

2019-06-01

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Elsevier

<https://doi.org/10.1093/cdn/nzz034.FS01-06-19>

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Production Diversity, Men's Help with Household Tasks, & Lower Women's Depression Mediate Impact of an Agriculture Intervention on Child's Dietary Diversity in Tanzania (FS01-06-19)

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Objectives: Production diversity and women's empowerment are two ways by which nutrition-sensitive agriculture interventions are thought to improve children's diet, but, few empirical studies have tested these pathways. We therefore investigated the impact of the Singida Nutrition and Agroecology Project (SNAP-Tz; NCT02761876) on child's dietary diversity, as well as the mediating role of production diversity and women's empowerment on that relationship.

Methods: SNAP-Tz is a randomized trial of a participatory agroecology and nutrition intervention on which mentor farmers lead their fellow farmers with children < 1 y.o. at baseline ($n = 587$) in learning and experimentation on agroecology, nutrition, and gender equity. We estimated the intention-to-treat impact of SNAP-Tz on Child's Dietary Diversity Score (CDDS) [0–7] using difference-in-difference analysis between 2016 and 2018. Average Causal Mediation Effect (ACME5)

were estimated for production diversity (Crop Nutritional Functional Richness; 0–7) and 4 measures of women's empowerment: Abbreviated Women's Empowerment in Agriculture Index (AWEAI, 0–1), women's ability to allocate income (WEAI questions; 0–1), men's help with household chores (with 7 activities; 0–7), and women's depression (Center for Epidemiologic Studies Depression Scale; 0–60). All analyses were done on Stata14 and controlled for geographic clustering and social desirability bias.

Results: SNAP-Tz significantly improved child's dietary diversity ($\beta = 0.53$, $P < 0.01$). Increased production diversity, greater male involvement in household chores, and lower women's depression mediated 11% (ACME: .06; 95%CI: .01-.11), 6% (ACME: .04; 95%CI: .00-.08), and 7% (ACME: .03; 95%CI: .00-.07) of SNAP-Tz's impact on child's dietary diversity, respectively. Mediation of AWEAI and income allocation decision making, on the other hand, were not significant.

Conclusions: SNAP-Tz improved child's dietary diversity through increasing agricultural production diversity, men's involvement in household chores, and women's mental health. By engaging men in household tasks and prioritizing women's mental health, we can optimize the impact of nutrition-sensitive agriculture projects.

Funding Sources: SNAP-Tz is funded by the McKnight Foundation. SLY was supported by the NIH (K01MH098902).