

Supplemental appendix

Table S1. Number of observations per adequacy by sub-sample

Adequacies	Full sample	Urban	Rural	Nonpoor	Poor	Urban nonpoor	Urban poor	Rural nonpoor	Rural poor	Quartile2	Quartile 3	Quartile 4
Adequate in WASH (definition 1)	3,921	2,038	951	2,382	607	1,859	179	523	428	708	856	818
Adequate in WASH (definition 2)	3,921	36	48	44	40	26	10	18	30	11	17	16
Adequate in Health	3,870	1,809	1,246	2,215	840	1,653	156	562	684	684	759	772
Adequate in Food	3,921	176	179	224	131	157	19	67	112	68	77	79
Adequate in Care	3,890	91	135	133	93	83	8	50	85	48	50	35
Adequate in: WASH only (definition 1)	3,857	242	153	242	153	190	52	52	101	98	94	50
Adequate in: WASH and Care only (definition 1)	3,857	29	24	36	17	29	0	7	17	5	21	10
Adequate in: WASH and Food only (definition 1)	3,857	21	1	22	0	21	0	1	0	9	10	3
Adequate in: WASH and Health only (definition 1)	3,857	1,376	584	1,640	320	1,287	89	353	231	451	598	591
Adequate in: WASH and Care and Food only (definition 1)	3,857	6	16	16	6	5	1	11	5	11	5	0
Adequate in: WASH and Care and Health only (definition 1)	3,857	146	95	177	64	133	13	44	51	63	42	72
Adequate in: WASH and Food and Health only (definition 1)	3,857	103	38	120	21	91	12	29	9	28	33	59
Adequate in: WASH and Care and Food and Health only (definition 1)	3,857	43	39	62	20	37	6	25	14	20	25	17
Adequate in: Food only (definition 1)	3,857	0	33	0	33	0	0	0	33	0	0	0
Adequate in: Health only (definition 1)	3,857	93	299	151	241	67	26	84	215	88	46	17
Adequate in: Care only (definition 1)	3,857	0	38	3	35	0	0	3	35	3	0	0
Adequate in: Care and Food only	3,857	0	7	0	7	0	0	0	7	0	0	0

Adequacies	Full sample	Urban	Rural	Nonpoor	Poor	Urban nonpoor	Urban poor	Rural nonpoor	Rural poor	Quartile2	Quartile 3	Quartile 4
(definition 1)												
Adequate in: Care and Health only (definition 1)	3,857	11	130	31	110	7	4	24	106	19	8	4
Adequate in: Food and Health only (definition 1)	3,857	0	18	0	18	0	0	0	18	0	0	0
Adequate in: Care and Food and Health only (definition 1)	3,857	3	27	4	26	3	0	1	26	0	4	0
Adequate in: WASH only (definition 2)	3,857	8	7	3	12	3	5	0	7	3	0	0
Adequate in: WASH and Care only (definition 2)	3,857	0	0	0	0	0	0	0	0	0	0	0
Adequate in: WASH and Food only (definition 2)	3,857	0	0	0	0	0	0	0	0	0	0	0
Adequate in: WASH and Health only (definition 2)	3,857	19	28	24	23	14	5	10	18	7	17	0
Adequate in: WASH and Care and Food only (definition 2)	3,857	0	0	0	0	0	0	0	0	0	0	0
Adequate in: WASH and Care and Health only (definition 2)	3,857	3	8	10	1	3	0	7	1	0	0	10
Adequate in: WASH and Food and Health only (definition 2)	3,857	0	4	0	4	0	0	0	4	0	0	0
Adequate in: WASH and Care and Food and Health only (definition 2)	3,857	6	0	6	0	6	0	0	0	0	0	6
Adequate in: Food only (definition 2)	3,857	21	34	22	33	21	0	1	33	9	10	3
Adequate in: Health only (definition 2)	3,857	1,450	855	1,767	538	1,340	110	427	428	532	627	608
Adequate in: Care only (definition 2)	3,857	29	62	39	52	29	0	10	52	8	21	10
Adequate in: Care and Food only (definition 2)	3,857	6	23	16	13	5	1	11	12	11	5	0
Adequate in: Care and Health only (definition 2)	3,857	154	217	198	173	137	17	61	156	82	50	66

Adequacies	Full sample	Urban	Rural	Nonpoor	Poor	Urban nonpoor	Urban poor	Rural nonpoor	Rural poor	Quartile2	Quartile 3	Quartile 4
Adequate in: Food and Health only (definition 2)	3,857	103	52	120	35	91	12	29	23	28	33	59
Adequate in: Care and Food and Health only (definition 2)	3,857	40	66	60	46	34	6	26	40	20	29	11

Source: Authors' estimates based on the 2011–12 MICS.

Table S2. Effects of Food, Health, WASH and Care Adequacies on Child Nutrition in Tunisia, 2011-12 by Wealth and Location Samples (using adequacy definition 1) and Controlling for Clusters

Definition 1	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	full	urban	rural	T75	B25	T75_Urban	B25_Urban	T75_Rural	B25_Rural	quartile 2	quartile 3	quartile 4
Adequate in: WASH only	0.460*** [0.165]	0.507* [0.276]	-0.028 [0.218]	0.474** [0.228]	0.140 [0.237]	-0.078 [0.324]	1.341*** [0.509]	0.413 [0.369]	-0.276 [0.261]	-0.032 [0.290]	1.221*** [0.439]	-0.081 [1.072]
Adequate in: WASH and Care only	0.743** [0.296]	0.476 [0.479]	0.827** [0.372]	0.621 [0.397]	0.731* [0.429]	-0.138 [0.504]		1.384** [0.682]	0.572 [0.426]	0.382 [0.572]	0.984 [0.729]	0.164 [1.220]
Adequate in: WASH and Food only	1.690*** [0.329]	1.393*** [0.394]	2.396 [1.631]	1.435*** [0.360]		0.708* [0.425]		2.248 [1.671]		1.440*** [0.473]	0.842 [0.622]	4.058*** [1.421]
Adequate in: WASH and Health only	0.754*** [0.140]	0.351 [0.251]	1.062*** [0.172]	0.563*** [0.199]	0.504** [0.203]	-0.269 [0.300]	1.415*** [0.437]	1.587*** [0.266]	0.223 [0.224]	0.579** [0.231]	0.730* [0.397]	0.425 [1.053]
Adequate in: WASH and Care and Food only	0.181 [0.320]	1.027 [0.844]	0.003 [0.346]	-0.033 [0.379]	0.235 [0.654]	0.688 [1.033]	1.352 [1.330]	0.375 [0.428]	-0.447 [0.731]	-0.382 [0.384]	1.670 [1.189]	
Adequate in: WASH and Care and Health only	0.182 [0.181]	-0.278 [0.289]	0.596** [0.258]	-0.046 [0.236]	0.136 [0.345]	-0.852** [0.333]	-1.123 [0.765]	0.861** [0.368]	0.529 [0.374]	0.334 [0.302]	-0.444 [0.495]	-0.229 [1.067]
Adequate in: WASH and Food and Health only	0.551*** [0.194]	0.387 [0.295]	0.239 [0.315]	0.246 [0.249]	0.984*** [0.370]	-0.379 [0.342]	1.856*** [0.621]	0.429 [0.430]	0.238 [0.476]	0.780* [0.456]	0.139 [0.510]	0.249 [1.070]
Adequate in: WASH and Care and Food and Health	1.001*** [0.244]	1.157*** [0.369]	0.511 [0.340]	0.692** [0.307]	1.372*** [0.427]	0.203 [0.419]	4.630*** [0.752]	0.874* [0.459]	0.185 [0.514]	1.454*** [0.444]	0.809 [0.538]	-0.947 [1.169]
Adequate in: Food only	0.147 [0.521]		0.307 [0.514]		0.417 [0.509]				0.259 [0.502]			
Adequate in: Health only	0.546*** [0.165]	0.482 [0.306]	0.548*** [0.191]	0.752*** [0.241]	0.413* [0.215]	0.084 [0.360]	0.921* [0.533]	1.271*** [0.318]	0.183 [0.230]	1.014*** [0.274]	0.608 [0.485]	-0.275 [1.136]

Definition 1	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VARIABLES	full	urban	rural	T75	B25	T75_Urban	B25_Urban	T75_Rural	B25_Rural	quartile 2	quartile 3	quartile 4
Adequate in: Care only	-1.126*** [0.376]		-1.045*** [0.376]	0.397 [1.842]	-0.894** [0.385]			0.881 [1.815]	-1.256*** [0.385]	0.425 [1.678]		
Adequate in: Care and Food only	1.427* [0.854]		1.626* [0.836]		1.680** [0.820]				1.619** [0.802]			
Adequate in: Care and Health only	-0.551** [0.223]	-0.009 [0.739]	-0.485** [0.238]	-0.715* [0.413]	-0.317 [0.263]	0.333 [1.028]	0.481 [0.984]	-0.447 [0.460]	-0.499* [0.272]	-0.068 [0.499]	-2.008*** [0.769]	0.906 [1.580]
Adequate in: Food and Health only	1.165** [0.477]		1.234*** [0.474]		1.474*** [0.471]				1.084** [0.468]			
Adequate in: Care and Food and Health only	0.738 [0.483]	-0.929 [1.032]	1.311** [0.534]	-0.775 [0.934]	1.435*** [0.542]	-1.603 [1.037]		0.282 [2.184]	1.356** [0.534]		-0.662 [1.095]	
Cluster ID	0.000 [0.000]	0.001** [0.000]	-0.000 [0.000]	0.001** [0.000]	0.001 [0.000]	0.000 [0.000]	0.005*** [0.001]	0.001* [0.001]	-0.001** [0.001]	-0.001 [0.000]	-0.000 [0.001]	0.002*** [0.000]
Constant	-0.665*** [0.144]	-0.405 [0.252]	-0.590*** [0.188]	-0.432** [0.201]	-1.034*** [0.224]	0.300 [0.300]	-2.781*** [0.449]	-1.040*** [0.283]	-0.282 [0.259]	-0.135 [0.237]	-0.423 [0.397]	-0.555 [1.059]
Observations	3,516	1,887	1,629	2,339	1,177	1,679	208	660	969	802	803	734
R-squared	0.038	0.026	0.086	0.027	0.051	0.023	0.287	0.120	0.055	0.056	0.054	0.083

Source: Authors' estimates based on the 2011–12 MICS.

Note: Using adequate WASH access definition 1: All improved water, all improved sanitation, nonshared toilet use, community improved sanitation, no child feces considered. ***, **, and * refer to statistical significance levels of 1, 5, and 10 percent, respectively, on a test of means. Standard errors in brackets. This table reports coefficients estimated from equation (1), that is, the correlation on Tunisian children's nutritional status of successfully reaching a specific adequate access to one of the dimensions of the UNICEF framework (when single) and the effects of achieving two, three or all adequacies in the case of multiple dimensions combined.

Table S3. Effects of Food, Health, WASH and Care Adequacies on Child Nutrition in Tunisia, 2011-12 by Wealth and Location Samples (using adequacy definition 2) and Controlling for Clusters

Definition 2	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(11)	(12)	(13)
VARIABLES	full	urban	rural	T75	B25	T75_Urban	B25_Urban	T75_Rural	B25_Rural	quartile 2	quartile 3	quartile 4
Adequate in:												
WASH only	-1.269** [0.535]	-1.475 [0.968]	-0.926 [0.632]	0.181 [1.935]	-0.980* [0.532]	-0.066 [1.919]	-1.971* [1.073]		-0.859 [0.599]	0.676 [1.764]		
Adequate in:												
WASH and Health only	0.757*** [0.263]	-0.038 [0.345]	1.815*** [0.402]	0.135 [0.327]	1.873*** [0.422]	-0.150 [0.359]	-0.855 [1.124]	0.760 [0.769]	2.187*** [0.446]	-0.290 [0.913]	-0.277 [0.412]	
Adequate in:												
WASH and Care and Health only	0.952* [0.557]	0.387 [0.775]	1.814** [0.795]	0.635 [0.564]		0.182 [0.771]		1.390* [0.822]				0.823 [0.543]
Adequate in:												
WASH and Food and Health only	0.601 [1.220]		1.025 [1.199]		1.096 [1.152]				1.060 [1.129]			
Adequate in:												
WASH and Care and Food and Health	-1.613 [1.233]	-2.080* [1.240]		-1.950 [1.241]		-2.208* [1.232]						-1.841 [1.136]
Adequate in:												
Food only	0.950*** [0.270]	0.982*** [0.327]	0.470 [0.488]	1.093*** [0.320]	0.286 [0.491]	0.786** [0.328]		2.084 [1.669]	0.354 [0.484]	1.467*** [0.446]	-0.112 [0.523]	4.133*** [0.978]

Definition 2	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(11)	(12)	(13)
VARIABLES	full	urban	rural	T75	B25	T75_Urban	B25_Urban	T75_Rural	B25_Rural	quartile 2	quartile 3	quartile 4
Adequate in:												
Health only	0.384*** [0.088]	-0.065 [0.120]	0.873*** [0.128]	0.238** [0.110]	0.289** [0.144]	-0.186 [0.129]	0.397 [0.300]	1.346*** [0.202]	0.247 [0.160]	0.687*** [0.162]	-0.234 [0.199]	0.489** [0.220]
Adequate in: Care only	-0.260 [0.226]	0.039 [0.425]	-0.113 [0.268]	0.270 [0.356]	-0.321 [0.283]	-0.087 [0.425]		1.142* [0.628]	-0.350 [0.284]	0.408 [0.525]	0.024 [0.647]	0.251 [0.670]
Adequate in: Care and Food only	-0.023 [0.287]	0.576 [0.815]	0.174 [0.312]	-0.375 [0.341]	0.659 [0.508]	0.724 [0.996]	0.356 [1.307]	0.161 [0.394]	0.593 [0.539]	-0.356 [0.350]	0.703 [1.146]	
Adequate in: Care and Health only	- 0.428*** [0.130]	- 0.732*** [0.186]	- -0.091 [0.179]	- 0.528*** [0.165]	-0.309 [0.202]	-0.796*** [0.195]	-1.563*** [0.590]	0.137 [0.299]	-0.129 [0.214]	0.286 [0.239]	1.676*** [0.335]	-0.272 [0.289]
Adequate in: Food and Health only	0.263* [0.157]	-0.031 [0.197]	0.473* [0.266]	-0.096 [0.186]	1.020*** [0.291]	-0.304 [0.210]	0.858 [0.539]	0.230 [0.396]	0.757** [0.342]	0.800* [0.427]	-0.816** [0.379]	0.323 [0.281]
Adequate in: Care and Food and Health only	0.678*** [0.206]	0.721** [0.292]	0.704** [0.286]	0.336 [0.255]	1.265*** [0.331]	0.257 [0.316]	3.711*** [0.694]	0.657 [0.423]	0.820** [0.372]	1.479*** [0.415]	-0.320 [0.396]	-0.611 [0.614]
Cluster ID	0.000 [0.000]	0.001*** [0.000]	-0.001 [0.000]	0.001** [0.000]	0.001 [0.000]	0.000 [0.000]	0.005*** [0.001]	0.001 [0.001]	-0.001 [0.001]	-0.001 [0.000]	-0.000 [0.001]	0.002*** [0.000]
Constant	-0.316*** [0.093]	-0.001 [0.123]	-0.559*** [0.152]	-0.090 [0.114]	-0.930*** [0.176]	0.214 [0.131]	-1.891*** [0.333]	-0.812*** [0.229]	-0.505** [0.208]	-0.163 [0.176]	0.527*** [0.202]	-0.626*** [0.224]
Observations	3,516	1,887	1,629	2,339	1,177	1,679	208	660	969	802	803	734
R-squared	0.028	0.026	0.062	0.025	0.053	0.022	0.265	0.109	0.047	0.051	0.037	0.085

Source: Authors' estimates based on the 2011–12 MICS.

Note: Using adequate WASH access definition 2: All improved water, all improved sanitation, nonshared toilet use, community improved sanitation, and child feces disposed of safely. Categories of reference: mother's tertiary education; head's tertiary education; marital status, never married. ***, **, and * refer to statistical significance levels of 1, 5, and 10 percent, respectively, on a test of means. Standard errors in brackets. This table reports coefficients estimated from equation (1), that is, the correlation on Tunisian children's nutritional status of successfully reaching a specific adequate access to one of the dimensions of the UNICEF framework (when single) and the effects of achieving two, three or all adequacies in the case of multiple dimensions combined.

Table S4. Correlations of Adequacy Variables

	WASH adequacy (def 1)	WASH adequacy (def 2)	Adequate health services	Adequate care	Adequate food security
WASH adequacy (def 1)	1				
WASH adequacy (def 2)	0.0654** (0.0000)	1			
Adequate health services	0.1023** (0.0000)	0.0152 (0.3458)	1		
Adequate care	-0.0962** (0.0000)	0.0117 (0.4693)	-0.0449** (0.0056)	1	
Adequate food security	0.0397* (0.013)	-0.0219 (0.1709)	-0.0513** (0.0014)	0.2158** (0.0000)	1

Source: Authors' estimates based on the 2011–12 MICS.

Note: * significant at 0.05 level and ** significant at 0.01 level; p-values in parentheses.

Table S5. Effects of Food, Health, WASH and Care Adequacies on Child Nutrition in Tunisia, 2011-12 by Wealth and Location Samples (using adequacy definition 1) and Controlling for Age-Gender Subgroups

VARIABLES	(1) full	(2) urban	(3) rural	(4) T75	(5) B25	(6) T75_Urban	(7) B25_Urban	(8) T75_Rural	(9) B25_Rural	(10) quartile 2	(11) quartile 3	(12) quartile 4
Adequate in: WASH only	0.421** [0.163]	0.515* [0.273]	-0.130 [0.217]	0.337 [0.225]	0.129 [0.236]	-0.142 [0.318]	1.288** [0.571]	0.189 [0.379]	-0.175 [0.257]	-0.146 [0.291]	0.952** [0.431]	-0.202 [1.082]
Adequate in: WASH and Care only	0.724** [0.292]	0.739 [0.473]	0.596 [0.368]	0.718* [0.392]	0.450 [0.428]	0.018 [0.493]		1.273* [0.688]	0.218 [0.422]	0.424 [0.570]	0.832 [0.703]	0.638 [1.236]
Adequate in: WASH and Food only	1.667*** [0.323]	1.394*** [0.389]	2.011 [1.602]	1.291*** [0.353]		0.662 [0.415]		2.225 [1.666]		1.331*** [0.470]	1.026* [0.602]	3.948*** [1.435]
Adequate in: WASH and Health only	0.646*** [0.138]	0.284 [0.249]	0.882*** [0.170]	0.334* [0.197]	0.489** [0.199]	-0.454 [0.295]	0.967** [0.479]	1.325*** [0.277]	0.282 [0.218]	0.342 [0.232]	0.566 [0.392]	-0.016 [1.058]
Adequate in: WASH and Care and Food only	-0.167 [0.316]	0.888 [0.833]	-0.324 [0.339]	-0.474 [0.376]	0.016 [0.655]	0.345 [1.010]	1.892 [1.419]	0.035 [0.437]	-0.926 [0.738]	-0.509 [0.386]	1.146 [1.148]	
Adequate in: WASH and Care and Health only	0.109 [0.180]	-0.261 [0.286]	0.439* [0.257]	-0.254 [0.234]	0.212 [0.339]	-0.953*** [0.327]	-0.904 [0.823]	0.591 [0.377]	0.412 [0.365]	0.101 [0.306]	-0.647 [0.482]	-0.592 [1.072]
Adequate in: WASH and Food and Health only	0.420** [0.191]	0.250 [0.292]	0.127 [0.313]	-0.049 [0.245]	1.040*** [0.365]	-0.612* [0.335]	2.456*** [0.672]	0.150 [0.439]	0.475 [0.475]	0.472 [0.452]	0.041 [0.503]	-0.323 [1.071]

VARIABLES	(1) full	(2) urban	(3) rural	(4) T75	(5) B25	(6) T75_Urban	(7) B25_Urban	(8) T75_Rural	(9) B25_Rural	(10) quartile 2	(11) quartile 3	(12) quartile 4
Adequate in: WASH and Care and Food and Health	0.882*** [0.241]	1.031*** [0.365]	0.538 [0.335]	0.387 [0.303]	1.617*** [0.429]	-0.021 [0.413]	3.822*** [0.815]	0.665 [0.464]	0.708 [0.523]	0.971** [0.442]	0.710 [0.527]	-1.479 [1.179]
Adequate in: Food only	0.211 [0.513]		0.311 [0.505]		0.538 [0.503]				0.378 [0.492]			
Adequate in: Health only	0.437*** [0.163]	0.468 [0.302]	0.401** [0.189]	0.507** [0.239]	0.372* [0.213]	-0.137 [0.354]	0.646 [0.596]	1.087*** [0.327]	0.151 [0.225]	0.865*** [0.277]	0.228 [0.479]	-0.481 [1.148]
Adequate in: Care only	- 1.129*** [0.371]		- 1.100*** [0.372]	0.045 [1.813]	-0.910** [0.381]			0.735 [1.810]	-1.092*** [0.378]	0.191 [1.645]		
Adequate in: Care and Food only	1.694** [0.843]		1.981** [0.827]		2.301*** [0.821]				2.145*** [0.799]			
Adequate in: Care and Health only	- 0.660*** [0.221]	-0.037 [0.729]	- 0.716*** [0.238]	-0.865** [0.407]	-0.380 [0.262]	-0.069 [1.007]	0.024 [1.062]	-0.635 [0.466]	-0.674** [0.272]	-0.217 [0.495]	1.955*** [0.745]	0.820 [1.594]
Adequate in: Food and Health only	0.792* [0.472]		0.781* [0.468]		1.187** [0.466]				0.796* [0.461]			
Adequate in: Care and Food and Health only	0.807* [0.475]	-0.612 [1.020]	1.239** [0.524]	-0.618 [0.919]	1.630*** [0.535]	-1.298 [1.017]		0.523 [2.177]	1.369*** [0.524]		-0.366 [1.060]	
Male age 0-5 months	-0.526*** [0.087]	-0.399*** [0.108]	-0.719*** [0.149]	-0.480*** [0.099]	-0.870*** [0.184]	-0.459*** [0.109]	0.553 [0.570]	-0.328 [0.234]	-0.947*** [0.197]	-0.207 [0.168]	-1.149*** [0.189]	0.042 [0.155]

VARIABLES	(1) full	(2) urban	(3) rural	(4) T75	(5) B25	(6) T75_Urban	(7) B25_Urban	(8) T75_Rural	(9) B25_Rural	(10) quartile 2	(11) quartile 3	(12) quartile 4
Male age 6-11 months	0.185** [0.092]	-0.016 [0.121]	0.460*** [0.142]	0.255** [0.106]	-0.135 [0.191]	0.097 [0.125]	-0.649 [0.428]	0.495** [0.195]	0.275 [0.216]	0.777*** [0.176]	0.390* [0.215]	-0.068 [0.162]
Male age 12-24 months	-0.601*** [0.072]	-0.656*** [0.095]	-0.517*** [0.111]	-0.613*** [0.087]	-0.587*** [0.129]	-0.757*** [0.099]	0.519 [0.325]	-0.163 [0.175]	-0.735*** [0.144]	-0.401** [0.161]	-0.657*** [0.168]	-0.488*** [0.135]
Constant	-0.298** [0.137]	-0.003 [0.248]	-0.391** [0.165]	0.085 [0.198]	-0.561*** [0.185]	0.785*** [0.295]	-1.472*** [0.473]	-0.605** [0.280]	-0.329* [0.199]	-0.061 [0.236]	-0.016 [0.393]	0.310 [1.054]
Observations	3,516	1,887	1,629	2,339	1,177	1,679	208	660	969	802	803	734
R-squared	0.067	0.051	0.120	0.059	0.077	0.064	0.204	0.131	0.095	0.098	0.118	0.069

Source: Authors' estimates based on the 2011–12 MICS.

Note: Using adequate WASH access definition 1: All improved water, all improved sanitation, nonshared toilet use, community improved sanitation, no child feces considered. ***, **, and * refer to statistical significance levels of 1, 5, and 10 percent, respectively, on a test of means. Standard errors in brackets. This table reports coefficients estimated from equation (1), that is, the correlation on Tunisian children's nutritional status of successfully reaching a specific adequate access to one of the dimensions of the UNICEF framework (when single) and the effects of achieving two, three or all adequacies in the case of multiple dimensions combined. Reference for age sex dummies is female girls 0-24 months of age.

Table S6. Effects of Food, Health, WASH and Care Adequacies on Child Nutrition in Tunisia, 2011-12 by Wealth and Location Samples (using adequacy definition 2) and Controlling for Age-Gender Subgroups

VARIABLES	(1) full	(2) urban	(3) rural	(4) T75	(5) B25	(6) T75_Urban	(7) B25_Urban	(8) T75_Rural	(9) B25_Rural	(10) quartile 2	(11) quartile 3	(12) quartile 4
Adequate in: WASH only	-1.374*** [0.526]	-1.081 [0.954]	-1.236** [0.622]	-0.024 [1.902]	-1.074** [0.525]	-0.369 [1.877]	-1.632 [1.161]		-1.340** [0.588]	0.434 [1.731]		
Adequate in: WASH and Health only	0.732*** [0.260]	-0.190 [0.342]	1.845*** [0.395]	0.072 [0.323]	1.795*** [0.417]	-0.349 [0.353]	0.031 [1.177]	1.021 [0.766]	2.068*** [0.437]	-0.256 [0.903]	-0.079 [0.400]	
Adequate in: WASH and Care and Health only	0.996* [0.549]	0.653 [0.766]	1.420* [0.778]	0.684 [0.554]		0.515 [0.755]		1.526* [0.810]				0.823 [0.547]
Adequate in: WASH and Food and Health only	0.639 [1.202]		1.040 [1.177]		1.083 [1.137]				1.086 [1.102]			
Adequate in: WASH and Care and Food and Health	-1.340 [1.217]	-1.895 [1.228]		-1.704 [1.223]		-2.088* [1.209]						-2.030* [1.153]
Adequate in: Food only	0.981*** [0.266]	0.970*** [0.321]	0.484 [0.478]	1.048*** [0.313]	0.402 [0.485]	0.783** [0.320]		2.146 [1.657]	0.396 [0.473]	1.394*** [0.441]	0.337 [0.512]	4.151*** [0.985]
Adequate in: Health only	0.301*** [0.087]	-0.133 [0.120]	0.740*** [0.127]	0.102 [0.110]	0.264* [0.141]	-0.329** [0.129]	-0.005 [0.341]	1.195*** [0.205]	0.171 [0.156]	0.524*** [0.163]	-0.219 [0.195]	0.155 [0.230]
Adequate in: Care only	-0.252 [0.223]	0.319 [0.420]	-0.204 [0.264]	0.452 [0.350]	-0.448 [0.280]	0.143 [0.416]		1.116* [0.628]	-0.501* [0.279]	0.500 [0.519]	0.111 [0.624]	0.838 [0.667]

VARIABLES	(1) full	(2) urban	(3) rural	(4) T75	(5) B25	(6) T75_Urban	(7) B25_Urban	(8) T75_Rural	(9) B25_Rural	(10) quartile 2	(11) quartile 3	(12) quartile 4
Adequate in: Care and												
Food only	-0.277 [0.283]	0.455 [0.803]	-0.031 [0.305]	-0.723** [0.338]	0.770 [0.508]	0.451 [0.974]	0.941 [1.379]	-0.044 [0.394]	0.521 [0.539]	-0.446 [0.349]	0.368 [1.100]	
Adequate in: Care and												
Health only	-0.494*** [0.129]	-0.726*** [0.185]	-0.235 [0.178]	-0.641*** [0.162]	-0.305 [0.200]	-0.870*** [0.192]	-1.540** [0.637]	-0.016 [0.296]	-0.315 [0.211]	0.141 [0.238]	-1.593*** [0.329]	-0.566* [0.297]
Adequate in: Food and												
Health only	0.138 [0.154]	-0.180 [0.194]	0.309 [0.262]	-0.296 [0.183]	0.972*** [0.287]	-0.502** [0.205]	1.505*** [0.558]	0.061 [0.397]	0.681** [0.337]	0.565 [0.420]	-0.728** [0.369]	-0.144 [0.285]
Adequate in: Care and												
Food and Health only	0.608*** [0.204]	0.602** [0.290]	0.726** [0.284]	0.140 [0.252]	1.459*** [0.334]	0.100 [0.312]	2.871*** [0.727]	0.581 [0.423]	1.004*** [0.374]	1.075*** [0.412]	-0.163 [0.384]	-1.110* [0.626]
Male age 0-5 months	-0.526*** [0.087]	-0.396*** [0.109]	-0.676*** [0.148]	-0.490*** [0.099]	-0.806*** [0.181]	-0.451*** [0.110]	0.574 [0.572]	-0.338 [0.229]	-0.898*** [0.193]	-0.220 [0.166]	-1.159*** [0.190]	0.027 [0.154]
Male age 6-11 months	0.197** [0.092]	-0.022 [0.121]	0.506*** [0.142]	0.264** [0.106]	-0.220 [0.186]	0.104 [0.125]	-0.918** [0.408]	0.556*** [0.193]	0.087 [0.210]	0.699*** [0.173]	0.357* [0.214]	-0.073 [0.161]
Male age 12-24 months	-0.596*** [0.072]	-0.674*** [0.095]	-0.546*** [0.111]	-0.625*** [0.087]	-0.624*** [0.127]	-0.784*** [0.099]	0.512 [0.335]	-0.150 [0.175]	-0.839*** [0.140]	-0.433*** [0.159]	-0.752*** [0.165]	-0.524*** [0.133]
Constant	0.007 [0.086]	0.431*** [0.118]	-0.420*** [0.124]	0.334*** [0.109]	-0.423*** [0.132]	0.679*** [0.128]	-0.521* [0.281]	-0.526** [0.207]	-0.316** [0.149]	-0.124 [0.167]	0.762*** [0.185]	0.143 [0.237]
Observations	3,516	1,887	1,629	2,339	1,177	1,679	208	660	969	802	803	734
R-squared	0.058	0.052	0.098	0.059	0.080	0.065	0.186	0.125	0.094	0.089	0.107	0.075

Source: Authors' estimates based on the 2011–12 MICS.

Note: Using adequate WASH access definition 2: All improved water, all improved sanitation, nonshared toilet use, community improved sanitation, and child feces disposed of safely. Categories of reference: mother's tertiary education; head's tertiary education; marital status, never married. ***, **, and * refer to statistical significance levels of 1, 5, and 10 percent, respectively, on a test of means. Standard errors in brackets. This table reports coefficients estimated from equation (1), that is, the correlation on Tunisian children's nutritional status of successfully reaching a specific adequate access to one of the dimensions of the UNICEF framework (when single) and the effects of achieving two, three or all adequacies in the case of multiple dimensions combined. Reference for age sex dummies is female girls 0-24 months of age.

Table S7. Effects of Food, Health, WASH and Care Adequacies on Child Nutrition in Tunisia, 2011-12 by Wealth and Location Samples (using adequacy definition 2 and non-clustered standard errors)

Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(11)	(12)	(13)
Adequacies	full	urban	rural	Non poor	Poor	Non poor urban	Poor urban	Non poor rural	Poor rural	quartile 2	quartile 3	quartile 4
WASH only	-1.240** [0.534]	-1.300 [0.967]	-0.957 [0.631]	0.281 [1.937]	-0.920* [0.531]	0.015 [1.919]	-0.996 [1.144]		-0.899 [0.599]	0.599 [1.763]		
WASH and Health only	0.752*** [0.263]	-0.073 [0.345]	1.800*** [0.402]	0.108 [0.327]	1.896*** [0.422]	-0.178 [0.359]	0.154 [1.199]	0.838 [0.768]	2.185*** [0.447]	-0.311 [0.913]	-0.269 [0.411]	
WASH and Care and Health only	0.956* [0.557]	0.268 [0.775]	1.699** [0.791]	0.663 [0.564]		0.115 [0.770]		1.603** [0.812]				0.939* [0.552]
WASH and Food and Health only	0.603 [1.220]		1.038 [1.199]		1.071 [1.152]				1.096 [1.130]			
WASH and Care and Food and Health	-1.596 [1.233]	-2.002 [1.242]		-1.889 [1.242]		-2.155* [1.232]						-1.613 [1.154]
Food only	0.929*** [0.270]	0.887*** [0.326]	0.444 [0.488]	1.019*** [0.318]	0.307 [0.491]	0.734** [0.327]		2.223 [1.669]	0.332 [0.484]	1.559*** [0.440]	-0.090 [0.521]	4.017*** [0.994]
Health only	0.377*** [0.088]	-0.075 [0.120]	0.894*** [0.128]	0.229** [0.110]	0.266* [0.143]	-0.188 [0.129]	0.227 [0.322]	1.317*** [0.202]	0.274* [0.159]	0.689*** [0.162]	-0.239 [0.199]	0.416* [0.223]
Care only	-0.252 [0.226]	0.120 [0.425]	-0.105 [0.268]	0.326 [0.356]	-0.343 [0.282]	-0.033 [0.424]		1.162* [0.629]	-0.319 [0.283]	0.409 [0.525]	0.003 [0.645]	0.755 [0.674]
Care and Food only	-0.036 [0.286]	0.743 [0.814]	0.241 [0.309]	-0.418 [0.341]	0.666 [0.508]	0.835 [0.994]	1.064 [1.405]	0.033 [0.386]	0.607 [0.540]	-0.281 [0.345]	0.644 [1.138]	
Care and Health only	-0.429*** [0.130]	-0.735*** [0.186]	-0.086 [0.179]	-0.546*** [0.165]	-0.273 [0.201]	-0.798*** [0.195]	-1.151* [0.632]	0.052 [0.295]	-0.169 [0.213]	0.306 [0.239]	-1.671*** [0.334]	-0.340 [0.294]
Food and Health only	0.248 [0.156]	-0.077 [0.196]	0.491* [0.266]	-0.148 [0.185]	1.056*** [0.290]	-0.342 [0.208]	1.628*** [0.564]	0.174 [0.395]	0.757** [0.343]	0.768* [0.426]	-0.802** [0.378]	0.096 [0.282]

Care and Food and Health only	0.672*** [0.206]	0.675** [0.292]	0.701** [0.286]	0.309 [0.255]	1.280*** [0.331]	0.237 [0.316]	2.994*** [0.737]	0.609 [0.422]	0.756** [0.370]	1.532*** [0.413]	-0.319 [0.396]	-0.747 [0.624]
Constant	-0.264*** [0.080]	0.142 [0.111]	-0.699*** [0.112]	0.029 [0.102]	-0.732*** [0.121]	0.295** [0.120]	-0.644** [0.276]	-0.603*** [0.185]	-0.757*** [0.134]	-0.289** [0.145]	0.486*** [0.182]	-0.247 [0.215]
Observations	3,516	1,887	1,629	2,339	1,177	1,679	208	660	969	802	803	734
R-squared	0.028	0.022	0.061	0.023	0.051	0.020	0.139	0.105	0.044	0.049	0.037	0.052

Source: authors' estimates based on MICS 2011–12.

Note: Using adequate WASH access definition 2: All improved water, all improved sanitation, nonshared toilet use, community based sanitation, and child feces disposed of safely. ***, **, and * refer to statistical significance levels of 1, 5, and 10 percent, respectively, on a test of means. Standard errors in brackets.

Table S8. Table 4 Effects of Food, Health, WASH, and Care Adequacies on Child Nutrition in Tunisia, 2011–12 on Conditioned Full Sample (using adequacy definition 1 and non-clustered standard errors)

Adequacies, Controls	Unconditioned	Conditioned (1)	Conditioned (2)	Conditioned (3)	Conditioned (4)
WASH only	0.453*** [0.165]	0.803*** [0.199]	0.677*** [0.198]	0.597*** [0.200]	0.649*** [0.201]
WASH and Care only	0.759** [0.296]	0.748** [0.305]	0.651** [0.302]	0.473 [0.308]	0.497 [0.308]
WASH and Food only	1.638*** [0.327]	0.337 [0.459]	0.044 [0.455]	0.011 [0.471]	0.172 [0.473]
WASH and Health only	0.737*** [0.139]	0.895*** [0.174]	0.756*** [0.175]	0.709*** [0.178]	0.765*** [0.179]
WASH and Care and Food only	0.152 [0.319]	0.267 [0.329]	0.375 [0.330]	0.071 [0.352]	0.052 [0.351]
WASH and Care and Health only	0.170 [0.181]	0.518** [0.213]	0.447** [0.210]	0.416* [0.214]	0.449** [0.214]
WASH and Food and Health only	0.525*** [0.193]	0.884*** [0.236]	0.750*** [0.234]	0.823*** [0.241]	0.861*** [0.242]

Adequacies, Controls	Unconditioned	Conditioned (1)	Conditioned (2)	Conditioned (3)	Conditioned (4)
WASH and Care and Food and Health only	0.983*** [0.244]	1.737*** [0.298]	1.540*** [0.296]	1.536*** [0.299]	1.596*** [0.300]
Food only	0.165 [0.521]	0.824 [0.985]	0.809 [0.967]	1.035 [0.961]	1.015 [0.960]
Health only	0.547*** [0.165]	0.639*** [0.199]	0.591*** [0.195]	0.645*** [0.196]	0.644*** [0.196]
Care only	-1.140*** [0.375]	-1.336*** [0.446]	-1.289*** [0.438]	-1.207*** [0.437]	-1.244*** [0.437]
Care and Food only	1.460* [0.854]	-	-	-	-
Care and Health only	-0.544** [0.223]	-0.377 [0.251]	-0.388 [0.247]	-0.274 [0.247]	-0.325 [0.247]
Food and Health only	1.147** [0.477]	2.957*** [0.662]	3.169*** [0.654]	3.250*** [0.654]	3.264*** [0.653]
Care and Food and Health only	0.752 [0.482]	1.833*** [0.506]	1.851*** [0.496]	1.950*** [0.495]	1.978*** [0.494]
Log child's age		0.089* [0.046]	0.044 [0.045]	0.033 [0.046]	0.026 [0.046]
Female child		0.463*** [0.071]	0.518*** [0.071]	0.477*** [0.071]	0.475*** [0.071]
Multiple birth		1.001*** [0.105]	1.229*** [0.107]	1.192*** [0.107]	1.211*** [0.107]
Birth order		-0.222*** [0.052]	-0.208*** [0.053]	-0.162** [0.067]	-0.139** [0.067]
Age of the mother			0.006 [0.007]	-0.001 [0.008]	-0.000 [0.008]
Mother's education: none			-0.681*** [0.147]	-0.647*** [0.191]	-0.643*** [0.191]

Adequacies, Controls	Unconditioned	Conditioned (1)	Conditioned (2)	Conditioned (3)	Conditioned (4)
Mother's education: primary			-0.370*** [0.122]	-0.458*** [0.160]	-0.441*** [0.161]
Mother's education: secondary			-0.316*** [0.122]	-0.413*** [0.142]	-0.406*** [0.142]
Marital status: married			2.993*** [0.374]	3.264*** [0.378]	3.290*** [0.377]
Number of children aged 0-5 yr				-0.228*** [0.064]	-0.234*** [0.064]
Number of children aged 6-14 yr				-0.028 [0.060]	-0.041 [0.060]
Household size				0.010 [0.027]	0.003 [0.027]
Gender of the household head				1.022*** [0.197]	1.072*** [0.198]
Head's education: none				-0.135 [0.196]	-0.175 [0.197]
Head's education: primary				0.161 [0.156]	0.136 [0.156]
Head's education: secondary				0.216 [0.143]	0.210 [0.143]
Affected by shocks				-0.120* [0.073]	-0.129 [0.078]
Wealth score				0.039 [0.045]	0.077 [0.047]

Adequacies, Controls	Unconditioned	Conditioned (1)	Conditioned (2)	Conditioned (3)	Conditioned (4)
Acceded to clinic when household member ill					0.130 [0.116]
Urban					-0.247*** [0.088]
Constant	-0.590*** [0.134]	-1.084*** [0.214]	-3.768*** [0.512]	-3.605*** [0.573]	-3.586*** [0.575]
Observations	3,516	2,240	2,240	2,239	2,239
R-squared	0.037	0.117	0.152	0.170	0.174

Source: Authors' estimates based on the 2011–12 MICS.

Note: Using adequate WASH access definition 1: All improved water, all improved sanitation, no shared toilet use, no child feces considered. Using adequate WASH access definition 2: All improved water, all improved sanitation, nonshared toilet use, community improved sanitation, and child feces disposed of safely. Categories of reference: mother's tertiary education; head's tertiary education; marital status, never married. ***, **, and * refer to statistical significance levels of 1, 5, and 10 percent, respectively, on a test of means. Standard errors in brackets. This table reports coefficients estimated from equation (1), that is, the correlation on Tunisian children's nutritional status of successfully reaching a specific adequate access to one of the dimensions of the NICEF framework (when single) and the effects of achieving two, three or all adequacies in the case of multiple dimensions combined.