

# Effect of nutrition-sensitive agriculture interventions on maternal and child nutritional outcomes in rural Odisha, India (UPAVAN trial)

## Research snapshot<sup>1</sup>

**A**lmost a quarter of the world's undernourished people live in India. The investigators tested the effects of three nutrition-sensitive agriculture (NSA) interventions on maternal and child nutrition in the Keonjhar district of Odisha State in India. Clusters of villages were randomised to one of four arms:

- 1) Women's group meetings and household visits occurring each fortnight over 32 months using NSA videos (AGRI group)
- 2) As above but combining NSA and nutrition-specific videos (AGRI-NUT group)
- 3) Fortnightly women's group meetings using NSA videos and nutrition-specific participatory learning and action (PLA) cycle meetings and videos (AGRI-NUT+PLA group)
- 4) Control group (no intervention)

These components have been implemented separately in several low-income settings but this was the first trial to test different combinations of these approaches. Anthropometry and dietary diversity outcomes were assessed in children aged 6-23 months and their mothers through cross-sectional surveys at baseline (November 2016) and at endline (November 2019).

Compared with the control group, there was an increase in the proportion of children consuming at least four of seven food groups in the AGRI-NUT (adjusted relative risk [RR] 1.19, 95% CI 1.03 to 1.37,  $p=0.02$ ) and AGRI-NUT+PLA (1.27, 1.11 to 1.46,  $p=0.001$ ) groups

but not in the AGRI group. There was an increase in the proportion of mothers consuming at least five of ten food groups in the AGRI (adjusted RR 1.21, 1.01 to 1.45) and AGRI-NUT+PLA (1.30, 1.10 to 1.53) groups compared with the control group but not in AGRI-NUT. There were no effects on child wasting or on mean maternal Body Mass Index (BMI).

The authors conclude that women's groups using combinations of NSA videos, nutrition-specific videos and PLA cycle meetings improved maternal and child diet quality in rural Odisha,

India. Future efforts could consider integrating similar interventions within larger scale, multi-sector programme designs to increase impact. However, child wasting continues to be a problem and innovation in the prevention of child wasting is an urgent priority.

<sup>1</sup> Kadiyala, S, Harris-Fry, H, Pradhan, R, Mohanty, S et al (2021) Effect of nutrition-sensitive agriculture interventions with participatory videos and women's group meetings on maternal and child nutritional outcomes in rural Odisha, India (UPAVAN trial): a four-arm, observer-blind, cluster-randomised controlled trial. *Lancet Planetary Health*. 2021; in press. Published 2021 Mar 31. doi: 10.1016/S2542-5196(21)00001-2



Home-based nutrition gardens and backyard poultry, India

# Biannual azithromycin distribution and child mortality among malnourished children in Niger

## Research snapshot<sup>1</sup>

**B**iannual azithromycin distribution has been shown to reduce child mortality as well as increase antimicrobial resistance. The authors assessed whether this effect differed according to underweight status in a high-mortality setting in West Africa. Children received biannual distribution of azithromycin or a placebo over two years in a large, randomised control trial in Niger. In this analysis, the effect of azithromycin distribution on child mortality was assessed for underweight subgroups using weight-for-age z-score (WAZ) thresholds of  $-2$  and  $-3$  in 27,222 children between one and 11 months of age who had their weight measured at their first study visit. Mortality was defined as the community mortality rate (deaths per 1,000 person-years at risk). Modification of the effect of azithromycin on mortality

by underweight status was examined on the additive and multiplicative scale and the absolute number of deaths averted with azithromycin in each subgroup was estimated.

The communities assigned to azithromycin had lower mortality rates than those assigned to the placebo ( $-12.6$  deaths per 1,000 person-years (95% CI  $-18.5$  to  $-6.9$ ,  $P < 0.001$ )). Reductions were larger among children with lower WAZ:  $-17.0$  (95% CI  $-28.0$  to  $-7.0$ ,  $P = 0.001$ ) among children with WAZ  $< -2$  and  $-25.6$  (95% CI  $-42.6$  to  $-9.6$ ,  $P = 0.003$ ) among children with WAZ  $< -3$ . The estimated number of deaths averted with azithromycin was 388 (95% CI 214 to 574) overall, 116 (95% CI 48 to 192) among children with WAZ  $< -2$  and 76 (95% CI 27 to 127) among children with WAZ  $< -3$ .

Although the absolute reduction in mortality between arms appears larger in both underweight groups, no statistically significant evidence of effect modification was demonstrated by the WAZ subgroup on either the additive or multiplicative scale. Based on these results, the authors conclude that the treatment of all children aged between one and 11 months would save five times as many lives as restricting treatments only to children with a WAZ  $< -3$ . In this setting, the number of deaths averted would be greatest if all children were treated with azithromycin, regardless of nutritional status.

<sup>1</sup> O'Brien, K S, Arzika, A M, Maliki, R, Manzo, F, Mamkara, A K, Lebas, E, et al (2020) Biannual azithromycin distribution and child mortality among malnourished children: A subgroup analysis of the MORDOR cluster-randomized trial in Niger. *PLoS Med* 17(9): e1003285. <https://doi.org/10.1371/journal.pmed.1003285>

<sup>2</sup> An additive interaction contrast greater than 0 indicates the joint effect of receiving placebo and being underweight is greater than the sum of the individual effects considered separately. A multiplicative interaction contrast greater than 1 indicates the joint effect of receiving placebo and being underweight is greater than the product of the individual effects considered separately.