

Supplemental File 2. The association between health risk factors and the nutritional status of children

No	Factors (number of children)		The number of children (%)				p-value
			Overweight	Obesity	Overweight or Obesity	Thinness or Normal	
		Total (782)	169 (21.61)	112 (14.32)	281 (35.93)	501 (64.07)	
A	Demographic and socio-economic characteristics of children and their parents						
1	Child's sex	Male (373)	84 (22.52)	89 (23.86)	173 (46.38)	200 (53.62)	<0.0001
		Female (409)	85 (20.78)	23 (5.62)	108 (26.41)	301 (73.59)	
2	Child's age (months)	72 to 83 (145)	31 (21.38)	24 (16.55)	55 (37.93)	90 (62.07)	0.2292
		84 to 95 (158)	30 (18.99)	22 (13.92)	52 (32.91)	106 (67.09)	
		96 to 107 (178)	41 (23.03)	34 (19.10)	75 (42.13)	103 (57.87)	
		108 to 119 (170)	35 (20.59)	24 (14.12)	59 (34.71)	111 (65.29)	
		120 to 131 (131)	32 (24.43)	8 (6.11)	40 (30.53)	91 (69.47)	
3	Grade	One (145)	31 (21.38)	24 (16.55)	55 (37.93)	90 (62.07)	0.2045
		Two (159)	30 (18.87)	22 (13.84)	52 (32.70)	107 (67.30)	
		Three (177)	41 (23.16)	34 (19.21)	75 (42.37)	102 (57.63)	
		Four (170)	35 (20.59)	24 (14.12)	59 (34.71)	111 (65.29)	
		Five (131)	32 (24.43)	8 (6.11)	40 (30.53)	91 (69.47)	
4	Area (school location)	Urban (562)	121 (21.53)	84 (14.95)	205 (36.48)	357 (63.52)	0.6721
		Suburb (220)	48 (21.82)	28 (12.73)	76 (34.55)	144 (65.45)	
5	School type	Public (557)	119 (21.36)	71 (12.75)	190 (34.11)	367 (65.89)	0.1121
		Private (225)	50 (22.22)	41 (18.22)	91 (40.44)	134 (59.56)	

No	Factors (number of children)		The number of children (%)				p-value
			Overweight	Obesity	Overweight or Obesity	Thinness or Normal	
6	The number of children in the family (including the child in this study)	1 (62)	17 (27.42)	15 (24.19)	32 (51.61)	30 (48.39)	0.0146*
		2 (571)	118 (20.67)	81 (14.19)	199 (34.85)	372 (65.15)	
		3 (125)	28 (22.40)	13 (10.40)	41 (32.80)	84 (67.20)	
		4 (18)	6 (33.33)	3 (16.67)	9 (50.00)	9 (50.00)	
		5 (6)	0 (0.00)	0 (0.00)	0 (0.00)	6 (100.00)	
7	Father's education	Under secondary (23)	2 (8.70)	0 (0.00)	2 (8.70)	21 (91.30)	0.0390
		Secondary (74)	19 (25.68)	10 (13.51)	29 (39.19)	45 (60.81)	
		High school (238)	48 (20.17)	30 (12.61)	78 (32.77)	160 (67.23)	
		University (367)	83 (22.62)	59 (16.08)	142 (38.69)	225 (61.31)	
		Post-university (80)	17 (21.25)	13 (16.25)	30 (37.50)	50 (62.50)	
8	Father's occupation	Blue-collar worker (515)	107 (20.78)	66 (12.82)	173 (33.59)	342 (66.41)	0.0693
		White-collar worker (267)	62 (23.22)	46 (17.23)	108 (40.45)	159 (59.55)	
9	Mother's education	Under secondary (18)	2 (11.11)	0 (0.00)	2 (11.11)	16 (88.89)	0.0851
		Secondary (81)	18 (22.22)	8 (9.88)	26 (32.10)	55 (67.90)	
		High school (215)	45 (20.93)	26 (12.09)	71 (33.02)	144 (66.98)	
		University (404)	90 (22.28)	69 (17.08)	159 (39.36)	245 (60.64)	
		Post-university (64)	14 (21.88)	9 (14.06)	23 (35.94)	41 (64.06)	
10	Mother's occupation	Blue-collar worker (438)	82 (18.72)	54 (12.33)	136 (31.05)	302 (68.95)	0.0017
		White-collar worker (344)	87 (25.29)	58 (16.86)	145 (42.15)	199 (57.85)	

No	Factors (number of children)		The number of children (%)				p-value
			Overweight	Obesity	Overweight or Obesity	Thinness or Normal	
11	People living with the child	Mother and father (695)	143 (20.58)	95 (13.67)	238 (34.24)	457 (65.76)	0.0021*
		Only father (9)	4 (44.44)	4 (44.44)	8 (88.89)	1 (11.11)	
		Only mother (36)	11 (30.56)	6 (16.67)	17 (47.22)	19 (52.78)	
		Others (grandparents, aunts...) (42)	11 (26.19)	7 (16.67)	18 (42.86)	24 (57.14)	
12	Family income per month in 2020 (million Vietnam dongs)	< 10 (284)	52 (18.31)	29 (10.21)	81 (28.52)	203 (71.48)	0.0011
		10 - 19.99 (312)	70 (22.44)	44 (14.10)	114 (36.54)	198 (63.46)	
		20 - 29.99 (131)	36 (27.48)	27 (20.61)	63 (48.09)	68 (51.91)	
		30 or more (55)	11 (20.00)	12 (21.82)	23 (41.82)	32 (58.18)	
B	Dietary habits of children (Rarely: 1-3 days/month or one day/week, Sometimes: 2-4 days/week, Usually: 5-6 days/week)						
1	Breakfast	Never (21)	3 (14.29)	4 (19.05)	7 (33.33)	14 (66.67)	0.9312
		Rarely (15)	4 (26.67)	2 (13.33)	6 (40.00)	9 (60.00)	
		Sometimes (25)	5 (20.00)	4 (16.00)	9 (36.00)	16 (64.00)	
		Usually (28)	6 (21.43)	2 (7.14)	8 (28.57)	20 (71.43)	
		Every day (693)	151 (21.79)	100 (14.43)	251 (36.22)	442 (63.78)	
2	Lunch	Never (20)	5 (25.00)	3 (15.00)	8 (40.00)	12 (60.00)	0.8795*
		Rarely (11)	2 (18.18)	1 (9.09)	3 (27.27)	8 (72.73)	
		Sometimes (8)	1 (12.50)	2 (25.00)	3 (37.50)	5 (62.50)	
		Usually (13)	3 (23.08)	3 (23.08)	6 (46.15)	7 (53.85)	
		Every day (730)	158 (21.64)	103 (14.11)	261 (35.75)	469 (64.25)	

No	Factors (number of children)		The number of children (%)				p-value
			Overweight	Obesity	Overweight or Obesity	Thinness or Normal	
3	Dinner	Never (30)	5 (16.67)	3 (10.00)	8 (26.67)	22 (73.33)	0.6717*
		Rarely (11)	3 (27.27)	2 (18.18)	5 (45.45)	6 (54.55)	
		Sometimes (9)	1 (11.11)	1 (11.11)	2 (22.22)	7 (77.78)	
		Usually (19)	3 (15.79)	3 (15.79)	6 (31.58)	13 (68.42)	
		Every day (713)	157 (22.02)	103 (14.45)	260 (36.47)	453 (63.53)	
4	Eating after 20:00	Never/Rarely (453)	95 (20.97)	69 (15.23)	164 (36.20)	289 (63.80)	0.334
		Sometimes (285)	62 (21.75)	35 (12.28)	97 (34.04)	188 (65.96)	
		Usually/Every day (44)	12 (27.27)	8 (18.18)	20 (45.45)	24 (54.55)	
5	Eating vegetables	Never/Rarely (71)	17 (23.94)	10 (14.08)	27 (38.03)	44 (61.97)	0.4536
		Sometimes (250)	53 (21.20)	29 (11.60)	82 (32.80)	168 (67.20)	
		Usually/Every day (461)	99 (21.48)	73 (15.84)	172 (37.31)	289 (62.69)	
6	Eating confectionery, sweet foods	Never/Rarely (125)	34 (27.20)	24 (19.20)	58 (46.40)	67 (53.60)	0.0172
		Sometimes (549)	115 (20.95)	76 (13.84)	191 (34.79)	358 (65.21)	
		Usually/Every day (108)	20 (18.52)	12 (11.11)	32 (29.63)	76 (70.37)	
7	Eating fast food	Never/Rarely (332)	70 (21.08)	52 (15.66)	122 (36.75)	210 (63.25)	0.4471
		Sometimes (429)	93 (21.68)	56 (13.05)	149 (34.73)	280 (65.27)	
		Usually/Every day (21)	6 (28.57)	4 (19.05)	10 (47.62)	11 (52.38)	
8	Drinking soda, soft drinks	Never/Rarely (336)	69 (20.54)	57 (16.96)	126 (37.50)	210 (62.50)	0.3225
		Sometimes (420)	97 (23.10)	52 (12.38)	149 (35.48)	271 (64.52)	
		Usually/Every day (26)	3 (11.54)	3 (11.54)	6 (23.08)	20 (76.92)	

No	Factors (number of children)		The number of children (%)				p-value	
			Overweight	Obesity	Overweight or Obesity	Thinness or Normal		
C	Physical and sedentary activities of children							
1	Doing household chores	Yes (677)		151 (22.30)	91 (13.44)	242 (35.75)	435 (64.25)	0.8664
		No (105)		18 (17.14)	21 (20.00)	39 (37.14)	66 (62.86)	
2	Playing sports	Yes (491)		114 (23.22)	82 (16.70)	196 (39.92)	295 (60.08)	0.0033
		No (291)		55 (18.90)	30 (10.31)	85 (29.21)	206 (70.79)	
3	Types of sports	Football	Yes (191)	50 (26.18)	36 (18.85)	86 (45.03)	105 (54.97)	0.0034
			No (591)	119 (20.14)	76 (12.86)	195 (32.99)	396 (67.01)	
		Skipping	Yes (115)	19 (16.52)	6 (5.22)	25 (21.74)	90 (78.26)	0.0009
			No (667)	150 (22.49)	106 (15.89)	256 (38.38)	411 (61.62)	
		Badminton	Yes (112)	25 (22.32)	20 (17.86)	45 (40.18)	67 (59.82)	0.3654
			No (670)	144 (21.49)	92 (13.73)	236 (35.22)	434 (64.78)	
		Running, jogging	Yes (107)	24 (22.43)	17 (15.89)	41 (38.32)	66 (61.68)	0.6564
			No (675)	145 (21.48)	95 (14.07)	240 (35.56)	435 (64.44)	
		Marterial arts	Yes (40)	14 (35.00)	7 (17.50)	21 (52.50)	19 (47.50)	0.0382
			No (742)	155 (20.89)	105 (14.15)	260 (35.04)	482 (64.96)	
		Cycling	Yes (36)	6 (16.67)	8 (22.22)	14 (38.89)	22 (61.11)	0.841
			No (746)	163 (21.85)	104 (13.94)	267 (35.79)	479 (64.21)	
		Shuttlecock kicking	Yes (21)	4 (19.05)	4 (19.05)	8 (38.10)	13 (61.90)	1
			No (761)	165 (21.68)	108 (14.19)	273 (35.87)	488 (64.13)	

No	Factors (number of children)			The number of children (%)				p-value
				Overweight	Obesity	Overweight or Obesity	Thinness or Normal	
3	Types of sports	Basketball	Yes (18)	7 (38.89)	5 (27.78)	12 (66.67)	6 (33.33)	0.0124
			No (764)	162 (21.20)	107 (14.01)	269 (35.21)	495 (64.79)	
		Other sports (swimming, table tennis...)	Yes (32)	8 (25.00)	5 (15.63)	13 (40.63)	19 (59.38)	0.7064
			No (750)	161 (21.47)	107 (14.27)	268 (35.73)	482 (64.27)	
4	The number of times playing sports per week	Not playing sports (291)		55 (18.90)	30 (10.31)	85 (29.21)	206 (70.79)	0.0430
		1 to 2 times (187)		43 (22.99)	36 (19.25)	79 (42.25)	108 (57.75)	
		3 to 4 times (146)		37 (25.34)	20 (13.70)	57 (39.04)	89 (60.96)	
		5 to 6 times (69)		16 (23.19)	10 (14.49)	26 (37.68)	43 (62.32)	
		7 times or more (89)		18 (20.22)	16 (17.98)	34 (38.20)	55 (61.80)	
5	The total time of playing sports per week	Not playing sports (291)		55 (18.90)	30 (10.31)	85 (29.21)	206 (70.79)	0.0050
		Less than 1h (102)		21 (20.59)	20 (19.61)	41 (40.20)	61 (59.80)	
		1h - less than 2h (172)		29 (16.86)	28 (16.28)	57 (33.14)	115 (66.86)	
		2h - less than 3h (87)		32 (36.78)	10 (11.49)	42 (48.28)	45 (51.72)	
		3h - less than 4h (48)		12 (25.00)	6 (12.50)	18 (37.50)	30 (62.50)	
		4h or more (82)		20 (24.39)	18 (21.95)	38 (46.34)	44 (53.66)	
6	Mode of transport to school	On foot (78)		16 (20.51)	9 (11.54)	25 (32.05)	53 (67.95)	0.0416
		Bicycle (153)		26 (16.99)	17 (11.11)	43 (28.10)	110 (71.90)	
		Motorbike/car/bus (551)		127 (23.05)	86 (15.61)	213 (38.66)	338 (61.34)	

No	Factors (number of children)		The number of children (%)				p-value
			Overweight	Obesity	Overweight or Obesity	Thinness or Normal	
7	Watching television	Never (168)	33 (19.64)	14 (8.33)	47 (27.98)	121 (72.02)	0.0208*
		Less than 1h/day (402)	92 (22.89)	70 (17.41)	162 (40.30)	240 (59.70)	
		From 1h to 3h/day (210)	43 (20.48)	28 (13.33)	71 (33.81)	139 (66.19)	
		More than 3h/day (2)	1 (50.00)	0 (0.00)	1 (50.00)	1 (50.00)	
8	Using computers, laptops	Never (687)	141 (20.52)	99 (14.41)	240 (34.93)	447 (65.07)	0.1486*
		Less than 1h/day (78)	24 (30.77)	11 (14.10)	35 (44.87)	43 (55.13)	
		From 1h to 3h/day (16)	3 (18.75)	2 (12.50)	5 (31.25)	11 (68.75)	
		More than 3h/day (1)	1 (100.00)	0 (0.00)	1 (100.00)	0 (0.00)	
9	Using phones, tablets	Never (451)	94 (20.84)	70 (15.52)	164 (36.36)	287 (63.64)	0.562
		Less than 1h/day (264)	59 (22.35)	36 (13.64)	95 (35.98)	169 (64.02)	
		From 1h to 3h/day (66)	15 (22.73)	6 (9.09)	21 (31.82)	45 (68.18)	
		More than 3h/day (1)	1 (100.00)	0 (0.00)	1 (100.00)	0 (0.00)	
10	Reading books, newspapers, magazines for fun	Never (400)	70 (17.50)	63 (15.75)	133 (33.25)	267 (66.75)	0.0613
		Less than 1h/day (320)	83 (25.94)	40 (12.50)	123 (38.44)	197 (61.56)	
		From 1h to 3h/day (59)	14 (23.73)	8 (13.56)	22 (37.29)	37 (62.71)	
		More than 3h/day (3)	2 (66.67)	1 (33.33)	3 (100.00)	0 (0.00)	
11	The total time of sedentary activities	Less than 1h/day (314)	59 (18.79)	43 (13.69)	102 (32.48)	212 (67.52)	0.1763
		From 1h to 2h/day (398)	85 (21.36)	64 (16.08)	149 (37.44)	249 (62.56)	
		More than 2h/day (70)	25 (35.71)	5 (7.14)	30 (42.86)	40 (57.14)	

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		Overweight	Obesity	Overweight or Obesity	Thinness or Normal	
	1. p-values were calculated using the Chi-squared test and Fisher’s exact test. *: using Fisher’s exact test 2. Occupation: Blue-collar workers (people who do work needing strength or physical skill rather than office work, for example, farmers, drivers, traders). White-collar workers (people who work in offices, doing work needings mental rather than physical effort, for example, doctors, teachers) 3. Exchange rate: 1 million Vietnam dongs = 42.828US\$) 4. h: hour					