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Supplementary Materials for:

Development and Application of Novel Caregiver Hygiene Behavior Measures Relating to Food Preparation, Handwashing, and Play Environments in Rural Kenya

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Supplementary Table S1. All original items related to hygienic food preparation and storage and frequency of responses (organized by COM-B component).

Hygienic Food Preparation and Storage n=270									
Item	Likert Scale (1 = strongly disagree, 5 = strongly agree)					Descriptive Statistics			COM-B Component
	1	2	3	4	5	Mean	Kurtosis	Skewness	
<i>E.1.4 It is not necessary to reheat food for meals prepared early in the day.</i>	151	15	7	28	69	2.44	1.45	0.55	Capability Psychological
<i>E.1.5 It is okay to cut vegetables with the same knife just after I cut raw chicken or fish.</i>	224	9	2	13	22	1.52	5.93	2.16	Capability Psychological
<i>E.1.8 I re-heat previously cooked food every time before feeding it to my family.</i>	3	3	1	15	248	4.86	30.45	-5.08	Capability Psychological
<i>E.1.56 I would feel confident to demonstrate preparation of food for children under 2 to others in my community.</i>	7	4	5	31	223	4.70	13.94	-3.29	Capability Physical
<i>E.1.2 Most people in my community prepare food safely.</i>	26	13	50	42	139	3.94	2.83	-1.02	Opportunity Social
<i>E.1.12 Most people in my community cover prepared food in between meals.</i>	16	18	66	40	130	3.93	2.63	-0.83	Opportunity Social
<i>E.1.13 Most people in my community reheat previously cooked food before feeding it to their families.</i>	15	12	77	42	124	3.92	2.73	-0.79	Opportunity Social
<i>E.1.1 Preparing food in a clean place is important.</i>	0	0	1	2	267	4.99	133.23	-11.05	Motivation Reflective
<i>E.1.3 Reheating previously cooked food makes it less likely to make you sick.</i>	38	10	3	26	193	4.21	3.65	-1.55	Motivation Reflective
<i>E.1.6 It is beneficial to wash food before preparation.</i>	5	4	4	17	240	4.79	19.00	-3.97	Motivation Reflective
<i>E.1.7 It is beneficial to store food in a covered container.</i>	7	3	2	19	239	4.78	18.90	-4.00	Motivation Reflective
<i>E.1.9* It is important when cooking soup or other liquid foods to bring them to a full boil.</i>	174	3	4	13	55	2.08	2.09	1.00	Motivation Reflective
<i>E.1.10* It is safe to consume meat when the juices run red or pink.</i>	32	4	3	15	195	4.35	4.73	-1.88	Motivation Reflective

<i>E.1.11 Thorough cooking of food makes it safe to eat.</i>	1	0	1	5	263	4.96	118.56	-9.99	Motivation Reflective
<i>E.1.14 Food that has NOT been covered is still safe to consume.</i>	154	29	14	26	47	2.20	2.02	0.85	Motivation Reflective
<i>E.1.15 Food that has not been covered between mealtimes can make my family sick.</i>	24	3	8	33	202	4.43	6.24	-2.15	Motivation Reflective
<i>E.1.16 If food has been sitting out for more than 4 hours, it can make my family sick if they eat it.</i>	84	21	19	40	106	3.23	1.32	-0.27	Motivation Reflective
<i>E.1.58 The reason I COOK foods thoroughly is because they taste better warm.</i>	1	0	1	16	252	4.92	60.16	-6.53	Motivation Reflective
<i>E.1.59 The reason I COOK foods thoroughly is to prevent sickness in my family.</i>	0	1	2	10	257	4.94	44.29	-5.98	Motivation Reflective
<i>E.1.60 The reason I REHEAT foods is because they taste better warm.</i>	2	2	1	10	255	4.90	44.73	-6.20	Motivation Reflective
<i>E.1.61 The reason I REHEAT foods is to prevent sickness in my family.</i>	0	0	3	9	258	4.93	51.04	-6.64	Motivation Reflective

*This question was added later; 249 participants responded

Supplementary Table S2. All original items related to the provision of a safe play environment and frequency of responses (organized by COM-B component).

Provision of Safe Play Environment n=270									
Item	Likert Scale (1 = strongly disagree, 5 = strongly agree)					Descriptive Stats			COM-B Component
	1	2	3	4	5	Mean	Kurtosis	Skewness	
<i>E.1.17 Most people in this community have animal feces (including chicken feces) present in their COMPOUND.</i>	23	6	30	35	176	4.24	4.29	-1.58	Opportunity Social
<i>E.1.18 Most people in this community have animal feces (including chicken feces) present in their HOUSE.</i>	59	13	38	43	117	3.54	1.79	-0.60	Opportunity Social
<i>E.1.19 Most people in my community have a designated play area for their young children.</i>	104	15	44	33	74	2.84	1.36	0.10	Opportunity Social
<i>E.1.20 Most children in this community play in areas that are free from human feces.</i>	52	15	31	34	138	3.71	1.97	-0.77	Opportunity Social
<i>E.1.21 Most children in this community play in areas that are free from animal feces (Including CHICKEN feces).</i>	73	32	27	34	104	3.24	1.37	-0.23	Opportunity Social
<i>E.1.22 Most children in this community play in areas that are free from garbage or other wastes.</i>	69	29	24	35	113	3.35	1.42	-0.35	Opportunity Social
<i>E.1.26 I find it disgusting when animal feces (including CHICKEN feces) are present inside a house.</i>	8	5	3	15	239	4.75	15.32	-3.61	Opportunity Social
<i>E.1.27 I find it disgusting when animal feces (including CHICKEN feces) are present within a compound.</i>	10	4	2	10	244	4.76	15.47	-3.69	Opportunity Social
<i>E.1.23 It is possible for me to provide a play space to my child that is free of ANIMAL feces (including CHICKEN feces).</i>	13	16	9	29	203	4.46	5.93	-2.05	Motivation Reflective
<i>E.1.24 It is possible for me to provide a play space to my child that is free of HUMAN feces.</i>	11	7	8	21	223	4.62	9.61	-2.75	Motivation Reflective

<i>E.1.25 It is possible for me to provide a play space to my child that is free of garbage and other household wastes.</i>	8	13	6	23	220	4.61	8.63	-2.58	Motivation Reflective
<i>E.1.28 Chicken feces can make you sick.</i>	18	4	10	12	226	4.57	8.04	-2.54	Motivation Reflective
<i>E.1.29 Dog feces can make you sick.</i>	2	0	2	7	259	4.93	66.02	-7.52	Motivation Reflective
<i>E.1.30 Cow / goat feces can make you sick.</i>	20	6	10	13	221	4.51	6.86	-2.31	Motivation Reflective

Supplementary Table S3. All original items related to handwashing at key times and frequency of responses (organized by COM-B component).

Handwashing at Key times n=270									
Item	Likert Scale (1 = strongly disagree, 5 = strongly agree)					Descriptive Statistics			COM-B Component
	1	2	3	4	5	Mean	Kurtosis	Skewness	
<i>E.1.57 I would feel confident to demonstrate excellent hand washing techniques to others in my community.</i>	9	4	2	29	226	4.70	14.00	-3.37	Capability Physical
<i>E.1.31 I always have water for handwashing.</i>	6	8	0	20	236	4.75	15.24	-3.58	Opportunity Physical
<i>E.1.32 It is possible for me to buy soap for handwashing</i>	21	10	1	34	204	4.44	6.22	-2.16	Opportunity Physical
<i>E.1.34 Sometimes I don't wash my hands because I don't have enough time.</i>	122	8	1	33	106	2.97	1.10	-0.02	Opportunity Physical
<i>E.1.35 Most people in my community have soap.</i>	49	16	41	53	111	3.60	1.99	-0.67	Opportunity Social
<i>E.1.36 Most people in my community use soap EVERY TIME they wash their hands.</i>	55	20	53	57	85	3.36	1.79	-0.43	Opportunity Social
<i>E.1.37 Most people in my community wash their hands after defecating.</i>	50	11	52	51	106	3.56	2.01	-0.64	Opportunity Social
<i>E.1.38 Most people in my community wash their hands before preparing food.</i>	34	14	55	55	112	3.73	2.42	-0.79	Opportunity Social
<i>E.1.39 Most people in my community wash their hands before feeding a young child.</i>	28	14	58	47	123	3.83	2.57	-0.86	Opportunity Social

<i>E.1.40 Most people in my community wash their hands before eating.</i>	10	7	50	31	172	4.29	4.14	-1.41	Opportunity Social
<i>E.1.41 Most people in my community wash the hands of a CHILD under 2 years old before the child eats.</i>	15	15	56	37	147	4.06	3.03	-1.05	Opportunity Social
<i>E.1.33 It is important for me to have soap available for handwashing.</i>	1	1	1	27	240	4.87	32.81	-4.70	Motivation Reflective
<i>E.1.42 Not washing my hands before preparing food can make my child sick.</i>	10	21	13	23	203	4.44	5.22	-1.89	Motivation Reflective
<i>E.1.43 Not washing my hands after touching the feces of my young child can cause me to become ill.</i>	14	21	12	19	204	4.40	4.87	-1.82	Motivation Reflective
<i>E.1.44 Washing your hands after you change your baby's nappies or diapers can prevent you and your child from becoming ill.</i>	20	8	11	32	199	4.41	5.86	-2.04	Motivation Reflective

Supplementary Table S4. All original items related to responsive feeding practices and preparation of porridge of sufficient caloric density, and frequency of responses (organized by COM-B component).

Responsive Feeding Practices n=270									
Item	Likert Scale (1 = strongly disagree, 5 = strongly agree)					Descriptive Statistics			COM-B Component
	1	2	3	4	5	Mean	Kurtosis	Skewness	
<i>E.1.45 It does not matter how thick or thin my child's porridge is.</i>	90	45	33	60	42	2.70	1.54	0.20	Capability Psychological
<i>E.1.46 Thick porridge has more nutrients than thin porridge.</i>	27	26	12	64	141	3.99	2.93	-1.16	Capability Psychological
<i>E.1.47 Thick porridge will give my child stomach problems</i>	99	38	14	46	73	2.84	1.31	0.14	Capability Psychological
<i>E.1.49 Infants show signs of hunger when they start crying.</i>	40	13	5	30	182	4.11	3.16	-1.37	Capability Psychological
<i>E.1.50 Infants show signs of hunger when they start reaching for their mothers' breast.</i>	10	4	0	15	241	4.75	15.84	-3.72	Capability Psychological
<i>E.1.51 Infants show signs of hunger when they put an object in their mouth.</i>	59	5	3	17	186	3.99	2.45	-1.16	Capability Psychological
<i>E.1.52* I try to feed my child when he or she looks at other people who are eating.</i>	63	7	2	8	90	3.32	1.18	-0.33	Capability Psychological

<i>E.1.53* I try to feed my child when he or she moves mouth and tongue as if eating.</i>	58	7	6	11	88	3.38	1.27	-0.39	Capability Psychological
<i>E.1.54* I try to feed my child when he or she drools or spits.</i>	85	16	2	16	51	2.60	1.31	0.40	Capability Psychological
<i>E.1.55* I try to feed my child when he or she puts other objects into her/his mouth.</i>	83	8	3	16	60	2.78	1.15	0.20	Capability Psychological
<i>E.1.48 Thick porridge will give my child stomach problems.</i>	59	36	26	43	106	3.37	1.51	-0.37	Motivation Reflective

*This question only asked of mothers with children under the age of 2; 170 participants total.