

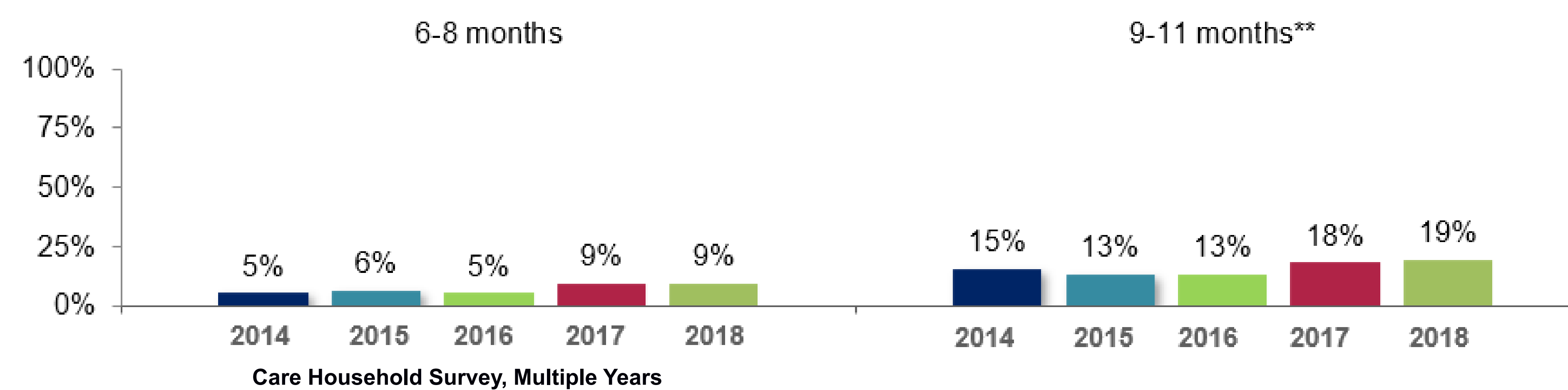
Salience and Habit Formation around Complementary Feeding – Experimental Evidence from Bihar, India

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Project Background

Bihar has a stunting rate of 42.9% and wasting rate of 22.9%. These numbers put Bihar above the national average, and amidst the worst performing states when it comes to infant nutrition. This is often driven by low dietary diversity that is prevalent in Bihar.

% of Children Receiving Minimum Dietary Diversity in Bihar



While the Anganwadi System is an important mechanism to tackle malnutrition, Anganwadi Workers report low salience for complementary feeding counselling as a part of their job-role. This is reflected in the success of programs targeting complementary feeding – most AWCs do not hold a CF day to counsel mothers in groups, and less than 5% of mothers of 6m-2year olds report having a home visit from the AWW.

Intervention

The study aimed to evaluate a reusable wall-hung food journal on behavioral barriers towards complementary feeding practices. The food journal was designed to support habit formation among caregivers of 6-24m children by increasing frequency and diversity of complementary feeding through visual representation of food groups and daily feeding trends. The journal could be filled for a maximum of 4 months assuming daily usage, thus, we evaluated after a duration of 5 months.

The study was preceded by diagnostic research and A/B testing for finalizing the food journal intervention. The diagnostic research identified 3 behavioral bottlenecks that act as bottleneck for complementary feeding of children

- Salience of complementary feeding principles like diversity and frequency.
- Intention-action gap in a time and resource constrained environment
- Belief bias around suitability of certain food items for children

The food journal addresses these 3 bottlenecks using a COM-B approach



Sample and Method

We designed a cluster-RCT, with a sample of 2682 caregivers across 340 AWCs. These were chosen in 30 blocks across 6 districts of Bihar – Araria, Arwal, Bhagalpur, Muzaffarpur, Nawada, and Siwan. The districts were selected based on their moderate stunting and vulnerability rates. 5 blocks were selected from each district and AWCs were randomly selected using a Probability Proportional to Size method.

Baseline and endline with caregivers measured knowledge and practice of complementary feeding (including 24h and 7-day feeding recall), system 1 and system 2 thinking around meal-planning and feeding, habit formation, socio-demographic data, and Mid Upper Arm Circumference (MUAC). The endline was conducted 5 months after the distribution of the intervention. 92% of treatment households reported receiving the intervention.

While there was no reported compliance issue with the experiment, we did experience ~22% survey-attrition at endline and was already accounted for as buffer. Additional module level attrition especially with the MUAC measurement impeded our power.

Our primary empirical specification is an intention-to-treat linear regression with control variables at the individual and cluster levels, and clustered SEs.

Results

Our outcomes of interest can be classified into 3 categories:

- Behaviors and Beliefs
- Feeding Practices
- Anthropometric (MUAC)

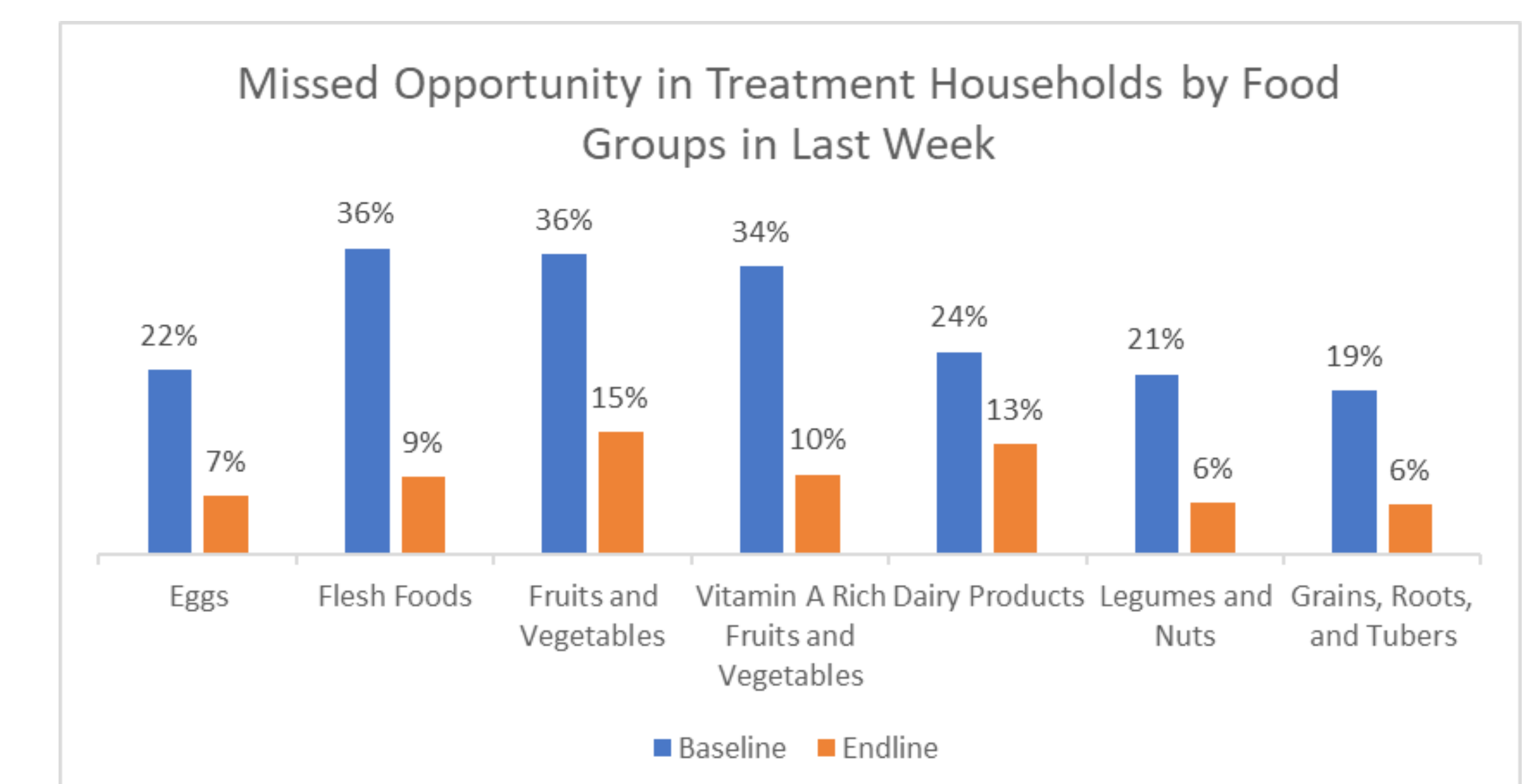
The food journal was successfully able to impact a host of habit-forming behaviors. Caregivers were able to automatically identify avenues to improve the nutritional diversity of a common meal of khichdi (rice and lentils). Food journal recipients improve their automaticity by ~10%.

Additionally, we are also able to positively influence the formation of habits through 4 mechanisms – noticing the number of ingredients in a meal, counting the ingredients, thinking about ingredients fed yesterday, and actively add additional items if required.

However, food journal recipients do not report increased prescriptive norms when it comes to deliberative planning around feeding with emphasis on norms around meat and egg feeding, vegetarianism during religious months, among others.

On feeding practices, the food journal resulted in small (~5%) yet significant increases in the number of individual food items as well as food groups, that were fed to the child yesterday.

Further, we analyzed the hypothesis that poor feeding practices reflect the household's inability to purchase nutritious and diverse food items. Our missed opportunity analysis measures the availability of food items in the household for adult's consumption and compares it with the child's consumption of those food items to determine this. While our casual analysis doesn't show any statistically significant results, our descriptive analysis finds large drops in the Treatment group's missed opportunity, across all food groups.



Additional analysis (for example using censored treatment status) is ongoing and awaited.

Lastly, we do not find any casual impact on the MUAC of children. MUAC is usually deployed as a screening tool, and thus sticky to influence.

Implications

The findings of the study demonstrate that traditional interventions targeting complementary feeding practices and knowledge, or nutritional supplementation will increase in impact if they directly address behavioral biases like salience of the principles in a day-to-day manner when caregivers are faced with bottlenecks like time-poverty, intention-action gap, among others.

With its demonstrated ability to influence the behaviors and habits that determine feeding, similar interventions can be tested in contexts of maternal nutrition which might have more long term benefits on children.