the women with severe anemia were either not using the Fish regularly or correctly or that they were not suffering from IDA but anemia with a different etiology.