

Supplemental Information for “Paternal care and growth rates in Shodagor children”

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Table S1. Sample summary statistics for households in which the primary caregiver is mother, father, or both, children are between the ages of 2-19, and for which there are no missing model data.

n	103
Males	55 (53%)
Females	48 (47%)
Age (years)	2-19
Number of measures	1-5
Number of households	58
Number of kids any father care	82 (80%)
Number of households any father care	45 (78%)
Number of kids father primary care	32 (31%)
Number of households father primary care	17 (29%)

Table S2. Down-sample summary statistics for households in which primary caregiver is mother, father ONLY, children are between the ages of 2-19, and for which there are no missing model data.

n	64
Males	29 (45%)
Females	35 (55%)
Age (years)	2-18
Number of measures	1-5
Number of households	35
Number of kids any father care	40 (63%)
Number of households any father care	20 (57%)
Number of kids father primary care	22 (34%)
Number of households father primary care	12 (34%)

Table S3. Posterior means and 90% credible intervals for fixed effect coefficients.

		Height Z-score	Weight Z-score	BMI Z-score
Null Z-score Models	Intercept	-0.158 (-0.607,0.292)	0.387 (-0.425,1.198)	0.724 (-0.223,1.664)
	Dry Season	0.065 (0.012,0.118)	0.073 (-0.031,0.176)	0.024 (-0.099,0.147)
	Income (log)	0.039 (-0.068,0.145)	-0.116 (-0.318,0.087)	-0.200 (-0.436,0.037)
Cumulative Growth Models	Intercept	-0.302 (-0.775,0.176)	0.097 (-0.714,0.909)	0.448 (-0.495,1.397)
	Dry Season	0.065 (0.013,0.117)	0.070 (-0.033,0.175)	0.021 (-0.103,0.144)
	Income (log)	0.038 (-0.069,0.145)	-0.113 (-0.313,0.087)	-0.196 (-0.432,0.038)
	Occupation	0.310 (-0.019,0.639)	0.587 (0.262,0.915)	0.552 (0.229,0.874)
		Height velocity	Weight velocity	BMI velocity
Null Velocity Models	Intercept	-0.389 (-0.794,0.017)	0.338 (-0.395,1.069)	0.776 (-0.134,1.695)
	Income (log)	0.086 (0.018,0.153)	0.098 (-0.025,0.221)	0.047 (-0.108,0.201)
	Dry Season	0.094 (-0.009,0.198)	-0.107 (-0.292,0.079)	-0.223 (-0.458,0.008)
Seasonal Growth Models	Intercept	-0.383 (-0.801,0.036)	0.17 (-0.58,0.922)	0.472 (-0.454,1.408)
	Income (log)	0.096 (-0.009,0.201)	-0.078 (-0.267,0.11)	-0.175 (-0.410,0.057)
	Dry Season	0.100 (0.011,0.190)	0.217 (0.053,0.379)	0.238 (0.040,0.436)
	Occupation	-0.031 (-0.124,0.061)	0.133 (-0.030,0.296)	0.274 (0.072,0.476)
	Trading X Dry	-0.032 (-0.169,0.105)	-0.281 (-0.530,-0.030)	-0.459 (-0.764,-0.154)
Father Care Models	Intercept	-0.413 (-0.826,-0.004)	0.139 (-0.603,0.876)	0.535 (-0.385,1.454)
	Income (log)	0.086 (-0.020,0.192)	-0.054 (-0.244,0.137)	-0.151 (-0.39,0.086)
	Dry Season	0.085 (0.006,0.164)	0.150 (0.010,0.289)	0.112 (-0.062,0.286)
	Father Ever Primary	0.083 (-0.110,0.277)	0.362 (0.021,0.702)	0.382 (-0.021,0.790)
	Father Care Proportion Substitutive X Father Care Porportion	0.207 (-0.001,0.417)	-0.033 (-0.377,0.309)	-0.154 (-0.573,0.271)
		-0.309 (-0.689,0.068)	-0.968 (-1.607,-0.327)	-1.000 (-1.758,-0.244)
Null Downsample	Intercept	-0.602 (-0.988,-0.218)	0.107 (-0.819,1.039)	0.745 (-0.372,1.870)
	Dry Season	0.074 (0.001,0.147)	0.039 (-0.151,0.230)	-0.041 (-0.265,0.184)
	Income (log)	0.137 (0.040,0.235)	-0.047 (-0.285,0.187)	-0.206 (-0.491,0.079)
Substitutive Care Models	Intercept	-0.566 (-0.969,-0.170)	-0.083 (-1.041,0.873)	0.448 (-0.671,1.575)
	Income (log)	0.128 (0.026,0.231)	0.005 (-0.239,0.250)	-0.124 (-0.411,0.164)
	Dry Season	0.060 (-0.023,0.142)	0.126 (-0.085,0.337)	0.088 (-0.161,0.334)
	Father Primary	0.039 (-0.071,0.15)	-0.239 (-0.502,0.024)	-0.355 (-0.667,-0.048)

Table S4. Model fit statistics and random effect estimates. WAIC = Watanabe–Akaike information criterion. Posterior mean estimates are reported for marginal and conditional R^2 . Posterior means and 90% credible intervals are reported for individual variance and household variance component ratios.

Model	Outcome	WAIC	R^2_m	R^2_c	Individual variance component	Household variance component
Null Z-score	Height (z)	110.60	0.002	0.930	0.841 (0.711,0.985)	0.374 (0.062,0.616)
	Weight (z)	493.63	0.004	0.745	0.767 (0.625,0.935)	0.450 (0.129,0.689)
	BMI (z)	588.54	0.006	0.634	0.580 (0.447,0.745)	0.569 (0.350,0.772)
Cumulative Growth	Height (z)	109.67	0.028	0.930	0.832 (0.707,0.974)	0.379 (0.074,0.612)
	Weight (z)	492.28	0.091	0.746	0.753 (0.619,0.905)	0.385 (0.083,0.613)
	BMI (z)	588.61	0.086	0.634	0.574 (0.444,0.736)	0.504 (0.282,0.702)
Null Velocity	HT velocity (z)	205.99	0.029	0.050	0.027 (0.003,0.076)	0.028 (0.003,0.079)
	WT velocity (z)	546.36	0.012	0.024	0.035 (0.003,0.101)	0.037 (0.003,0.110)
	BMI velocity (z)	669.71	0.013	0.029	0.053 (0.005,0.154)	0.055 (0.005,0.161)
Seasonal Growth	HT velocity (z)	208.39	0.041	0.062	0.028 (0.002,0.078)	0.032 (0.003,0.088)
	WT velocity (z)	546.77	0.031	0.043	0.035 (0.003,0.103)	0.038 (0.003,0.113)
	BMI velocity (z)	666.36	0.043	0.059	0.054 (0.005,0.157)	0.057 (0.005,0.163)
Father Care	HT velocity (z)	210.31	0.057	0.078	0.027 (0.003,0.078)	0.033 (0.003,0.089)
	WT velocity (z)	548.57	0.058	0.069	0.035 (0.003,0.102)	0.037 (0.004,0.110)
	BMI velocity (z)	670.41	0.055	0.070	0.053 (0.005,0.153)	0.055 (0.005,0.160)
Null Downsample	HT velocity (z)	37.42	0.068	0.158	0.063 (0.007,0.129)	0.050 (0.005,0.118)
	WT velocity (z)	312.16	0.011	0.033	0.057 (0.005,0.169)	0.058 (0.005,0.174)
	BMI velocity (z)	360.76	0.019	0.048	0.087 (0.008,0.244)	0.074 (0.007,0.219)
Substitutive Care	HT velocity (z)	38.74	0.076	0.164	0.063 (0.007,0.130)	0.049 (0.005,0.118)
	WT velocity (z)	312.54	0.032	0.054	0.057 (0.005,0.166)	0.056 (0.006,0.172)
	BMI velocity (z)	359.36	0.049	0.076	0.083 (0.008,0.234)	0.068 (0.006,0.203)

Table S5. Proportion of time each category of caregiver was named during each season in “care switch” and “no care switch” households, for all Shodagor households with at least one child aged 18 or under (N=79).

	Care Switch		No Care Switch	
	Dry	Rainy	Dry	Rainy
Mothers	31.5%	53.4%	53.6%	59.4%
Fathers	28.9%	9.3%	36.3%	30.8%
Grandmothers	5.1%	7.4%	5.3%	4.5%
Siblings	13.3%	7.6%	1.9%	0.8%
None	20.0%	20.9%	2.8%	4.3%
Others	1.2%	1.4%	0.0%	0.1%

Figure S1. Proportion of time each category of caregiver was named during each season in “care switch” and “no care switch” households, for all Shodagor households with at least one child aged 18 or under (N=79).

