

T21032

Mothusi

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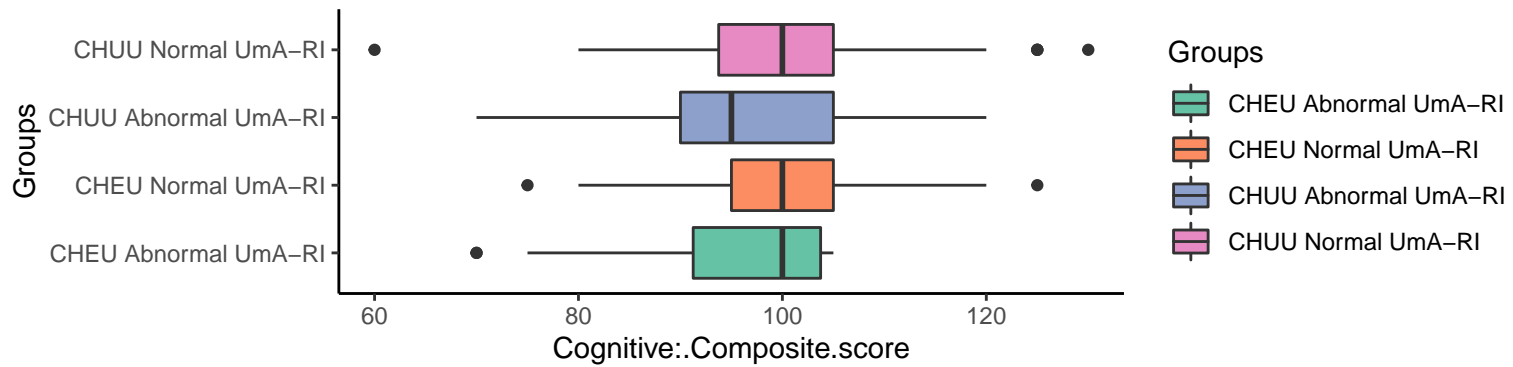
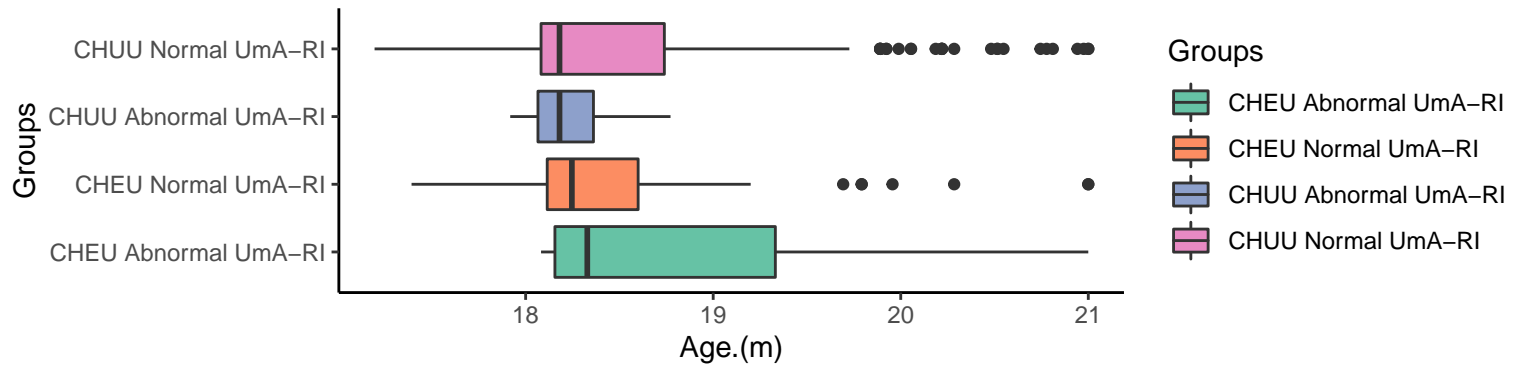
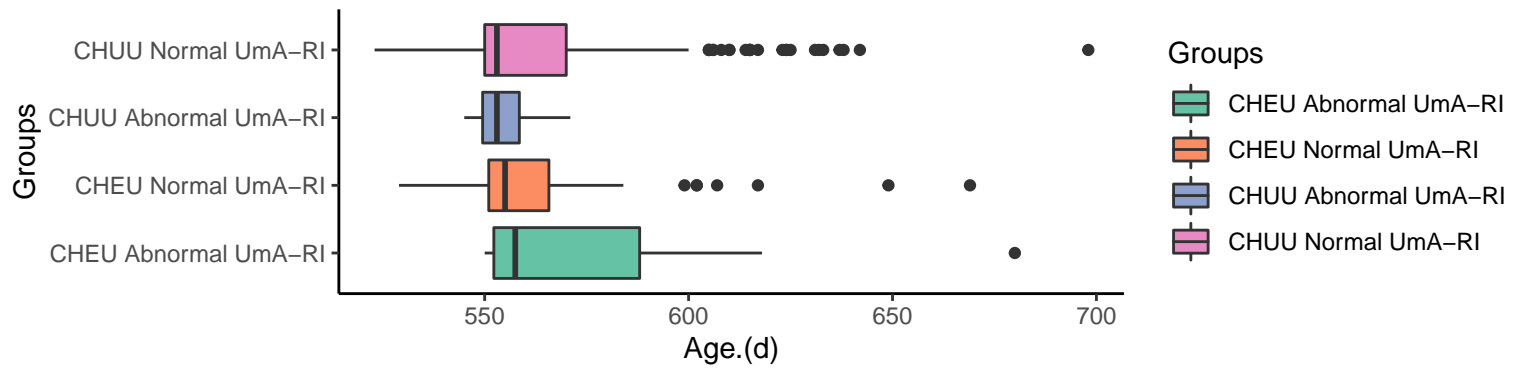
1 Descriptive Results and Statistical Investigations

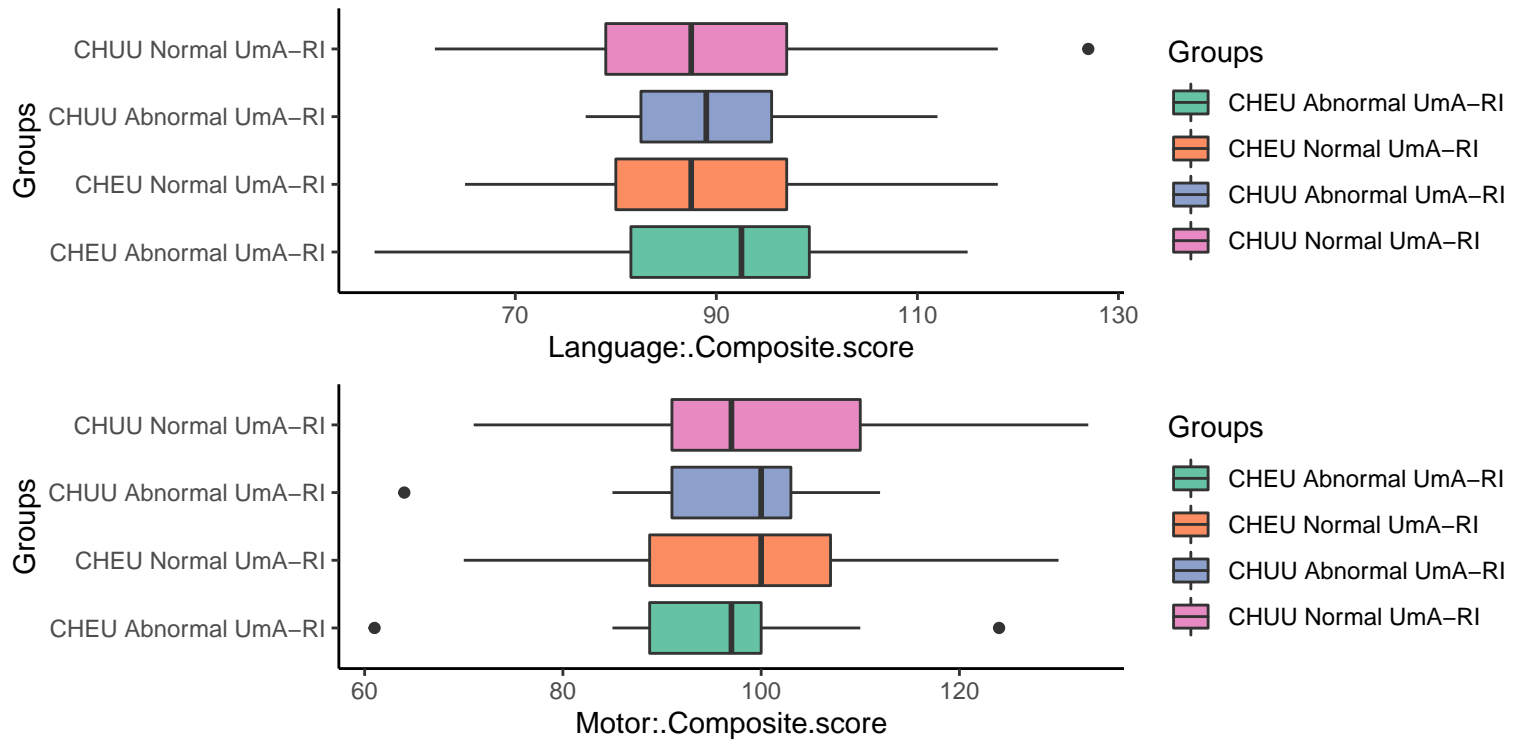
1.1 Bayleys

For this section, the control group was compared individually to the other three.

	DataA (N = 263)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 180)
Sex					
Missing Values	0	0	0	0	0
Male	128 (48.7%)	4 (28.6%)	28 (56.0%)	8 (42.1%)	88 (48.9%)
Female	135 (51.3%)	10 (71.4%)	22 (44.0%)	11 (57.9%)	92 (51.1%)
Age (days)					
Missing Values	0	0	0	0	0
min	523	550	529	545	523
max	698	680	669	571	698
n; mean (sd)	564.37 \pm 27.21	575.36 \pm 37.53	564.50 \pm 26.55	554.58 \pm 6.60	564.51 \pm 27.64
n; median (iqr)	554.00 (550.00, 568.00)	557.50 (552.25, 588.00)	555.00 (551.00, 565.75)	553.00 (549.50, 558.50)	553.00 (550.00, 570.00)
mean (CI)	564.37 (95% CI: 561.08, 567.65)	575.36 (95% CI: 555.70, 595.02)	564.50 (95% CI: 557.14, 571.86)	554.58 (95% CI: 551.61, 557.55)	564.51 (95% CI: 560.47, 568.54)
Age (months)					
Missing Values	0	0	0	0	0
min	17.1945205479452	18.0821917808219	17.3917808219178	17.9178082191781	17.1945205479452
max	21	21	21	18.772602739726	21
n; mean (sd)	18.54 \pm 0.83	18.82 \pm 0.97	18.53 \pm 0.78	18.23 \pm 0.22	18.55 \pm 0.87
n; median (iqr)	18.21 (18.08, 18.67)	18.33 (18.16, 19.33)	18.25 (18.12, 18.60)	18.18 (18.07, 18.36)	18.18 (18.08, 18.74)
mean (CI)	18.54 (95% CI: 18.44, 18.64)	18.82 (95% CI: 18.31, 19.33)	18.53 (95% CI: 18.32, 18.75)	18.23 (95% CI: 18.14, 18.33)	18.55 (95% CI: 18.42, 18.67)
Cognitive: Composite score					
Missing Values	0	0	0	0	0
min	60	70	75	70	60
max	130	105	125	120	130
n; mean (sd)	99.71 \pm 10.89	93.93 \pm 12.89	100.38 \pm 10.25	98.16 \pm 11.69	100.14 \pm 10.76
n; median (iqr)	100.00 (95.00, 105.00)	100.00 (91.25, 103.75)	100.00 (95.00, 105.00)	95.00 (90.00, 105.00)	100.00 (93.75, 105.00)
mean (CI)	99.71 (95% CI: 98.40, 101.03)	93.93 (95% CI: 87.18, 100.68)	100.38 (95% CI: 97.54, 103.22)	98.16 (95% CI: 92.90, 103.42)	100.14 (95% CI: 98.57, 101.71)
Categorical analysis					
Missing Values	0	0	0	0	0
0	250 (95.1%)	11 (78.6%)	46 (92.0%)	18 (94.7%)	175 (97.2%)
1	11 (4.2%)	3 (21.4%)	4 (8.0%)	0 (0.0%)	4 (2.2%)
2	2 (0.8%)	0 (0.0%)	0 (0.0%)	1 (5.3%)	1 (0.6%)

	DataA (N = 263)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 180)
Language: Composite					
score					
Missing Values	0	0	0	0	0
min	56	56	65	77	62
max	127	115	118	112	127
n; mean (sd)	89.42 \pm 12.27	90.93 \pm 15.78	88.66 \pm 11.36	90.58 \pm 10.62	89.39 \pm 12.46
n; median (iqr)	89.00 (79.00, 97.00)	92.50 (81.50, 99.25)	87.50 (80.00, 97.00)	89.00 (82.50, 95.50)	87.50 (79.00, 97.00)
mean (CI)	89.42 (95% CI: 87.94, 90.91)	90.93 (95% CI: 82.66, 99.20)	88.66 (95% CI: 85.51, 91.81)	90.58 (95% CI: 85.81, 95.35)	89.39 (95% CI: 87.57, 91.21)
Categorical analysis					
Missing Values	0	0	0	0	0
0	163 (62.0%)	10 (71.4%)	31 (62.0%)	14 (73.7%)	108 (60.0%)
1	93 (35.4%)	3 (21.4%)	18 (36.0%)	5 (26.3%)	67 (37.2%)
2	7 (2.7%)	1 (7.1%)	1 (2.0%)	0 (0.0%)	5 (2.8%)
Motor: Composite					
score					
Missing Values	0	0	0	0	0
min	61	61	70	64	71
max	133	124	130	112	133
n; mean (sd)	99.50 \pm 12.03	95.64 \pm 14.24	99.42 \pm 12.81	97.89 \pm 11.64	99.99 \pm 11.70
n; median (iqr)	97.00 (91.00, 107.00)	97.00 (88.75, 100.00)	100.00 (88.75, 107.00)	100.00 (91.00, 103.00)	97.00 (91.00, 110.00)
mean (CI)	99.50 (95% CI: 98.04, 100.95)	95.64 (95% CI: 88.18, 103.10)	99.42 (95% CI: 95.87, 102.97)	97.89 (95% CI: 92.66, 103.13)	99.99 (95% CI: 98.28, 101.70)
Categorical analysis					
Missing Values	0	0	0	0	0
0	245 (93.2%)	13 (92.9%)	44 (88.0%)	18 (94.7%)	170 (94.4%)
1	16 (6.1%)	0 (0.0%)	6 (12.0%)	0 (0.0%)	10 (5.6%)
2	2 (0.8%)	1 (7.1%)	0 (0.0%)	1 (5.3%)	0 (0.0%)





The following investigation will compare each of the three groups against our baseline (normal group) in order to determine if significant differences exists. In all instances we used the Shapiro Wilk test to determine if the data was normally distributed. If the data was normal, the independent t-test was used to compare the groups while the Mann Whitney U tests was used in the non-normal cases. All tests were performed at a 5% level of significance.

1.1.1 HUU Normal vs HUU Abnormal

- The p-value for `Cognitive::Composite.score` (not normal) was: 0.5448
- The p-value for `Language::Composite.score` (not normal) was: 0.579
- The p-value for `Motor::Composite.score` (not normal) was: 0.8516

1.1.2 HUU Normal vs HEU Normal

- The p-value for `Cognitive::Composite.score` (not normal) was: 0.6107
- The p-value for `Language::Composite.score` (not normal) was: 0.818
- The p-value for `Motor::Composite.score` (not normal) was: 0.8273

1.1.3 HUU Normal vs HUE Abnormal

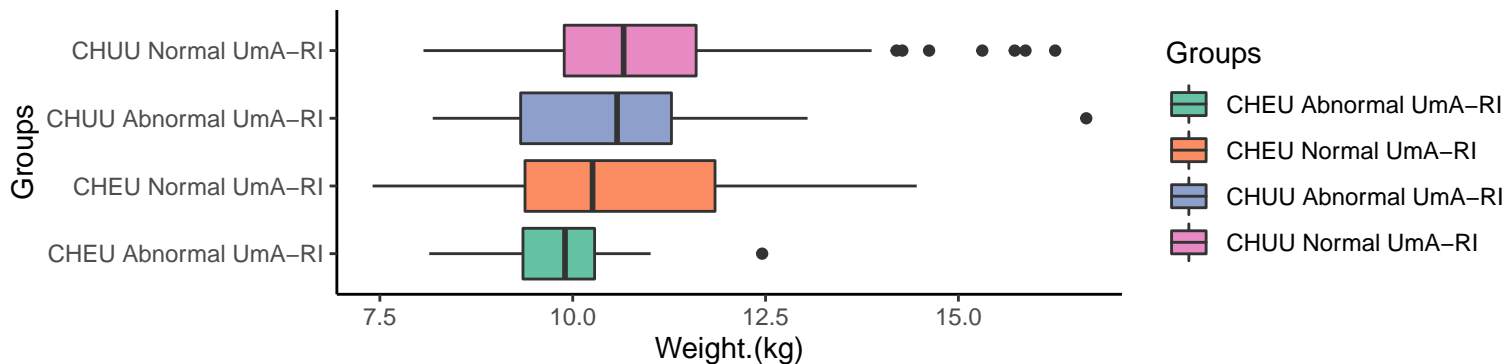
- The p-value for `Cognitive:.Composite.score` (not normal) was: 0.2503
- The p-value for `Language:.Composite.score` (not normal) was: 0.48
- The p-value for `Motor:.Composite.score` (not normal) was: 0.3282

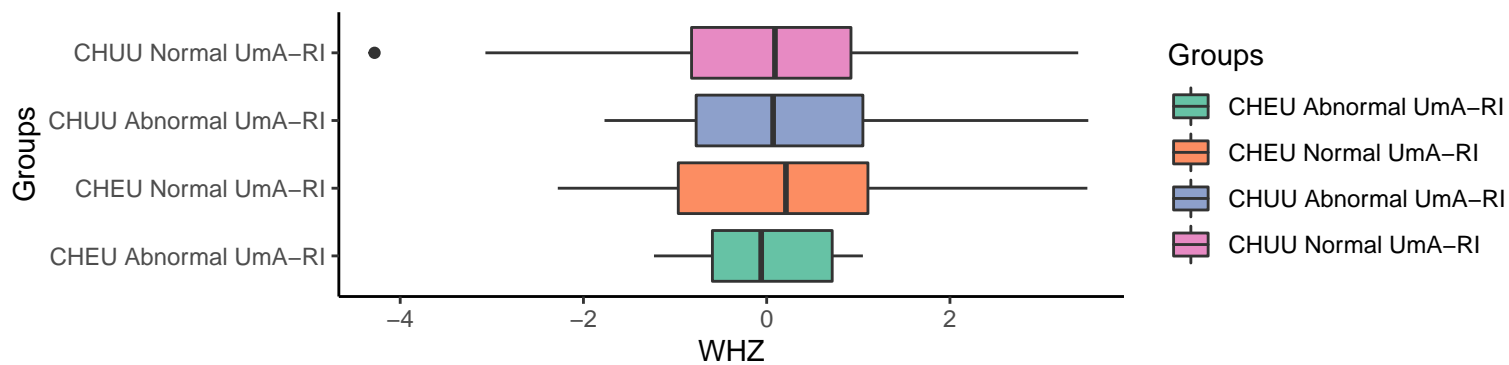
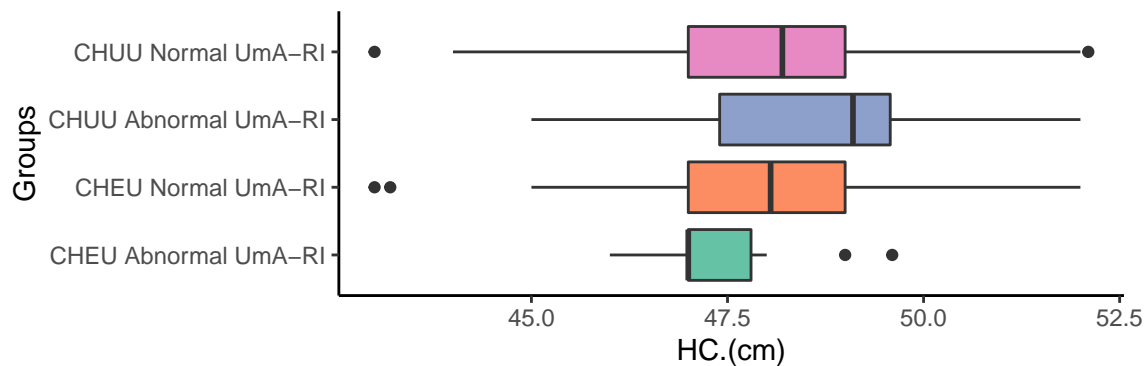
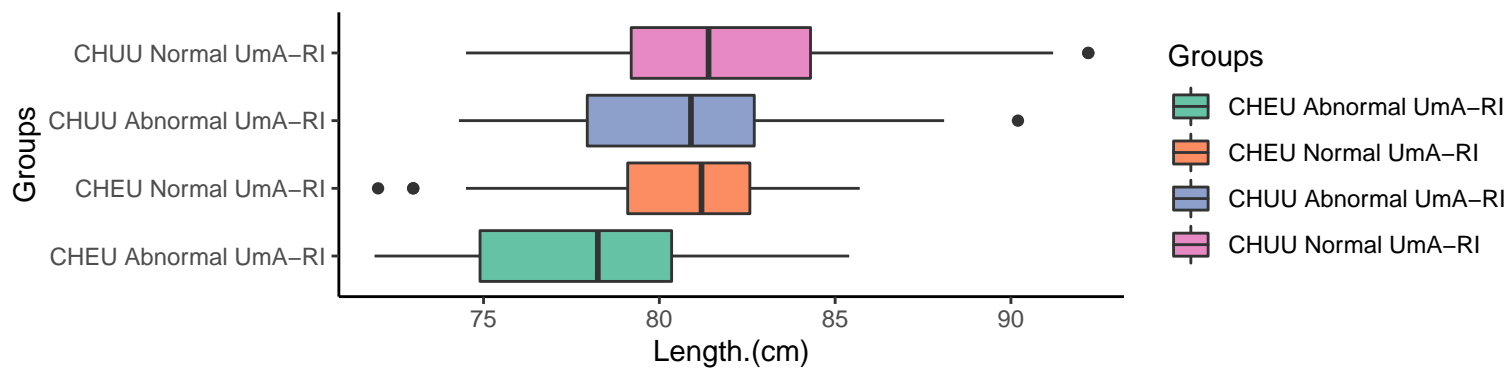
1.2 Anthropometry

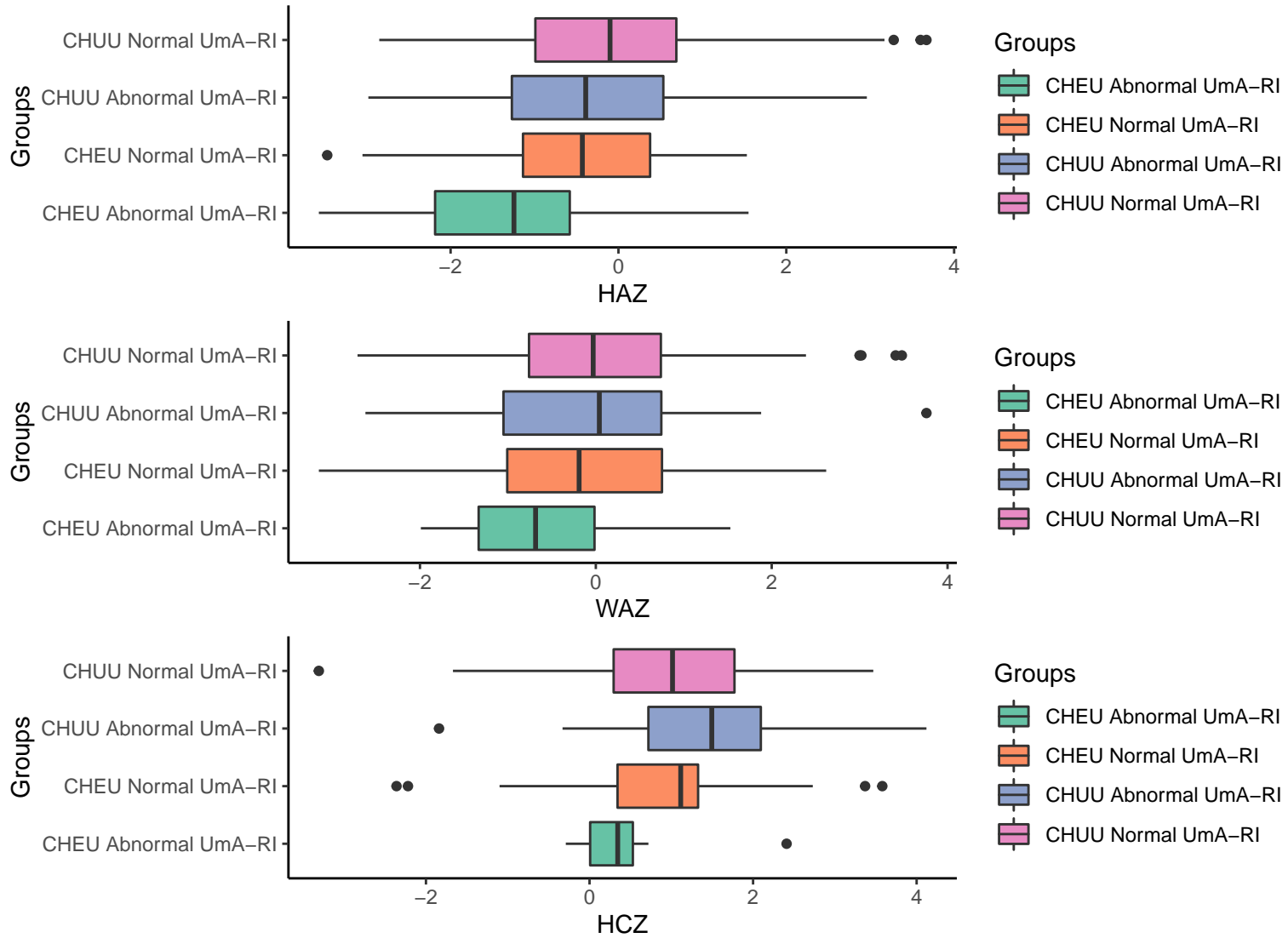
For this section, the control group was compared individually to the other three.

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Age.(m)					
Missing Values	0	0	0	0	0
min	17.1945205479452	18.0821917808219	17.3917808219178	17.9178082191781	17.1945205479452
max	21	21	21	18.772602739726	21
n; mean (sd)	18.54 \pm 0.83	18.82 \pm 0.97	18.53 \pm 0.78	18.23 \pm 0.22	18.55 \pm 0.86
n; median (iqr)	18.20 (18.08, 18.66)	18.33 (18.16, 19.33)	18.25 (18.12, 18.60)	18.18 (18.07, 18.36)	18.18 (18.08, 18.74)
mean (CI)	18.54 (95% CI: 18.44, 18.63)	18.82 (95% CI: 18.31, 19.33)	18.53 (95% CI: 18.32, 18.75)	18.23 (95% CI: 18.14, 18.33)	18.55 (95% CI: 18.42, 18.67)
Weight (kg)					
Missing Values	0	0	0	0	0
min	7.405	8.14	7.405	8.185	8.065
max	16.658	12.456	14.46	16.658	16.255
n; mean (sd)	10.79 \pm 1.61	9.92 \pm 1.07	10.72 \pm 1.75	10.82 \pm 1.97	10.87 \pm 1.55
n; median (iqr)	10.55 (9.59, 11.61)	9.90 (9.36, 10.28)	10.26 (9.38, 11.85)	10.57 (9.32, 11.28)	10.66 (9.89, 11.60)
mean (CI)	10.79 (95% CI: 10.60, 10.98)	9.92 (95% CI: 9.36, 10.48)	10.72 (95% CI: 10.24, 11.21)	10.82 (95% CI: 9.94, 11.70)	10.87 (95% CI: 10.65, 11.10)
Length (cm)					
Missing Values	0	0	0	0	0
min	71.9	71.9	72	74.3	74.5
max	92.2	85.4	85.7	90.2	92.2
n; mean (sd)	81.36 \pm 3.83	78.11 \pm 3.65	80.55 \pm 3.26	81.02 \pm 4.19	81.88 \pm 3.81
n; median (iqr)	81.20 (79.00, 83.58)	78.25 (74.90, 80.35)	81.20 (79.10, 82.57)	80.90 (77.95, 82.70)	81.40 (79.20, 84.30)
mean (CI)	81.36 (95% CI: 80.90, 81.83)	78.11 (95% CI: 76.19, 80.02)	80.55 (95% CI: 79.64, 81.45)	81.02 (95% CI: 79.14, 82.90)	81.88 (95% CI: 81.32, 82.43)
HC (cm)					
Missing Values	6	0	0	1	5
min	43	46	43	45	43
max	52.1	49.6	52	52	52.1
n; mean (sd)	258; 48.09 \pm 1.65	47.29 \pm 1.05	48.08 \pm 1.85	18; 48.66 \pm 1.73	176; 48.10 \pm 1.60
n; median (iqr)	258; 48.00 (47.00, 49.00)	47.00 (47.00, 47.80)	48.05 (47.00, 49.00)	18; 49.10 (47.40, 49.58)	176; 48.20 (47.00, 49.00)
mean (CI)	48.09 (95% CI: 47.89, 48.29)	47.29 (95% CI: 46.74, 47.84)	48.08 (95% CI: 47.57, 48.59)	48.66 (95% CI: 47.86, 49.46)	48.10 (95% CI: 47.87, 48.34)
WHZ					
Missing Values	0	0	0	0	0
min	-4.28	-1.23	-2.28	-1.77	-4.28
max	3.51	1.05	3.5	3.51	3.4
n; mean (sd)	0.10 \pm 1.25	0.03 \pm 0.77	0.19 \pm 1.46	0.15 \pm 1.33	0.07 \pm 1.21

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
n; median (iqr)	0.09 (-0.82, 0.97)	-0.06 (-0.59, 0.71)	0.21 (-0.96, 1.10)	0.07 (-0.77, 1.05)	0.09 (-0.82, 0.92)
mean (CI)	0.10 (95% CI: -0.05, 0.25)	0.03 (95% CI: -0.38, 0.43)	0.19 (95% CI: -0.21, 0.60)	0.15 (95% CI: -0.45, 0.75)	0.07 (95% CI: -0.10, 0.25)
HAZ					
Missing Values	0	0	0	0	0
min	-3.57	-3.57	-3.47	-2.98	-2.85
max	3.67	1.55	1.53	2.96	3.67
n; mean (sd)	-0.22 ± 1.34	-1.35 ± 1.35	-0.56 ± 1.16	-0.24 ± 1.57	-0.04 ± 1.31
n; median (iqr)	-0.27 (-1.11, 0.51)	-1.25 (-2.19, -0.58)	-0.43 (-1.14, 0.38)	-0.39 (-1.27, 0.54)	-0.10 (-0.99, 0.69)
mean (CI)	-0.22 (95% CI: -0.39, -0.06)	-1.35 (95% CI: -2.06, -0.64)	-0.56 (95% CI: -0.88, -0.23)	-0.24 (95% CI: -0.94, 0.47)	-0.04 (95% CI: -0.24, 0.15)
WAZ					
Missing Values	0	0	0	0	0
min	-3.15	-1.99	-3.15	-2.62	-2.71
max	3.76	1.53	2.62	3.76	3.48
n; mean (sd)	-0.03 ± 1.22	-0.63 ± 0.96	-0.11 ± 1.32	0.01 ± 1.55	0.04 ± 1.16
n; median (iqr)	-0.07 (-0.88, 0.72)	-0.69 (-1.33, -0.01)	-0.19 (-1.01, 0.75)	0.04 (-1.05, 0.74)	-0.03 (-0.76, 0.74)
mean (CI)	-0.03 (95% CI: -0.17, 0.12)	-0.63 (95% CI: -1.13, -0.13)	-0.11 (95% CI: -0.48, 0.25)	0.01 (95% CI: -0.69, 0.71)	0.04 (95% CI: -0.13, 0.21)
HCZ					
Missing Values	6	0	0	1	5
min	-3.31	-0.29	-2.36	-1.84	-3.31
max	4.12	2.41	3.58	4.12	3.47
n; mean (sd)	258; 0.89 ± 1.17	0.42 ± 0.66	0.83 ± 1.23	18; 1.37 ± 1.42	176; 0.90 ± 1.15
n; median (iqr)	258; 0.92 (0.28, 1.69)	0.34 (0.01, 0.53)	1.11 (0.34, 1.33)	18; 1.50 (0.72, 2.10)	176; 1.02 (0.29, 1.77)
mean (CI)	0.89 (95% CI: 0.75, 1.03)	0.42 (95% CI: 0.07, 0.76)	0.83 (95% CI: 0.49, 1.17)	1.37 (95% CI: 0.71, 2.03)	0.90 (95% CI: 0.73, 1.07)







The following investigation will compare each of the three groups against our baseline (normal group) in order to determine if significant differences exists. In all instances we used the Shapiro Wilk test to determine if the data was normally distributed. If the data was normal, the independent t-test was used to compare the groups while the Mann Whitney U tests was used in the non-normal cases. All tests were performed at a 5% level of significance.

1.2.1 HUU Normal vs HUU Abnormal

- The p-value for `Weight.(kg)` (not normal) was: 0.5996

- The p-value for `Length.(cm)` (not normal) was: 0.3063
- The p-value for `HC.(cm)` (not normal) was: 0.1151
- The p-value for `WHZ` (normal) was: 0.8113
- The p-value for `HAZ` (not normal) was: 0.4787
- The p-value for `WAZ` (normal) was: 0.93
- The p-value for `HCZ` (normal) was: 0.1886

1.2.2 HUU Normal vs HEU Normal

- The p-value for `Weight.(kg)` (not normal) was: 0.5973
- The p-value for `Length.(cm)` (not normal) was: 0.1265
- The p-value for `HC.(cm)` (not normal) was: 0.9941
- The p-value for `WHZ` (normal) was: 0.5859
- The p-value for `HAZ` (not normal) was: 0.0711
- The p-value for `WAZ` (normal) was: 0.4589
- The p-value for `HCZ` (normal) was: 0.7141

1.2.3 HUU Normal vs HUE Abnormal

- The p-value for `Weight.(kg)` (not normal) was: 0.0153
- The p-value for `Length.(cm)` (not normal) was: 0.0013
- The p-value for `HC.(cm)` (not normal) was: 0.0238
- The p-value for `WHZ` (normal) was: 0.8425
- The p-value for `HAZ` (not normal) was: 0.001
- The p-value for `WAZ` (normal) was: 0.0239
- The p-value for `HCZ` (not normal) was: 0.035

(When comparing all 4 groups) For all the numerical variables: In all instances we used the Shapiro Wilk test to determine if the data was normally distributed. The ANOVA tests was used for the normal instances while the Kruskal Wallis H test was used as the data was non-normal. All tests were performed at a 5% level of significance.

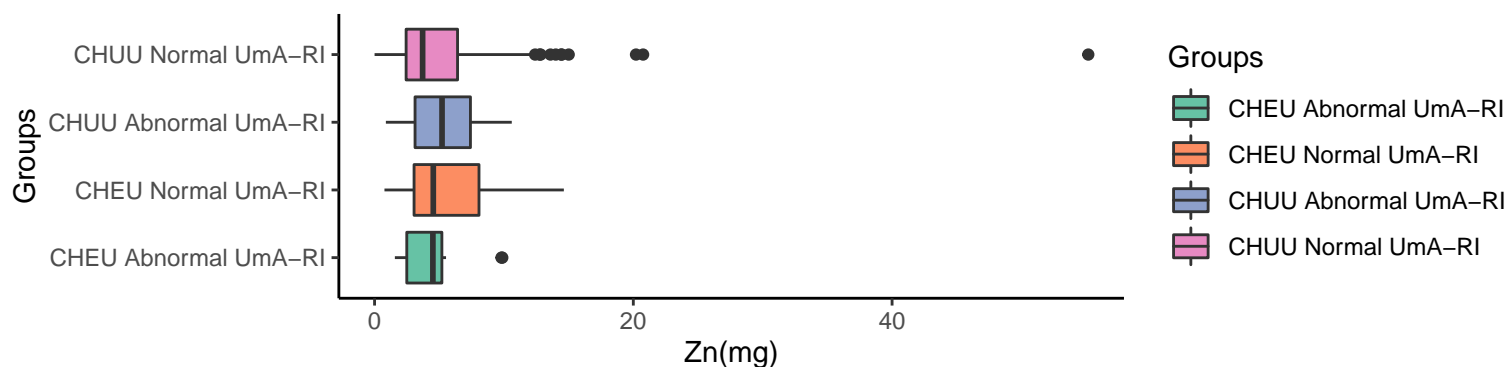
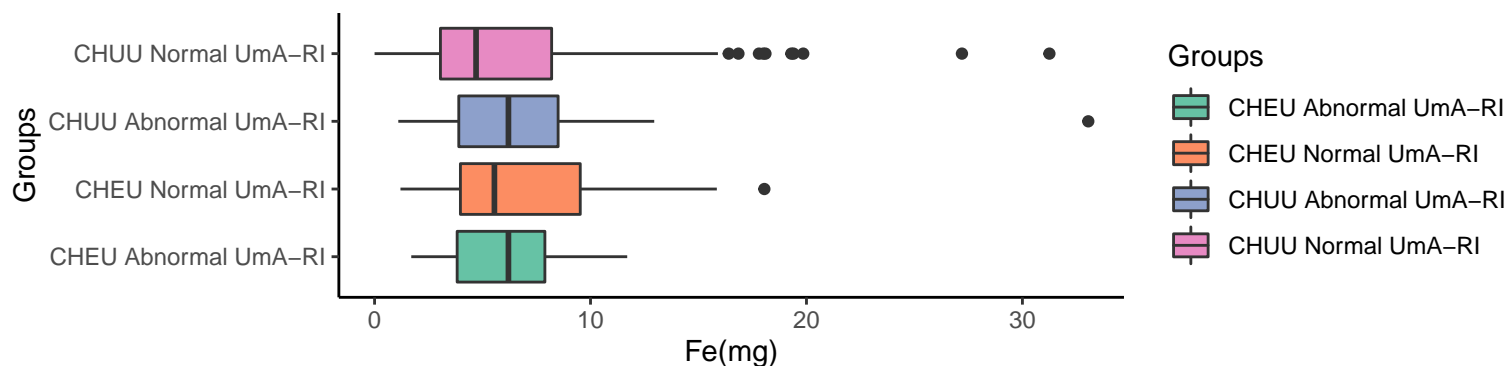
- The p-value for `Age.(m)` (not normal) was: 0.4223

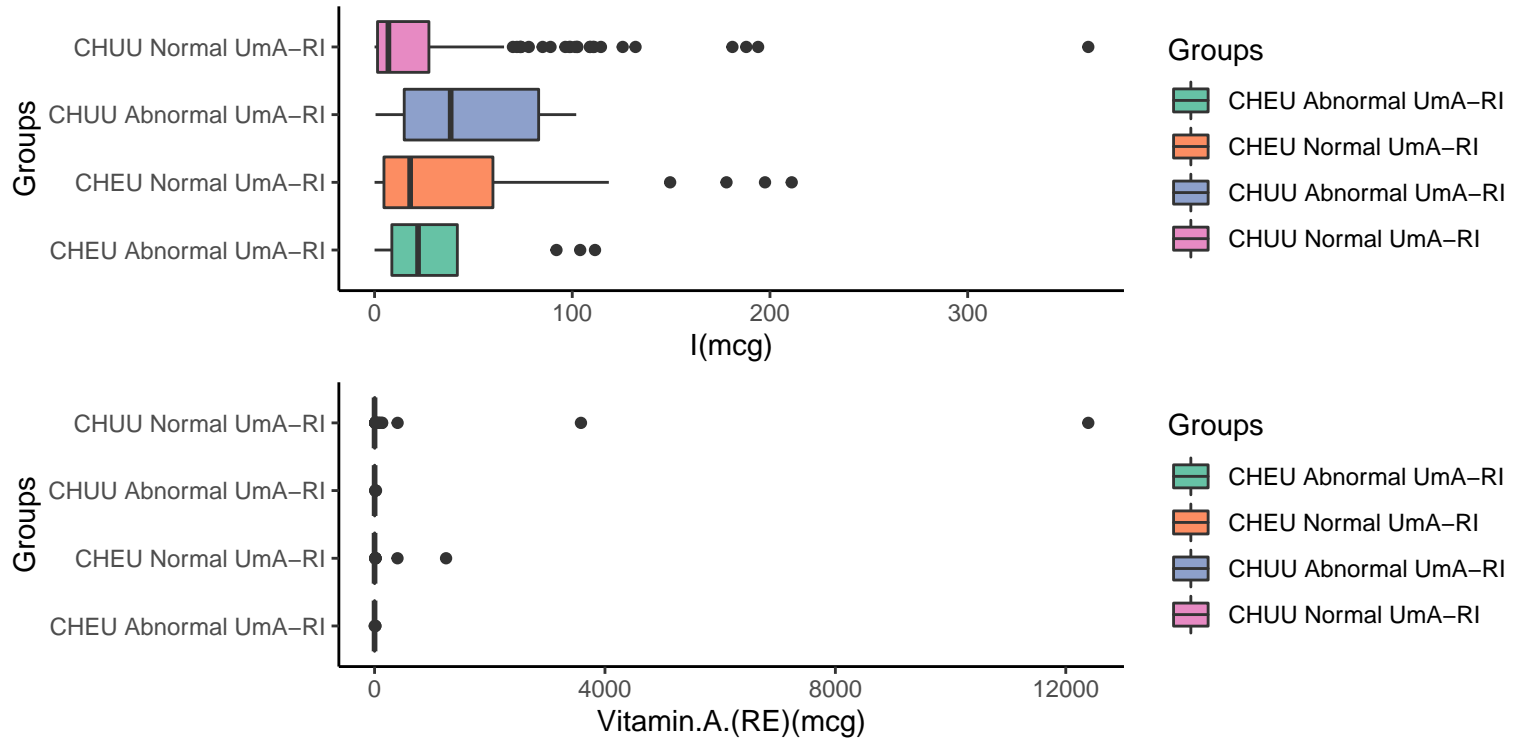
1.3 Nutrient Intake

For this section, the control group was compared individually to the other three.

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
The day of the recall refer					
Missing Values	1	0	0	1	0
Monday	6 (2.3%)	0 (0.0%)	1 (2.0%)	1 (5.6%)	4 (2.2%)
Tuesday	14 (5.3%)	8 (57.1%)	0 (0.0%)	0 (0.0%)	6 (3.3%)
Wednesday	12 (4.6%)	1 (7.1%)	3 (6.0%)	3 (16.7%)	5 (2.8%)
Thursday	108 (41.1%)	2 (14.3%)	20 (40.0%)	4 (22.2%)	82 (45.3%)
Friday	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Saturday	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Sunday	123 (46.8%)	3 (21.4%)	26 (52.0%)	10 (55.6%)	84 (46.4%)
Typical of the child's usual food intake					
Missing Values	5	0	1	2	2
Yes	248 (95.8%)	14 (100.0%)	48 (98.0%)	16 (94.1%)	170 (95.0%)
No	8 (3.1%)	0 (0.0%)	1 (2.0%)	0 (0.0%)	7 (3.9%)
Fe(mg)					
Missing Values	2	0	0	2	0
min	0	1.7	1.2	1.1	0
max	33.05	11.7	18.05	33.05	31.25
n; mean (sd)	262; 6.58 ± 5.03	6.27 ± 3.27	6.93 ± 4.32	17; 7.84 ± 7.31	6.39 ± 5.08
n; median (iqr)	262; 4.93 (3.21, 8.69)	6.20 (3.82, 7.89)	5.55 (3.98, 9.53)	17; 6.20 (3.90, 8.50)	4.70 (3.05, 8.20)
mean (CI)	6.58 (95% CI: 5.97, 7.19)	6.27 (95% CI: 4.56, 7.99)	6.93 (95% CI: 5.73, 8.12)	7.84 (95% CI: 4.36, 11.31)	6.39 (95% CI: 5.65, 7.13)
Zn(mg)					
Missing Values	2	0	0	2	0
min	0	1.57	0.765	0.875	0
max	55.165	9.87	14.63	10.605	55.165
n; mean (sd)	262; 5.21 ± 4.66	4.56 ± 2.62	5.52 ± 3.41	17; 5.54 ± 2.84	5.14 ± 5.20
n; median (iqr)	262; 3.98 (2.57, 6.69)	4.51 (2.49, 5.20)	4.54 (3.05, 8.07)	17; 5.21 (3.13, 7.41)	3.71 (2.44, 6.42)
mean (CI)	5.21 (95% CI: 4.64, 5.77)	4.56 (95% CI: 3.19, 5.93)	5.52 (95% CI: 4.58, 6.47)	5.54 (95% CI: 4.19, 6.89)	5.14 (95% CI: 4.38, 5.90)
I(mcg)					
Missing Values	2	0	0	2	0
min	0	0	0	0.5	0
max	361	111.5	211	102	361
n; mean (sd)	262; 30.90 ± 46.59	35.96 ± 38.54	41.67 ± 53.89	17; 45.41 ± 36.42	26.18 ± 45.33
n; median (iqr)	262; 9.50 (2.50, 41.50)	22.00 (8.75, 41.88)	18.00 (4.75, 59.88)	17; 38.50 (15.00, 83.00)	7.00 (1.50, 27.50)

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
mean (CI)	30.90 (95% CI: 25.26, 36.55)	35.96 (95% CI: 15.78, 56.15)	41.67 (95% CI: 26.73, 56.61)	45.41 (95% CI: 28.10, 62.72)	26.18 (95% CI: 19.57, 32.78)
Vitamin A (RE)(mcg)					
Missing Values	2	0	0	2	0
min	0	0	0	0	0
max	12390.5	14	1241.5	25	12390.5
n; mean (sd)	262; 74.02 ± 799.56	2.25 ± 5.03	35.26 ± 182.89	17; 4.68 ± 7.39	96.79 ± 957.12
n; median (iqr)	262; 0.00 (0.00, 4.00)	0.00 (0.00, 0.75)	0.00 (0.00, 2.50)	17; 1.00 (0.00, 3.50)	0.00 (0.00, 5.50)
mean (CI)	74.02 (95% CI: -22.80, 170.84)	2.25 (95% CI: -0.38, 4.88)	35.26 (95% CI: -15.43, 85.95)	4.68 (95% CI: 1.16, 8.19)	96.79 (95% CI: -42.64, 236.23)





The following investigation will compare each of the three groups against our baseline (normal group) in order to determine if significant differences exists. In all instances we used the Shapiro Wilk test to determine if the data was normally distributed. If the data was normal, the independent t-test was used to compare the groups while the Mann Whitney U tests was used in the non-normal cases. All tests were performed at a 5% level of significance.

1.3.1 HUU Normal vs HUU Abnormal

- The p-value for Fe(mg) (not normal) was: 0.3149
- The p-value for Zn(mg) (not normal) was: 0.1592
- The p-value for I(mcg) (not normal) was: 0.0051
- The p-value for Vitamin.A.(RE)(mcg) (not normal) was: 0.4402

1.3.2 HUU Normal vs HEU Normal

- The p-value for Fe(mg) (not normal) was: 0.1678
- The p-value for Zn(mg) (not normal) was: 0.132
- The p-value for I(mcg) (not normal) was: 0.0329

- The p-value for Vitamin.A.(RE)(mcg) (not normal) was: 0.8918

1.3.3 HUU Normal vs HUE Abnormal

- The p-value for Fe(mg) (not normal) was: 0.5101
- The p-value for Zn(mg) (not normal) was: 0.8711
- The p-value for I(mcg) (not normal) was: 0.0941
- The p-value for Vitamin.A.(RE)(mcg) (not normal) was: 0.2071

1.4 IGMCD

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Concerns about child's development					
Missing Values	249	12	46	16	175
1	15 (100.0%)	2 (100.0%)	4 (100.0%)	3 (100.0%)	6 (100.0%)
Expressive Language					
Missing Values	2	0	0	1	1
0	254 (96.9%)	12 (85.7%)	50 (100.0%)	17 (94.4%)	175 (97.2%)
1	7 (2.7%)	1 (7.1%)	0 (0.0%)	1 (5.6%)	5 (2.8%)
2	1 (0.4%)	1 (7.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Receptive Language					
Missing Values	3	0	1	1	1
0	259 (99.2%)	14 (100.0%)	49 (100.0%)	17 (94.4%)	179 (99.4%)
1	2 (0.8%)	0 (0.0%)	0 (0.0%)	1 (5.6%)	1 (0.6%)
2	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Gross Movements					
Missing Values	5	0	0	1	4
0	235 (90.7%)	11 (78.6%)	44 (88.0%)	16 (88.9%)	164 (92.7%)
1	21 (8.1%)	3 (21.4%)	5 (10.0%)	1 (5.6%)	12 (6.8%)
2	3 (1.2%)	0 (0.0%)	1 (2.0%)	1 (5.6%)	1 (0.6%)
Fine Movements					
Missing Values	19	0	4	1	14
0	233 (95.1%)	14 (100.0%)	43 (93.5%)	17 (94.4%)	159 (95.2%)
1	8 (3.3%)	0 (0.0%)	1 (2.2%)	1 (5.6%)	6 (3.6%)
2	4 (1.6%)	0 (0.0%)	2 (4.3%)	0 (0.0%)	2 (1.2%)
Relating					
Missing Values	2	0	0	1	1
0	261 (99.6%)	14 (100.0%)	50 (100.0%)	17 (94.4%)	180 (100.0%)
1	1 (0.4%)	0 (0.0%)	0 (0.0%)	1 (5.6%)	0 (0.0%)
2	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Play activities					
Missing Values	3	0	0	1	2
0	259 (99.2%)	14 (100.0%)	50 (100.0%)	18 (100.0%)	177 (98.9%)
1	2 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (1.1%)
2	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Self-help activities					
Missing Values	1	0	0	1	0
0	259 (98.5%)	14 (100.0%)	50 (100.0%)	17 (94.4%)	178 (98.3%)
1	4 (1.5%)	0 (0.0%)	0 (0.0%)	1 (5.6%)	3 (1.7%)

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
2	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

No significance tests could be performed due to small samples.

1.5 Feeding Practices

For this section, the control group was compared individually to the other three.

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Ever breastfeed or try to breastfeed					
Missing Values	0	0	0	0	0
0	11 (4.2%)	0 (0.0%)	3 (6.0%)	0 (0.0%)	8 (4.4%)
1	253 (95.8%)	14 (100.0%)	47 (94.0%)	19 (100.0%)	173 (95.6%)
Reasons					
Missing Values	254	14	47	19	174
1	1 (10.0%)	0 (NaN%)	0 (0.0%)	0 (NaN%)	1 (14.3%)
2	2 (20.0%)	0 (NaN%)	0 (0.0%)	0 (NaN%)	2 (28.6%)
3	3 (30.0%)	0 (NaN%)	0 (0.0%)	0 (NaN%)	3 (42.9%)
4	2 (20.0%)	0 (NaN%)	1 (33.3%)	0 (NaN%)	1 (14.3%)
5	2 (20.0%)	0 (NaN%)	2 (66.7%)	0 (NaN%)	0 (0.0%)
Early initiation of breastfeeding					
Missing Values	82	5	26	8	43
1	161 (88.5%)	8 (88.9%)	23 (95.8%)	9 (81.8%)	121 (87.7%)
2	16 (8.8%)	1 (11.1%)	1 (4.2%)	2 (18.2%)	12 (8.7%)
3	5 (2.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (3.6%)
Early initiation of breastfeeding time					
Missing Values	38	2	7	3	26
1	68 (30.1%)	4 (33.3%)	22 (51.2%)	8 (50.0%)	34 (21.9%)
2	158 (69.9%)	8 (66.7%)	21 (48.8%)	8 (50.0%)	121 (78.1%)
Fed breast milk from a bottle or a cup					
Missing Values	16	2	3	0	11
0	172 (69.4%)	8 (66.7%)	34 (72.3%)	12 (63.2%)	118 (69.4%)
1	76 (30.6%)	4 (33.3%)	13 (27.7%)	7 (36.8%)	52 (30.6%)
Infant feeding from birth until 6 months					
Missing Values	1	0	0	0	1
1	40 (15.2%)	2 (14.3%)	7 (14.0%)	5 (26.3%)	26 (14.4%)
2	128 (48.7%)	5 (35.7%)	23 (46.0%)	8 (42.1%)	92 (51.1%)
3	20 (7.6%)	5 (35.7%)	7 (14.0%)	2 (10.5%)	6 (3.3%)
4	34 (12.9%)	2 (14.3%)	2 (4.0%)	1 (5.3%)	29 (16.1%)
5	14 (5.3%)	0 (0.0%)	3 (6.0%)	0 (0.0%)	11 (6.1%)
6	24 (9.1%)	0 (0.0%)	6 (12.0%)	2 (10.5%)	16 (8.9%)
7	3 (1.1%)	0 (0.0%)	2 (4.0%)	1 (5.3%)	0 (0.0%)
Infant feeding from birth until 6 months (2)					
Missing Values	1	0	0	0	1

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
1	171 (65.0%)	7 (50.0%)	32 (64.0%)	14 (73.7%)	118 (65.6%)
2	14 (5.3%)	0 (0.0%)	3 (6.0%)	0 (0.0%)	11 (6.1%)
3	58 (22.1%)	2 (14.3%)	8 (16.0%)	3 (15.8%)	45 (25.0%)
4	20 (7.6%)	5 (35.7%)	7 (14.0%)	2 (10.5%)	6 (3.3%)
Currently breastfeeding					
Missing Values	5	1	1	2	1
0	202 (78.0%)	11 (84.6%)	46 (93.9%)	13 (76.5%)	132 (73.3%)
1	57 (22.0%)	2 (15.4%)	3 (6.1%)	4 (23.5%)	48 (26.7%)
Continued breastfeeding					
Missing Values	207	12	47	15	133
1	57 (100.0%)	2 (100.0%)	3 (100.0%)	4 (100.0%)	48 (100.0%)
Breastfeeding cessation__months					
Missing Values	76	4	8	6	58
min	1	1	1	1	1
max	21	21	18	16	18
n; mean (sd)	188; 10.09 ± 5.82	10; 8.20 ± 8.28	42; 7.12 ± 5.11	13; 8.77 ± 5.26	123; 11.40 ± 5.49
n; median (iqr)	188; 11.50 (5.00, 15.00)	10; 4.00 (1.00, 15.75)	42; 6.00 (2.00, 12.00)	13; 7.00 (6.00, 14.00)	123; 13.00 (6.00, 16.00)
mean (CI)	10.09 (95% CI: 9.26, 10.92)	8.20 (95% CI: 3.07, 13.33)	7.12 (95% CI: 5.57, 8.67)	8.77 (95% CI: 5.91, 11.63)	11.40 (95% CI: 10.43, 12.37)
Breastfeeding cessation__months					
Missing Values	76	4	8	6	58
1	37 (19.7%)	5 (50.0%)	14 (33.3%)	3 (23.1%)	15 (12.2%)
2	31 (16.5%)	1 (10.0%)	9 (21.4%)	3 (23.1%)	18 (14.6%)
3	46 (24.5%)	0 (0.0%)	15 (35.7%)	3 (23.1%)	28 (22.8%)
4	74 (39.4%)	4 (40.0%)	4 (9.5%)	4 (30.8%)	62 (50.4%)
Introduction of formula months					
Missing Values	105	4	12	8	81
min	1	1	1	1	1
max	21	21	12	14	18
n; mean (sd)	159; 5.64 ± 5.03	10; 7.60 ± 8.32	38; 5.08 ± 3.79	11; 6.09 ± 4.01	100; 5.61 ± 5.15
n; median (iqr)	159; 4.00 (1.00, 8.00)	10; 4.00 (1.00, 13.00)	38; 6.00 (1.00, 6.75)	11; 6.00 (3.00, 7.00)	100; 3.50 (1.00, 8.00)
mean (CI)	5.64 (95% CI: 4.86, 6.42)	7.60 (95% CI: 2.45, 12.75)	5.08 (95% CI: 3.87, 6.28)	6.09 (95% CI: 3.72, 8.46)	5.61 (95% CI: 4.60, 6.62)
Introduction of formula months					
Missing Values	105	4	12	8	81
1	46 (28.9%)	4 (40.0%)	11 (28.9%)	1 (9.1%)	30 (30.0%)
2	14 (8.8%)	1 (10.0%)	3 (7.9%)	1 (9.1%)	9 (9.0%)
3	16 (10.1%)	0 (0.0%)	3 (7.9%)	2 (18.2%)	11 (11.0%)

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
4	6 (3.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (6.0%)
Main reason for introducing formula					
Missing Values	78	4	9	7	58
1	54 (29.0%)	1 (10.0%)	8 (19.5%)	3 (25.0%)	42 (34.1%)
2	8 (4.3%)	1 (10.0%)	1 (2.4%)	0 (0.0%)	6 (4.9%)
3	7 (3.8%)	2 (20.0%)	3 (7.3%)	0 (0.0%)	2 (1.6%)
4	27 (14.5%)	0 (0.0%)	3 (7.3%)	3 (25.0%)	21 (17.1%)
5	2 (1.1%)	0 (0.0%)	1 (2.4%)	0 (0.0%)	1 (0.8%)
6	80 (43.0%)	5 (50.0%)	24 (58.5%)	6 (50.0%)	45 (36.6%)
7	1 (0.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.8%)
8	2 (1.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (1.6%)
9	3 (1.6%)	0 (0.0%)	1 (2.4%)	0 (0.0%)	2 (1.6%)
10	2 (1.1%)	1 (10.0%)	0 (0.0%)	0 (0.0%)	1 (0.8%)
Water or glucose water					
Missing Values	6	0	0	1	5
0	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
1	258 (100.0%)	14 (100.0%)	50 (100.0%)	18 (100.0%)	176 (100.0%)
Age_months.given					
Missing Values	7	0	0	2	5
min	1	1	1	1	1
max	9	7	9	6	9
n; mean (sd)	257; 4.21 ± 2.08	4.57 ± 2.17	4.62 ± 2.17	17; 4.41 ± 1.84	176; 4.05 ± 2.07
n; median (iqr)	257; 5.00 (3.00, 6.00)	6.00 (3.00, 6.00)	6.00 (3.00, 6.00)	17; 5.00 (3.00, 6.00)	176; 4.00 (2.00, 6.00)
mean (CI)	4.21 (95% CI: 3.96, 4.47)	4.57 (95% CI: 3.43, 5.71)	4.62 (95% CI: 4.02, 5.22)	4.41 (95% CI: 3.54, 5.29)	4.05 (95% CI: 3.75, 4.36)
Tea, juice					
Missing Values	5	0	0	1	4
0	16 (6.2%)	2 (14.3%)	1 (2.0%)	2 (11.1%)	11 (6.2%)
1	243 (93.8%)	12 (85.7%)	49 (98.0%)	16 (88.9%)	166 (93.8%)
Age_months.given					
Missing Values	22	2	1	4	15
min	1	6	1	3	1
max	18	18	18	16	18
n; mean (sd)	242; 9.57 ± 3.91	12; 11.42 ± 4.32	49; 9.00 ± 3.97	15; 8.87 ± 3.58	166; 9.67 ± 3.88
n; median (iqr)	242; 9.00 (6.00, 12.00)	12; 10.00 (8.50, 15.50)	49; 8.00 (6.00, 12.00)	15; 8.00 (6.00, 12.00)	166; 9.00 (6.00, 12.00)
mean (CI)	9.57 (95% CI: 9.08, 10.06)	11.42 (95% CI: 8.97, 13.86)	9.00 (95% CI: 7.89, 10.11)	8.87 (95% CI: 7.05, 10.68)	9.67 (95% CI: 9.08, 10.26)
Cow's milk					

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Missing Values	5	1	0	1	3
0	121 (46.7%)	8 (61.5%)	17 (34.0%)	11 (61.1%)	85 (47.8%)
1	138 (53.3%)	5 (38.5%)	33 (66.0%)	7 (38.9%)	93 (52.2%)
Age_months.given					
Missing Values	126	9	17	12	88
min	3	6	7	3	4
max	18	13	18	17	18
n; mean (sd)	138; 11.72 ± 3.38	5; 10.40 ± 2.88	33; 12.67 ± 2.65	7; 9.57 ± 5.47	93; 11.61 ± 3.39
n; median (iqr)	138; 12.00 (9.25, 13.75)	5; 12.00 (9.00, 12.00)	33; 12.00 (12.00, 14.00)	7; 9.00 (6.00, 13.00)	93; 12.00 (9.00, 13.00)
mean (CI)	11.72 (95% CI: 11.15, 12.28)	10.40 (95% CI: 7.87, 12.93)	12.67 (95% CI: 11.76, 13.57)	9.57 (95% CI: 5.52, 13.63)	11.61 (95% CI: 10.92, 12.30)
Semi-solids eg cereals,porridge					
Missing Values	6	0	0	2	4
0	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
1	258 (100.0%)	14 (100.0%)	50 (100.0%)	17 (100.0%)	177 (100.0%)
Age_months.given					
Missing Values	6	0	0	2	4
min	1	1	1	3	1
max	12	8	8	7	12
n; mean (sd)	258; 5.26 ± 1.61	5.71 ± 1.73	5.22 ± 1.66	17; 5.53 ± 1.01	177; 5.21 ± 1.63
n; median (iqr)	258; 6.00 (5.00, 6.00)	6.00 (6.00, 6.00)	6.00 (5.00, 6.00)	17; 6.00 (5.00, 6.00)	177; 6.00 (4.00, 6.00)
mean (CI)	5.26 (95% CI: 5.07, 5.46)	5.71 (95% CI: 4.81, 6.62)	5.22 (95% CI: 4.76, 5.68)	5.53 (95% CI: 5.05, 6.01)	5.21 (95% CI: 4.97, 5.46)
Solids eg vegetables, fruit					
Missing Values	5	0	0	1	4
0	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.6%)
1	258 (99.6%)	14 (100.0%)	50 (100.0%)	18 (100.0%)	176 (99.4%)
Age_months.given					
Missing Values	7	0	0	1	6
min	3	6	4	4	3
max	19	19	18	12	18
n; mean (sd)	257; 8.72 ± 3.47	10.07 ± 4.41	8.32 ± 3.33	18; 7.72 ± 2.22	175; 8.82 ± 3.52
n; median (iqr)	257; 7.00 (6.00, 12.00)	9.50 (6.00, 12.00)	7.00 (6.00, 10.50)	18; 7.00 (6.00, 9.00)	175; 7.00 (6.00, 12.00)
mean (CI)	8.72 (95% CI: 8.29, 9.14)	10.07 (95% CI: 7.76, 12.38)	8.32 (95% CI: 7.40, 9.24)	7.72 (95% CI: 6.70, 8.75)	8.82 (95% CI: 8.30, 9.34)
Protein eg meat, eggs, peanut butter, cheese, yoghurt, fish					

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Missing Values	4	0	0	1	3
0	3 (1.2%)	1 (7.1%)	0 (0.0%)	1 (5.6%)	1 (0.6%)
1	257 (98.8%)	13 (92.9%)	50 (100.0%)	17 (94.4%)	177 (99.4%)
Age_months.given					
Missing Values	9	1	0	2	6
min	1	6	3	4	1
max	18	18	18	14	18
n; mean (sd)	255; 9.52 \pm 3.41	13; 11.15 \pm 3.08	8.90 \pm 3.74	17; 8.47 \pm 2.58	175; 9.67 \pm 3.37
n; median (iqr)	255; 9.00 (6.00, 12.00)	13; 12.00 (9.00, 12.00)	8.00 (6.00, 12.00)	17; 8.00 (7.00, 10.00)	175; 9.00 (7.00, 12.00)
mean (CI)	9.52 (95% CI: 9.10, 9.94)	11.15 (95% CI: 9.48, 12.83)	8.90 (95% CI: 7.86, 9.94)	8.47 (95% CI: 7.25, 9.70)	9.67 (95% CI: 9.17, 10.17)

The following investigation will compare each of the three groups against our baseline (normal group) in order to determine if significant differences exists. For the categorical variables we used the Chi Squared test. Only variables with groups larger than 5 were included in these investigations as smaller groups lead to volatility results. All tests were performed at a 5% level of significance.

1.5.1 HUU Normal vs HUU Abnormal

- The p-value for Cow's.milk is: 0.4048284

1.5.2 HUU Normal vs HEU Normal

- The p-value for Cow's.milk is: 0.1170801

1.5.3 HUU Normal vs HUE Abnormal

- The p-value for Cow's.milk is: 0.5012007

(When comparing all 4 groups) For all the numerical variables: In all instances we used the Shapiro Wilk test to determine if the data was normally distributed. The ANOVA tests was used for the normal instances while the Kruskal Wallis H test was used as the data was non-normal. All tests were performed at a 5% level of significance.

- The p-value for Breastfeeding.cessation_months1 (not normal) was: 0.0002
- The p-value for Introduction.of.formula_months1 (not normal) was: 0.8145
- The p-value for Age_months.given1 (not normal) was: 0.3181
- The p-value for Age_months.given2 (not normal) was: 0.2354
- The p-value for Age_months.given3 (not normal) was: 0.1501

- The p-value for Age_months.given4 (not normal) was: 0.3876
- The p-value for Age_months.given5 (not normal) was: 0.4744
- The p-value for Age_months.given6 (not normal) was: 0.0482

For each of the variables which were significantly different, we continue to perform a posthoc analysis to determine which groups differs from which. We always use the adjusted p-values as we included a Bonferonni correction.

Maternal Age (years)

Comparison	Z	P.unadj	P.adj
CHEU Abnormal UmA-RI - CHEU Normal UmA-RI	0.6211	0.5345	0.6414
CHEU Abnormal UmA-RI - CHUU Abnormal UmA-RI	-0.143	0.8863	0.8863
CHEU Normal UmA-RI - CHUU Abnormal UmA-RI	-0.8781	0.3799	0.5699
CHEU Abnormal UmA-RI - CHUU Normal UmA-RI	-1.604	0.1086	0.3259
CHEU Normal UmA-RI - CHUU Normal UmA-RI	-4.175	0.0000298	0.0001788
CHUU Abnormal UmA-RI - CHUU Normal UmA-RI	-1.603	0.109	0.2179

Age_months.given6

Comparison	Z	P.unadj	P.adj
CHEU Abnormal UmA-RI - CHEU Normal UmA-RI	2.443	0.01458	0.08751
CHEU Abnormal UmA-RI - CHUU Abnormal UmA-RI	2.113	0.0346	0.1038
CHEU Normal UmA-RI - CHUU Abnormal UmA-RI	0.06447	0.9486	0.9486
CHEU Abnormal UmA-RI - CHUU Normal UmA-RI	1.65	0.0989	0.1484
CHEU Normal UmA-RI - CHUU Normal UmA-RI	-1.784	0.07445	0.1489
CHUU Abnormal UmA-RI - CHUU Normal UmA-RI	-1.197	0.2312	0.2775

1.6 Sociodemographics

For this section, the statistical investigations only included testing the differences between the four groups.

1.6.1 At birth

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Maternal Age (years):					
Missing Values	0	0	0	0	0
min	19	21	19	21	20
max	46	46	41	36	41
n; mean (sd)	30.63 \pm 5.39	37.14 \pm 5.89	31.52 \pm 5.37	28.79 \pm 4.18	30.08 \pm 5.11
n; median (iqr)	30.00 (26.00, 35.00)	39.00 (34.25, 40.00)	32.00 (28.00, 35.75)	30.00 (26.00, 31.50)	29.00 (26.00, 34.00)
mean (CI)	30.63 (95% CI: 29.98, 31.28)	37.14 (95% CI: 34.06, 40.23)	31.52 (95% CI: 30.03, 33.01)	28.79 (95% CI: 26.91, 30.67)	30.08 (95% CI: 29.33, 30.82)
Premature					
Missing Values	0	0	0	0	0
0	239 (90.5%)	13 (92.9%)	48 (96.0%)	12 (63.2%)	166 (91.7%)
1	25 (9.5%)	1 (7.1%)	2 (4.0%)	7 (36.8%)	15 (8.3%)
RI					
Missing Values	0	0	0	0	0
min	0.51	0.73	0.55	0.67	0.51
max	0.94	0.87	0.71	0.94	0.72
n; mean (sd)	0.65 \pm 0.06	0.76 \pm 0.04	0.63 \pm 0.04	0.75 \pm 0.06	0.64 \pm 0.05
n; median (iqr)	0.65 (0.62, 0.68)	0.75 (0.73, 0.77)	0.64 (0.61, 0.65)	0.74 (0.70, 0.77)	0.65 (0.61, 0.68)
mean (CI)	0.65 (95% CI: 0.65, 0.66)	0.76 (95% CI: 0.74, 0.78)	0.63 (95% CI: 0.62, 0.64)	0.75 (95% CI: 0.72, 0.77)	0.64 (95% CI: 0.63, 0.65)
GA at birth (days)					
Missing Values	0	0	0	0	0
min	217	257	253	218	217
max	300	282	300	283	300
n; mean (sd)	276.44 \pm 13.79	271.29 \pm 6.68	278.76 \pm 9.62	259.84 \pm 17.67	277.94 \pm 13.53
n; median (iqr)	278.00 (271.00, 284.00)	272.50 (267.25, 275.75)	279.00 (274.00, 284.00)	264.00 (256.50, 271.00)	279.00 (272.00, 287.00)
mean (CI)	276.44 (95% CI: 274.78, 278.11)	271.29 (95% CI: 267.78, 274.79)	278.76 (95% CI: 276.09, 281.43)	259.84 (95% CI: 251.90, 267.79)	277.94 (95% CI: 275.97, 279.92)
GA_EXACT.WEEKS					
Missing Values	0	0	0	0	0
min	27.7142857142857	27.7142857142857	28	28.1428571428571	28
max	34.4285714285714	31.1428571428571	34	34.4285714285714	34
n; mean (sd)	30.35 \pm 1.78	28.78 \pm 0.88	30.39 \pm 1.62	30.92 \pm 1.73	30.40 \pm 1.83
n; median (iqr)	30.14 (28.71, 31.46)	28.64 (28.29, 29.14)	30.14 (29.29, 31.50)	30.71 (30.14, 31.29)	30.14 (28.71, 31.71)

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
mean (CI)	30.35 (95% CI: 30.13, 30.56)	28.78 (95% CI: 28.32, 29.24)	30.39 (95% CI: 29.94, 30.84)	30.92 (95% CI: 30.15, 31.70)	30.40 (95% CI: 30.13, 30.66)
RI.Z-SCORE					
Missing Values	0	0	0	0	0
min	-1.93342439660547	1.19056653181264	-1.41633097880243	0.93302250970774	-1.93342439660547
max	4.85637275756004	3.66999768450206	0.949891420731395	4.85637275756004	1.01107983401071
n; mean (sd)	0.23 ± 0.90	1.78 ± 0.71	-0.10 ± 0.60	1.81 ± 0.90	0.03 ± 0.66
n; median (iqr)	0.25 (-0.32, 0.68)	1.56 (1.27, 2.01)	-0.07 (-0.46, 0.34)	1.80 (1.09, 2.02)	0.19 (-0.38, 0.56)
mean (CI)	0.23 (95% CI: 0.12, 0.34)	1.78 (95% CI: 1.40, 2.15)	-0.10 (95% CI: -0.27, 0.07)	1.81 (95% CI: 1.41, 2.21)	0.03 (95% CI: -0.06, 0.13)
Birth Weight (g)					
Missing Values	0	0	0	0	0
min	1200	2120	2006	1200	1500
max	4750	3400	3995	3560	4750
n; mean (sd)	3,115.02 ± 500.77	2,742.14 ± 395.57	3,107.62 ± 433.05	2,650.00 ± 581.27	3,194.71 ± 479.81
n; median (iqr)	3,130.00 (2,776.25, 3,450.00)	2,790.00 (2,555.00, 2,993.75)	3,155.00 (2,765.00, 3,426.25)	2,620.00 (2,440.00, 3,070.00)	3,180.00 (2,840.00, 3,540.00)
mean (CI)	3,115.02 (95% CI: 3,054.61, 3,175.42)	2,742.14 (95% CI: 2,534.94, 2,949.35)	3,107.62 (95% CI: 2,987.59, 3,227.65)	2,650.00 (95% CI: 2,388.63, 2,911.37)	3,194.71 (95% CI: 3,124.81, 3,264.61)
HC.(cm)					
Missing Values	8	1	1	1	5
min	28	31	31	28	29
max	38	36	38	36	38
n; mean (sd)	256; 34.34 ± 1.68	13; 34.00 ± 1.58	49; 34.51 ± 1.49	18; 32.94 ± 1.92	176; 34.46 ± 1.66
n; median (iqr)	256; 34.00 (33.00, 36.00)	13; 34.00 (33.00, 35.00)	49; 34.00 (34.00, 36.00)	18; 33.00 (33.00, 34.00)	176; 35.00 (34.00, 36.00)
mean (CI)	34.34 (95% CI: 34.13, 34.55)	34.00 (95% CI: 33.14, 34.86)	34.51 (95% CI: 34.09, 34.93)	32.94 (95% CI: 32.06, 33.83)	34.46 (95% CI: 34.22, 34.71)
WeightZScore					
Missing Values	1	0	0	0	1
min	-3.5797	-2.3531	-3.144	-2.1002	-3.5797
max	2.7786	0.437	1.9845	1.8622	2.7786
n; mean (sd)	263; -0.39 ± 1.11	-0.98 ± 0.75	-0.54 ± 0.96	-0.43 ± 1.08	180; -0.30 ± 1.16
n; median (iqr)	263; -0.47 (-1.13, 0.39)	-0.90 (-1.23, -0.63)	-0.56 (-1.17, 0.16)	-0.44 (-1.10, 0.36)	180; -0.33 (-1.08, 0.45)
mean (CI)	-0.39 (95% CI: -0.52, -0.26)	-0.98 (95% CI: -1.37, -0.58)	-0.54 (95% CI: -0.81, -0.27)	-0.43 (95% CI: -0.92, 0.05)	-0.30 (95% CI: -0.47, -0.13)
HeadCircumferenceZScore					
Missing Values	8	1	1	1	5
min	-3.4516	-1.5277	-2.189	-1.8866	-3.4516

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
max	3.4687	2.1332	3.4687	1.6892	3.1051
n; mean (sd)	256; 0.36 ± 1.27	13; 0.50 ± 1.11	49; 0.35 ± 1.24	18; 0.23 ± 0.97	176; 0.37 ± 1.32
n; median (iqr)	256; 0.39 (-0.46, 1.33)	13; 0.31 (-0.13, 1.46)	49; 0.27 (-0.48, 1.35)	18; 0.11 (-0.39, 0.98)	176; 0.45 (-0.49, 1.33)
mean (CI)	0.36 (95% CI: 0.21, 0.52)	0.50 (95% CI: -0.10, 1.11)	0.35 (95% CI: -0.00, 0.69)	0.23 (95% CI: -0.21, 0.68)	0.37 (95% CI: 0.18, 0.57)
Sex					
Missing Values	0	0	0	0	0
1	129 (48.9%)	4 (28.6%)	28 (56.0%)	8 (42.1%)	89 (49.2%)
2	135 (51.1%)	10 (71.4%)	22 (44.0%)	11 (57.9%)	92 (50.8%)
Experienced labour					
Missing Values	0	0	0	0	0
0	39 (14.8%)	3 (21.4%)	8 (16.0%)	2 (10.5%)	26 (14.4%)
1	223 (84.5%)	9 (64.3%)	42 (84.0%)	17 (89.5%)	155 (85.6%)
9	2 (0.8%)	2 (14.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Mode of onset of labour					
Missing Values	41	5	8	2	26
1	172 (77.1%)	1 (11.1%)	38 (90.5%)	6 (35.3%)	127 (81.9%)
2	46 (20.6%)	3 (33.3%)	4 (9.5%)	11 (64.7%)	28 (18.1%)
9	5 (2.2%)	5 (55.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Primary indication					
Missing Values	219	11	46	8	154
1	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
2	11 (24.4%)	3 (100.0%)	0 (0.0%)	8 (72.7%)	0 (0.0%)
3	2 (4.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (7.4%)
4	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
5	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
6	4 (8.9%)	0 (0.0%)	1 (25.0%)	1 (9.1%)	2 (7.4%)
7	3 (6.7%)	0 (0.0%)	0 (0.0%)	1 (9.1%)	2 (7.4%)
8	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
9	3 (6.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (11.1%)
10	2 (4.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (7.4%)
11	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
12	19 (42.2%)	0 (0.0%)	3 (75.0%)	1 (9.1%)	15 (55.6%)
13	1 (2.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (3.7%)
99	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Mode of birth					
Missing Values	0	0	0	0	0
1	168 (63.6%)	5 (35.7%)	31 (62.0%)	9 (47.4%)	123 (68.0%)
2	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.6%)
3	3 (1.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (1.7%)

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
4	38 (14.4%)	2 (14.3%)	8 (16.0%)	2 (10.5%)	26 (14.4%)
5	51 (19.3%)	4 (28.6%)	11 (22.0%)	8 (42.1%)	28 (15.5%)
9	3 (1.1%)	3 (21.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
For caesarean section, the primary indication					
Missing Values	175	8	31	9	127
5	3 (3.4%)	0 (0.0%)	1 (5.3%)	0 (0.0%)	2 (3.7%)
6	17 (19.1%)	1 (16.7%)	3 (15.8%)	5 (50.0%)	8 (14.8%)
7	3 (3.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (5.6%)
8	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
9	1 (1.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.9%)
10	2 (2.2%)	0 (0.0%)	0 (0.0%)	1 (10.0%)	1 (1.9%)
11	1 (1.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.9%)
12	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
13	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
14	12 (13.5%)	1 (16.7%)	2 (10.5%)	2 (20.0%)	7 (13.0%)
15	7 (7.9%)	0 (0.0%)	1 (5.3%)	1 (10.0%)	5 (9.3%)
16	37 (41.6%)	3 (50.0%)	11 (57.9%)	1 (10.0%)	22 (40.7%)
17	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
18	3 (3.4%)	1 (16.7%)	1 (5.3%)	0 (0.0%)	1 (1.9%)
99	2 (2.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (3.7%)
Postpartum haemorrhage					
Missing Values	0	0	0	0	0
0	260 (98.5%)	14 (100.0%)	49 (98.0%)	19 (100.0%)	178 (98.3%)
1	4 (1.5%)	0 (0.0%)	1 (2.0%)	0 (0.0%)	3 (1.7%)
Postpartum preeclampsia/eclampsia					
Missing Values	0	0	0	0	0
0	264 (100.0%)	14 (100.0%)	50 (100.0%)	19 (100.0%)	181 (100.0%)
1	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Anaemia requiring blood transfusion					
Missing Values	0	0	0	0	0
0	260 (98.5%)	14 (100.0%)	48 (96.0%)	19 (100.0%)	179 (98.9%)
1	4 (1.5%)	0 (0.0%)	2 (4.0%)	0 (0.0%)	2 (1.1%)
Postpartum endometritis					
Missing Values	0	0	0	0	0
0	263 (99.6%)	14 (100.0%)	50 (100.0%)	19 (100.0%)	180 (99.4%)
1	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.6%)
Apgar score at 5 minutes					

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Missing Values	2	0	0	1	1
min	5	9	5	5	5
max	10	10	10	10	10
n; mean (sd)	262; 9.31 \pm 0.91	9.21 \pm 0.43	9.24 \pm 0.94	18; 8.94 \pm 1.11	180; 9.37 \pm 0.91
n; median (iqr)	262; 9.00 (9.00, 10.00)	9.00 (9.00, 9.00)	9.00 (9.00, 10.00)	18; 9.00 (9.00, 9.00)	180; 10.00 (9.00, 10.00)
mean (CI)	9.31 (95% CI: 9.19, 9.42)	9.21 (95% CI: 8.99, 9.44)	9.24 (95% CI: 8.98, 9.50)	8.94 (95% CI: 8.43, 9.46)	9.37 (95% CI: 9.23, 9.50)
If referred to a HR clinic, referral at every occasion?					
Missing Values	220	10	44	0	166
0	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
1	41 (93.2%)	3 (75.0%)	6 (100.0%)	17 (89.5%)	15 (100.0%)
High-risk Umbiflow reading					
Missing Values	220	10	44	0	166
0	20 (45.5%)	0 (0.0%)	6 (100.0%)	0 (0.0%)	14 (93.3%)
1	24 (54.5%)	4 (100.0%)	0 (0.0%)	19 (100.0%)	1 (6.7%)
Anaemia					
Missing Values	220	10	44	0	166
0	43 (97.7%)	4 (100.0%)	6 (100.0%)	19 (100.0%)	14 (93.3%)
1	1 (2.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (6.7%)
Suspected small for gestational age					
Missing Values	220	10	44	0	166
0	39 (88.6%)	4 (100.0%)	4 (66.7%)	19 (100.0%)	12 (80.0%)
1	5 (11.4%)	0 (0.0%)	2 (33.3%)	0 (0.0%)	3 (20.0%)
Suspected large for gestational age					
Missing Values	220	10	44	0	166
0	43 (97.7%)	4 (100.0%)	6 (100.0%)	19 (100.0%)	14 (93.3%)
1	1 (2.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (6.7%)
Gestational hypertension					
Missing Values	220	10	44	0	166
0	43 (97.7%)	4 (100.0%)	5 (83.3%)	19 (100.0%)	15 (100.0%)
1	1 (2.3%)	0 (0.0%)	1 (16.7%)	0 (0.0%)	0 (0.0%)
Pre-eclampsia/eclampsia					
Missing Values	220	10	44	0	166
0	42 (95.5%)	4 (100.0%)	6 (100.0%)	19 (100.0%)	13 (86.7%)
1	2 (4.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (13.3%)
Abnormal glucose screening					

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Missing Values	220	10	44	0	166
0	42 (95.5%)	4 (100.0%)	6 (100.0%)	19 (100.0%)	13 (86.7%)
1	2 (4.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (13.3%)
Reduced fetal movement after 28 weeks					
Missing Values	220	10	44	0	166
0	44 (100.0%)	4 (100.0%)	6 (100.0%)	19 (100.0%)	15 (100.0%)
1	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Antepartum haemorrhage					
Missing Values	220	10	44	0	166
0	43 (97.7%)	4 (100.0%)	6 (100.0%)	19 (100.0%)	14 (93.3%)
1	1 (2.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (6.7%)
Abnormal fetal presentation					
Missing Values	220	10	44	0	166
0	43 (97.7%)	4 (100.0%)	6 (100.0%)	19 (100.0%)	14 (93.3%)
1	1 (2.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (6.7%)
Abnormal fetal lie					
Missing Values	220	10	44	0	166
0	44 (100.0%)	4 (100.0%)	6 (100.0%)	19 (100.0%)	15 (100.0%)
1	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Maternal medical condition					
Missing Values	220	10	44	0	166
0	40 (90.9%)	4 (100.0%)	4 (66.7%)	19 (100.0%)	13 (86.7%)
1	4 (9.1%)	0 (0.0%)	2 (33.3%)	0 (0.0%)	2 (13.3%)
Other condition					
Missing Values	220	10	44	0	166
0	39 (88.6%)	4 (100.0%)	4 (66.7%)	19 (100.0%)	12 (80.0%)
1	5 (11.4%)	0 (0.0%)	2 (33.3%)	0 (0.0%)	3 (20.0%)
Gravidity					
Missing Values	0	0	0	0	0
min	1	1	1	1	1
max	7	4	7	4	6
n; mean (sd)	2.48 ± 1.14	3.14 ± 0.95	2.80 ± 1.23	2.32 ± 0.95	2.35 ± 1.12
n; median (iqr)	2.00 (2.00, 3.00)	3.00 (3.00, 4.00)	3.00 (2.00, 3.00)	2.00 (2.00, 3.00)	2.00 (1.00, 3.00)
mean (CI)	2.48 (95% CI: 2.34, 2.62)	3.14 (95% CI: 2.65, 3.64)	2.80 (95% CI: 2.46, 3.14)	2.32 (95% CI: 1.89, 2.74)	2.35 (95% CI: 2.19, 2.52)
Parity (number of all previous births greater or equal 28 weeks)					
Missing Values	0	0	0	0	0
min	1	1	1	1	1

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
max	6	4	6	4	6
n; mean (sd)	2.22 ± 1.05	2.93 ± 0.83	2.40 ± 1.05	2.05 ± 0.85	2.14 ± 1.06
n; median (iqr)	2.00 (1.00, 3.00)	3.00 (3.00, 3.00)	2.00 (2.00, 3.00)	2.00 (1.50, 2.50)	2.00 (1.00, 3.00)
mean (CI)	2.22 (95% CI: 2.10, 2.35)	2.93 (95% CI: 2.49, 3.36)	2.40 (95% CI: 2.11, 2.69)	2.05 (95% CI: 1.67, 2.43)	2.14 (95% CI: 1.98, 2.29)
Abortions, miscarriages, TOP					
Missing Values	0	0	0	0	0
min	0	0	0	0	0
max	2	1	2	2	2
n; mean (sd)	0.25 ± 0.48	0.29 ± 0.47	0.34 ± 0.52	0.26 ± 0.56	0.22 ± 0.45
n; median (iqr)	0.00 (0.00, 0.00)	0.00 (0.00, 0.75)	0.00 (0.00, 1.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)
mean (CI)	0.25 (95% CI: 0.19, 0.31)	0.29 (95% CI: 0.04, 0.53)	0.34 (95% CI: 0.20, 0.48)	0.26 (95% CI: 0.01, 0.52)	0.22 (95% CI: 0.15, 0.29)
Home language					
Missing Values	0	0	0	0	0
1	89 (33.7%)	7 (50.0%)	13 (26.0%)	6 (31.6%)	63 (34.8%)
2	13 (4.9%)	0 (0.0%)	3 (6.0%)	0 (0.0%)	10 (5.5%)
3	18 (6.8%)	0 (0.0%)	8 (16.0%)	0 (0.0%)	10 (5.5%)
4	22 (8.3%)	1 (7.1%)	3 (6.0%)	3 (15.8%)	15 (8.3%)
5	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.6%)
6	7 (2.7%)	2 (14.3%)	3 (6.0%)	1 (5.3%)	1 (0.6%)
7	23 (8.7%)	1 (7.1%)	7 (14.0%)	0 (0.0%)	15 (8.3%)
8	10 (3.8%)	0 (0.0%)	2 (4.0%)	1 (5.3%)	7 (3.9%)
9	13 (4.9%)	0 (0.0%)	3 (6.0%)	1 (5.3%)	9 (5.0%)
10	7 (2.7%)	0 (0.0%)	2 (4.0%)	0 (0.0%)	5 (2.8%)
11	1 (0.4%)	0 (0.0%)	0 (0.0%)	1 (5.3%)	0 (0.0%)
12	60 (22.7%)	3 (21.4%)	6 (12.0%)	6 (31.6%)	45 (24.9%)
Population group					
Missing Values	0	0	0	0	0
1	263 (99.6%)	14 (100.0%)	50 (100.0%)	19 (100.0%)	180 (99.4%)
2	1 (0.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.6%)
3	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Mother's highest level of education					
Missing Values	0	0	0	0	0
1	22 (8.3%)	2 (14.3%)	4 (8.0%)	3 (15.8%)	13 (7.2%)
2	187 (70.8%)	11 (78.6%)	40 (80.0%)	12 (63.2%)	124 (68.5%)
3	55 (20.8%)	1 (7.1%)	6 (12.0%)	4 (21.1%)	44 (24.3%)
Marital status					
Missing Values	0	0	0	0	0

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
1	106 (40.2%)	4 (28.6%)	20 (40.0%)	6 (31.6%)	76 (42.0%)
2	100 (37.9%)	7 (50.0%)	17 (34.0%)	9 (47.4%)	67 (37.0%)
3	55 (20.8%)	3 (21.4%)	12 (24.0%)	4 (21.1%)	36 (19.9%)
4	2 (0.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (1.1%)
5	1 (0.4%)	0 (0.0%)	1 (2.0%)	0 (0.0%)	0 (0.0%)
Mother's current employment					
Missing Values	0	0	0	0	0
0	159 (60.2%)	10 (71.4%)	29 (58.0%)	10 (52.6%)	110 (60.8%)
1	105 (39.8%)	4 (28.6%)	21 (42.0%)	9 (47.4%)	71 (39.2%)
Type of employment					
Missing Values	159	10	29	10	110
1	15 (14.3%)	0 (0.0%)	1 (4.8%)	1 (11.1%)	13 (18.3%)
2	6 (5.7%)	0 (0.0%)	3 (14.3%)	0 (0.0%)	3 (4.2%)
3	17 (16.2%)	1 (25.0%)	6 (28.6%)	3 (33.3%)	7 (9.9%)
4	67 (63.8%)	3 (75.0%)	11 (52.4%)	5 (55.6%)	48 (67.6%)
Social grant					
Missing Values	134	3	24	14	93
1	130 (100.0%)	11 (100.0%)	26 (100.0%)	5 (100.0%)	88 (100.0%)
2	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Partner's highest level of education					
Missing Values	8	1	2	0	5
1	10 (3.9%)	1 (7.7%)	0 (0.0%)	0 (0.0%)	9 (5.1%)
2	174 (68.0%)	7 (53.8%)	35 (72.9%)	15 (78.9%)	117 (66.5%)
3	46 (18.0%)	4 (30.8%)	5 (10.4%)	3 (15.8%)	34 (19.3%)
99	26 (10.2%)	1 (7.7%)	8 (16.7%)	1 (5.3%)	16 (9.1%)
Partner's current employment					
Missing Values	10	0	1	0	9
0	41 (16.1%)	2 (14.3%)	7 (14.3%)	3 (15.8%)	29 (16.9%)
1	213 (83.9%)	12 (85.7%)	42 (85.7%)	16 (84.2%)	143 (83.1%)
Type of employment					
Missing Values	54	3	8	4	39
1	32 (15.2%)	2 (18.2%)	7 (16.7%)	3 (20.0%)	20 (14.1%)
2	22 (10.5%)	2 (18.2%)	6 (14.3%)	1 (6.7%)	13 (9.2%)
3	33 (15.7%)	1 (9.1%)	7 (16.7%)	5 (33.3%)	20 (14.1%)
4	123 (58.6%)	6 (54.5%)	22 (52.4%)	6 (40.0%)	89 (62.7%)
Monthly household income					
Missing Values	2	0	0	0	2
1	47 (17.9%)	4 (28.6%)	7 (14.0%)	0 (0.0%)	36 (20.1%)
2	65 (24.8%)	0 (0.0%)	15 (30.0%)	8 (42.1%)	42 (23.5%)

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
3	61 (23.3%)	5 (35.7%)	13 (26.0%)	5 (26.3%)	38 (21.2%)
4	19 (7.3%)	2 (14.3%)	5 (10.0%)	1 (5.3%)	11 (6.1%)
5	58 (22.1%)	1 (7.1%)	9 (18.0%)	5 (26.3%)	43 (24.0%)
6	12 (4.6%)	2 (14.3%)	1 (2.0%)	0 (0.0%)	9 (5.0%)
Partner's HIV status					
Missing Values	1	0	0	0	1
0	46 (17.5%)	2 (14.3%)	15 (30.0%)	1 (5.3%)	28 (15.6%)
1	189 (71.9%)	8 (57.1%)	14 (28.0%)	18 (94.7%)	149 (82.8%)
2	28 (10.6%)	4 (28.6%)	21 (42.0%)	0 (0.0%)	3 (1.7%)
Description of neighbourhood					
Missing Values	0	0	0	0	0
1	120 (45.5%)	3 (21.4%)	21 (42.0%)	13 (68.4%)	83 (45.9%)
2	91 (34.5%)	7 (50.0%)	20 (40.0%)	5 (26.3%)	59 (32.6%)
3	42 (15.9%)	4 (28.6%)	6 (12.0%)	1 (5.3%)	31 (17.1%)
4	11 (4.2%)	0 (0.0%)	3 (6.0%)	0 (0.0%)	8 (4.4%)
Access to running water					
Missing Values	0	0	0	0	0
1	36 (13.6%)	3 (21.4%)	9 (18.0%)	3 (15.8%)	21 (11.6%)
2	87 (33.0%)	4 (28.6%)	10 (20.0%)	6 (31.6%)	67 (37.0%)
3	129 (48.9%)	7 (50.0%)	27 (54.0%)	10 (52.6%)	85 (47.0%)
4	12 (4.5%)	0 (0.0%)	4 (8.0%)	0 (0.0%)	8 (4.4%)
Access to toilet					
Missing Values	2	1	1	0	0
1	181 (69.1%)	8 (61.5%)	30 (61.2%)	15 (78.9%)	128 (70.7%)
2	81 (30.9%)	5 (38.5%)	19 (38.8%)	4 (21.1%)	53 (29.3%)
Electricity at home					
Missing Values	1	0	0	1	0
0	14 (5.3%)	0 (0.0%)	2 (4.0%)	0 (0.0%)	12 (6.6%)
1	249 (94.7%)	14 (100.0%)	48 (96.0%)	18 (100.0%)	169 (93.4%)
Functional fridge at home					
Missing Values	1	0	0	1	0
0	41 (15.6%)	2 (14.3%)	8 (16.0%)	2 (11.1%)	29 (16.0%)
1	222 (84.4%)	12 (85.7%)	42 (84.0%)	16 (88.9%)	152 (84.0%)
Television at home					
Missing Values	1	0	0	1	0
0	29 (11.0%)	0 (0.0%)	7 (14.0%)	0 (0.0%)	22 (12.2%)
1	234 (89.0%)	14 (100.0%)	43 (86.0%)	18 (100.0%)	159 (87.8%)
Telephone available at home					
Missing Values	1	0	0	1	0
0	252 (95.8%)	14 (100.0%)	49 (98.0%)	18 (100.0%)	171 (94.5%)

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
1	11 (4.2%)	0 (0.0%)	1 (2.0%)	0 (0.0%)	10 (5.5%)
Cell phone					
Missing Values	0	0	0	0	0
0	3 (1.1%)	1 (7.1%)	0 (0.0%)	0 (0.0%)	2 (1.1%)
1	261 (98.9%)	13 (92.9%)	50 (100.0%)	19 (100.0%)	179 (98.9%)
Computer at home					
Missing Values	0	0	0	0	0
0	184 (69.7%)	9 (64.3%)	40 (80.0%)	13 (68.4%)	122 (67.4%)
1	80 (30.3%)	5 (35.7%)	10 (20.0%)	6 (31.6%)	59 (32.6%)
Access to internet					
Missing Values	5	0	1	1	3
0	44 (17.0%)	2 (14.3%)	11 (22.4%)	3 (16.7%)	28 (15.7%)
1	35 (13.5%)	2 (14.3%)	8 (16.3%)	8 (44.4%)	17 (9.6%)
2	18 (6.9%)	0 (0.0%)	5 (10.2%)	0 (0.0%)	13 (7.3%)
3	162 (62.5%)	10 (71.4%)	25 (51.0%)	7 (38.9%)	120 (67.4%)
Family own a car					
Missing Values	1	1	0	0	0
0	178 (67.7%)	10 (76.9%)	37 (74.0%)	13 (68.4%)	118 (65.2%)
1	85 (32.3%)	3 (23.1%)	13 (26.0%)	6 (31.6%)	63 (34.8%)
House made of brick & cement					
Missing Values	0	0	0	0	0
0	98 (37.1%)	7 (50.0%)	22 (44.0%)	7 (36.8%)	62 (34.3%)
1	166 (62.9%)	7 (50.0%)	28 (56.0%)	12 (63.2%)	119 (65.7%)
Rent					
Missing Values	0	0	0	0	0
0	122 (46.2%)	7 (50.0%)	21 (42.0%)	9 (47.4%)	85 (47.0%)
1	142 (53.8%)	7 (50.0%)	29 (58.0%)	10 (52.6%)	96 (53.0%)
Stay in a RDP house					
Missing Values	0	0	0	0	0
0	224 (84.8%)	13 (92.9%)	44 (88.0%)	17 (89.5%)	150 (82.9%)
1	40 (15.2%)	1 (7.1%)	6 (12.0%)	2 (10.5%)	31 (17.1%)

(When comparing all 4 groups) For all the numerical variables: In all instances we used the Shapiro Wilk test to determine if the data was normally distributed. The ANOVA tests was used for the normal instances while the Kruskal Wallis H test was used as the data was non-normal. All tests were performed at a 5% level of significance.

- The p-value for **Maternal.Age.(years):** (not normal) was: 0.0001
- The p-value for Birth weight (normal) was: 0
- The p-value for Apgar.score.at.5.minutes (not normal) was: 0.045

- The p-value for Gravidity (not normal) was: 0.0072
- The p-value for Parity.(number.of.all.previous.births.28.weeks) (not normal) was: 0.007
- The p-value for Abortions,.miscarriages,.TOP (not normal) was: 0.3825
- The p-value for GA_EXACT.WEEKS (not normal) was: 0.0013
- The p-value for RIZ-SCORE (not normal) was: 0
- The p-value for HC.(cm) (not normal) was: 0.0061
- The p-value for WeightZScore (normal) was: 0.1047
- The p-value for HeadCircumferenceZScore (not normal) was: 0.8645

For each of the variables which were significantly different, we continue to perform a posthoc analysis to determine which groups differs from which. We always use the adjusted p-values as we included a Bonferonni correction.

Maternal Age (years)

Comparison	Z	P.unadj	P.adj
CHEU Abnormal UmA-RI - CHEU Normal UmA-RI	2.918	0.003523	0.007047
CHEU Abnormal UmA-RI - CHUU Abnormal UmA-RI	3.944	0.00008026	0.0002408
CHEU Normal UmA-RI - CHUU Abnormal UmA-RI	1.88	0.06008	0.0721
CHEU Abnormal UmA-RI - CHUU Normal UmA-RI	4.276	0.000019	0.000114
CHEU Normal UmA-RI - CHUU Normal UmA-RI	1.903	0.05709	0.08563
CHUU Abnormal UmA-RI - CHUU Normal UmA-RI	-0.8407	0.4005	0.4005

Birth weight

- Groups:

	diff	lwr	upr	p adj
CHEU Normal UmA-RI-CHEU Abnormal UmA-RI	365.5	-6.161	737.1	0.05584
CHUU Abnormal UmA-RI-CHEU Abnormal UmA-RI	-92.14	-525.1	340.8	0.9464
CHUU Normal UmA-RI-CHEU Abnormal UmA-RI	452.6	111.6	793.5	0.003864
CHUU Abnormal UmA-RI-CHEU Normal UmA-RI	-457.6	-788.9	-126.4	0.002369
CHUU Normal UmA-RI-CHEU Normal UmA-RI	87.09	-109.3	283.5	0.6608
CHUU Normal UmA-RI-CHUU Abnormal UmA-RI	544.7	248.3	841.1	0.00001976

Apgar.score.at.5.minutes

Comparison	Z	P.unadj	P.adj
CHEU Abnormal UmA-RI - CHEU Normal UmA-RI	-0.9091	0.3633	0.4359
CHEU Abnormal UmA-RI - CHUU Abnormal UmA-RI	0.2833	0.777	0.777
CHEU Normal UmA-RI - CHUU Abnormal UmA-RI	1.367	0.1715	0.343
CHEU Abnormal UmA-RI - CHUU Normal UmA-RI	-1.683	0.09238	0.2771
CHEU Normal UmA-RI - CHUU Normal UmA-RI	-1.201	0.2296	0.3444
CHUU Abnormal UmA-RI - CHUU Normal UmA-RI	-2.297	0.0216	0.1296

Gravidity

Comparison	Z	P.unadj	P.adj
CHEU Abnormal UmA-RI - CHEU Normal UmA-RI	1.39	0.1646	0.2468
CHEU Abnormal UmA-RI - CHUU Abnormal UmA-RI	2.199	0.02787	0.05574

Comparison	Z	P.unadj	P.adj
CHEU Normal UmA-RI - CHUU Abnormal UmA-RI	1.315	0.1886	0.2263
CHEU Abnormal UmA-RI - CHUU Normal UmA-RI	2.835	0.004587	0.02752
CHEU Normal UmA-RI - CHUU Normal UmA-RI	2.291	0.02194	0.06582
CHUU Abnormal UmA-RI - CHUU Normal UmA-RI	0.04881	0.9611	0.9611

Parity.(number.of.all.previous.births.28.weeks)

Comparison	Z	P.unadj	P.adj
CHEU Abnormal UmA-RI - CHEU Normal UmA-RI	1.964	0.04948	0.09896
CHEU Abnormal UmA-RI - CHUU Abnormal UmA-RI	2.555	0.01062	0.03185
CHEU Normal UmA-RI - CHUU Abnormal UmA-RI	1.135	0.2563	0.3075
CHEU Abnormal UmA-RI - CHUU Normal UmA-RI	3.15	0.001633	0.009798
CHEU Normal UmA-RI - CHUU Normal UmA-RI	1.751	0.07987	0.1198
CHUU Abnormal UmA-RI - CHUU Normal UmA-RI	-0.1084	0.9137	0.9137

GA_EXACT.WEEKS

Comparison	Z	P.unadj	P.adj
CHEU Abnormal UmA-RI - CHEU Normal UmA-RI	-3.282	0.001029	0.002059
CHEU Abnormal UmA-RI - CHUU Abnormal UmA-RI	-3.83	0.0001281	0.0007686
CHEU Normal UmA-RI - CHUU Abnormal UmA-RI	-1.323	0.1858	0.223
CHEU Abnormal UmA-RI - CHUU Normal UmA-RI	-3.465	0.0005312	0.001593
CHEU Normal UmA-RI - CHUU Normal UmA-RI	0.1966	0.8441	0.8441
CHUU Abnormal UmA-RI - CHUU Normal UmA-RI	1.609	0.1077	0.1615

RI.Z-SCORE

Comparison	Z	P.unadj	P.adj
CHEU Abnormal UmA-RI - CHEU Normal UmA-RI	6.351	0.0000000002133	0.0000000004265
CHEU Abnormal UmA-RI - CHUU Abnormal UmA-RI	0.03411	0.9728	0.9728
CHEU Normal UmA-RI - CHUU Abnormal UmA-RI	-7.082	0.000000000001426	0.000000000008554
CHEU Abnormal UmA-RI - CHUU Normal UmA-RI	6.056	0.000000001392	0.000000002089
CHEU Normal UmA-RI - CHUU Normal UmA-RI	-1.505	0.1323	0.1588
CHUU Abnormal UmA-RI - CHUU Normal UmA-RI	6.917	0.000000000004617	0.00000000001385

HC. (cm)

Comparison	Z	P.unadj	P.adj
CHEU Abnormal UmA-RI - CHEU Normal UmA-RI	-0.8825	0.3775	0.453
CHEU Abnormal UmA-RI - CHUU Abnormal UmA-RI	1.498	0.134	0.2681
CHEU Normal UmA-RI - CHUU Abnormal UmA-RI	2.978	0.002905	0.008715
CHEU Abnormal UmA-RI - CHUU Normal UmA-RI	-1.039	0.2987	0.448
CHEU Normal UmA-RI - CHUU Normal UmA-RI	-0.1447	0.885	0.885
CHUU Abnormal UmA-RI - CHUU Normal UmA-RI	-3.411	0.0006477	0.003886

(When comparing all 4 groups) For the categorical variables we used the Chi Squared test. Only variables with groups larger than 5 were included in these investigations as smaller groups lead to volatility results. All tests were performed at a 5% level of significance.

- The p-value for House.made.of.brick.&.cement is: 0.4493963
- The p-value for Rent is: 0.9213464

1.6.2 Medical conditions

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Baby admitted to the neonatal unit in the first week of life					
Missing Values	2	1	0	0	1
0	216 (82.4%)	12 (92.3%)	44 (88.0%)	13 (68.4%)	147 (81.7%)
1	46 (17.6%)	1 (7.7%)	6 (12.0%)	6 (31.6%)	33 (18.3%)
Diagnosis					
Missing Values	219	13	45	13	148
1	13 (28.9%)	0 (0.0%)	3 (60.0%)	3 (50.0%)	7 (21.2%)
2	21 (46.7%)	0 (0.0%)	2 (40.0%)	2 (33.3%)	17 (51.5%)
3	11 (24.4%)	1 (100.0%)	0 (0.0%)	1 (16.7%)	9 (27.3%)
Baby ever taken any prescribed medications					
Missing Values	10	2	3	2	3
0	156 (61.4%)	1 (8.3%)	7 (14.9%)	11 (64.7%)	137 (77.0%)
1	98 (38.6%)	11 (91.7%)	40 (85.1%)	6 (35.3%)	41 (23.0%)
NVP started					
Missing Values	217	8	9	19	181
1	47 (100.0%)	6 (100.0%)	41 (100.0%)	0 (NaN%)	0 (NaN%)
AZT started					
Missing Values	253	6	47	19	181
1	11 (100.0%)	8 (100.0%)	3 (100.0%)	0 (NaN%)	0 (NaN%)
Rating mother's general health					
Missing Values	2	1	0	0	1
1	110 (42.0%)	5 (38.5%)	16 (32.0%)	5 (26.3%)	84 (46.7%)
2	54 (20.6%)	3 (23.1%)	14 (28.0%)	3 (15.8%)	34 (18.9%)
3	76 (29.0%)	5 (38.5%)	14 (28.0%)	10 (52.6%)	47 (26.1%)
4	18 (6.9%)	0 (0.0%)	6 (12.0%)	0 (0.0%)	12 (6.7%)
5	4 (1.5%)	0 (0.0%)	0 (0.0%)	1 (5.3%)	3 (1.7%)
Infections post partum					
Missing Values	249	13	48	16	172
1	15 (100.0%)	1 (100.0%)	2 (100.0%)	3 (100.0%)	9 (100.0%)
Complications / illnesses post partum					
Missing Values	234	14	45	17	158
1	30 (100.0%)	0 (NaN%)	5 (100.0%)	2 (100.0%)	23 (100.0%)
Taking any prescribed medication					
Missing Values	203	3	10	18	172
1	61 (100.0%)	11 (100.0%)	40 (100.0%)	1 (100.0%)	9 (100.0%)

No significance tests could be performed due to small samples.

1.6.3 Food security assessment

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Statements best describes the food eaten in your household in the past 12 months					
Missing Values	2	1	0	1	0
1	93 (35.5%)	4 (30.8%)	16 (32.0%)	10 (55.6%)	63 (34.8%)
2	96 (36.6%)	4 (30.8%)	21 (42.0%)	6 (33.3%)	65 (35.9%)
3	62 (23.7%)	4 (30.8%)	13 (26.0%)	1 (5.6%)	44 (24.3%)
4	11 (4.2%)	1 (7.7%)	0 (0.0%)	1 (5.6%)	9 (5.0%)
You and other household members worried that food would run out before you got money to buy more					
Missing Values	1	1	0	0	0
0	113 (43.0%)	7 (53.8%)	24 (48.0%)	10 (52.6%)	72 (39.8%)
1	150 (57.0%)	6 (46.2%)	26 (52.0%)	9 (47.4%)	109 (60.2%)
The food that you and other household members bought just didn't last, and there wasn't any money to get more					
Missing Values	1	1	0	0	0
0	126 (47.9%)	7 (53.8%)	22 (44.0%)	11 (57.9%)	86 (47.5%)
1	137 (52.1%)	6 (46.2%)	28 (56.0%)	8 (42.1%)	95 (52.5%)
You and other household members couldn't afford to eat balanced meals					
Missing Values	3	1	1	0	1
0	127 (48.7%)	9 (69.2%)	21 (42.9%)	12 (63.2%)	85 (47.2%)
1	134 (51.3%)	4 (30.8%)	28 (57.1%)	7 (36.8%)	95 (52.8%)
In the past 12 months, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food					
Missing Values	96	8	19	10	59
0	79 (47.0%)	3 (50.0%)	13 (41.9%)	4 (44.4%)	59 (48.4%)
1	89 (53.0%)	3 (50.0%)	18 (58.1%)	5 (55.6%)	63 (51.6%)
How often did this happen					
Missing Values	177	11	32	15	119
0	7 (8.0%)	1 (33.3%)	3 (16.7%)	1 (25.0%)	2 (3.2%)
1	80 (92.0%)	2 (66.7%)	15 (83.3%)	3 (75.0%)	60 (96.8%)
In the past 12 months, did you personally ever eat less than you felt you should have because there wasn't enough money to buy food					
Missing Values	96	8	18	10	60

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
0	78 (46.4%)	3 (50.0%)	14 (43.8%)	3 (33.3%)	58 (47.9%)
1	90 (53.6%)	3 (50.0%)	18 (56.2%)	6 (66.7%)	63 (52.1%)
In the past 12 months, did you personally lose weight because you didn't have enough money for food					
Missing Values	101	8	21	11	61
0	110 (67.5%)	4 (66.7%)	15 (51.7%)	6 (75.0%)	85 (70.8%)
1	53 (32.5%)	2 (33.3%)	14 (48.3%)	2 (25.0%)	35 (29.2%)
In the past 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food					
Missing Values	116	8	23	11	74
0	126 (85.1%)	6 (100.0%)	21 (77.8%)	8 (100.0%)	91 (85.0%)
1	22 (14.9%)	0 (0.0%)	6 (22.2%)	0 (0.0%)	16 (15.0%)
How often did this happen					
Missing Values	242	14	44	19	165
0	3 (13.6%)	0 (NaN%)	1 (16.7%)	0 (NaN%)	2 (12.5%)
1	19 (86.4%)	0 (NaN%)	5 (83.3%)	0 (NaN%)	14 (87.5%)
Household Adult Food Security Raw Score/Scale of 10					
Missing Values	0	0	0	0	0
min	0	0	0	0	0
max	9	7	9	7	9
n; mean (sd)	2.93 ± 2.92	1.86 ± 2.66	3.16 ± 3.16	2.11 ± 2.64	3.04 ± 2.89
n; median (iqr)	2.00 (0.00, 6.00)	0.00 (0.00, 2.75)	2.50 (0.00, 6.00)	0.00 (0.00, 4.00)	3.00 (0.00, 6.00)
mean (CI)	2.93 (95% CI: 2.58, 3.28)	1.86 (95% CI: 0.47, 3.25)	3.16 (95% CI: 2.28, 4.04)	2.11 (95% CI: 0.92, 3.29)	3.04 (95% CI: 2.62, 3.46)
Household Adult Food Security Status					
Missing Values	0	0	0	0	0
1	98 (37.1%)	8 (57.1%)	18 (36.0%)	10 (52.6%)	62 (34.3%)
2	37 (14.0%)	2 (14.3%)	7 (14.0%)	1 (5.3%)	27 (14.9%)
3	60 (22.7%)	2 (14.3%)	8 (16.0%)	4 (21.1%)	46 (25.4%)
4	69 (26.1%)	2 (14.3%)	17 (34.0%)	4 (21.1%)	46 (25.4%)

(When comparing all 4 groups) For all the numerical variables: In all instances we used the Shapiro Wilk test to determine if the data was normally distributed. The Kruskal Wallis H test was used as the data was non-normal. All tests were performed at a 5% level of significance.

- The p-value for Household Adult Food Security Raw Score/Scale of 10 was: 0.223

(When comparing all 4 groups) For the categorical variables we used the Chi Squared test. Only variables with groups larger than 5 were included in these investigations as smaller groups lead to volatility results. All tests were performed at a 5% level of significance.

- The p-value for You.and.other.household.members.worried.that.food.would.run.out.before.you.got.money.to.buy.more is: 0.4540611
- The p-value for The.food.that.you.and.other.household.members.bought.just.didn't.last,.and.there.wasn't.any.money.to.get.more is: 0.7385931

1.6.4 Lifestyle behaviour

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Do you smoke cigarettes					
Missing Values	1	1	0	0	0
0	257 (97.7%)	12 (92.3%)	48 (96.0%)	19 (100.0%)	178 (98.3%)
1	6 (2.3%)	1 (7.7%)	2 (4.0%)	0 (0.0%)	3 (1.7%)
If Yes, how many do you smoke each day					
Missing Values	260	13	49	19	179
min	3	3	3	Inf	3
max	4	3	3	-Inf	4
n; mean (sd)	4; 3.25 ± 0.50	1; 3.00 ± NA	1; 3.00 ± NA	0; NaN ± NA	2; 3.50 ± 0.71
n; median (iqr)	4; 3.00 (3.00, 3.25)	1; 3.00 (3.00, 3.00)	1; 3.00 (3.00, 3.00)	0; NA (NA, NA)	2; 3.50 (3.25, 3.75)
mean (CI)	3.25 (95% CI: 2.76, 3.74)	3.00 (95% CI: NA, NA)	3.00 (95% CI: NA, NA)	NaN (95% CI: NaN, NaN)	3.50 (95% CI: 2.52, 4.48)
Since your baby was born, how often do you drink alcohol					
Missing Values	3	1	0	1	1
1	3 (1.1%)	0 (0.0%)	0 (0.0%)	2 (11.1%)	1 (0.6%)
2	8 (3.1%)	0 (0.0%)	2 (4.0%)	0 (0.0%)	6 (3.3%)
3	26 (10.0%)	0 (0.0%)	4 (8.0%)	0 (0.0%)	22 (12.2%)
4	15 (5.7%)	1 (7.7%)	4 (8.0%)	0 (0.0%)	10 (5.6%)
5	16 (6.1%)	0 (0.0%)	1 (2.0%)	0 (0.0%)	15 (8.3%)
6	193 (73.9%)	12 (92.3%)	39 (78.0%)	16 (88.9%)	126 (70.0%)

No significance tests can be performed here due to small samples.

1.6.5 CD4 and HVL

These include only two groups:

	DataA (N = 64)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)
Latest CD4			
Missing Values	45	8	37
min	107	130	107
max	900	890	900
n; mean (sd)	19; 448.32 \pm 297.92	6; 416.00 \pm 295.25	13; 463.23 \pm 309.93
n; median (iqr)	19; 462.00 (159.50, 700.00)	6; 362.00 (179.50, 565.50)	13; 500.00 (167.00, 800.00)
mean (CI)	448.32 (95% CI: 314.35, 582.28)	416.00 (95% CI: 179.76, 652.24)	463.23 (95% CI: 294.76, 631.71)
Latest Viral load			
Missing Values	25	1	24
min	0	0	0
max	316	134	316
n; mean (sd)	39; 17.46 \pm 57.71	13; 14.08 \pm 38.49	26; 19.15 \pm 65.90
n; median (iqr)	39; 0.00 (0.00, 0.00)	13; 0.00 (0.00, 0.00)	26; 0.00 (0.00, 0.00)
mean (CI)	17.46 (95% CI: -0.65, 35.57)	14.08 (95% CI: -6.85, 35.00)	19.15 (95% CI: -6.18, 44.48)
Current ART			
Missing Values	10	1	9
1	38 (70.4%)	7 (53.8%)	31 (75.6%)
2	16 (29.6%)	6 (46.2%)	10 (24.4%)

(When comparing all 4 groups) For the continuous variables, the Shapiro Willk test was used to test for normality. Since both were found to not be normally distributed, the Mann Whitney U test was used to compare the results between the two groups. All tests were performed at a 5% level of significance.

- For Latest.CD4 the p-value was: 0.9649
- For Latest.Viral.load the p-value was: 0.7976

(When comparing all 4 groups) For the categorical variables we used the Chi Squared test. Only variables with groups larger than 5 were included in these investigations as smaller groups lead to volatility results. All tests were performed at a 5% level of significance.

- The p-value for Current.ART is: 0.2506089

1.6.6 Maternal mental health

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Little interest or pleasure in doing things					
Missing Values	5	1	0	2	2
1	200 (77.2%)	11 (84.6%)	35 (70.0%)	16 (94.1%)	138 (77.1%)
2	32 (12.4%)	1 (7.7%)	9 (18.0%)	0 (0.0%)	22 (12.3%)
3	11 (4.2%)	1 (7.7%)	4 (8.0%)	0 (0.0%)	6 (3.4%)
4	16 (6.2%)	0 (0.0%)	2 (4.0%)	1 (5.9%)	13 (7.3%)
Feeling down, depressed or hopeless					
Missing Values	5	1	0	2	2
1	182 (70.3%)	11 (84.6%)	30 (60.0%)	15 (88.2%)	126 (70.4%)
2	42 (16.2%)	1 (7.7%)	12 (24.0%)	1 (5.9%)	28 (15.6%)
3	21 (8.1%)	1 (7.7%)	5 (10.0%)	0 (0.0%)	15 (8.4%)
4	14 (5.4%)	0 (0.0%)	3 (6.0%)	1 (5.9%)	10 (5.6%)

For the categorical variables we used the Chi Squared test. Only variables with groups larger than 5 can be included in the analysis. No tests could be done.

1.6.7 Child medical conditions

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Child had malnutrition/Kwashiorkor					
Missing Values	247	14	44	19	170
1	17 (100.0%)	0 (NaN%)	6 (100.0%)	0 (NaN%)	11 (100.0%)
Child had diarrhea					
Missing Values	189	13	37	15	124
1	75 (100.0%)	1 (100.0%)	13 (100.0%)	4 (100.0%)	57 (100.0%)
Child had difficulty in breathing					
Missing Values	228	14	43	15	156
1	36 (100.0%)	0 (NaN%)	7 (100.0%)	4 (100.0%)	25 (100.0%)
Child once admitted for any illness in the hospital					
Missing Values	241	14	45	19	163
1	23 (100.0%)	0 (NaN%)	5 (100.0%)	0 (NaN%)	18 (100.0%)
Visited any health care facility because the child was ill					
Missing Values	187	14	38	15	120
1	77 (100.0%)	0 (NaN%)	12 (100.0%)	4 (100.0%)	61 (100.0%)
Child currently need or use medicine prescribed by a doctor or nurse					
Missing Values	247	13	47	17	170
1	17 (100.0%)	1 (100.0%)	3 (100.0%)	2 (100.0%)	11 (100.0%)
Child limited in any way in his or her ability to do the things most children of the same age can do					
Missing Values	259	13	50	19	177
1	5 (100.0%)	1 (100.0%)	0 (NaN%)	0 (NaN%)	4 (100.0%)
Child have any kind of developmental problem, disability for which he/she needs or gets special treatment or stimulation					
Missing Values	263	14	50	18	181
1	1 (100.0%)	0 (NaN%)	0 (NaN%)	1 (100.0%)	0 (NaN%)

For the categorical variables we used the Chi Squared test. Only variables with groups larger than 5 can be included in the analysis. No tests could be done.

1.6.8 Covid related

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Number of people earning an income per month					
Missing Values	4	0	1	2	1
1	147 (56.5%)	9 (64.3%)	28 (57.1%)	12 (70.6%)	98 (54.4%)
2	69 (26.5%)	2 (14.3%)	12 (24.5%)	4 (23.5%)	51 (28.3%)
3	5 (1.9%)	0 (0.0%)	2 (4.1%)	0 (0.0%)	3 (1.7%)
4	39 (15.0%)	3 (21.4%)	7 (14.3%)	1 (5.9%)	28 (15.6%)
Have you, the study child, or other household member tested positive for COVID-19					
Missing Values	241	12	46	15	168
1	23 (100.0%)	2 (100.0%)	4 (100.0%)	4 (100.0%)	13 (100.0%)
Number of household members tested positive for COVID-19					
Missing Values	241	12	46	15	168
1	18 (78.3%)	2 (100.0%)	4 (100.0%)	2 (50.0%)	10 (76.9%)
2	5 (21.7%)	0 (0.0%)	0 (0.0%)	2 (50.0%)	3 (23.1%)
Person(s) tested positive for COVID-19					
Missing Values	244	12	46	15	171
1	3 (15.0%)	0 (0.0%)	1 (25.0%)	0 (0.0%)	2 (20.0%)
2	4 (20.0%)	0 (0.0%)	1 (25.0%)	1 (25.0%)	2 (20.0%)
3	2 (10.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)	1 (10.0%)
4	1 (5.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (10.0%)
5	10 (50.0%)	2 (100.0%)	2 (50.0%)	2 (50.0%)	4 (40.0%)
Mother of the study child hospitalised with COVID					
Missing Values	263	14	49	19	181
1	1 (100.0%)	0 (NaN%)	1 (100.0%)	0 (NaN%)	0 (NaN%)
Mother of the study child fully recover from COVID					
Missing Values	260	14	49	19	178
1	4 (100.0%)	0 (NaN%)	1 (100.0%)	0 (NaN%)	3 (100.0%)
Father of the study child fully recover from COVID					

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
Missing Values	259	14	49	17	179
1	5 (100.0%)	0 (NaN%)	1 (100.0%)	2 (100.0%)	2 (100.0%)
You / another household member lose your / their job due to COVID-19					
Missing Values	193	12	31	15	135
1	71 (100.0%)	2 (100.0%)	19 (100.0%)	4 (100.0%)	46 (100.0%)
The person(s) who lost the job					
Missing Values	193	12	31	15	135
1	19 (26.8%)	0 (0.0%)	8 (42.1%)	2 (50.0%)	9 (19.6%)
2	35 (49.3%)	2 (100.0%)	7 (36.8%)	1 (25.0%)	25 (54.3%)
3	5 (7.0%)	0 (0.0%)	2 (10.5%)	0 (0.0%)	3 (6.5%)
4	12 (16.9%)	0 (0.0%)	2 (10.5%)	1 (25.0%)	9 (19.6%)
Impact did COVID-19 on household income					
Missing Values	3	0	0	1	2
1	19 (7.3%)	0 (0.0%)	4 (8.0%)	0 (0.0%)	15 (8.4%)
2	13 (5.0%)	2 (14.3%)	2 (4.0%)	0 (0.0%)	9 (5.0%)
3	122 (46.7%)	9 (64.3%)	19 (38.0%)	10 (55.6%)	84 (46.9%)
4	107 (41.0%)	3 (21.4%)	25 (50.0%)	8 (44.4%)	71 (39.7%)
COVID-19 related assistance received					
Missing Values	117	6	17	12	82
1	5 (3.4%)	0 (0.0%)	1 (3.0%)	0 (0.0%)	4 (4.0%)
2	93 (63.3%)	7 (87.5%)	24 (72.7%)	5 (71.4%)	57 (57.6%)
3	2 (1.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (2.0%)
4	9 (6.1%)	0 (0.0%)	3 (9.1%)	0 (0.0%)	6 (6.1%)
5	38 (25.9%)	1 (12.5%)	5 (15.2%)	2 (28.6%)	30 (30.3%)
Thinking of the period of the COVID-19 pandemic, did you and your household members have enough food to eat					
Missing Values	4	1	0	1	2

	DataA (N = 264)	CHEU Abnormal UmA-RI (N = 14)	CHEU Normal UmA-RI (N = 50)	CHUU Abnormal UmA-RI (N = 19)	CHUU Normal UmA-RI (N = 181)
1	100 (38.5%)	6 (46.2%)	13 (26.0%)	9 (50.0%)	72 (40.2%)
2	46 (17.7%)	2 (15.4%)	12 (24.0%)	2 (11.1%)	30 (16.8%)
3	89 (34.2%)	3 (23.1%)	21 (42.0%)	6 (33.3%)	59 (33.0%)
4	25 (9.6%)	2 (15.4%)	4 (8.0%)	1 (5.6%)	18 (10.1%)
How often are you and your family members eating food that you used to eat before the COVID-19 pandemic					
Missing Values	3	0	0	1	2
1	108 (41.4%)	7 (50.0%)	16 (32.0%)	9 (50.0%)	76 (42.5%)
2	44 (16.9%)	2 (14.3%)	8 (16.0%)	4 (22.2%)	30 (16.8%)
3	82 (31.4%)	3 (21.4%)	21 (42.0%)	4 (22.2%)	54 (30.2%)
4	27 (10.3%)	2 (14.3%)	5 (10.0%)	1 (5.6%)	19 (10.6%)

No significance test requested.

2 Additional investigations - Overall

2.1 Association between developmental outcomes and feeding practices and iron, zinc and iodine intakes

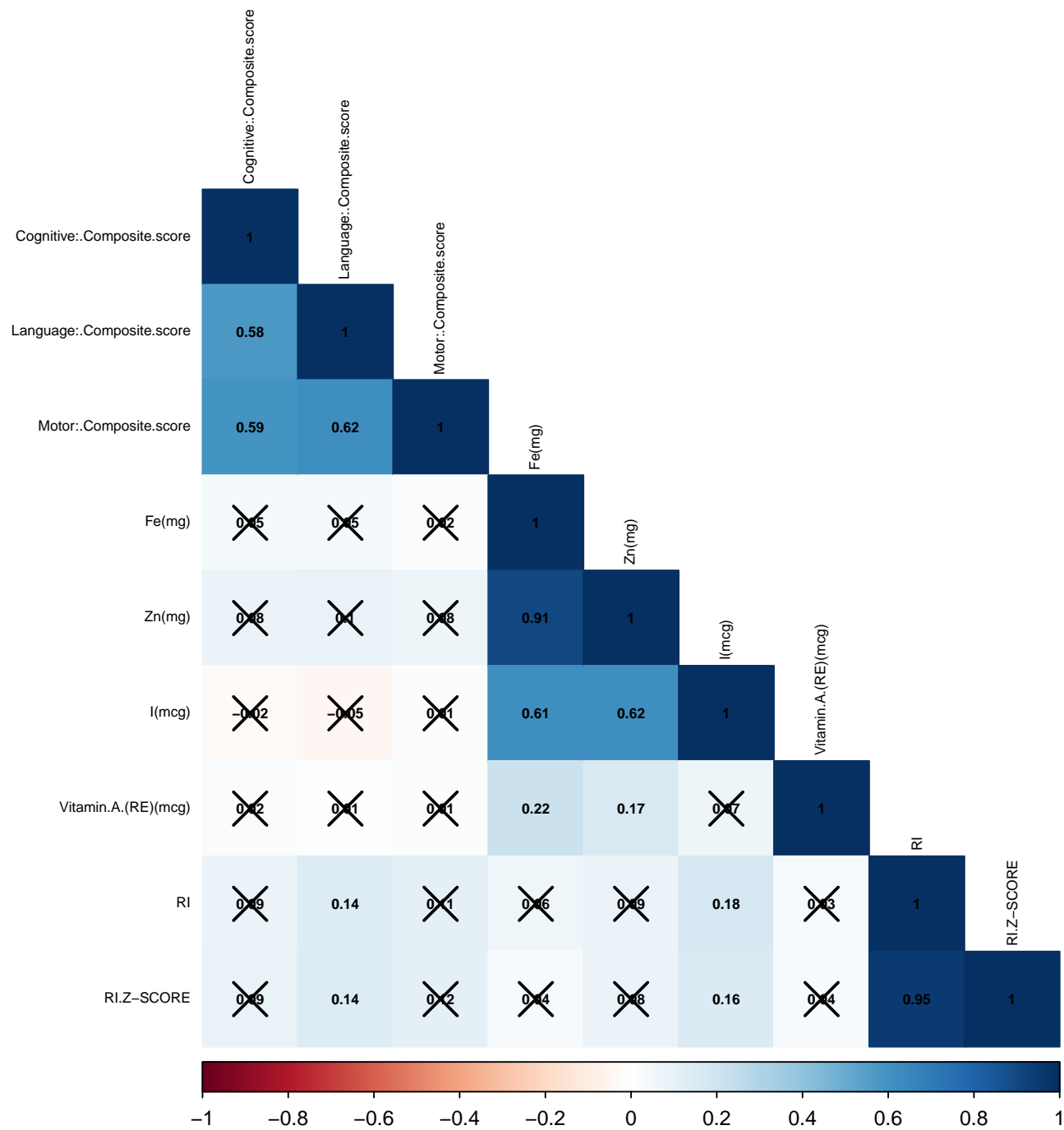
Association between developmental outcomes and feeding practices and iron (Fe), zinc (Zn) and iodine (I) intakes - correlation between developmental (cognitive, language and motor - Bayley) outcomes and the Feeding practices (breastfeeding variables), as well as intake of each nutrient: Fe, Zn, I and vitamin A -

2.1.1 Does the intake of Fe, Zn, I or vitamin A have an influence on cognitive, language or motor development

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 24: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.5789
Motor:.Composite.score	0.594
Fe(mg)	0.04583
Zn(mg)	0.082
I(mcg)	-0.02054
Vitamin.A.(RE)(mcg)	0.02215
RI	0.08918
RI.Z-SCORE	0.09197

Table 25: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.5789
Language:.Composite.score	1
Motor:.Composite.score	0.6161
Fe(mg)	0.04913
Zn(mg)	0.09649
I(mcg)	-0.04597
Vitamin.A.(RE)(mcg)	0.008661
RI	0.1445
RI.Z-SCORE	0.1414

Table 26: Table continues below

	Motor:.Composite.score	Fe(mg)	Zn(mg)
Cognitive:.Composite.score	0.594	0.04583	0.082
Language:.Composite.score	0.6161	0.04913	0.09649
Motor:.Composite.score	1	0.01855	0.07646
Fe(mg)	0.01855	1	0.9099
Zn(mg)	0.07646	0.9099	1
I(mcg)	0.01405	0.6148	0.6161
Vitamin.A.(RE)(mcg)	0.01064	0.217	0.1672
RI	0.1122	0.06101	0.0854

	Motor::Composite.score	Fe(mg)	Zn(mg)
RI.Z-SCORE	0.1164	0.03977	0.08334

Table 27: Table continues below

	I(mcg)	Vitamin.A.(RE)(mcg)	RI
Cognitive::Composite.score	-0.02054	0.02215	0.08918
Language::Composite.score	-0.04597	0.008661	0.1445
Motor::Composite.score	0.01405	0.01064	0.1122
Fe(mg)	0.6148	0.217	0.06101
Zn(mg)	0.6161	0.1672	0.0854
I(mcg)	1	0.07166	0.1754
Vitamin.A.(RE)(mcg)	0.07166	1	0.03221
RI	0.1754	0.03221	1
RI.Z-SCORE	0.1565	0.03708	0.9545

	RI.Z-SCORE
Cognitive::Composite.score	0.09197
Language::Composite.score	0.1414
Motor::Composite.score	0.1164
Fe(mg)	0.03977
Zn(mg)	0.08334
I(mcg)	0.1565
Vitamin.A.(RE)(mcg)	0.03708
RI	0.9545
RI.Z-SCORE	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 29: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0
Motor:.Composite.score	0
Fe(mg)	0.4716
Zn(mg)	0.06226
I(mcg)	0.9444
Vitamin.A.(RE)(mcg)	0.56
RI	0.4305
RI.Z-SCORE	0.5095

Table 30: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0
Language:.Composite.score	NA
Motor:.Composite.score	0
Fe(mg)	0.9728
Zn(mg)	0.04227
I(mcg)	0.4003
Vitamin.A.(RE)(mcg)	0.9408
RI	0.0876
RI.Z-SCORE	0.1051

Table 31: Table continues below

	Motor:.Composite.score	Fe(mg)	Zn(mg)
Cognitive:.Composite.score	0	0.4716	0.06226
Language:.Composite.score	0	0.9728	0.04227
Motor:.Composite.score	NA	0.777	0.1279
Fe(mg)	0.777	NA	0
Zn(mg)	0.1279	0	NA
I(mcg)	0.6565	0	0
Vitamin.A.(RE)(mcg)	0.7189	0.01785	0.05282

	Motor::Composite.score	Fe(mg)	Zn(mg)
RI	0.4283	0.7552	0.7665
RI.Z-SCORE	0.4652	0.9976	0.5936

Table 32: Table continues below

	I(mcg)	Vitamin.A.(RE)(mcg)	RI
Cognitive::Composite.score	0.9444	0.56	0.4305
Language::Composite.score	0.4003	0.9408	0.0876
Motor::Composite.score	0.6565	0.7189	0.4283
Fe(mg)	0	0.01785	0.7552
Zn(mg)	0	0.05282	0.7665
I(mcg)	NA	0.6875	0.3175
Vitamin.A.(RE)(mcg)	0.6875	NA	0.4281
RI	0.3175	0.4281	NA
RI.Z-SCORE	0.572	0.4804	0

	RI.Z-SCORE
Cognitive::Composite.score	0.5095
Language::Composite.score	0.1051
Motor::Composite.score	0.4652
Fe(mg)	0.9976
Zn(mg)	0.5936
I(mcg)	0.572
Vitamin.A.(RE)(mcg)	0.4804
RI	0
RI.Z-SCORE	NA

2.1.2 Does the feeding practices have an influence on cognitive, language or motor development

Feeding practices are categorical in nature so we cannot calculate correlations. All the variables also had very low counts so no significant tests could be performed.

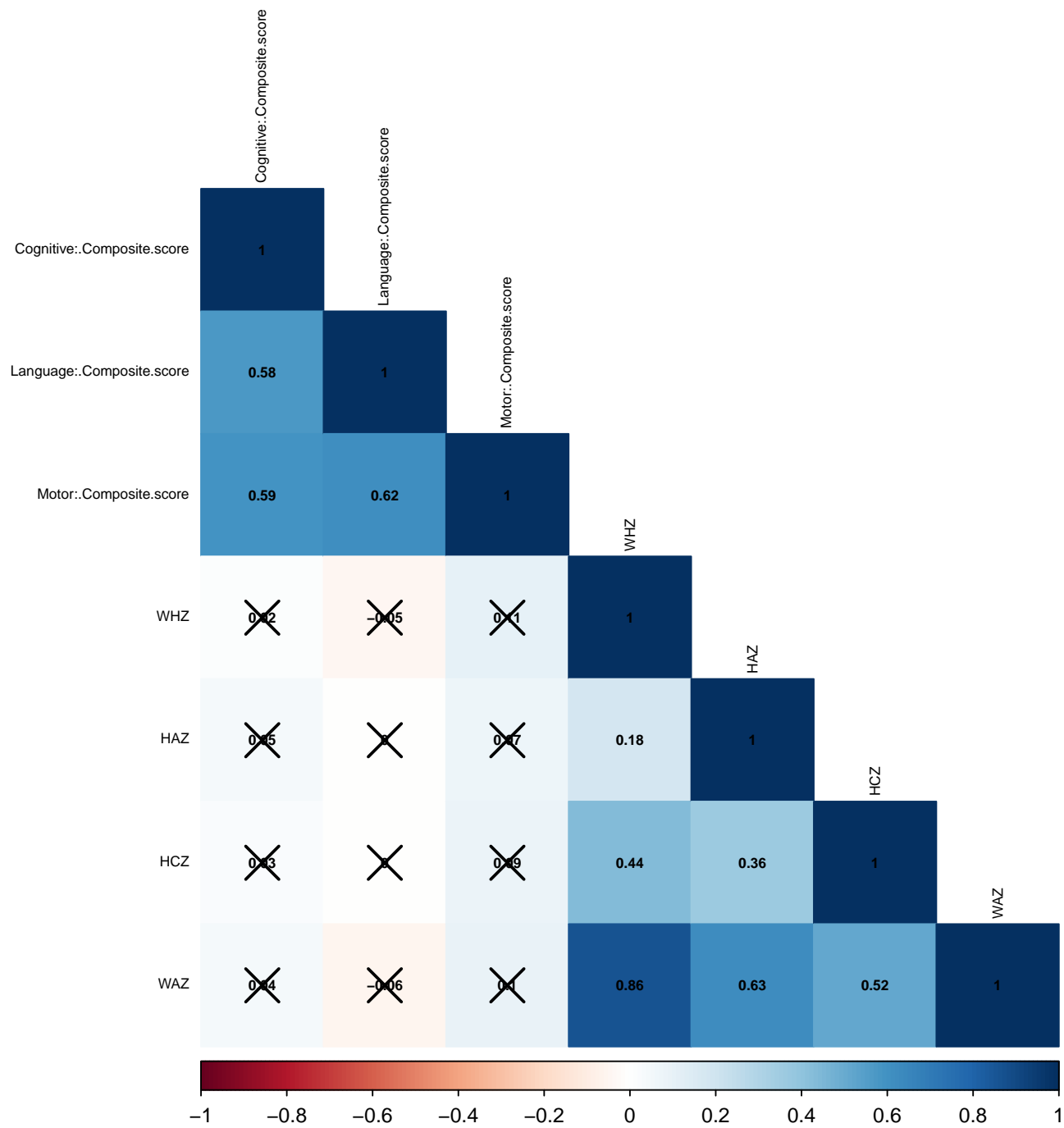
2.2 Association between developmental outcomes vs anthropometric indices and z scores

Association between developmental outcomes vs anthropometric indices and z scores - is there any correlation between growth outcomes (WAZ, WLZ, HCZ and LAZ) and each domain of developmental outcomes (domain: cognitive, language and motor - Bayley)

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 34: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.5789
Motor:.Composite.score	0.594
WHZ	0.01856
HAZ	0.04606
HCZ	0.02694
WAZ	0.0433

Table 35: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.5789
Language:.Composite.score	1
Motor:.Composite.score	0.6161
WHZ	-0.04545
HAZ	-0.003638
HCZ	-0.003695
WAZ	-0.05895

Table 36: Table continues below

	Motor:.Composite.score	WHZ	HAZ
Cognitive:.Composite.score	0.594	0.01856	0.04606
Language:.Composite.score	0.6161	-0.04545	-0.003638
Motor:.Composite.score	1	0.1077	0.07139
WHZ	0.1077	1	0.1838
HAZ	0.07139	0.1838	1
HCZ	0.08918	0.438	0.3617
WAZ	0.09729	0.8614	0.6251

	HCZ	WAZ
Cognitive:.Composite.score	0.02694	0.0433
Language:.Composite.score	-0.003695	-0.05895

	HCZ	WAZ
Motor:.Composite.score	0.08918	0.09729
WHZ	0.438	0.8614
HAZ	0.3617	0.6251
HCZ	1	0.5198
WAZ	0.5198	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 38: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0
Motor:.Composite.score	0
WHZ	0.7555
HAZ	0.2842
HCZ	0.9283
WAZ	0.4263

Table 39: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0
Language:.Composite.score	NA
Motor:.Composite.score	0
WHZ	0.5956
HAZ	0.7971
HCZ	0.9738
WAZ	0.759

Table 40: Table continues below

	Motor:.Composite.score	WHZ	HAZ
Cognitive:.Composite.score	0	0.7555	0.2842
Language:.Composite.score	0	0.5956	0.7971
Motor:.Composite.score	NA	0.06269	0.1336
WHZ	0.06269	NA	0.003021
HAZ	0.1336	0.003021	NA
HCZ	0.1374	0	0
WAZ	0.02757	0	0

	HCZ	WAZ
Cognitive:.Composite.score	0.9283	0.4263
Language:.Composite.score	0.9738	0.759
Motor:.Composite.score	0.1374	0.02757
WHZ	0	0
HAZ	0	0
HCZ	NA	0
WAZ	0	NA

3 Additional investigations - Only CHEU

3.1 Association between developmental outcomes and feeding practices and iron, zinc and iodine intakes

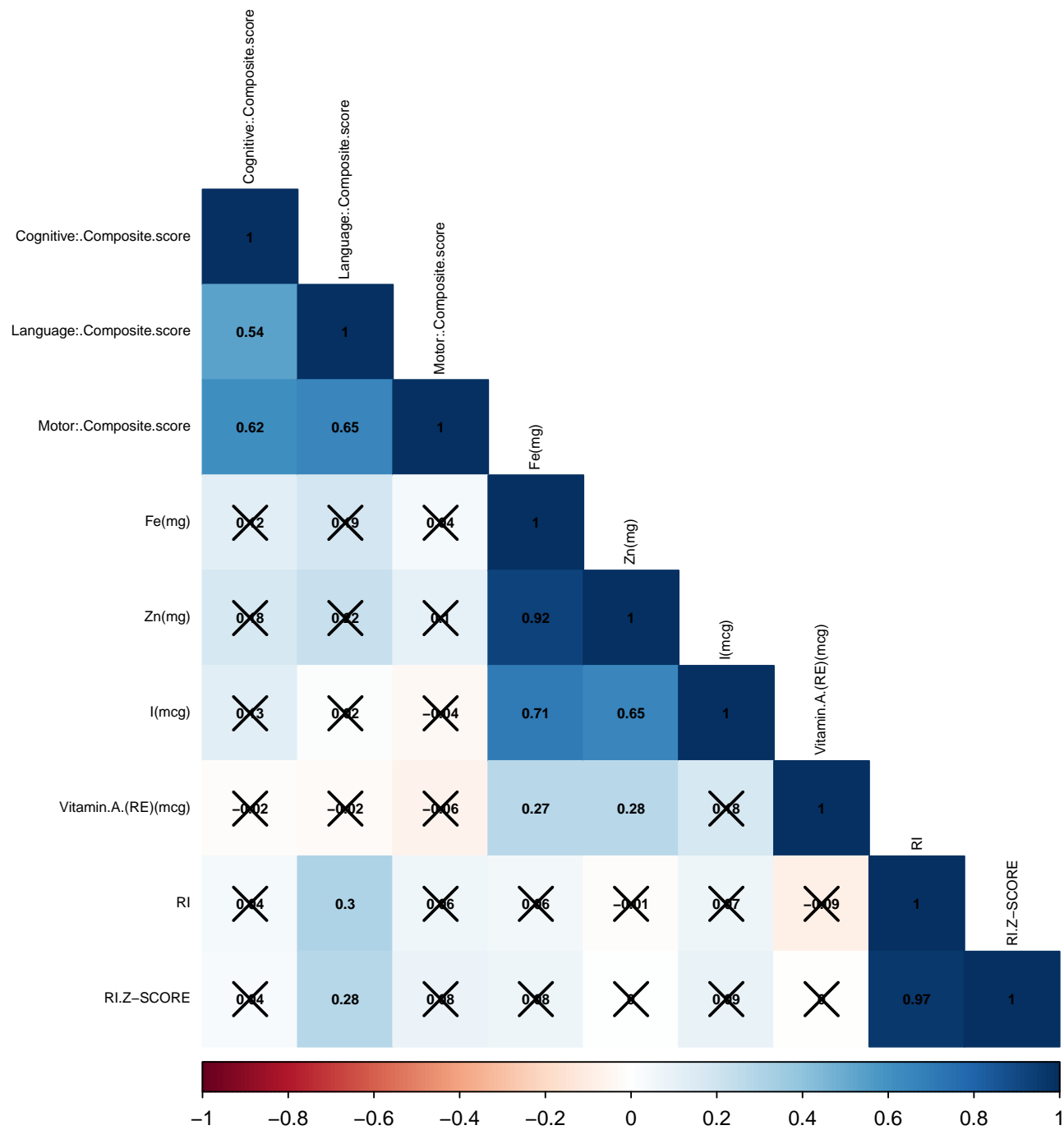
Association between developmental outcomes and feeding practices and iron (Fe), zinc (Zn) and iodine (I) intakes - correlation between developmental (cognitive, language and motor - Bayley) outcomes and the Feeding practices (breastfeeding variables), as well as intake of each nutrient: Fe, Zn, I and vitamin A -

3.1.1 Does the intake of Fe, Zn, I or vitamin A have an influence on cognitive, language or motor development

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 42: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.5354
Motor:.Composite.score	0.6152
Fe(mg)	0.1229
Zn(mg)	0.1762
I(mcg)	0.1284
Vitamin.A.(RE)(mcg)	-0.01661
RI	0.04308
RI.Z-SCORE	0.03675

Table 43: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.5354
Language:.Composite.score	1
Motor:.Composite.score	0.6505
Fe(mg)	0.1866
Zn(mg)	0.2202
I(mcg)	0.01826
Vitamin.A.(RE)(mcg)	-0.02384
RI	0.304
RI.Z-SCORE	0.284

Table 44: Table continues below

	Motor:.Composite.score	Fe(mg)	Zn(mg)
Cognitive:.Composite.score	0.6152	0.1229	0.1762
Language:.Composite.score	0.6505	0.1866	0.2202
Motor:.Composite.score	1	0.04403	0.1037
Fe(mg)	0.04403	1	0.9219
Zn(mg)	0.1037	0.9219	1
I(mcg)	-0.03504	0.7078	0.6524
Vitamin.A.(RE)(mcg)	-0.06135	0.2729	0.276
RI	0.06197	0.05939	-0.01033

	Motor:.Composite.score	Fe(mg)	Zn(mg)
RI.Z-SCORE	0.08249	0.07594	0.0009731

Table 45: Table continues below

	I(mcg)	Vitamin.A.(RE)(mcg)	RI
Cognitive:.Composite.score	0.1284	-0.01661	0.04308
Language:.Composite.score	0.01826	-0.02384	0.304
Motor:.Composite.score	-0.03504	-0.06135	0.06197
Fe(mg)	0.7078	0.2729	0.05939
Zn(mg)	0.6524	0.276	-0.01033
I(mcg)	1	0.1781	0.07198
Vitamin.A.(RE)(mcg)	0.1781	1	-0.08804
RI	0.07198	-0.08804	1
RI.Z-SCORE	0.09469	-0.003449	0.9679

	RI.Z-SCORE
Cognitive:.Composite.score	0.03675
Language:.Composite.score	0.284
Motor:.Composite.score	0.08249
Fe(mg)	0.07594
Zn(mg)	0.0009731
I(mcg)	0.09469
Vitamin.A.(RE)(mcg)	-0.003449
RI	0.9679
RI.Z-SCORE	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 47: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0.0000076
Motor:.Composite.score	0.0000002
Fe(mg)	0.176
Zn(mg)	0.08788
I(mcg)	0.01912
Vitamin.A.(RE)(mcg)	0.7962
RI	0.8221
RI.Z-SCORE	0.9429

Table 48: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.0000076
Language:.Composite.score	NA
Motor:.Composite.score	0
Fe(mg)	0.389
Zn(mg)	0.1903
I(mcg)	0.4095
Vitamin.A.(RE)(mcg)	0.5668
RI	0.1248
RI.Z-SCORE	0.1521

Table 49: Table continues below

	Motor:.Composite.score	Fe(mg)	Zn(mg)
Cognitive:.Composite.score	0.0000002	0.176	0.08788
Language:.Composite.score	0	0.389	0.1903
Motor:.Composite.score	NA	0.9766	0.5489
Fe(mg)	0.9766	NA	0
Zn(mg)	0.5489	0	NA
I(mcg)	0.8007	0	0
Vitamin.A.(RE)(mcg)	0.6702	0.1485	0.1863

	Motor:..Composite.score	Fe(mg)	Zn(mg)
RI	0.9639	0.8589	0.6968
RI.Z-SCORE	0.8768	0.9457	0.813

Table 50: Table continues below

	I(mcg)	Vitamin.A.(RE)(mcg)	RI
Cognitive:..Composite.score	0.01912	0.7962	0.8221
Language:..Composite.score	0.4095	0.5668	0.1248
Motor:..Composite.score	0.8007	0.6702	0.9639
Fe(mg)	0	0.1485	0.8589
Zn(mg)	0	0.1863	0.6968
I(mcg)	NA	0.8083	0.9314
Vitamin.A.(RE)(mcg)	0.8083	NA	0.4877
RI	0.9314	0.4877	NA
RI.Z-SCORE	0.9549	0.7097	0

	RI.Z-SCORE
Cognitive:..Composite.score	0.9429
Language:..Composite.score	0.1521
Motor:..Composite.score	0.8768
Fe(mg)	0.9457
Zn(mg)	0.813
I(mcg)	0.9549
Vitamin.A.(RE)(mcg)	0.7097
RI	0
RI.Z-SCORE	NA

3.1.2 Does the feeding practices have an influence on cognitive, language or motor development

Feeding practices are categorical in nature so we cannot calculate correlations. All the variables also had very low counts so no significant tests could be performed.

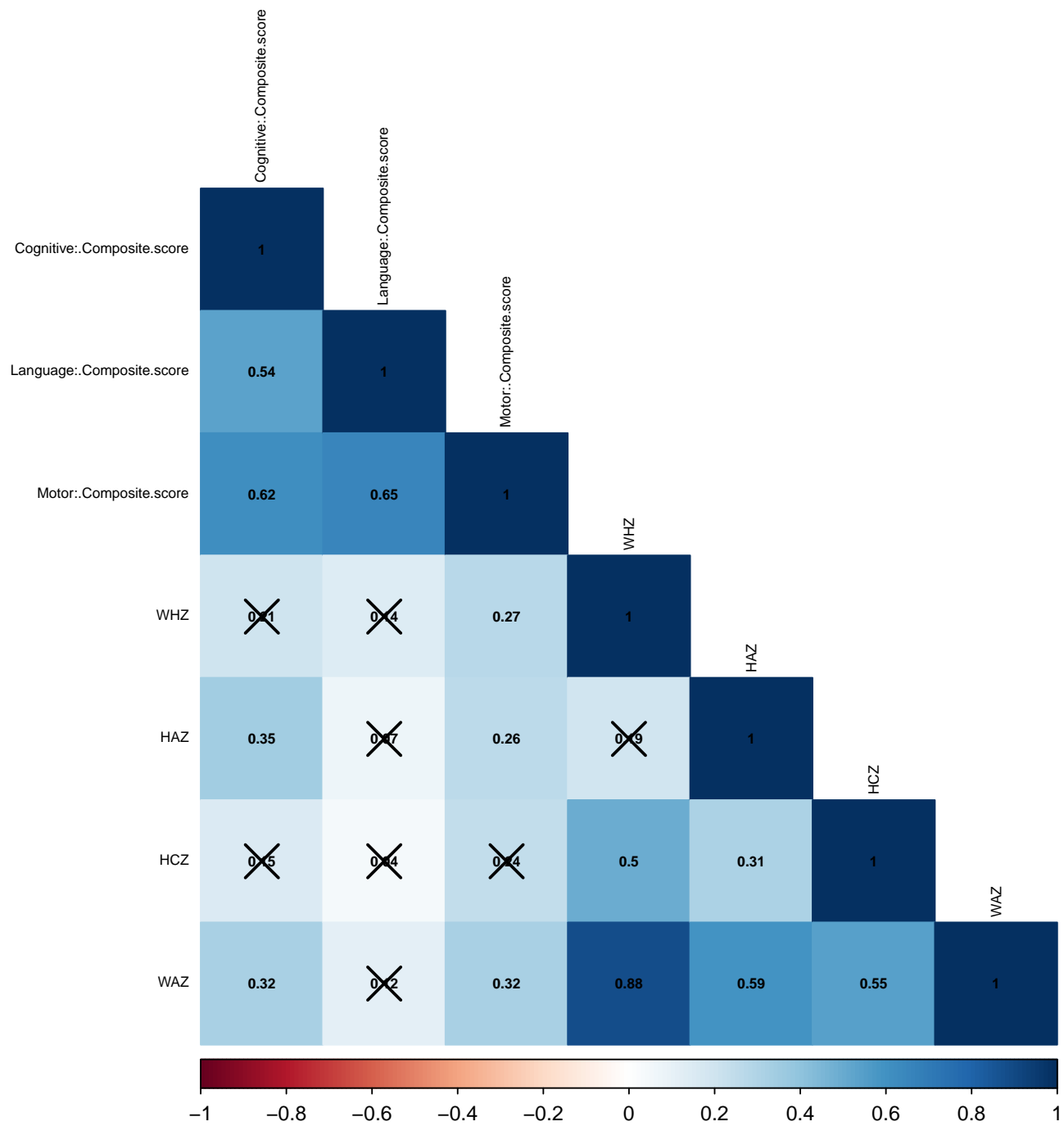
3.2 Association between developmental outcomes vs anthropometric indices and z scores

Association between developmental outcomes vs anthropometric indices and z scores - is there any correlation between growth outcomes (WAZ, WLZ, HCZ and LAZ) and each domain of developmental outcomes (domain: cognitive, language and motor - Bayley)

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 52: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.5354
Motor:.Composite.score	0.6152
WHZ	0.209
HAZ	0.3462
HCZ	0.1546
WAZ	0.3243

Table 53: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.5354
Language:.Composite.score	1
Motor:.Composite.score	0.6505
WHZ	0.1418
HAZ	0.07457
HCZ	0.04056
WAZ	0.116

Table 54: Table continues below

	Motor:.Composite.score	WHZ	HAZ
Cognitive:.Composite.score	0.6152	0.209	0.3462
Language:.Composite.score	0.6505	0.1418	0.07457
Motor:.Composite.score	1	0.2737	0.2642
WHZ	0.2737	1	0.1937
HAZ	0.2642	0.1937	1
HCZ	0.2411	0.4987	0.3105
WAZ	0.3203	0.8844	0.5949

	HCZ	WAZ
Cognitive:.Composite.score	0.1546	0.3243
Language:.Composite.score	0.04056	0.116

	HCZ	WAZ
Motor:.Composite.score	0.2411	0.3203
WHZ	0.4987	0.8844
HAZ	0.3105	0.5949
HCZ	1	0.5463
WAZ	0.5463	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 56: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0.0000076
Motor:.Composite.score	0.0000002
WHZ	0.1669
HAZ	0.009916
HCZ	0.359
WAZ	0.02078

Table 57: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.0000076
Language:.Composite.score	NA
Motor:.Composite.score	0
WHZ	0.1853
HAZ	0.5098
HCZ	0.4286
WAZ	0.1964

Table 58: Table continues below

	Motor:.Composite.score	WHZ
Cognitive:.Composite.score	0.0000002	0.1669
Language:.Composite.score	0	0.1853
Motor:.Composite.score	NA	0.04424
WHZ	0.04424	NA
HAZ	0.01706	0.08775
HCZ	0.02191	0.00003256
WAZ	0.006978	0

	HAZ	HCZ	WAZ
Cognitive:.Composite.score	0.009916	0.359	0.02078
Language:.Composite.score	0.5098	0.4286	0.1964
Motor:.Composite.score	0.01706	0.02191	0.006978
WHZ	0.08775	0.00003256	0
HAZ	NA	0.001439	0.00000001
HCZ	0.001439	NA	0.00000109
WAZ	0.00000001	0.00000109	NA

4 Additional investigations - Only CHUU

4.1 Association between developmental outcomes and feeding practices and iron, zinc and iodine intakes

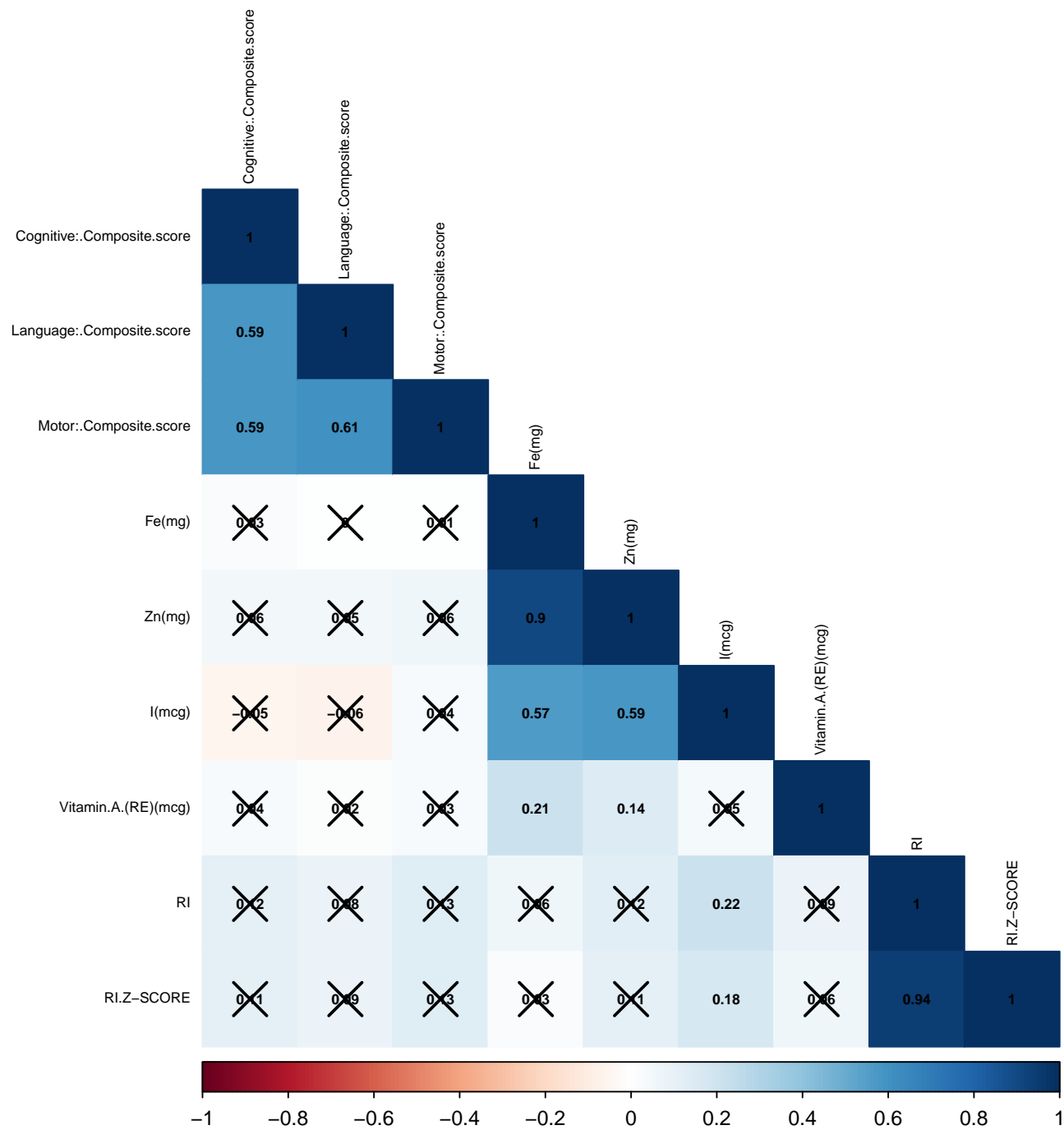
Association between developmental outcomes and feeding practices and iron (Fe), zinc (Zn) and iodine (I) intakes - correlation between developmental (cognitive, language and motor - Bayley) outcomes and the Feeding practices (breastfeeding variables), as well as intake of each nutrient: Fe, Zn, I and vitamin A -

4.1.1 Does the intake of Fe, Zn, I or vitamin A have an influence on cognitive, language or motor development

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 60: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.585
Motor:.Composite.score	0.587
Fe(mg)	0.02999
Zn(mg)	0.05723
I(mcg)	-0.05426
Vitamin.A.(RE)(mcg)	0.03791
RI	0.1162
RI.Z-SCORE	0.1149

Table 61: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.585
Language:.Composite.score	1
Motor:.Composite.score	0.6056
Fe(mg)	0.001611
Zn(mg)	0.05282
I(mcg)	-0.06471
Vitamin.A.(RE)(mcg)	0.01658
RI	0.08299
RI.Z-SCORE	0.08946

Table 62: Table continues below

	Motor:.Composite.score	Fe(mg)	Zn(mg)
Cognitive:.Composite.score	0.587	0.02999	0.05723
Language:.Composite.score	0.6056	0.001611	0.05282
Motor:.Composite.score	1	0.005722	0.06061
Fe(mg)	0.005722	1	0.9003
Zn(mg)	0.06061	0.9003	1
I(mcg)	0.03726	0.5679	0.5892
Vitamin.A.(RE)(mcg)	0.03203	0.2136	0.1439
RI	0.1322	0.06277	0.1243

	Motor:.Composite.score	Fe(mg)	Zn(mg)
RI.Z-SCORE	0.1301	0.0258	0.1126

Table 63: Table continues below

	I(mcg)	Vitamin.A.(RE)(mcg)	RI
Cognitive:.Composite.score	-0.05426	0.03791	0.1162
Language:.Composite.score	-0.06471	0.01658	0.08299
Motor:.Composite.score	0.03726	0.03203	0.1322
Fe(mg)	0.5679	0.2136	0.06277
Zn(mg)	0.5892	0.1439	0.1243
I(mcg)	1	0.04852	0.2159
Vitamin.A.(RE)(mcg)	0.04852	1	0.08692
RI	0.2159	0.08692	1
RI.Z-SCORE	0.1772	0.06215	0.9446

	RI.Z-SCORE
Cognitive:.Composite.score	0.1149
Language:.Composite.score	0.08946
Motor:.Composite.score	0.1301
Fe(mg)	0.0258
Zn(mg)	0.1126
I(mcg)	0.1772
Vitamin.A.(RE)(mcg)	0.06215
RI	0.9446
RI.Z-SCORE	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 65: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0
Motor:.Composite.score	0
Fe(mg)	0.8443
Zn(mg)	0.174
I(mcg)	0.1771
Vitamin.A.(RE)(mcg)	0.5877
RI	0.2488
RI.Z-SCORE	0.3794

Table 66: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0
Language:.Composite.score	NA
Motor:.Composite.score	0
Fe(mg)	0.6794
Zn(mg)	0.09361
I(mcg)	0.1299
Vitamin.A.(RE)(mcg)	0.8899
RI	0.2951
RI.Z-SCORE	0.3172

Table 67: Table continues below

	Motor:.Composite.score	Fe(mg)	Zn(mg)
Cognitive:.Composite.score	0	0.8443	0.174
Language:.Composite.score	0	0.6794	0.09361
Motor:.Composite.score	NA	0.7262	0.1529
Fe(mg)	0.7262	NA	0
Zn(mg)	0.1529	0	NA
I(mcg)	0.5298	0	0
Vitamin.A.(RE)(mcg)	0.7643	0.03108	0.08559

	Motor:..Composite.score	Fe(mg)	Zn(mg)
RI	0.2846	0.6767	0.8583
RI.Z-SCORE	0.4084	0.9879	0.614

Table 68: Table continues below

	I(mcg)	Vitamin.A.(RE)(mcg)	RI
Cognitive:..Composite.score	0.1771	0.5877	0.2488
Language:..Composite.score	0.1299	0.8899	0.2951
Motor:..Composite.score	0.5298	0.7643	0.2846
Fe(mg)	0	0.03108	0.6767
Zn(mg)	0	0.08559	0.8583
I(mcg)	NA	0.6097	0.2578
Vitamin.A.(RE)(mcg)	0.6097	NA	0.3356
RI	0.2578	0.3356	NA
RI.Z-SCORE	0.5398	0.4113	0

	RI.Z-SCORE
Cognitive:..Composite.score	0.3794
Language:..Composite.score	0.3172
Motor:..Composite.score	0.4084
Fe(mg)	0.9879
Zn(mg)	0.614
I(mcg)	0.5398
Vitamin.A.(RE)(mcg)	0.4113
RI	0
RI.Z-SCORE	NA

4.1.2 Does the feeding practices have an influence on cognitive, language or motor development

Feeding practices are categorical in nature so we cannot calculate correlations. All the variables also had very low counts so no significant tests could be performed.

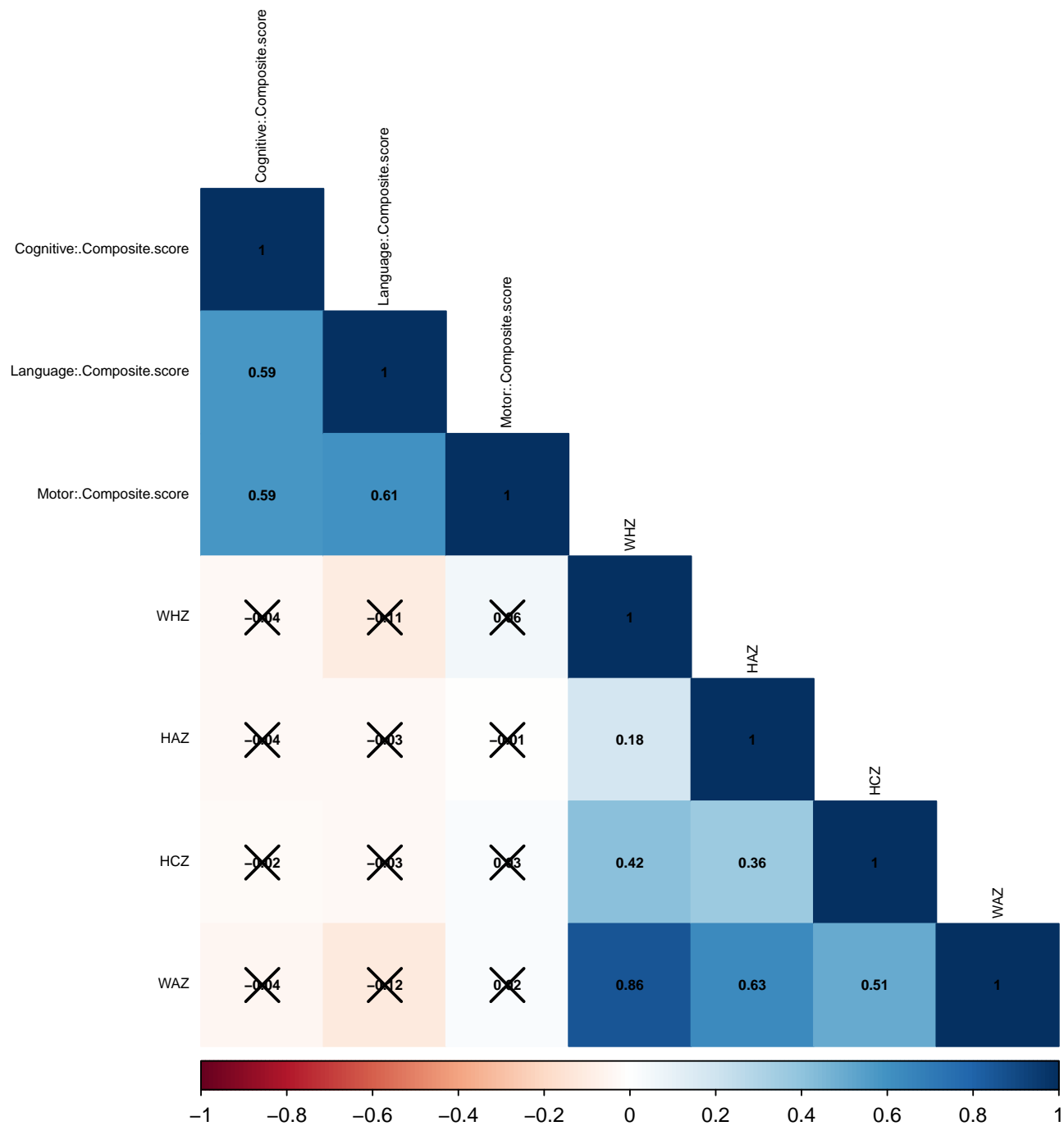
4.2 Association between developmental outcomes vs anthropometric indices and z scores

Association between developmental outcomes vs anthropometric indices and z scores - is there any correlation between growth outcomes (WAZ, WLZ, HCZ and LAZ) and each domain of developmental outcomes (domain: cognitive, language and motor - Bayley)

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 70: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.585
Motor:.Composite.score	0.587
WHZ	-0.03668
HAZ	-0.03932
HCZ	-0.02368
WAZ	-0.04092

Table 71: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.585
Language:.Composite.score	1
Motor:.Composite.score	0.6056
WHZ	-0.1066
HAZ	-0.03001
HCZ	-0.03436
WAZ	-0.1159

Table 72: Table continues below

	Motor:.Composite.score	WHZ	HAZ
Cognitive:.Composite.score	0.587	-0.03668	-0.03932
Language:.Composite.score	0.6056	-0.1066	-0.03001
Motor:.Composite.score	1	0.05575	-0.006762
WHZ	0.05575	1	0.1814
HAZ	-0.006762	0.1814	1
HCZ	0.02989	0.4164	0.3625
WAZ	0.02043	0.8552	0.632

	HCZ	WAZ
Cognitive:.Composite.score	-0.02368	-0.04092
Language:.Composite.score	-0.03436	-0.1159

	HCZ	WAZ
Motor::Composite.score	0.02989	0.02043
WHZ	0.4164	0.8552
HAZ	0.3625	0.632
HCZ	1	0.5068
WAZ	0.5068	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 74: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0
Motor:.Composite.score	0
WHZ	0.6273
HAZ	0.7893
HCZ	0.4992
WAZ	0.5988

Table 75: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0
Language:.Composite.score	NA
Motor:.Composite.score	0
WHZ	0.1488
HAZ	0.9197
HCZ	0.6146
WAZ	0.2473

Table 76: Table continues below

	Motor:.Composite.score	WHZ
Cognitive:.Composite.score	0	0.6273
Language:.Composite.score	0	0.1488
Motor:.Composite.score	NA	0.3755
WHZ	0.3755	NA
HAZ	0.8206	0.008444
HCZ	0.7765	0
WAZ	0.4261	0

	HAZ	HCZ	WAZ
Cognitive:.Composite.score	0.7893	0.4992	0.5988
Language:.Composite.score	0.9197	0.6146	0.2473
Motor:.Composite.score	0.8206	0.7765	0.4261
WHZ	0.008444	0	0
HAZ	NA	0.00000004	0
HCZ	0.00000004	NA	0
WAZ	0	0	NA

5 Additional investigations - Only Normal

5.1 Association between developmental outcomes and feeding practices and iron, zinc and iodine intakes

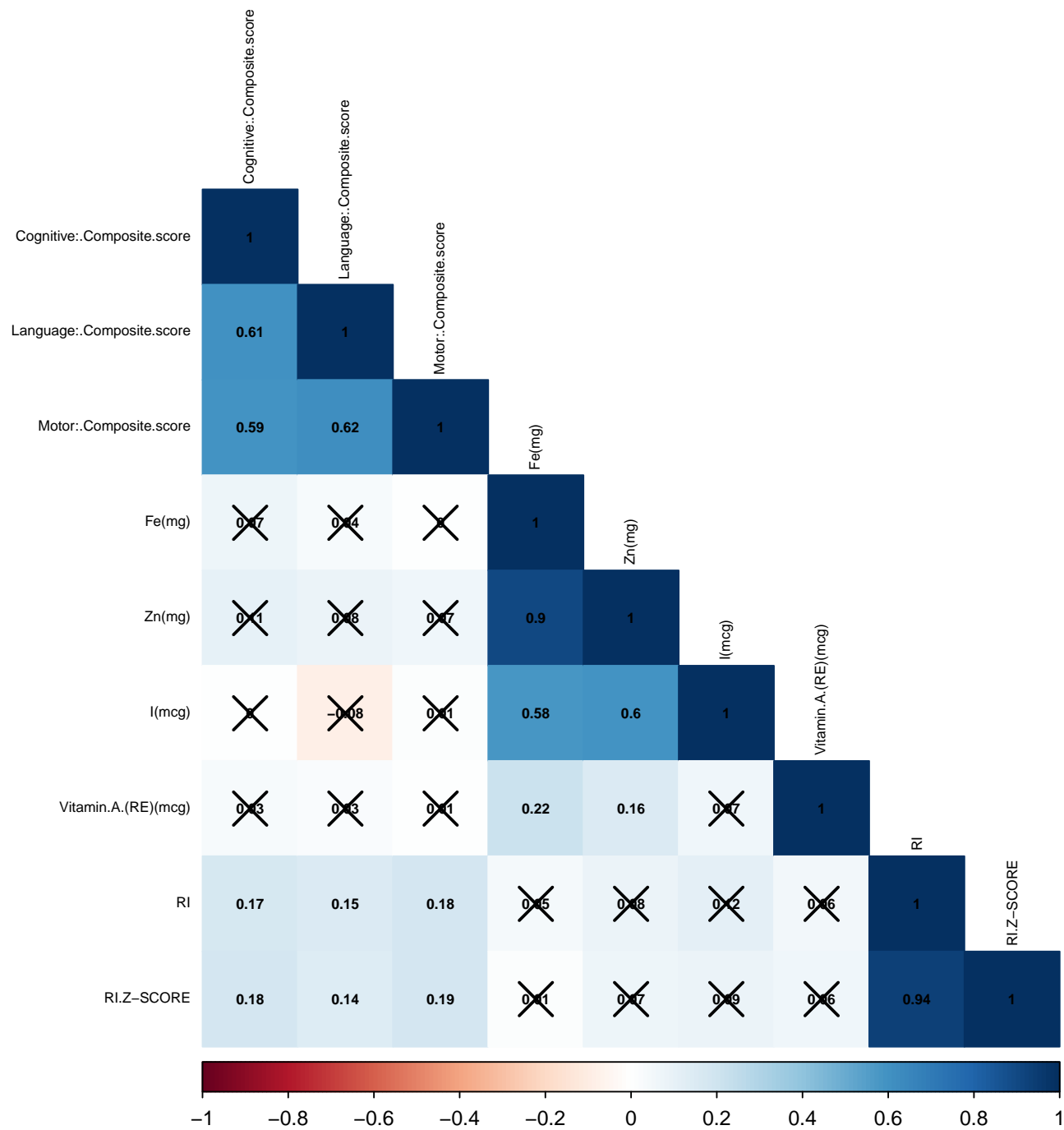
Association between developmental outcomes and feeding practices and iron (Fe), zinc (Zn) and iodine (I) intakes - correlation between developmental (cognitive, language and motor - Bayley) outcomes and the Feeding practices (breastfeeding variables), as well as intake of each nutrient: Fe, Zn, I and vitamin A -

5.1.1 Does the intake of Fe, Zn, I or vitamin A have an influence on cognitive, language or motor development

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 78: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.6092
Motor:.Composite.score	0.59
Fe(mg)	0.07362
Zn(mg)	0.106
I(mcg)	0.001722
Vitamin.A.(RE)(mcg)	0.0311
RI	0.1742
RI.Z-SCORE	0.1818

Table 79: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.6092
Language:.Composite.score	1
Motor:.Composite.score	0.6175
Fe(mg)	0.0375
Zn(mg)	0.08384
I(mcg)	-0.08166
Vitamin.A.(RE)(mcg)	0.02576
RI	0.1536
RI.Z-SCORE	0.1439

Table 80: Table continues below

	Motor:.Composite.score	Fe(mg)	Zn(mg)
Cognitive:.Composite.score	0.59	0.07362	0.106
Language:.Composite.score	0.6175	0.0375	0.08384
Motor:.Composite.score	1	0.002475	0.06712
Fe(mg)	0.002475	1	0.903
Zn(mg)	0.06712	0.903	1
I(mcg)	0.0117	0.5845	0.598
Vitamin.A.(RE)(mcg)	0.007277	0.2188	0.1555
RI	0.1848	0.04632	0.08197

	Motor:.Composite.score	Fe(mg)	Zn(mg)
RI.Z-SCORE	0.1877	0.01481	0.07405

Table 81: Table continues below

	I(mcg)	Vitamin.A.(RE)(mcg)	RI
Cognitive:.Composite.score	0.001722	0.0311	0.1742
Language:.Composite.score	-0.08166	0.02576	0.1536
Motor:.Composite.score	0.0117	0.007277	0.1848
Fe(mg)	0.5845	0.2188	0.04632
Zn(mg)	0.598	0.1555	0.08197
I(mcg)	1	0.06556	0.1195
Vitamin.A.(RE)(mcg)	0.06556	1	0.05864
RI	0.1195	0.05864	1
RI.Z-SCORE	0.08632	0.06263	0.9373

	RI.Z-SCORE
Cognitive:.Composite.score	0.1818
Language:.Composite.score	0.1439
Motor:.Composite.score	0.1877
Fe(mg)	0.01481
Zn(mg)	0.07405
I(mcg)	0.08632
Vitamin.A.(RE)(mcg)	0.06263
RI	0.9373
RI.Z-SCORE	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 83: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0
Motor:.Composite.score	0
Fe(mg)	0.1252
Zn(mg)	0.03575
I(mcg)	0.675
Vitamin.A.(RE)(mcg)	0.5981
RI	0.001234
RI.Z-SCORE	0.002146

Table 84: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0
Language:.Composite.score	NA
Motor:.Composite.score	0
Fe(mg)	0.7658
Zn(mg)	0.04353
I(mcg)	0.2411
Vitamin.A.(RE)(mcg)	0.9553
RI	0.01772
RI.Z-SCORE	0.02535

Table 85: Table continues below

	Motor:.Composite.score	Fe(mg)	Zn(mg)
Cognitive:.Composite.score	0	0.1252	0.03575
Language:.Composite.score	0	0.7658	0.04353
Motor:.Composite.score	NA	0.7446	0.1238
Fe(mg)	0.7446	NA	0
Zn(mg)	0.1238	0	NA
I(mcg)	0.7461	0	0
Vitamin.A.(RE)(mcg)	0.7482	0.01496	0.06462

	Motor::Composite.score	Fe(mg)	Zn(mg)
RI	0.002708	0.6672	0.8575
RI.Z-SCORE	0.003166	0.9257	0.8669

Table 86: Table continues below

	I(mcg)	Vitamin.A.(RE)(mcg)	RI
Cognitive::Composite.score	0.675	0.5981	0.001234
Language::Composite.score	0.2411	0.9553	0.01772
Motor::Composite.score	0.7461	0.7482	0.002708
Fe(mg)	0	0.01496	0.6672
Zn(mg)	0	0.06462	0.8575
I(mcg)	NA	0.6635	0.646
Vitamin.A.(RE)(mcg)	0.6635	NA	0.1375
RI	0.646	0.1375	NA
RI.Z-SCORE	0.8722	0.1526	0

	RI.Z-SCORE
Cognitive::Composite.score	0.002146
Language::Composite.score	0.02535
Motor::Composite.score	0.003166
Fe(mg)	0.9257
Zn(mg)	0.8669
I(mcg)	0.8722
Vitamin.A.(RE)(mcg)	0.1526
RI	0
RI.Z-SCORE	NA

5.1.2 Does the feeding practices have an influence on cognitive, language or motor development

Feeding practices are categorical in nature so we cannot calculate correlations. All the variables also had very low counts so no significant tests could be performed.

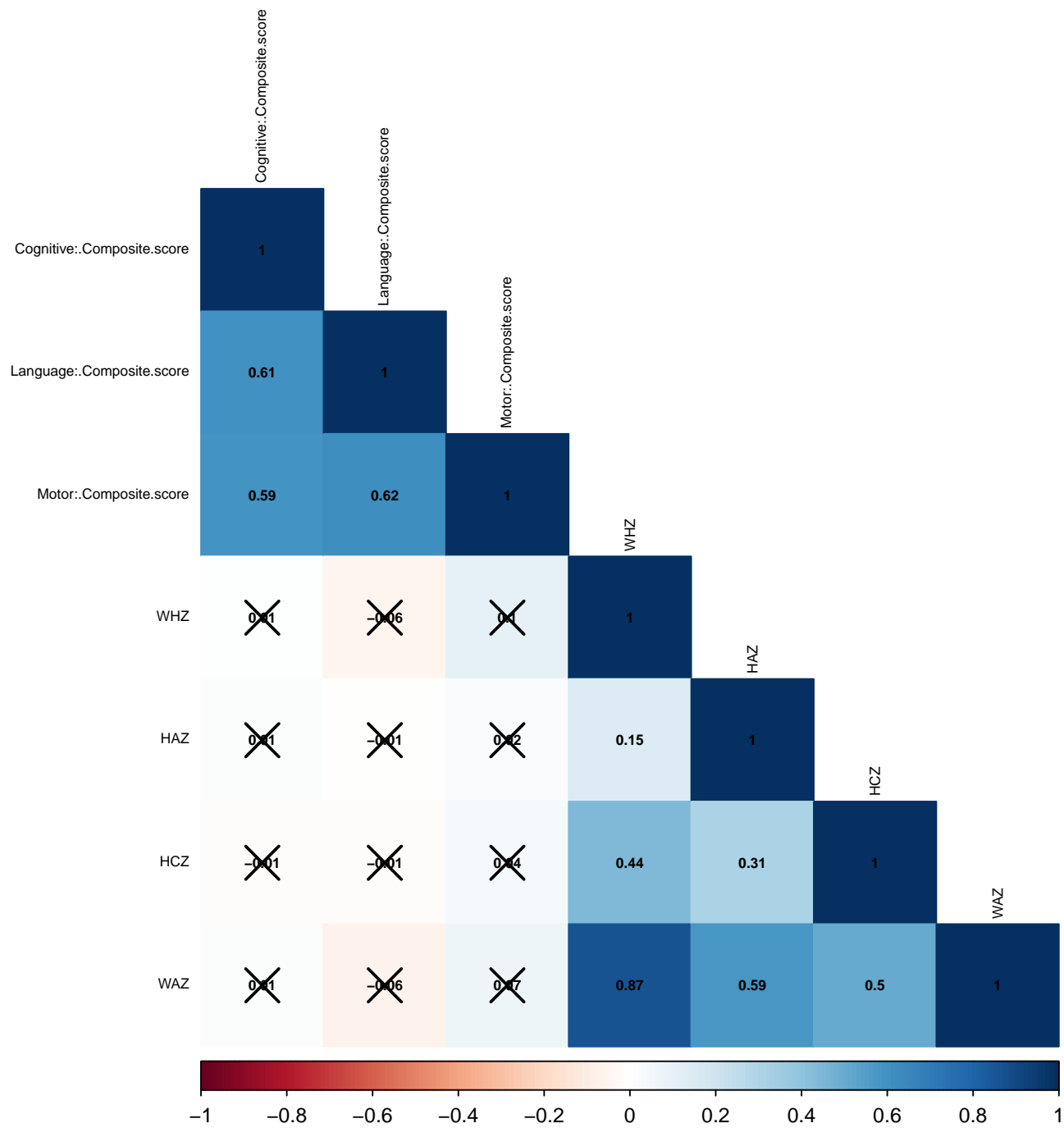
5.2 Association between developmental outcomes vs anthropometric indices and z scores

Association between developmental outcomes vs anthropometric indices and z scores - is there any correlation between growth outcomes (WAZ, WLZ, HCZ and LAZ) and each domain of developmental outcomes (domain: cognitive, language and motor - Bayley)

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 88: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.6092
Motor:.Composite.score	0.59
WHZ	0.006933
HAZ	0.01186
HCZ	-0.01488
WAZ	0.01488

Table 89: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.6092
Language:.Composite.score	1
Motor:.Composite.score	0.6175
WHZ	-0.05697
HAZ	-0.008912
HCZ	-0.01396
WAZ	-0.06427

Table 90: Table continues below

	Motor:.Composite.score	WHZ	HAZ
Cognitive:.Composite.score	0.59	0.006933	0.01186
Language:.Composite.score	0.6175	-0.05697	-0.008912
Motor:.Composite.score	1	0.1038	0.02357
WHZ	0.1038	1	0.1484
HAZ	0.02357	0.1484	1
HCZ	0.04102	0.4402	0.31
WAZ	0.0743	0.8693	0.5852

	HCZ	WAZ
Cognitive:.Composite.score	-0.01488	0.01488
Language:.Composite.score	-0.01396	-0.06427

	HCZ	WAZ
Motor::Composite.score	0.04102	0.0743
WHZ	0.4402	0.8693
HAZ	0.31	0.5852
HCZ	1	0.5011
WAZ	0.5011	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 92: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0
Motor:.Composite.score	0
WHZ	0.9933
HAZ	0.7471
HCZ	0.407
WAZ	0.8786

Table 93: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0
Language:.Composite.score	NA
Motor:.Composite.score	0
WHZ	0.4967
HAZ	0.7384
HCZ	0.8111
WAZ	0.7066

Table 94: Table continues below

	Motor:.Composite.score	WHZ	HAZ
Cognitive:.Composite.score	0	0.9933	0.7471
Language:.Composite.score	0	0.4967	0.7384
Motor:.Composite.score	NA	0.1519	0.458
WHZ	0.1519	NA	0.031
HAZ	0.458	0.031	NA
HCZ	0.4405	0	0.0000009
WAZ	0.1293	0	0

	HCZ	WAZ
Cognitive:.Composite.score	0.407	0.8786
Language:.Composite.score	0.8111	0.7066
Motor:.Composite.score	0.4405	0.1293
WHZ	0	0
HAZ	0.00000009	0
HCZ	NA	0
WAZ	0	NA

6 Additional investigations - Only Abnormal

6.1 Association between developmental outcomes and feeding practices and iron, zinc and iodine intakes

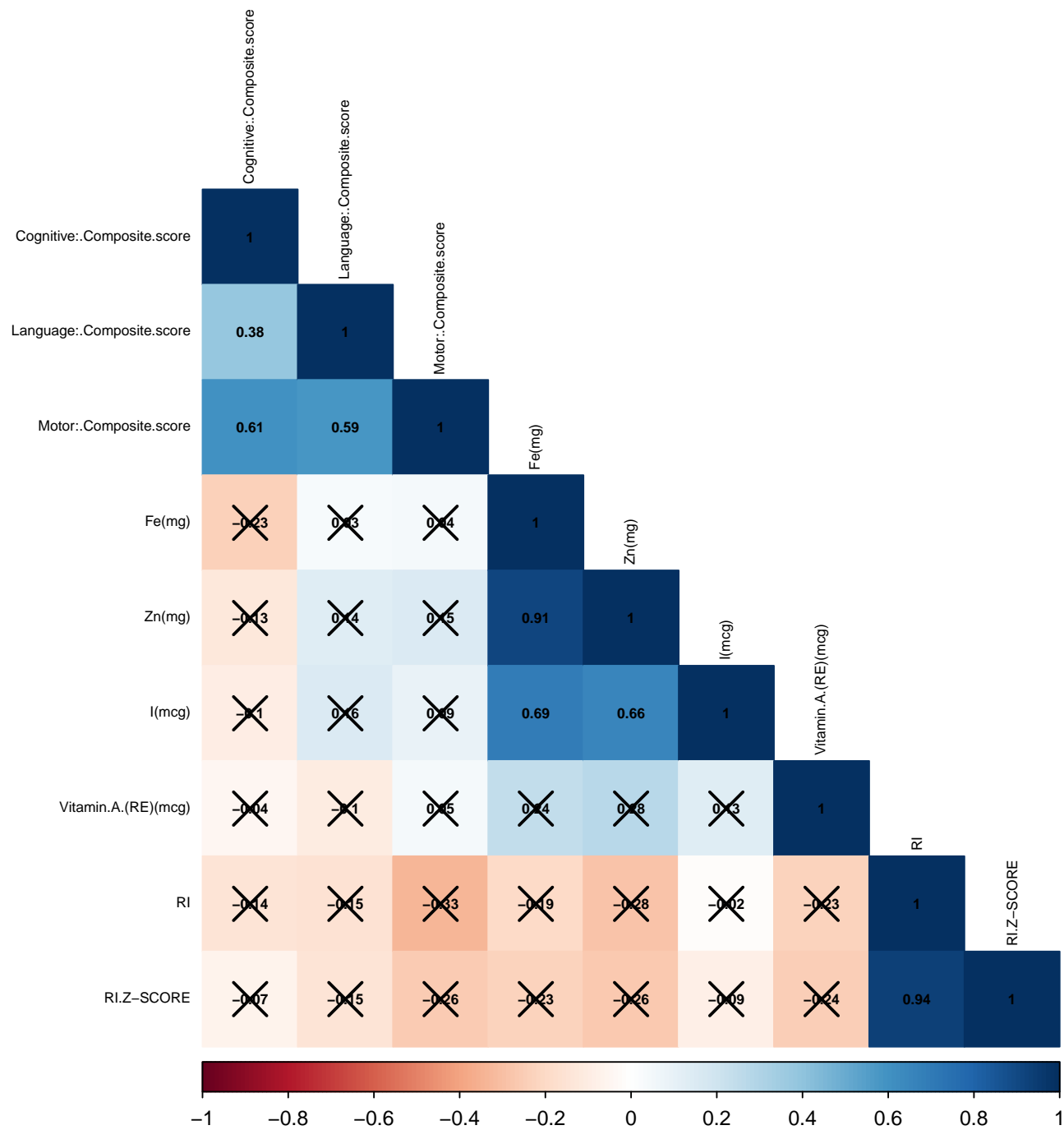
Association between developmental outcomes and feeding practices and iron (Fe), zinc (Zn) and iodine (I) intakes - correlation between developmental (cognitive, language and motor - Bayley) outcomes and the Feeding practices (breastfeeding variables), as well as intake of each nutrient: Fe, Zn, I and vitamin A -

6.1.1 Does the intake of Fe, Zn, I or vitamin A have an influence on cognitive, language or motor development

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 96: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.3843
Motor:.Composite.score	0.6065
Fe(mg)	-0.2317
Zn(mg)	-0.1275
I(mcg)	-0.09736
Vitamin.A.(RE)(mcg)	-0.04341
RI	-0.1409
RI.Z-SCORE	-0.06644

Table 97: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.3843
Language:.Composite.score	1
Motor:.Composite.score	0.5893
Fe(mg)	0.03169
Zn(mg)	0.1363
I(mcg)	0.1592
Vitamin.A.(RE)(mcg)	-0.1005
RI	-0.1548
RI.Z-SCORE	-0.1478

Table 98: Table continues below

	Motor:.Composite.score	Fe(mg)	Zn(mg)
Cognitive:.Composite.score	0.6065	-0.2317	-0.1275
Language:.Composite.score	0.5893	0.03169	0.1363
Motor:.Composite.score	1	0.04445	0.1545
Fe(mg)	0.04445	1	0.9134
Zn(mg)	0.1545	0.9134	1
I(mcg)	0.09156	0.6931	0.6598
Vitamin.A.(RE)(mcg)	0.04803	0.243	0.2783
RI	-0.3318	-0.1933	-0.2819

	Motor::Composite.score	Fe(mg)	Zn(mg)
RI.Z-SCORE	-0.2556	-0.2251	-0.2623

Table 99: Table continues below

	I(mcg)	Vitamin.A.(RE)(mcg)	RI
Cognitive::Composite.score	-0.09736	-0.04341	-0.1409
Language::Composite.score	0.1592	-0.1005	-0.1548
Motor::Composite.score	0.09156	0.04803	-0.3318
Fe(mg)	0.6931	0.243	-0.1933
Zn(mg)	0.6598	0.2783	-0.2819
I(mcg)	1	0.1341	-0.01811
Vitamin.A.(RE)(mcg)	0.1341	1	-0.2292
RI	-0.01811	-0.2292	1
RI.Z-SCORE	-0.08894	-0.2416	0.9377

	RI.Z-SCORE
Cognitive::Composite.score	-0.06644
Language::Composite.score	-0.1478
Motor::Composite.score	-0.2556
Fe(mg)	-0.2251
Zn(mg)	-0.2623
I(mcg)	-0.08894
Vitamin.A.(RE)(mcg)	-0.2416
RI	0.9377
RI.Z-SCORE	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 101: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0.009717
Motor:.Composite.score	0.00000806
Fe(mg)	0.2031
Zn(mg)	0.488
I(mcg)	0.6298
Vitamin.A.(RE)(mcg)	0.6485
RI	0.6032
RI.Z-SCORE	0.7854

Table 102: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.009717
Language:.Composite.score	NA
Motor:.Composite.score	0.00009857
Fe(mg)	0.4406
Zn(mg)	0.7371
I(mcg)	0.4345
Vitamin.A.(RE)(mcg)	0.9497
RI	0.2848
RI.Z-SCORE	0.3511

Table 103: Table continues below

	Motor:.Composite.score	Fe(mg)
Cognitive:.Composite.score	0.00000806	0.2031
Language:.Composite.score	0.00009857	0.4406
Motor:.Composite.score	NA	0.9345
Fe(mg)	0.9345	NA
Zn(mg)	0.9305	0.00000065
I(mcg)	0.894	0.07721
Vitamin.A.(RE)(mcg)	0.3763	0.001345

	Motor::Composite.score	Fe(mg)
RI	0.1938	0.2986
RI.Z-SCORE	0.2773	0.3586

Table 104: Table continues below

	Zn(mg)	I(mcg)	Vitamin.A.(RE)(mcg)
Cognitive::Composite.score	0.488	0.6298	0.6485
Language::Composite.score	0.7371	0.4345	0.9497
Motor::Composite.score	0.9305	0.894	0.3763
Fe(mg)	0.00000065	0.07721	0.001345
Zn(mg)	NA	0.0001823	0.08185
I(mcg)	0.0001823	NA	0.702
Vitamin.A.(RE)(mcg)	0.08185	0.702	NA
RI	0.06812	0.5843	0.126
RI.Z-SCORE	0.0929	0.5501	0.2305

	RI	RI.Z-SCORE
Cognitive::Composite.score	0.6032	0.7854
Language::Composite.score	0.2848	0.3511
Motor::Composite.score	0.1938	0.2773
Fe(mg)	0.2986	0.3586
Zn(mg)	0.06812	0.0929
I(mcg)	0.5843	0.5501
Vitamin.A.(RE)(mcg)	0.126	0.2305
RI	NA	0
RI.Z-SCORE	0	NA

6.1.2 Does the feeding practices have an influence on cognitive, language or motor development

Feeding practices are categorical in nature so we cannot calculate correlations. All the variables also had very low counts so no significant tests could be performed.

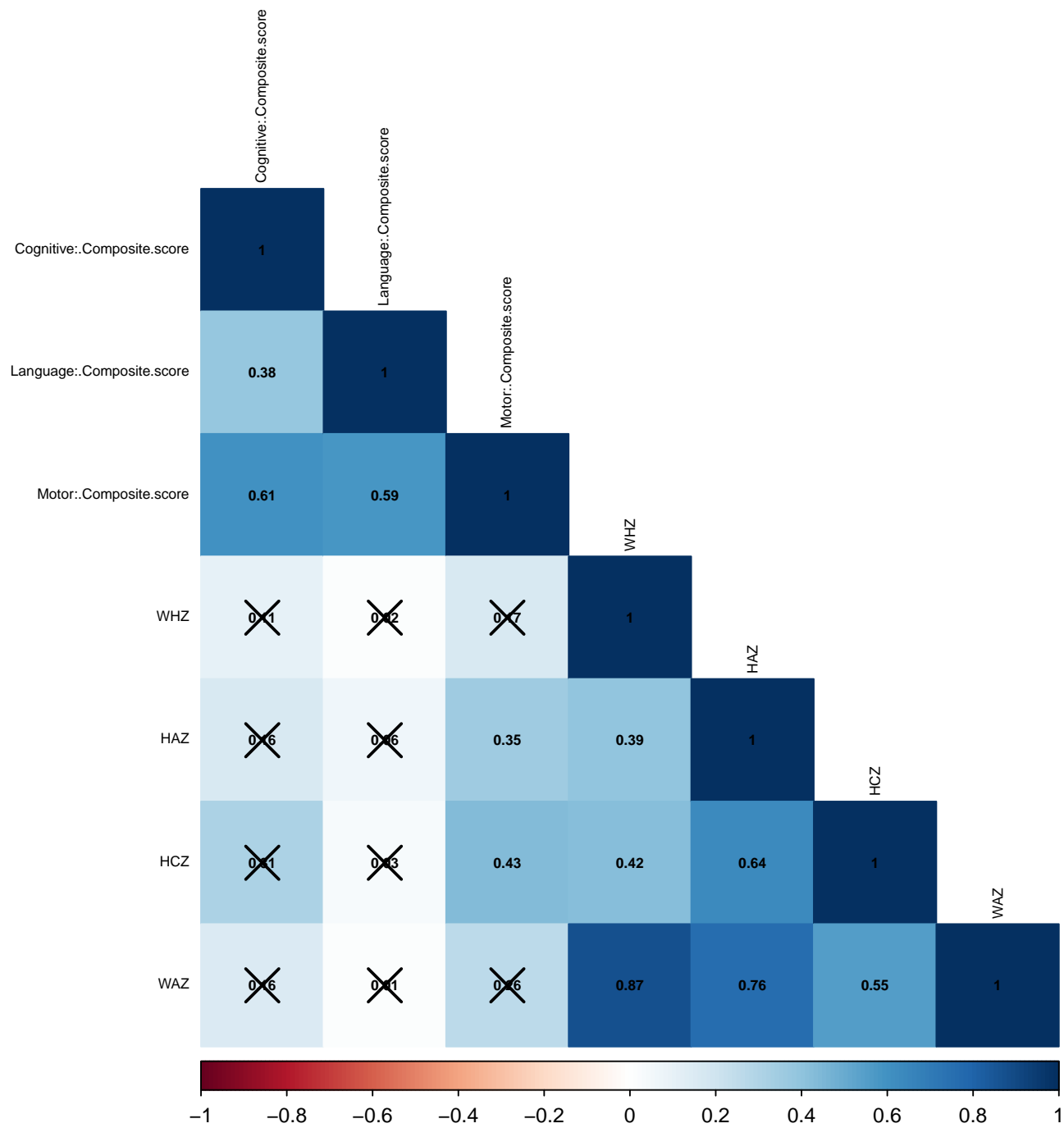
6.2 Association between developmental outcomes vs anthropometric indices and z scores

Association between developmental outcomes vs anthropometric indices and z scores - is there any correlation between growth outcomes (WAZ, WLZ, HCZ and LAZ) and each domain of developmental outcomes (domain: cognitive, language and motor - Bayley)

All the variables were tested for normality using the Shapiro Wilk test. Since the Bayley scores are not normally distributed, the Spearmans Correlation measure was used.

The correlation can be between -1 and 1 with stronger associations closer to the outer bounds (-1 and 1). We also included a significance tests to determine if the correlation is significantly different from 0, if this is not the case then there is no significant association.

The view displays all the relationships, heatmapped to quickly summarise if the relationship is positive or negative and the “X” indicates if the correlation was significant or not. Where the “X” was present it showed that the relationship was not significantly different from zero.



The correlation are:

Table 106: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	1
Language:.Composite.score	0.3843
Motor:.Composite.score	0.6065
WHZ	0.1061
HAZ	0.1621
HCZ	0.31
WAZ	0.1585

Table 107: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.3843
Language:.Composite.score	1
Motor:.Composite.score	0.5893
WHZ	0.01837
HAZ	0.06426
HCZ	0.03413
WAZ	0.01451

Table 108: Table continues below

	Motor:.Composite.score	WHZ	HAZ
Cognitive:.Composite.score	0.6065	0.1061	0.1621
Language:.Composite.score	0.5893	0.01837	0.06426
Motor:.Composite.score	1	0.1683	0.3544
WHZ	0.1683	1	0.3925
HAZ	0.3544	0.3925	1
HCZ	0.4349	0.4232	0.6388
WAZ	0.2644	0.8711	0.7608

	HCZ	WAZ
Cognitive:.Composite.score	0.31	0.1585
Language:.Composite.score	0.03413	0.01451

	HCZ	WAZ
Motor:.Composite.score	0.4349	0.2644
WHZ	0.4232	0.8711
HAZ	0.6388	0.7608
HCZ	1	0.5541
WAZ	0.5541	1

The significance of each correlation is:

Only the p-values that are <0.05 have significant correlations.

Table 110: Table continues below

	Cognitive:.Composite.score
Cognitive:.Composite.score	NA
Language:.Composite.score	0.009717
Motor:.Composite.score	0.00000806
WHZ	0.3669
HAZ	0.2516
HCZ	0.09256
WAZ	0.237

Table 111: Table continues below

	Language:.Composite.score
Cognitive:.Composite.score	0.009717
Language:.Composite.score	NA
Motor:.Composite.score	0.00009857
WHZ	0.7372
HAZ	0.9155
HCZ	0.6573
WAZ	0.8374

Table 112: Table continues below

	Motor:.Composite.score	WHZ
Cognitive:.Composite.score	0.00000806	0.3669
Language:.Composite.score	0.00009857	0.7372
Motor:.Composite.score	NA	0.1209
WHZ	0.1209	NA
HAZ	0.1264	0.005264
HCZ	0.03806	0.00553
WAZ	0.07683	0

	HAZ	HCZ	WAZ
Cognitive:.Composite.score	0.2516	0.09256	0.237
Language:.Composite.score	0.9155	0.6573	0.8374
Motor:.Composite.score	0.1264	0.03806	0.07683
WHZ	0.005264	0.00553	0
HAZ	NA	0.00001919	0
HCZ	0.00001919	NA	0.00002862
WAZ	0	0.00002862	NA