

Supplementary Table 1. Observed ARTI burden by study group

Outcome	Intervention	Control
Children enrolled, n	149	74
Children with ≥ 1 ARTI, n (%)	27 (18.1)	45 (60.8)
Children with no ARTI, n (%)	122 (81.9)	29 (39.2)
Total ARTI episodes, n	139	132
Total child-weeks of follow-up	3697	1842
Crude incidence rate per 100 child-weeks	3.76	7.17

ARTI, acute respiratory tract infection.

Crude incidence rates were calculated as total ARTI episodes divided by total child-weeks of follow-up and are expressed per 100 child-weeks.

Children with ≥ 1 ARTI were defined as those who experienced at least one ARTI episode during the follow-up period.

Supplementary Table 2. Sequentially adjusted incidence rate ratios for the association between intervention and acute respiratory tract infection incidence

Model	Covariates included	No. of observations	IRR	95% CI	P-value
Model 0	None (crude)	5539	0.52	0.31-0.88	0.015
Model 1	Age	5539	0.13	0.09-0.20	<0.001
Model 2	Age + parental education	5293	0.15	0.10-0.23	<0.001
Model 3	Age + parental education + sex + caregiver + income	5293	0.14	0.09-0.22	<0.001

IRRs were estimated using Poisson regression with a log link and person-time offset. Standard errors were clustered at the participant level to account for repeated weekly observations within children. Paternal and maternal education were collapsed into three categories for regression analyses to reduce sparse-data bias and improve model stability.

Supplementary Table 3. Sensitivity analysis using alternative count-data models

Model specification	No. of observations	IRR	95% CI	P-value	Notes
Crude Poisson	5539	0.52	0.31–0.88	0.015	Offset = person-time
Adjusted Poisson	5293	0.14	0.09–0.22	<0.001	Fully adjusted model
Adjusted negative binomial	5293	0.14	0.09–0.22	<0.001	Alpha <0.001

Adjusted models included age, sex, main caregiver, paternal education, maternal education, and income sufficiency. Paternal and maternal education were collapsed into three categories because several original categories contained sparse observations, leading to unstable estimates. The estimated overdispersion parameter in the negative binomial model was close to zero ($\alpha < 0.001$), suggesting no meaningful overdispersion.