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Supplemental Data File

Table S1: Univariable four-level multilevel analysis of the associations between individual independent variables and calcium, iron, and zinc intake.

Variable	Calcium Coef (95%CI)	P value	Iron Coef (95%CI)	P value	Zinc Coef (95%=CI)	P value
Age (year)	2.07 (1.8529, 2.29)	<0.001	0.008 (.005, .01)	<0.001		<0.001
Gender						
Male	Ref		Ref		Ref	
Female	23.14 (20.09, 26.18)	<0.001	0.19 (0.15, 0.24)	<0.001	-0.11 (-0.13, -0.09)	<0.001
Marital Status						
Single	Ref		Ref		Ref	
Married	-1.30 (-15.90, 13.30)	0.862	-0.13 (-0.34, 0.06)	0.187	-0.007 (-0.008, 0.005)	0.526
Widowed	35.72 (18.84, 52.60)	<0.001	0.31 (0.07, 0.54)	0.010	-1.23 (-1.47, -0.99)	<0.001
Divorced	5.29 (-18.52, 29.10)	0.663	0.22 (-0.10, 0.56)	0.180	-0.13 (-0.29, 0.02)	0.094
Other	23.53 (-61.16, 108.23)	0.586	-0.15 (-1.34, 1.02)	0.792	-0.41 (-0.97, 0.14)	0.147
Education						
Illiterate	Ref		Ref		Ref	
Up to Diploma	-23.39 (-27.58, -19.19)	<0.001	-0.19 (-0.25, -0.13)	<0.001	0.15 (0.12, 0.18)	<0.001
Up to Bachelor's Degree	-30.21 (-37.266, -23.15)	<0.001	-0.27 (-0.36, -0.17)	<0.001	0.47 (0.43, 0.52)	<0.001
Master's Degree and above	-34.52 (-47.80, -21.23)	<0.001	-0.52 (-0.71, -0.33)	<0.001	0.61 (0.52, 0.70)	<0.001
Socioeconomic Status						
The poorest	Ref		Ref		Ref	
Poor	-9.47 (-14.76, -4.19)	<0.001	-0.16 (-0.24, -0.09)	<0.001	0.20 (0.16, 0.23)	<0.001
Middle	-23.19 (-28.85, -17.53)	<0.001	-0.33 (-0.40, -0.25)	<0.001	0.33 (0.30, 0.37)	<0.001
Rich	-20.76 (-26.70, -14.82)	<0.001	-0.37 (-0.46, -0.29)	<0.001	0.45 (0.41, 0.49)	<0.001
The Richest	-32.89 (-39.41, -26.37)	<0.001	-0.49 (-0.58, -0.40)	<0.001	0.69 (0.65, 0.74)	<0.001
Smoking Status						

Never smoker	Ref		Ref		Ref	
Current smoker	-27.19 (-32.30, -22.08)	<0.001	-0.33 (-0.40, -0.26)	<0.001	-0.01 (-0.05, 0.01)	**0.271**
Former smoker	-54.34 (-60.33, -48.35)	<0.001	-0.49 (-0.57, -0.40)	<0.001	0.01 (-0.02, 0.05)	**0.523**
Physical Activity (MET)	0.03 (-0.20, 0.27)	**0.785**	-0.002 (-0.005, 0.001)	0.173	-0.002 (-0.004, -0.001)	<0.001
Body Mass Index						
Normal	Ref		Ref		Ref	
Underweight	-31.65 (-44.58, -18.71)	<0.001	-0.48 (-0.66, -0.30)	<0.001	-0.16 (-0.25, -0.08)	<0.001
Overweight	12.31 (8.20, 16.42)	<0.001	0.13 (0.07, 0.19)	<0.001	0.08 (0.05, 0.11)	<0.001
Obesity	24.11 (19.61, 28.62)	<0.001	0.24 (0.18, 0.31)	<0.001	0.09 (0.06, 0.12)	<0.001
DMF (Number of teeth)	-0.41 (-0.61, -0.21)	<0.001	-0.01 (-0.01, -0.01)	<0.001	-0.01 (-0.02, -0.01)	<0.001
Sleep Duration (Hour)	0.02(-0.63, 0.69)	**0.931**	-0.01 (-0.01, -0.0008)	0.032	-0.008 (-0.01, -0.004)	<0.001
Hypertension						
No	Ref		Ref		Ref	
Yes	27.29 (23.35, 31.23)	<0.001	0.30 (0.25, 0.36)	<0.001	-0.006 (-0.03, 0.01)	**0.619**
Diabetes						
No	Ref		Ref		Ref	
Yes	55.28 (50.63, 59.93)	<0.001	0.68 (0.62, 0.75)	<0.001	0.16 (0.12, 0.19)	<0.001
Cardiovascular Disease						
No	Ref		Ref		Ref	
Yes	32.31 (28.35, 36.27)	<0.001	0.30 (0.24, 0.36)	<0.001	-0.02 (-0.05, 0.002)	0.075
Metabolic Syndrome						
No	Ref		Ref		Ref	
Yes	31.21 (27.59, 34.82)	<0.001	0.41 (0.36, 0.46)	<0.001	0.07 (0.04, 0.09)	<0.001
Time						
Baseline	Ref		Ref		Ref	
Reassessment	-34.62 (-37.36, -31.88)	<0.001	0.06 (-0.32, 0.45)	0.228	-0.17 (-0.19, -0.16)	<0.001

Ref: Reference group; CI: Confidence Interval; Items with P<0.05 are displayed in regular font; Items with P>0.05 are highlighted in bold font. Each independent variable was evaluated separately in a four-level multilevel model using the same four-level structure as the main model.

Table S2. Mean unadjusted paired changes in calcium, iron, and zinc intake (mg/day) by interview center during the study period (2015–2021).

Interview Center	**Calcium(**mg/day**)**	**Iron(**mg/day)	**Zinc(**mg/day**)**
Ravansar	-102.2	-0.64	-0.07
Gillan	**-27.5**	0.10	**-0.005**
Fasa	**-396.9**	**-5.6**	-2.16
Azar	-213.1	-2.31	-1.6
Kharameh	-0.93	-0.73	-0.57
Mazandaran	-111.4	-1.42	-0.81
Zahedan	-44.7	**-0.07**	-0.46
Yazd	-183.7	-3.11	-1.7
Rafsanjan	-151.1	-2.9	-1.4
Hovayzeh	-114.5	-1.1	-0.86
Shahrekord	-74.8	-0.99	-1.03
Bandare kong	-253.3	-3.95	**-2.59**
Urmia	-147.4	-2.16	-1.51
Ardabil	-85.1	-0.77	-1.2
Sabzevar	-160	-2.6	-1.8
Dena	-226.2	-2.38	-1.67
Kevar	-156.3	-2.34	-0.95