Supplementary Table S1. Characteristics of the total sample based on level of cognitive status.

N=352

N(%)		Good Cognitive status 207(58.8)	Low cognitive status 145(41.2)	P value
Age (years)		72 ± 7 (73)	75 ± 8 (74)	
Age80		25(12.1)	42(29)	<0.001
Income	Insufficient	110(53.1)	88(60.7)	0.16
	Sufficient	97(46.9)	57(39.3)	
Marital status	Married	136(65.7)	96(66.2)	0.92
Living conditions	Living with partner	118(57)	84(57.9)	0.482
	Living with others	61(29.5)	36(24.8)	
	Living alone	28(13.5)	25(17.2)	
Gender	Men	104(50.2)	72(49.7)	0.914
	Women	103(49.8)	73(50.3)	
Living in Beirut	Beirut	18(8.7)	43(29.7)	<0.001
BMI (kg/m^2)	<22	55(26.6)	54(37.2)	0.103
	22-27	19(9.2)	11(7.6)	
	>27	133(64.3)	80(55.2)	
		0.65 ± 0.08 (0.65)	0.65 ± 0.09 (0.64)	
WHTR	>0.718	38(18.9)	30(21.7)	0.522
Dependency	High	1(0.5)	9(6.2)	<0.001
	Low	20(9.7)	26(17.9)	
	No	186(89.9)	110(75.9)	
Physical Activity	Sedentary	165(79.7)	110(75.9)	0.629
	Regular active	40(19.3)	34(23.4)	
	Optimal active	2(1)	1(0.7)	
Multimorbidity		155(75.2)	115(79.3)	0.373
More than 2 age-related conditions		101(48.8)	88(60.7)	0.028
Polypharmacy		150(72.8)	104(75.4)	0.598
Frailty		19(9.2)	34(23.4)	<0.001
Malnutrition		5(2.4)	14(9.7)	0.003
Good health perception		102(50.2)	45(31.3)	<0.001
Dietary patterns	WDP	20(9.7)	22(15.2)	0.089
	HIMED-DP	43(20.8)	38(26.2)	
	MODMED-DP	144(69.6)	85(58.6)	

Values are presented as Mean ± standard deviation (median). P value represent statistical significance for T-test or Mann-Whitney for respectively normal or non-normally distributed data. Categorical variables are represented as N (percentage). P-value represent statistical significance for Pearson Chi-square.

Supplementary Table S2. Comparison between characteristics of literate and illiterate with low CS.

		Illiterate group	Literate group	p value
Age(yrs)		76.7±7.3 (76.5)	72.9±8.8 (72)	0.006
Living in Beirut	Beirut	24(37.5)	19(23.5)	0.066
	Other Region	40(62.5)	62(76.5)	
Gender	Men	24(37.5)	48(59.3)	0.009
	Women	40(62.5)	33(40.7)	
Income	Insufficient	45(70.3)	43(53.1)	0.035
	Sufficient	19(29.7)	38(46.9)	
Married	Married	40(62.5)	56(69.1)	0.402
Living conditions	Living with partner	36(56.3)	48(59.3)	0.680
	Living with others	15(23.4)	21(25.9)	
	Living alone	13(20.3)	12(14.8)	
BMI(kg/m2)		29.75±6.77 (28.14)	27.85±4.9 (27.35)	0.052
	<22	21(32.8)	33(40.7)	0.613
	22-27	5(7.8)	6(7.4)	
	>27	38(59.4)	42(51.9)	
WC(cm)		103.77±12.92 (101.7)	102.05±11.68 (101)	0.415
WHTR		0.68±0.1(0.67)	0.63±0.08(0.62)	0.002
	> 0.718	22(34.9)	8(10.7)	0.001
	<0.718	41(65.1)	67(89.3)	
HGS (kg)		18.35±7.64 (17.9)	26.38±9.12 (23.87)	0.001
	Low	49(77.8)	33(45.2)	<0.001
	Good	14(22.2)	40(54.8)	
Multimorbidity		56(87.5)	59(72.8)	0.030
Age-related conditions		49(76.6)	39(48.1)	0.001
Polypharmacy		42(70)	62(79.5)	0.200
Malnourishment		6(9.4)	8(9.9)	0.919
Good health perception		9(14.1)	36(45)	<0.001
Frailty		19(29.7)	15(18.5)	0.115
Mental health	Good	18(28.1)	36(45)	0.038
	Poor	46(71.9)	44(55)	
Physical Activity	Sedentary	52(81.3)	58(71.6)	0.164
	Regular active	11(17.2)	23(28.4)	
	Optimal active	1(1.6)	0(0)	
Caloric intake	Kcal/kg BW	26.4±8.9 (26.2)	28.3±9.2 (27.4)	0.225
Dietary patterns	WDP	9(14.1)	13(16)	0.947
	HIMED-DP	17(26.6)	21(25.9)	
	MODMED-DP	38(59.4)	47(58)	

Values are presented as Mean ± standard deviation (median). P value represent statistical significance for T-test or Mann-Whitney for respectively normal or non-normally distributed data. Categorical variables are represented as N (percentage). P-value represent statistical significance for Pearson Chi-square.

Supplementary Table S3. Health and functional status of participants living in Beirut and participants living in the other regions of Lebanon.

		Beirut (N= 61)	Other Regions (N=291)	P value
Multi-morbidity	**≤ 1 disease**	8 (13.3)	73 (25.1)	0.049
	> 1 disease	52 (86.7)	218 (74.9)	
Age-related conditions	**≤ 1 disability**	17 (27.9)	146 (50.2)	0.001
	> 1 disability	44 (72.1)	145 (49.8)	
Polypharmacy	**≥ 6 Medications**	43 (75.4)	211 (73.5)	0.763
	< 6 Medications	14 (24.6)	76 (26.5)	
Physical Activity	**Sedentary**	41 (67.2)	234 (80.4)	0.037
	Regular active	20 (32.8)	54 (18.6)	
	Optimal active	0 (0)	3 (1)	
Dependency status	**High dependency**	1 (1.6)	9 (3.1)	0.764
	Low dependency	9 (14.8)	37 (12.7)	
	Independent	51 (83.6)	245 (84.2)	
Frailty status	**Frail**	12 (19.7)	41 (14.1)	0.268
	Not Frail	49 (80.3)	250 (85.9)	
Hand grip strength	**Low HGS**	34 (56.7)	137 (50.2)	0.363
	Good HGS	26 (43.3)	136 (49.8)	
	Strength (kg)	23.5 ± 8.5 (22.7)	24.5 ± 9.6 (23.3)	0.585
Fall during the past year	**No falls**	41 (67.2)	216 (74.2)	0.456
	Fall occurrence	20 (32.8)	74 (25.4)	
Cognitive decline	**Good cognitive test**	34 (55.7)	202 (64.4)	0.039
	Low cognitive test	27 (44.3)	89 (30.6)	
	Family History	7 (11.5)	62 (21.3)	0.079
Smoking status	**Non-smoker**	24 (39.3)	142 (48.8)	0.388
	Smoker	24 (39.3)	93 (32)	
	Previous smoker	13 (21.3)	56 (19.2)	

Values are presented as Mean ± standard deviation (median). P value represent statistical significance for T-test or Mann-Whitney for respectively normal or non-normally distributed data. Categorical variables are represented as N (percentage). P-value represent statistical significance for Pearson Chi-square.

Supplementary Table S4. Nutritional & anthropometric characteristics: comparison between living in Beirut vs living in other regions.

		Beirut (N= 61)	Other Regions (N=291)	P value
Nutritional status	**poor**	37 (60.7)	90 (30.9)	<0.001
	good	24 (39.3)	201 (69.1)	
BMI (kg/m$^{2)}$	**Mean**	29.8 ± 6.3	29 ± 5.7	0.221
	BMI < 22	21 (34.4)	88 (30.2)	0.724
	BMI (22–27)	4 (6.6)	26 (8.9)	
	BMI > 27	36 (59)	177 (60.8)	
WTHR		0.67 ± 0.11 [0.65]	0.64 ± 0.08 [0.64]	0.013

Abbreviations: BMI: body mass index; MAC: midarm circumference; WTHR: waist to height ratio; HSG: handgrip strength. Numeric variables are represented as median (interquartile range). Categorical variables are represented as N (percentage). Numeric variables are represented as mean ± SD [median]

Supplementary Table S5. Comparison of nutrient intakes between participants living in Beirut vs participants living in other regions.

	Beirut	Others	P value
	(N= 61)	(N=291)	
Energy Cal/d	1626.31 ± 398.41 [1627]	2000.42 ± 619.93 [1900]	0.001
Protein (g/d)	56.95 ± 16.34 [57.4]	70.61 ± 25.59 [68]	0.001
Carbohydrates (g/d)	180.54 ± 51.38 [177]	221.18 ± 77.22 [206]	0.006
Sugars (g/d)	56.65 ± 23.15 [53.4]	63.96 ± 30.26 [58]	0.556
Fibers (g/d)	16.68 ± 5.63 [16.5]	20.86 ± 7.8 [19.4]	0.003
Fat (g/d)	78.6 ± 20.37 [79.9]	97.28 ± 31.51 [92.5]	0.001
SAFA (% TEI)	12.9 ± 2.6 [12.2]	12.2 ± 2.72 [12.2]	0.346
MUFA (% TEI)	18.96 ± 3.88 [18.6]	19.71 ± 4.52 [19.1]	0.247
PUFA (% TEI)	8.63 ± 2.21 [8.5]	8.89 ± 2.53 [8.5]	0.792
W3 FA (g/d)	0.59 ± 0.3 [0.52]	0.89 ± 0.63 [0.69]	0.006
W6 FA (g/d)	11.09 ± 4.78 [10.6]	13.82 ± 6.56 [13]	0.12
W6/W3 ratio	19.95 ± 6.78 [20.76]	18.41 ± 7.87 [18.6]	0.355
Cholesterol (mg/d)	222.53 ± 127.42 [187]	252.44 ± 149.38 [223]	0.214
VIT A (µg/d)	765.98 ± 626.63 [543]	953.26 ± 839.86 [751]	0.582
VIT D (µg/d)	1.27 ± 0.83 [1.06]	1.34 ± 0.99 [1.1]	0.112
VIT E (mg/d)	9.47 ± 2.94 [9.02]	11.76 ± 4.19 [10.8]	0.02
VIT K (µg/d)	234.42 ± 163.62 [208]	317.09 ± 204.1 [272]	0.097
VIT C (mg/d)	89.73 ± 50.93 [78.5]	104.54 ± 57.01 [91.9]	0.284
VIT B1 (mg/d)	0.89 ± 0.26 [0.93]	1.12 ± 0.39 [1.05]	<0.001
VIT B2 (mg/d)	1.48 ± 0.49 [1.47]	1.69 ± 0.64 [1.64]	0.18
VIT B3 (mg/d)	17.36 ± 7.13 [15.9]	21.08 ± 8.92 [20.1]	0.041
VIT B6 (mg/d)	1.28 ± 0.38 [1.27]	3.15 ± 28.35 [1.49]	0.406
VIT B9 (µg/d)	293.15 ± 116.75 [278]	354.97 ± 136.37 [335]	0.047
VIT B12 (µg/d)	4.51 ± 4.35 [3.36]	5.54 ± 6.17 [3.86]	0.411
Mg (mg/d)	309.03 ± 115.5 [294]	371.73 ± 142.12 [355]	0.092
Ca (mg/d)	651.66 ± 212.95 [621]	765.58 ± 304.35 [733]	0.032
P (mg/d)	886.92 ± 239.91 [862]	1101.33 ± 386.14 [1069]	0.003
Fe (mg/d)	9.62 ± 2.9 [9.26]	12.37 ± 4.67 [11.6]	0.001
Zn (mg/d)	8.61 ± 2.47 [8.31]	10.38 ± 3.95 [10.3]	<0.001
Se (µg/d)	73.2 ± 28.54 [68]	88.92 ± 39.65 [86.8]	0.007

Supplementary Table S6: Socio-demographic characteristics of participants living region in Beirut and participants living in the other regions of Lebanon.

		Beirut (N= 61)	Other Regions (N=291)	P value
Age (years)		74 ± 7.1 [73]	73.1 ± 7.8 [73]	0.449
Gender	**Men**	29 (47.5)	147 (50.5)	0.673
	Women	32 (52.5)	144 (49.5)	
Economic status	**Insufficient**	43 (70.5)	155 (53.3)	0.014
	Sufficient	18 (29.5)	136 (46.7)	
Marital status	**Married**	36 (59)	196 (67.4)	0.217
	Divorced	4 (6.6)	6 (2.1)	
	Single	3 (4.9)	15 (5.2)	
	Widowed	18 (29.5)	74 (25.4)	
Living conditions	**Living with partner**	31 (50.8)	171 (58.8)	0.073
	Living with others	15 (24.6)	82 (28.2)	
	Living alone	15 (24.6)	38 (13.1)	
Education	**Illiteracy**	28 (45.9%)	79 (27.1%)	0.031
	Less than elementary	3 (4.9%)	39 (13.4%)	
	Elementary	15 (24.6%)	65 (22.3%)	
	Complementary	6 (9.8%)	40 (13.7%)	
	Baccalaureate	3 (4.9%)	37 (12.7%)	

Values are presented as Mean ± standard deviation (median). P value represent statistical significance for T-test or Mann-Whitney for respectively normal or non-normally distributed data. Categorical variables are represented as N (percentage). P-value represent statistical significance for Pearson Chi-square.

Supplementary Table S7. Comparison of food consumption and dietary patterns based on cognitive status and level of literacy.

		Literate			Illiterate		
		GCS	CI	*P value*	GCS	CI	*P value*
Food & Food group							
Whole cereals & products		1.8 ± 2.1 (1)	1.9 ± 2 (1.1)	0.628	1.4 ± 1.6(0.6)	1.1 ± 1.4(0.3)	0.326
Refined flour products		3.8 ± 3.3 (3.3)	3.4 ± 2.5 (2.9)	0.331	4.3 ± 2.6(4.3)	3.3 ± 2.5(3.4)	0.326
Rice		0.4 ± 0.4 (0.3)	0.5 ± 0.4 (0.4)	0.085	0.34 ± 0.32 (0.2)	0.4 ± 0.4 (0.3)	0.270
Vegetables		3.6 ± 1.6 (3.4)	3.7 ± 2 (3)	0.906	3.4 ± 1.9(3)	3 ± 2(2.4)	0.210
Potato		0.4 ± 0.3 (0.3)	0.3 ± 0.3 (0.3)	0.649	0.5 ± 0.5(0.3)	0.3 ± 0.3 (0.2)	0.042
Fruits		2.2 ± 1.3 (1.9)	2.4 ± 1.4 (2.4)	0.342	2.2 ± 1.3(1.9)	2.1 ± 1.2(1.9)	0.745
Fruits & Vegetables		5.9 ± 2.3 (5.6)	6.1 ± 2.7 (5.9)	0.546	5.6 ± 2.6 (5.5)	5 ± 2.6 (4.6)	0.263
Milk & dairy products		1.7 ± 1 (1.4)	1.6 ± 1 (1.6)	0.356	1.5 ± 0.8(1.3)	1.6 ± 0.8(1.5)	0.416
Meat and poultry		2.3 ± 1.5 (2.1)	2.3 ± 1.5 (1.9)	0.867	2.3 ± 1.3(2)	2.1 ± 1.2(1.9)	0.621
Fish & shellfish		0.6 ± 0.6 (0.4)	0.6 ± 0.6 (0.4)	0.604	0.5 ± 0.7(0.4)	0.6 ± 0.7(0.3)	0.822
Eggs		0.4 ± 0.5 (0.3)	0.4 ± 0.5 (0.3)	0.978	0.4 ± 0.3(0.3)	0.4 ± 0.4(0.3)	0.262
Beans		0.5 ± 0.5 (0.3)	0.6 ± 0.7 (0.5)	0.06	0.5 ± 0.4(0.6)	0.6 ± 0.8(0.3)	0.441
Olives. seeds and oleaginous		5.8 ± 3.7 (4.9)	6.5 ± 4 (6.1)	0.192	5.6 ± 3.1(4.5)	6 ± 3.2(6)	0.486
Vegetable oils		2.6 ± 1.7 (3)	3 ± 1.8 (3)	0.085	2.8 ± 1.6(3)	2.7 ± 1.5(3)	0.552
Processed & saturated fats		0.4 ± 0.8 (0)	0.3 ± 0.6 (0)	0.212	0.4 ± 1(0)	0.2 ± 0.6(0)	0.352
High Fat Sweets		0.3 ± 0.5 (0.1)	0.4 ± 0.7 (0.1)	0.201	0.3 ± 0.6(0.1)	0.2 ± 0.3(0.1)	0.102
Low Fat Sweets		0.5 ± 0.8 (0.2)	0.9 ± 1.2 (0.3)	0.002	0.5 ± 0.9(0.2)	0.6 ± 1.1(0.2)	0.643
Sugars and jams		2.4 ± 3.2 (1.1)	3.3 ± 3 (2.5)	0.045	3.4 ± 4.9(1.7)	3.4 ± 4.4(2)	0.980
Coffee		3 ± 3 (3)	2.8 ± 2.4 (2)	0.841	3 ± 2.9 (2.5)	2.3 ± 1.9 (2)	0.155
Tea		0.8 ± 1 (0.3)	0.7 ± 0.9 (0.4)	0.786	1.1 ± 0.9 (1)	0.7 ± 0.9 (0.3)	0.029
Dietary patterns	**WDP**	14(8.4)	13(16.05)	0.113	6(15)	9(14)	0.379
	HI-MEDDP	37(22.2)	21(25.9)		6(15)	17(26.6)	
	MOD-MEDDP	116(69.5)	47(58)		28(70)	38(59.4)	

Abbreviations: GCS: good cognitive status, CI: cognitive impairment.
Values are presented as Mean ± standard deviation (median).
P value represent statistical significance for T-test or Mann-Whitney for respectively normal or non-normally distributed data.
Categorical variables are represented as total count (percentage). P-value represent statistical significance for Pearson Chi-square.