Table 1. Description of study sample, according to weight/health status

| | | MHNW N = 194 | MUNW N = 118 | MHO N = 257 | MUO N = 490 | P-value |
|---|---|---|---|---|---|---|
| **Sex** | | | | | | 0.14 |
| Male | N (%) | 84 (43.3) | 51 (43.2) | 118 (45.9) | 266 (54.3) | |
| Female | | 110 (56.7) | 67 (56.8) | 139 (54.1) | 224 (45.7) | |
| **Psychosocial adversity score** | | | | | | 0.24 |
| 0 | N (%) | 96 (49.5) | 49 (41.5) | 126 (49.0) | 216 (44.1) | |
| 1 | N (%) | 56 (28.9) | 32 (27.1) | 67 (26.1) | 136 (27.8) | |
| 2 | N (%) | 35 (18.0) | 28 (23.7) | 51 (19.8) | 93 (18.9) | |
| ≥ 3 | N (%) | 7 (3.6) | 9 (7.6) | 13 (5.1) | 45 (9.2) | |
| **Socioeconomic adversity score** | | | | | | 0.004 |
| 0 | N (%) | 57 (29.4) | 33 (28.0) | 53 (20.6) | 81 (16.5) | |
| 1 | N (%) | 62 (32.0) | 36 (30.5) | 94 (36.6) | 153 (31.2) | |
| 2 | N (%) | 43 (22.2) | 30 (25.4) | 61 (23.7) | 138 (28.2) | |
| ≥ 3 | N (%) | 32 (16.5) | 19 (16.1) | 49 (10.1) | 118 (24.1) | |
| **Cardiometabolic health** | | | | | | |
| Risk factors | | | | | | |
| BMI (kg/m$^2$) | Median (IQR) | 23.2 (2.3) | 23.7 (1.6) | 27.7 (4.1) | 29.6 (5.4) | <0.001 |
| %fat | Mean (SD) | 32.0 (7.5) | 32.1 (6.8) | 36.9 (7.8) | 36.6 (7.5) | <0.001 |
| Systolic (mmHg) | Mean (SD) | 126.2 (17.6) | 139.8 (15.2) | 131.5 (17.5) | 141.8 (17.7) | <0.001 |
| Diastolic (mmHg) | Mean (SD) | 72.4 (9.1) | 78.8 (9.0) | 77.0 (9.4) | 79.9 (9.8) | <0.001 |
| HbA1c (%) | Median (IQR) | 5.6 (0.3) | 5.8 (0.3) | 5.5 (0.3) | 5.9 (0.5) | <0.001 |
| HDL-C (mmol/L) | Median (IQR) | 1.8 (0.5) | 1.7 (0.5) | 1.6 (0.5) | 1.4 (0.4) | <0.001 |
| Triglycerides (mmol/L) | Median (IQR) | 0.8 (0.4) | 1.0 (0.8) | 1.0 (0.5) | 1.5 (1.0) | <0.001 |

| Complications | | | | | | |
|---|---|---|---|---|---|---|
| Pre-diabetes | N (%) | 61 (31.4) | 96 (81.4) | 59 (23.0) | 410 (83.7) | <0.001 |
| High blood pressure | N (%) | 66 (34) | 109 (92.4) | 124 (48.3) | 446 (91.0) | <0.001 |
| Abnormal HDL-C | N (%) | Redacted | 6 (5.1) | Redacted | 86 (17.6) | <0.001 |
| High Triglycerides | N (%) | 11 (5.7) | 57 (48.3) | 16 (6.2) | 331 (67.6) | <0.001 |
| Medication | | | | | | |
| Antidiabetic or insulin | N (%) | 5 (2.6) | 8 (6.8) | 5 (2.0) | 8 (1.6) | 0.015 |
| Antihypertensive | N (%) | 5 (2.6) | 14 (11.9) | 17 (6.6) | 92 (18.8) | <0.001 |
| Lipid-lowering | N (%) | 5 (2.6) | 38 (32.2) | 9 (3.5) | 216 (44.1) | <0.001 |
| Number of complications | | | | | | |
| 0 | N (%) | 55 (28.4) | | 54 (21.0) | | |
| 1 | N (%) | 139 (71.7) | | 203 (79.0) | | |
| 2 | N (%) | | 87 (73.7) | | 249 (50.8) | |
| 3-4 | N (%) | | 31 (26.3) | | 241 (49.2) | <0.001 |

Cells with N < 5 have been redacted in accordance with the 1946 NSHD data sharing agreement

Metabolically healthy normal weight (MHNW), metabolically unhealthy normal weight (MUNW), metabolically healthy overweight/obese (MHO), and metabolically unhealthy overweight/obese (MUO)

Between-group differences were examined using chi-square for categorical variables and ANOVA for continuous variables (log transformed if not normally distributed).

Table 2. The relationship between psychosocial and socioeconomic adversity scores

| | | Psychosocial adversity score | | | |
|---|---|---|---|---|---|
| | | 0 | 1 | 2 | ≥ 3 |
| **Socioeconomic adversity score** | | | | | |
| 0 | N (%) | 114 (23.4) | 61 (21.0) | 40 (19.3) | 9 (12.2) |
| 1 | N (%) | 173 (35.5) | 99 (34.0) | 54 (26.1) | 19 (25.7) |
| 2 | N (%) | 114 (23.4) | 70 (24.0) | 62 (30.0) | 26 (35.1) |
| ≥ 3 | N (%) | 86 (17.7) | 61 (21.0) | 51 (24.6) | 20 (27.0) |
| Total | N (%) | 487 (100) | 291 (100) | 207 (100) | 74 (100) |

Table 3. Separate associations of each childhood psychosocial and socioeconomic adversity scores with metabolic health status or weight status (defined according to BMI) in adults aged 60-64 years (N = 1,059)

| | Metabolically unhealthy vs healthy | | | Overweight/obese vs normal weight | | |
|---|---|---|---|---|---|---|
| | RR (95% CI) | P-value | P-value for trend | RR (95% CI) | P-value | P-value for trend |
| **Psychosocial adversity score** | | | | | | |
| 0 | 1.00 | | | 1.00 | | |
| 1 | 1.17 (0.87, 1.57) | 0.30 | | 0.99 (0.72, 1.36) | 0.96 | |
| 2 | 1.18 (0.85, 1.65) | 0.31 | | 0.97 (0.68, 1.39) | 0.89 | |
| ≥ 3 | 2.26 (1.31, 3.89) | 0.03 | 0.009 | 1.54 (0.85, 2.77) | 0.15 | 0.418 |
| **Socioeconomic adversity score** | | | | | | |
| 0 | 1.00 | | | 1.00 | | |
| 1 | 1.19 (0.85, 1.67) | 0.32 | | 1.72 (1.20, 2.46) | 0.003 | |
| 2 | 1.62 (1.13, 2.32) | 0.009 | | 1.90 (1.30, 2.78) | 0.001 | |
| ≥ 3 | 1.69 (1.15, 2.47) | 0.008 | 0.002 | 2.26 (1.49, 3.42) | <0.001 | <0.001 |

P-values for trends were obtained by entering the exposures into the models as continuous variables.

All models are adjusted for age and sex.

Table 4. Separate associations of each childhood psychosocial and socioeconomic adversity scores with metabolic health status in normal weight and overweight/obese (defined according to BMI) adults aged 60-64 years (N = 1,059)

| | MUNW vs MHNW | | | MUO vs MHO | | |
|---|---|---|---|---|---|---|
| | RR (95% CI) | P-value | P-value for trend | RR (95% CI) | P-value | P-value for trend |
| **Psychosocial adversity score** | | | | | | |
| 0 | 1.00 | | | 1.00 | | |
| 1 | 1.12 (0.64, 1.95) | 0.69 | | 1.22 (0.84, 1.76) | 0.3 | |
| 2 | 1.57 (0.86, 2.87) | 0.15 | | 1.07 (0.71, 1.61) | 0.73 | |
| ≥ 3 | 2.52 (0.88, 7.17) | 0.08 | 0.05 | 2.01 (1.04, 3.88) | 0.04 | 0.09 |
| **Socioeconomic adversity score** | | | | | | |
| 0 | 1.00 | | | 1.00 | | |
| 1 | 1.00 (0.55, 1.82) | 0.99 | | 1.09 (0.71, 1.68) | 0.7 | |
| 2 | 1.21 (0.64, 2.28) | 0.56 | | 1.55 (0.98, 2.46) | 0.06 | |
| ≥ 3 | 1.03 (0.50, 2.10) | 0.94 | 0.74 | 1.65 (1.01, 2.67) | 0.04 | 0.01 |

Metabolically healthy normal weight (MHNW), metabolically unhealthy normal weight (MUNW), metabolically healthy overweight/obese (MHO), and metabolically unhealthy overweight/obese (MUO)

P-values for trends were obtained by entering the exposures into the models as continuous variables.

All models are adjusted for age and sex.

Table 5. Mutually-adjusted associations of childhood psychosocial and socioeconomic adversity scores with metabolic health status in normal weight and overweight/obese (defined according to BMI) adults aged 60-64 years (N = 1,059)

| | MUNW vs MHNW | | | MUO vs MHO | | |
|---|---|---|---|---|---|---|
| | RR (95% CI) | P-value | P-value for trend | RR (95% CI) | P-value | P-value for trend |
| **Psychosocial adversity score** | | | | | | |
| 0 | 1.00 | | | 1.00 | | |
| 1 | 1.12 (0.64, 1.95) | 0.69 | | 1.20 (0.83, 1.74) | 0.33 | |
| 2 | 1.56 (0.85, 2.86) | 0.15 | | 1.02 (0.68, 1.54) | 0.92 | |
| ≥ 3 | 2.49 (0.87, 7.13) | 0.09 | 0.05 | 1.87 (0.96, 3.61) | 0.06 | 0.15 |
| **Socioeconomic adversity score** | | | | | | |
| 0 | 1.00 | | | 1.00 | | |
| 1 | 1.00 (0.55, 1.81) | 0.99 | | 1.08 (0.70, 1.66) | 0.74 | |
| 2 | 1.13 (0.59, 2.14) | 0.72 | | 1.50 (0.95, 2.40) | 0.09 | |
| ≥ 3 | 0.95 (0.46, 1.96) | 0.9 | 0.93 | 1.60 (0.98, 2.60) | 0.06 | 0.02 |

Metabolically healthy normal weight (MHNW), metabolically unhealthy normal weight (MUNW), metabolically healthy overweight/obese (MHO), and metabolically unhealthy overweight/obese (MUO)

P-values for trends were obtained by entering the exposures into the models as continuous variables. All models are adjusted for age and sex.

Table 6. Mutually-adjusted associations of childhood psychosocial and socioeconomic adversity scores with metabolic health status in normal weight and overweight/obese (defined according to %fat) adults aged 60-64 years (N = 738)

| | MUNW vs MHNW | | | MUO vs MHO | | |
|---|---|---|---|---|---|---|
| | RR (95% CI) | P-value | P-value for trend | RR (95% CI) | P-value | P-value for trend |
| **Psychosocial adversity score** | | | | | | |
| 0 | 1.00 | | | 1.00 | | |
| 1 | 0.81 (0.48, 1.36) | 0.42 | | 1.79 (1.10, 2.94) | 0.02 | |
| 2 | 1.53 (0.85, 2.78) | 0.16 | | 1.03 (0.62, 1.73) | 0.90 | |
| ≥ 3 | 2.10 (0.71, 6.20) | 0.18 | 0.13 | 1.79 (0.82, 3.90) | 0.15 | 0.2 |
| **Socioeconomic adversity score** | | | | | | |
| 0 | 1.00 | | | 1.00 | | |
| 1 | 1.05 (0.60, 1.84) | 0.86 | | 0.93 (0.53, 1.63) | 0.79 | |
| 2 | 0.95 (0.52, 1.73) | 0.86 | | 1.60 (0.90, 2.99) | 0.14 | |
| ≥ 3 | 1.29 (0.64, 2.61) | 0.47 | 0.63 | 1.22 (0.65, 2.27) | 0.54 | 0.21 |

Metabolically healthy normal weight (MHNW), metabolically unhealthy normal weight (MUNW), metabolically healthy overweight/obese (MHO), and metabolically unhealthy overweight/obese (MUO)

P-values for trends were obtained by entering the exposures into the models as continuous variables. All models are adjusted for age and sex.