Supplementary Material C: Study Characteristics and Quality Appraisal for Supplementary Papers

Table S1

*Study characteristics of five omitted papers*

|  |  |  |  |
| --- | --- | --- | --- |
| Study information | Study sample | Study design |  |
| Ref. | Ctry. | Size | Participants | Age  | Activity | Exposure | Natural  | Control | Outc. | Rep. results |
| Quasi-randomized trial |
| Grazuleviciene et al. (2016) | LTU | 20i: 10c: 10 | Urban residents with coronary artery disease, ♀♂ | 62.3 (*SD*: 12.6) | Walking | 7 days (7\*30 min) | Park | Urban  | C | - I |
| Jia et al. (2016) | CHN | 18i: 10c: 8 | Elderly patients with chronic obstructive pulmonary disease, ♀♂ | i: 70.1 (*SD*: N.R.)c: 70 (*SD*: N.R.) | Walking | 2 days (2\*1.5 hours on the same day (morning and afternoon)) | Forest | Urban | C, A | + II |
| Cross-over trial |
| Song et al. (2013) | JPN | 7 | University students, ♂ | 22.5 (*SD*: 3.1) | Walking | 15 min | Park | Urban  | ln(HF) | + |
| Song et al. (2015b) | JPN | 20 | University students, ♂ | 22.3(*SD*: 1.2) | Walking | 15 min | Park | Urban  | ln(HF) | + |
| Tsunetsugu et al. (2013) | JPN | 41-44 | University students, ♂ | 21.1(*SD*: 1.1) | Seated relaxation | 15 min | Forest  | Urban  | ln(HF) | + |

*Note.* C = control group; c1 = control group number 1; c2 = control group number 2; i = intervention group; N.R. = not reported; SD = standard deviation. A = (serum) adrenaline; C = (salivary and serum) cortisol; HF = high frequency heart rate variability; ln(HF) = natural logarithm of high frequency heart rate variability. “+” = Significant difference between natural and control condition were reported; “-“ = Mixed results were reported (roman numerals refer to elaborative text in notes); “%” = No significant differences were reported.

I Measurements were conducted before and after (1.6 minutes and 60 minutes) each walk to allow comparisons on the single days as well as the accumulated effect after seven days. Lower levels of cortisol were observed amongst the participants walking in the park, but not participants walking along an urban street. No difference was observed from day 1 to day 7. II ln(HF) was measured every minute and compared across the two environments. The authors report that all measures of ln(HF) are higher in the natural environment, but it is unclear whether the difference is statistically significant. Average score across the 15 time points is higher in the urban park.

Table S2

*Quality appraisal of five omitted papers*

|  |  |  |
| --- | --- | --- |
|  | Quasi-randomized trials | Cross-over trial |
| Quality indicators | Grazuleviciene et al. (2016) | Jia et al. (2016) |  |  | Song et al. (2013) | Song et al. (2015b) | Tsunetsugu et al. (2013) |  |
| Study design |  |  |  |  |  |  |  |  |
| Power calculation reported | No | No |  |  | No | No | No |  |
| Inclusion criteria reported | Pa. | YesI |  |  | No | Yes | No |  |
| Individual level allocation | Yes | Yes |  |  | Yes | Yes | Yes |  |
| Random allocation to groups/ condition order | Yes | Yes |  |  | Yes | No | No |  |
| Randomization procedure appropriate | Un. | Un. |  |  | Un. | NA | NA |  |
| Actions taken to control for transient, exogenous factors  | Pa. | Yes |  |  | Un. | Pa. | Pa. |  |
| Confounders |  |  |  |  |  |  |  |  |
| Groups similar (sociodemographic) | Un. | Un. |  |  | NA | NA | NA |  |
| Groups/conditions balanced at baseline  | Yes | Yes |  |  | Un. | Yes | Un. |  |
| Participants blind to research question | Un. | Un. |  |  | Un. | Un. | Un. |  |
| Intervention integrity |  |  |  |  |  |  |  |  |
| Clear description of intervention and control | Yes | Pa. |  |  | Pa. | Yes | Pa. |  |
| Consistency of intervention | Yes | Un. |  |  | Un. | Yes | Un. |  |
| Data collection methods |  |  |  |  |  |  |  |  |
| Outcome assessors blind to group/condition allocation | Un. | Un. |  |  | Un. | Un. | Un. |  |
| Consistency of data collection  | Yes | Yes |  |  | Un. | Un. | Yes |  |
| Analyses |  |  |  |  |  |  |  |  |
| All outcomes reported (means and SD/SE) | No | No |  |  | No | No | No |  |
| All participants accounted for (i.e., losses/exclusions) | Yes | No |  |  | No | Yes | Yes |  |
| ITT analysis conducted (all data included after allocation) | Yes | No |  |  | No | No | No |  |
| Individual level analysis | Yes | Yes |  |  | Yes | Yes | Yes |  |
| Statistical analysis methods appropriate for study design | Pa. | Pa. |  |  | Pa. | Pa. | Pa. |  |
| External validity |  |  |  |  |  |  |  |  |
| Sample representative of target population | Pa. | Pa. |  |  | Un. | Un. | Un. |  |
| Overall quality score |  |  |  |  |  |  |  |  |
| Total number of points (out of possible 36/38a) | 22 | 17 |  |  | 8 | 16 | 11 |  |
| Quality rating as percent | 58 | 45 |  |  | 22 | 44 | 31 |  |
| Responded to query about “uncertain” ratings | NA | NA |  |  | NA | NA | NA |  |

*Note.* NA = Not applicable; Pa. = partial; Un. = unclear; \* = additional information provided by study authors

a Since the item ‘Groups similar (sociodemographic)’ was not applicable for within-studies, this item was extracted from the total possible score obtainable for within-studies.

I Information supplied from previous publication (Mao et al., 2012).