

Table S-1a. Characteristics of mothers of liveborn infants without a birth defects employed during the pre-pregnancy period by major occupational group, National Birth Defects Prevention Study, 1997–2011

Occupational Group	Maternal age at conception		Maternal race/ethnicity		Nativity (born in U.S.)		Maternal education		Pre-pregnancy diabetes					
	Mean (y)	SD	n	%	n	%	n	%	n	%				
Food Preparation and Serving Related (n=667)	23.4	5.4	37											
			Non-Hispanic white	7	56.5			<High school	148	22.2	No	664	99.6	
			Non-Hispanic black	79	11.8	No	145	21.7	=High school	283	42.4	Yes	3	0.4
			Hispanic	17	25.6	Yes	522	78.3	>High school	236	35.4			
			Other	1	6.0									
			40											
Building and Grounds Cleaning (n=197)	25.9	6.1	67	34.0										
			Non-Hispanic white	28	14.2	No	88	44.7	<High school	65	33.0	No	196	99.5
			Non-Hispanic black	93	47.2	Yes	109	55.3	=High school	80	40.6	Yes	1	0.5
			Hispanic	9	4.6				>High school	52	26.4			
			Other											
Personal Care and Service (n=441)	26.5	5.4	29	66.0	No									
			Non-Hispanic white	1	10.9	Yes	65	14.8	<High school	29	6.6	No	433	98.2
			Non-Hispanic black	48	18.1	Missi	375	85.2	=High school	127	28.9	Yes	8	1.8
			Hispanic	80	5.0	ng	1		>High school	284	64.6			
			Other	22					Missing	1				
			46											
Sales and Related (n=807)	25.1	6.1	2	57.2	No									
			Non-Hispanic white	11	14.1	Yes	109	13.5	<High school	107	13.3	No	799	99.1
			Non-Hispanic black	4	23.2	Missi	696	86.5	=High school	264	32.8	Yes	7	0.9
			Hispanic	18	5.5	ng	2		>High school	434	53.9	Missing	1	
			Other	7					Missing	2				
			44											
Office and Administrative Support (n=1406)	27.3	5.3	5	65.1	No									
			Non-Hispanic white	18	12.8	Yes	147	10.5	<High school	58	4.1	No	1395	99.5
			Non-Hispanic black	0	17.3	Missi	1257	89.5	=High school	386	27.5	Yes	7	0.5
			Hispanic	24	4.8	ng	2		>High school	958	68.3	Missing	4	
			Other	3					Missing	4				
			68											

Table S-1b. Additional characteristics of mothers of liveborn infants without a birth defect employed during the pre-pregnancy period by major occupational group, National Birth Defects Prevention Study, 1997–2011

Occupational Group	Pre-pregnancy body mass index*		Pre-pregnancy folic acid supplement use†		Pre-pregnancy smoking		Pre-pregnancy alcohol consumption					
	n	%	n	%	n	%	n	%				
Management (n=491)	Underweight	16	3.3	<=30 days	211	43.7	No Yes	426 65	86.8 13.2	No drinking	183	37.7
	Normal weight	288	58.9	<1/day	37	7.7				Binge drinking (>=4)	81	16.7
	Overweight	119	24.3	Daily use	235	48.7				< 4 drinks	222	45.7
	Obese	66	13.5	Missing	8					Missing	5	
	Missing	2										
Business and Financial Operations (n=308)	Underweight	12	3.9	<=30 days	137	44.6	No Yes	273 35	88.6 11.4	No drinking	132	43.3
	Normal weight	202	65.6	<1/day	22	7.2				Binge drinking (>=4)	50	16.4
	Overweight	58	18.8	Daily use	148	48.2				< 4 drinks	123	40.3
	Obese	36	11.7	Missing	1					Missing	3	
Computer and Mathematical (n=117)	Underweight	5	4.3	<=30 days	48	41.4	No Yes	109 8	93.2 6.8	No drinking	55	47.0
	Normal weight	73	62.4	<1/day	12	10.3				Binge drinking (>=4)	16	13.7
	Overweight	23	19.7	Daily use	56	48.3				< 4 drinks	46	39.3
	Obese	16	13.7	Missing	1							
Architecture and Engineering (n=34)	Underweight	0	0.0	<=30 days	13	39.4	No Yes	32 2	94.1 5.9	No drinking	11	32.4
	Normal weight	24	70.6	<1/day	2	6.1				Binge drinking (>=4)	8	23.5
	Overweight	7	20.6	Daily use	18	54.6				< 4 drinks	15	44.1
	Obese	3	8.9	Missing	1							
Life, Physical, and Social Sciences (n=118)	Underweight	5	4.2	<=30 days	46	39.0	No Yes	109 9	92.4 7.6	No drinking	48	41.0
	Normal weight	82	69.5	<1/day	19	16.1				Binge drinking (>=4)	15	12.8
	Overweight	24	20.3	Daily use	53	44.9				< 4 drinks	54	46.2
	Obese	7	5.9	Missing						Missing	1	
Community and Social Service (n=180)	Underweight	6	3.4	<=30 days	85	47.8	No Yes	155 25	86.1 13.9	No drinking	83	46.4
	Normal weight	94	52.5	<1/day	10	5.6				Binge drinking (>=4)	23	12.8
	Overweight	37	20.7	Daily use	83	46.6				< 4 drinks	73	40.8
	Obese	42	23.5	Missing	2					Missing	1	
	Missing	1										

Table S-1b. Additional characteristics of mothers of liveborn infants without a birth defect employed during the pre-pregnancy period by major occupational group, National Birth Defects Prevention Study, 1997–2011

Occupational Group	Pre-pregnancy body mass index*		Pre-pregnancy folic acid supplement use†		Pre-pregnancy smoking		Pre-pregnancy alcohol consumption					
	n	%	n	%	n	%	n	%				
Legal (n=89)	Underweight	5	5.7	<=30 days	39	44.3	No	75	84.3	No drinking	31	35.6
	Normal weight	57	64.8	<1/day	9	10.2		Yes	14	15.7	Binge drinking (>=4)	15
	Overweight	18	20.4	Daily use	40	45.5	Missing			< 4 drinks	41	47.1
	Obese	8	9.1	Missing	1					Missing	2	
	Missing	1										
Education, Training, and Library (n=710)	Underweight	20	2.8	<=30 days	351	50.0	No	665	93.7	No drinking	402	56.9
	Normal weight	400	56.3	<1/day	64	9.1				Yes	45	6.3
	Overweight	180	25.4	Daily use	287	40.9	Missing			< 4 drinks	223	31.6
	Obese	110	15.5	Missing	8					Missing	4	
Arts, Design, Entertainment, Sports, and Media (n=146)	Underweight	9	6.3	<=30 days	74	52.1	No	124	84.9	No drinking	65	45.1
	Normal weight	90	62.9	<1/day	9	6.3				Yes	22	15.1
	Overweight	30	21.0	Daily use	59	41.5	Missing			< 4 drinks	57	39.6
	Obese	14	9.8	Missing	4					Missing	2	
	Missing	3										
Healthcare Practitioners and Technical (n=637)	Underweight	14	2.2	<=30 days	301	47.6	No	568	89.2	No drinking	324	51.0
	Normal weight	378	59.5	<1/day	49	7.7				Yes	69	10.8
	Overweight	148	23.3	Daily use	283	44.7	Missing			< 4 drinks	210	33.1
	Obese	95	15.0	Missing	4					Missing	2	
Healthcare Support (n=339)	Underweight	17	5.1	<=30 days	263	77.8	No	249	73.5	No drinking	200	59.3
	Normal weight	135	40.2	<1/day	15	4.4				Yes	90	26.5
	Overweight	96	28.6	Daily use	60	17.8	Missing			< 4 drinks	69	20.5
	Obese	88	26.2	Missing	1					Missing	2	
	Missing	3										

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Occupational Group	Pre-pregnancy body mass index*		Pre-pregnancy folic acid supplement use†		Pre-pregnancy smoking		Pre-pregnancy alcohol consumption					
	n	%	n	%	n	%	n	%				
Office and Administrative Support (n=1406)	Underweight	65	4.6	<=30 days	978	70.2	No	1123	79.9	No drinking	802	57.3
	Normal weight	695	49.5	<1/day	79	5.7				Binge drinking (>=4)	246	17.6
	Overweight	332	23.7	Daily use	337	24.2	Yes	283	20.1	< 4 drinks	351	25.1
	Obese	311	22.2	Missing	12					Missing	7	
	Missing	3										
Farming, Fishing, and Forestry (n=84)	Underweight	5	7.2	<=30 days	75	89.3	No	77	91.7	No drinking	69	82.1
	Normal weight	25	36.2	<1/day	4	4.8				Binge drinking (>=4)	5	6.0
	Overweight	22	31.9	Daily use	5	6.0	Yes	7	8.3	< 4 drinks	10	11.9
	Obese	17	24.6									
	Missing	15										
Construction and Extraction (n=20)	Underweight	1	5.3	<=30 days	20	100.0	No	13	65.0	No drinking	12	60.0
	Normal weight	5	26.3	<1/day	0	0.0				Binge drinking (>=4)	4	20.0
	Overweight	9	47.4	Daily use	0	0.0	Yes	7	35.0	< 4 drinks	4	20.0
	Obese	4	21.1									
	Missing	1										
Installation, Maintenance, and Repair (n=14)	Underweight	0	0.0	<=30 days	7	50.0	No	10	71.4	No drinking	6	46.2
	Normal weight	7	50.0	<1/day	2	14.3				Binge drinking (>=4)	5	38.5
	Overweight	6	42.9	Daily use	5	35.7	Yes	4	28.6	< 4 drinks	2	15.4
	Obese	1	7.1							Missing	1	
Production (n=308)	Underweight	16	5.8	<=30 days	253	84.3	No	231	75.0	No drinking	206	67.3
	Normal weight	132	47.7	<1/day	8	2.7				Binge drinking (>=4)	43	14.1
	Overweight	66	23.8	Daily use	39	13.0	Yes	77	25.0	< 4 drinks	57	18.6
	Obese	63	22.7	Missing	8					Missing	2	
	Missing	31										

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Occupational Group	Pre-pregnancy body mass index*		Pre-pregnancy folic acid supplement use†		Pre-pregnancy smoking		Pre-pregnancy alcohol consumption					
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%				
Transportation and Material Moving (n=159)	Underweight	7	4.9	<=30 days	127	81.4	No Yes	116 43	73.0 27.0	No drinking	105	66.9
	Normal weight	68	47.9	<1/day	8	5.1				Binge drinking (>=4)	20	12.7
	Overweight	37	26.1	Daily use	21	13.5				< 4 drinks	32	20.4
	Obese	30	21.1	Missing	3					Missing	2	
	Missing	17										
Military Specific (n=5)	Underweight	1	20.0	<=30 days	4	80.0	No Yes	4 1	80.0 20.0	No drinking	2	40.0
	Normal weight	4	80.0	<1/day	0	0.0				Binge drinking (>=4)	1	20.0
	Overweight	0	0.0	Daily use	1	20.0				< 4 drinks	2	40.0
	Obese	0	0.0									

Table S2. General linear model evaluating the association between occupation and overall diet quality among mothers of liveborn infants without a birth defect employed during the pre-pregnancy period, National Birth Defects Prevention Study, 1997-2011 (n=7,341)

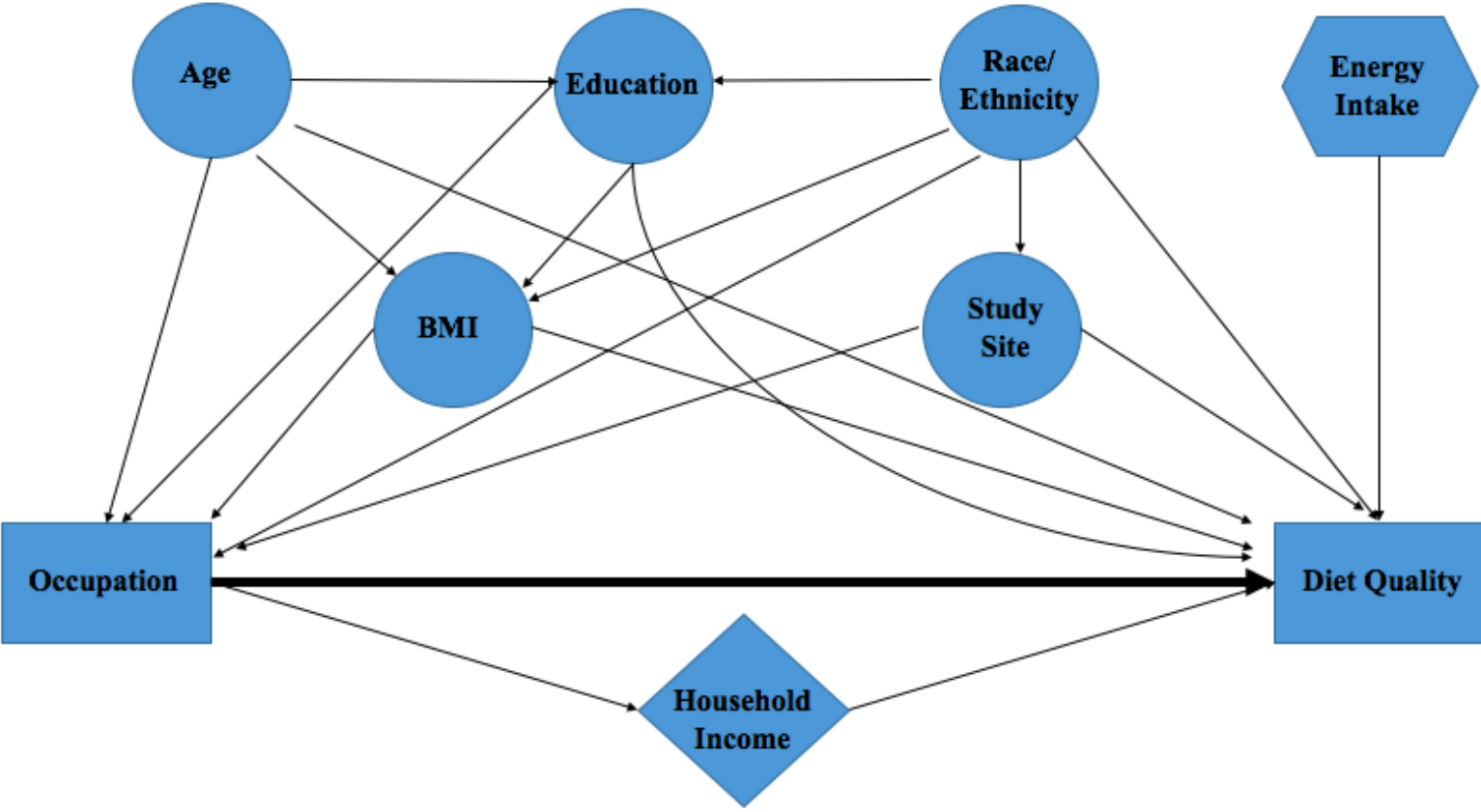
Occupational Group*	Diet Quality Index (DQI)			
	Crude Beta Coefficient	95% CI	Adjusted Beta Coefficient†	95% CI
Management	-0.8	(-1.3, -0.3)	-0.4	(-0.8, 0.0)
Business and Financial Operations	-0.9	(-1.5, -0.3)	-0.2	(-0.7, 0.3)
Computer and Mathematical	0.0	(-0.9, 1.0)	0.4	(-0.3, 1.2)
Architecture and Engineering	1.1	(-0.6, 2.8)	1.0	(-0.4, 2.4)
Life, Physical, and Social Sciences	0.8	(-0.1, 1.8)	0.6	(-0.2, 1.3)
Community and Social Service	0.4	(-0.4, 1.1)	0.8	(0.2, 1.4)
Legal	-1.0	(-2.1, 0.0)	-0.7	(-1.6, 0.1)
Education, Training, and Library	0.3	(-0.1, 0.7)	0.5	(0.1, 0.8)
Arts, Design, Entertainment, Sports, and Media	0.4	(-0.4, 1.3)	0.1	(-0.6, 0.7)
Healthcare Practitioners and Technical	0.0	(-0.4, 0.4)	0.3	(-0.1, 0.6)
Healthcare Support	-0.1	(-0.7, 0.4)	0.1	(-0.3, 0.6)
Protective Service	-0.8	(-2.0, 0.5)	-1.0	(-2.0, 0.0)
Food Preparation and Serving Related	0.3	(-0.1, 0.7)	-0.3	(-0.6, 0.1)
Building and Grounds Cleaning	1.8	(1.0, 2.5)	0.2	(-0.4, 0.8)
Personal Care and Service	0.2	(-0.3, 0.7)	0.3	(-0.1, 0.7)
Sales and Related	-0.2	(-0.6, 0.2)	-0.2	(-0.5, 0.1)
Office and Administrative Support	-0.7	(-1.0, -0.4)	-0.3	(-0.6, -0.1)
Farming, Fishing, and Forestry	3.1	(2.0, 4.2)	1.1	(0.1, 2.1)
Construction and Extraction‡	-	-	-	-
Installation, Maintenance, and Repair‡	-	-	-	-
Production	0.7	(0.1, 1.3)	0.2	(-0.3, 0.7)
Transportation and Material Moving	1.0	(0.2, 1.8)	-0.4	(-1.1, 0.3)
Military Specific‡	-	-	-	-

*The reference group for each occupational group was all the other occupational groups combined

† Adjusted for energy intake, study center, maternal age at conception, maternal education, maternal pre-pregnancy body mass index, and maternal race/ethnicity

‡ Individual comparisons were not completed for occupational groups with fewer than 30 women

Figure S-1. Final Directed Acyclic Graph (DAG) used to inform statistical models



Key

- Exposure/Outcome (represented by a blue rectangle)
- Confounder(s) (represented by a blue circle)
- Strong Predictor(s) of the Outcome (represented by a blue hexagon)
- Mediator(s) (represented by a blue diamond)