**Supplemental Materials**

**Table** **S1** Characteristics of participants, by region

**Table S2** Distribution of residential greenness

**Table S3** The potential mediators in the relationships between residential greenness and hypertension and blood pressure

**Fig S1** Several sensitivity analyses

**Table S1** Characteristics of participants, by region

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | Xinxiang | Suiping | Yuzhou | Yima | Tongxu |
| HTN | Non-HTN | HTN | Non-HTN | HTN | Non-HTN | HTN | Non-HTN | HTN | Non-HTN |
| N | 4402 | 6045 | 3643 | 12346 | 3186 | 6001 | 371 | 587 | 1161 | 1352 |
| Age (mean ± SD) | 59.60 ± 10.78 | 49.10 ± 13.57 | 61.01 ± 9.56 | 54.72 ± 11.68 | 59.99 ± 9.89 | 53.97 ± 11.86 | 60.19 ± 9.16 | 54.71 ± 11.42 | 62.39 ± 9.48 | 54.71 ± 12.46 |
| Sex (n, %) | Male | 1951 (44.3) | 2294 (37.9) | 1386 (38.0) | 5242 (42.5) | 1168 (36.7) | 2054 (34.2) | 111 (29.9) | 195 (33.2) | 478 (41.2) | 538 (39.8) |
|  | Female | 2451 (55.7) | 3751 (62.1) | 2257 (62.0) | 7104 (57.5) | 2018 (63.3) | 3947 (65.8) | 260 (70.1) | 392 (66.8) | 683 (58.8) | 814 (60.2) |
| Education (n, %) | Low | 2040 (46.3) | 1518 (25.1) | 2075 (57.0) | 5790 (46.9) | 1752 (55.0) | 2501 (41.7) | 170 (45.8) | 195 (33.2) | 756 (65.2) | 685 (50.6) |
|  | Medium | 1553 (35.3) | 2497 (41.3) | 1240 (34.0) | 5151 (41.7) | 1163 (36.5) | 2784 (46.4) | 154 (41.5) | 283 (48.2) | 285 (24.5) | 482 (35.7) |
|  | High | 809 (18.4) | 2030 (33.6) | 328 (9.0) | 1405 (11.4) | 271 (8.5) | 716 (11.9) | 47 (12.7) | 109 (18.6) | 120 (10.3) | 185 (13.7) |
| Married (n, %) | 3925 (89.2) | 5580 (92.3) | 3153 (86.5) | 11217 (90.9) | 2718 (85.3) | 5414 (90.2) | 324 (87.3) | 529 (90.1) | 1001 (86.2) | 1244 (92.0) |
| Income/month (n, %) | ≤500 yuan | 1761 (40.0) | 1781 (29.5) | 1502 (41.2) | 4554 (36.9) | 1206 (37.9) | 1937 (32.3) | 135 (36.4) | 198 (33.7) | 441 (38.0) | 429 (31.7) |
|  | 500~1000 yuan | 1514 (34.4) | 2074 (34.3) | 1054 (28.9) | 3688 (29.9) | 1146 (36.0) | 2292 (38.2) | 121 (32.6) | 194 (33.0) | 365 (31.4) | 402 (29.7) |
|  | ≥1000 yuan | 1127 (25.6) | 2190 (36.2) | 1087 (29.8) | 4104 (33.2) | 834 (26.2) | 1772 (29.5) | 115 (31.0) | 195 (33.2) | 355 (30.6) | 521 (38.5) |
| Smoking (n, %) | Never | 3110 (70.6) | 4448 (73.6) | 2733 (75.0) | 8687 (70.4) | 2386 (74.9) | 4553 (75.9) | 288 (77.6) | 453 (77.2) | 836 (72.0) | 968 (71.6) |
|  | Former | 457 (10.4) | 347 (5.7) | 328 (9.0) | 896 (7.3) | 367 (11.5) | 426 (7.1) | 47 (12.7) | 55 (9.4) | 134 (11.5) | 117 (8.7) |
|  | Current | 835 (19.0) | 1250 (20.7) | 582 (16.0) | 2763 (22.4) | 433 (13.6) | 1022 (17.0) | 36 (9.7) | 79 (13.5) | 191 (16.5) | 267 (19.7) |
| Drinking (n, %) | Never | 3255 (73.9) | 4775 (79.0) | 2914 (80.0) | 9601 (77.8) | 2424 (76.1) | 4588 (76.5) | 327 (88.1) | 504 (85.9) | 845 (72.8) | 989 (73.2) |
|  | Former | 209 (4.7) | 179 (3.0) | 277 (7.6) | 673 (5.5) | 154 (4.8) | 181 (3.0) | 11 (3.0) | 22 (3.7) | 58 (5.0) | 55 (4.1) |
|  | Current | 938 (21.3) | 1091 (18.0) | 452 (12.4) | 2072 (16.8) | 608 (19.1) | 1232 (20.5) | 33 (8.9) | 61 (10.4) | 258 (22.2) | 308 (22.8) |
| exercise (n, %) | Low | 2129 (48.4) | 2590 (42.8) | 1054 (28.9) | 3050 (24.7) | 1250 (39.2) | 1854 (30.9) | 133 (35.8) | 172 (29.3) | 217 (18.7) | 165 (12.2) |
|  | Medium | 1067 (24.2) | 1661 (27.5) | 1695 (46.5) | 5681 (46.0) | 1235 (38.8) | 2524 (42.1) | 154 (41.5) | 266 (45.3) | 226 (19.5) | 259 (19.2) |
|  | High | 1206 (27.4) | 1794 (29.7) | 894 (24.5) | 3615 (29.3) | 701 (22.0) | 1623 (27.0) | 84 (22.7) | 149 (25.4) | 718 (61.8) | 928 (68.6) |
| Fat-rich diet (n, %) | 558 (12.7) | 874 (14.5) | 651 (17.9) | 2917 (23.6) | 633 (19.9) | 1392 (23.2) | 45 (12.1) | 94 (16.0) | 122 (10.5) | 175 (12.9) |
| Family history of hypertension (n, %) | 1396 (31.7) | 867 (14.3) | 934 (25.6) | 1782 (14.4) | 882 (27.7) | 1059 (17.6) | 108 (29.1) | 126 (21.5) | 195 (16.8) | 215 (15.9) |
| Body mass index (kg/m2, mean ± SD) | 26.54 ± 3.65 | 24.67 ± 3.48 | 25.30 ± 3.46 | 23.77 ± 3.26 | 26.13 ± 3.71 | 24.64 ± 3.34 | 25.91 ± 3.51 | 24.88 ± 3.20 | 26.17 ± 3.75 | 24.70 ± 3.35 |
| PM2.5 (μg/m3, mean ± SD) | 74.07 ± 0.82 | 74.05 ± 0.84 | 70.86 ± 0.86 | 70.90 ± 0.87 | 76.88 ± 0.92 | 76.92 ± 0.92 | 71.61 ± 0.09 | 71.60 ± 0.16 | 74.84 ± 1.28 | 74.90 ± 1.19 |

**Abbreviations:** HTN, hypertension; SD, standard deviation; PM2.5, fine particulate matter.

**Table S2** Distribution of residential greenness

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Vegetation index | Mean | Min | Quantiles | Max | Interquartile range |
| Q25 | Q50 | Q75 |
| NDVI500m | 0.4785  | 0.1534 | 0.4490  | 0.4990  | 0.5331  | 0.5890  | 0.0840  |
| NDVI1000m | 0.4929  | 0.1789 | 0.4531  | 0.5213  | 0.5422  | 0.6108  | 0.0891  |
| NDVI3000m | 0.4869  | 0.2125 | 0.4463  | 0.5032  | 0.5390  | 0.5699  | 0.0927  |
| EVI500m | 0.3380  | 0.1008 | 0.3065  | 0.3459  | 0.3923  | 0.4399  | 0.0858  |
| EVI1000m | 0.3401  | 0.1032 | 0.2966  | 0.3562  | 0.3850  | 0.4375  | 0.0884  |
| EVI3000m | 0.3339  | 0.1301 | 0.2883  | 0.3485  | 0.3813  | 0.4139  | 0.0930  |

**Abbreviations:** NDVI, normalized diﬀerence vegetation index; EVI, enhanced vegetation index.

**Table S3** The potential mediators in the relationships between residential greenness and hypertension and blood pressure

|  |  |  |  |
| --- | --- | --- | --- |
| Associations | Mediator | Proportion mediated (%) | *P*mediation |
| NDVI500m-hypertension | PM2.5 | 4.6  | 0.320  |
|  | exercise | 3.6  | <0.0001 |
|  | BMI | 23.6  | <0.0001 |
| NDVI500m-SBP | PM2.5 | 6.4  | 0.360  |
|  | exercise | 0.7  | 0.160  |
|  | BMI | 33.2  | <0.0001 |
| NDVI500m-DBP | PM2.5 | 18.2  | <0.0001 |
|  | exercise | 2.0  | <0.0001 |
|  | BMI | 36.7  | <0.0001 |
| EVI500m-hypertension | PM2.5 | 3.7  | 0.360  |
|  | exercise | 4.4  | <0.0001 |
|  | BMI | 23.7  | <0.0001 |
| EVI500m-SBP | PM2.5 | 9.6  | 0.120  |
|  | exercise | 1.4  | 0.200  |
|  | BMI | 35.3  | <0.0001 |
| EVI500m-DBP | PM2.5 | 21.6  | <0.0001 |
|  | exercise | 2.3  | <0.0001 |
|  | BMI | 35.1  | <0.0001 |

**Abbreviations:** NDVI, normalized diﬀerence vegetation index; EVI, enhanced vegetation index; SBP, systolic blood pressure; DBP, diastolic blood pressure; PM2.5, fine particulate matter; BMI, body mass index.

**Note:** adjusted for age, sex, marriage, education, income, smoking, drinking, fat-rich diet, exercise, family history of hypertension, BMI, and PM2.5.

**Fig S1** Several sensitivity analyses

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**Abbreviations:** NDVI, normalized diﬀerence vegetation index; EVI, enhanced vegetation index; SBP, systolic blood pressure; DBP, diastolic blood pressure; PM2.5, fine particulate matter; BMI, body mass index.

**Note:** The 500-m, 1000-m, 3000-m, type 1, and type 2 used the corresponding 3-year average vegetation index; Type 1: participants taking the antihypertensive drug were excluded; Type 2: hypertensive patients were excluded; Adjusted for age, sex, marriage, education, income, smoking, drinking, fat-rich diet, exercise, family history of hypertension, BMI, and PM2.5.