**Supplementary Table 1. Neighbourhood Environment and Depressive Symptoms in Older Adults – Study Characteristics and Findings**

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|  | **Project name & author** **[Name of project, if applicable, first author, publication year;]** | **Participants****[****Total sample size; urban, rural or mixed sample; age, gender; response rate or proof of representativeness of sample; community dwellers or not; geographical location,** **ethnicity]** | **Study design****[Cross-sectional, longitudinal or experimental;****sampling method for clusters and individuals; stratification used by environment attributes; neighbourhood definition]** | **Covariates****[Covariates included in the analyses]** | **Outcome measures****[Depression outcome;** **instrument; validity; continuous/categorical]** | **Environmental exposure variables****[Environmental variables, their type (objective or subjective) and, in brackets, their classification into environmental categories (P = physical, S = social) (to assist compilation of summary table)]** | **Moderators****[Moderators examined and breakdown of sample size by qualitative moderator (e.g., sex; educational attainment)]** | **Analytical approach****[Analytical approach; adjustment for clustering; appropriateness (distributional assumptions; moderation analyses) and presentation]**  | **Findings****Main effects or moderating effects (conclusion in red)** | **Comments****[Notes important for study assessment or interpretation (if any)]** |
| 1 | Adult Changes in Thought (ACT) ;Berke et al., 2007 | N = 740 (urban);Mean age = 78 years;63% female;Response rate not reported; Community dwellers;King County, Washington USA;White (89%), African American (4%), Asian (5%) and other (2%) | Cross-sectional;Clusters: none;Individual: random; Stratification: none;Neighbourhood definition:100, 500, 1000 m buffer | Income, education, age, chronic disease burden, living alone, self-reported ethnicity, self-reported walking activity, smoking | Possible depression;CES-D - 20 item version (score 16+);validated;categorical (yes/no) | *Objective*Walkability (walkability, P) | Sex | Multiple logistic regression | *Moderating effects with possible depression*Walkability:Male: ORs ~ 0.13-0.81 p=.02 (walkability **-\*0.368**)Female: ORs ~0.55-1.58 p>.05(walkability **0\*0.632**) | Fractional weights needed to account for moderating effects (subgroup of sample) |
| 2 | Aging, Stress and Health (ASH) ; Bierman, 2009  | N = 836 (urban);Age: ≥ 65 years;% female not stated;65% response rate;Community dwellers;Washington DC, USA,Black & White | Longitudinal (wave 1 & wave 3);Clusters: DC & adjoining counties (purposive);Individual: random;Stratification: counties, randomly sampling 3 counties which ‘subsume this diversity’;Neighbourhood definition:participant delimitation | Age, race, gender, work status, owning one’s home, education, income, financial strain, number of children, number of people living in the home, religious attendance, years in current marital status, social integration, years spent at address, physical limitations | Depressive symptoms;4 items from Hopkins Symptoms Checklist,validity unknown;continuous | *Subjective*Neighbourhood disorder (personal/crime related safety, S) | Marital status (% married not presented in article – report 50/50)  | Full-information maximum likelihood regression;(not possible to assess distributional assumptions of depression score; missing descriptive statistics; clustering may not be accounted for)  | *Moderating effects with depressive symptoms*Neighbourhood disorder:Non-married: β = 0.164 p<.05(Personal/crime-related safety**-\*0.5**)Married: β = 0.002 p>.10(Personal/crime-related safety **0\*0.5**) | Marital status (% married not presented in article – assume 50/50).Fractional weights needed to account for moderating effects (subgroup of sample).  |
| 3 | Aichi Gerontological Evaulation Study (AGES); Murata et al., 2008 | N = 29, 860 (urban, semi-urban, rural);Mean age = 73 years54 % femaleResponse rate = 55%;Community dwellers;Aichi prefecture, Japan;Japanese  | Cross-sectional;Cluster: municipality (purposive);Individual: random;Stratification: prefectures (urban/semi-urban/rural area);Neighbourhood definition:not specified | Gender, age, illnesses, TMIG-IC, self-rated health, marital status, income, education | Possible depression;GDS-15 (score 5+)validated;categorical | *Objective*Area of residence – rural, semi-urban, urban (urbanisation, P) | None | Logistic regression (co-variate adjusted) and chi-square test (bivariate)(not accounted for clustering at the municipality level) | *Main effects with possible depression*Area of residence:urban/ruralOR=1.27; p<.001urban/semi-urbanOR=1.11; p<.05(urbanisation **-**) | Bivariate analyses and multiple logistic regression yielded same conclusion. |
| 4 | AGES;Takagi et al., 2013 | N = 9147, (mixed);Mean age = 73 years;47% female;Response rate = 61%;Community dwellers;Aichi, Japan;Japanese (race/ethnicity was not included because of ethnic homogeneity) | Cross-sectional;Cluster: elementary school district (purposive);Individual: random;Stratification: municipalities;Neighbourhood: elementary school district | Combinations of gender, income, age, duration of residency, education, hometown, marital status, children, individual social distance, neighbourhood level social distance | Possible depression;GDS-15 (score 6+);validated;categorical (yes/no) | *Subjective*Social distance (social/demographic heterogeneity, S)Trust (neighbourhood trust, S)Social participation (social connectedness, S)  | None | Multilevel logistic regression | *Main effects with possible depression*Social distance:OR 0.78; p>.05(social/demographic heterogeneity **0**)Trust:OR=0.87; p>.05(neighbourhood trust **0**)Social participation:OR=0.82; p>.05 (social connectedness **0**) | Paper looked at trust and participation as moderators of individual variables.Therefore no interaction effects can be examined.  |
| 5 | Alameda County Study (ACS);Roberts et al., 1997 | N = 2417 (mixed)Mean age = 65 years;56% female;Response rate = 93%Community dwellers;Alameda County, CA, USA;White (82.8%), African Americans (8.1%), Asian Americans (3.9%), Hispanic (3.8%), American Indians (1.4%)  | Cross-sectional;Cluster: household (random);Individual: random;Stratification: none;Neighbourhood definition:participant delimitation | None | Clinical depression;“12 items which operationalize the diagnostic symptom criteria for a major depressive episode outlined in DSM-III-R and DSM-IV (American Psychiatric Association)”;validation unknown;categorical (yes/no) | *Subjective*Neighbourhood problems (crime, traffic, trash & litter, lighting at night, public transportation) (neighbourhood disorder/ problems, S) | None | Bivariate logistic regression(no SE or 95% CI accompanying ORs) | *Main effects with clinical depression*Neighbourhood problemsno problems vs some problemsOR 1.80, p<.001no problems vs serious problemsOR 2.80, p<.001(neighbourhood problems **+**) | May not be eligible: index of neighbourhood problems includes various uncorrelated neighbourhood aspects; also suspect measure of clinical depression. |
| 6 | Assets and Health Dynamics Among the Oldest Old (AHEAD) ;Aneshensel et al., 2007  | N = 3442 (urban);Age = 77 years;62% female;80% response rate; Community dwellers;USA;Non-Hispanic White (84%), African American (10%), Hispanic (4%) & other (1%) | Cross-sectional; Clusters: multi-stage cluster design, census tracts (all), household (random);Individual: systematic random;Stratification: none;Neighbourhood definition:census tract | Age, sex, ethnicity, marital status, years of education, household income, household wealth, religion | Depressive symptoms;CES-D (8 item version);validated;continuous | *Objective*Residents living in the same house for past 5 years (%)(residential stability, S)Socio-economic disadvantage (SES, S) Affluence (SES, S) Proportion of African-Americans (social/demographic heterogeneity, S) Proportion of Hispanics (social/demographic heterogeneity, S) Proportion aged 65 or older (proportion of older adults, S) | None | Linear mixed models (examined both Poisson and normal variance functions) | *Main effects with depressive symptoms*Residents living in the same house for past 5 years (%):β = 0.724, p<.01(residential stability **+**) Socio-economic disadvantage:p>.05 (SES **0**)Affluence:p>.05 (SES **0**)% African-American:p>.05 (social/demographic heterogeneity **0**)% Hispanic:p>.05 (social/demographic heterogeneity **0**)Proportion of population >65 years:p>.05 (proportion of older adults **0**) | Note that there are multiple measures per environmental construct that need to be summed. |
| 7 | AHEAD;Muramatsu, 2003 | N = 6640, (urban, rural);Mean age = 77 years;% female: not statedResponse rate not stated;Community dwellers;USA;Black-non-Hispanic, Hispanic & White-non-Hispanic and others | Cross-sectional; Clusters: multi-stage cluster design, census tracts (all), household (random);Individual: systematic random;Stratification: none;Neighbourhood definition:census tract | Age, gender marital status, education, income, wealth, race/ethnicity, ADL limitations, IADL limitations, number of illnesses | Depressive symptoms;CES-D (8 item scale); validated;continuous | *Objective*Income inequality (socio-economic inequality, S)Mean household income (SES, S) | Number of illnesses, individual-level income and wealth | Linear mixed models(outcome positively skewed) | *Main effects with depressive symptoms*Income inequality:b = 2.64, p≤0.001(socio-economic inequality **+**)Mean household income:b = 0.002, p>.05(SES **0**)*No moderating effects of individual-level wealth and income on Income inequality - depression associations.* *Moderating effects with depressive symptoms* Income equality:# of illnesses significant moderator but effects of same direction across levels of moderator. | Wave 1 (1993-1994) |
| 8 | ¡Caminemos!;Hernandez et al., 2015 | N = 570 (urban), 351 for longitudinal analysis;Mean age = 73 years;77% female; Data from randomised control trial, no response rate stated;Community dwellers;Los Angeles, USA;Latinos  | Longitudinal & cross-sectional;Cluster: senior centre (convenience);Individual: convenience; Stratification: none;Neighbourhood definition:15-20 min walk from home | Age, gender  | Possible depression; GDS-5 (score 2+);validated;categorical (yes/no) | *Subjective*Walking/cycling facilities (barriers to walking, P)Neighbourhood aesthetics (aesthetics, P)Traffic safety (traffic safety, P) Crime safety (personal/crime-related safety, S) | None | Logistic regression(no adjustment for clustering at recruitment point) | *Main effects with possible depression (prevalence)*Walking/cycling facilities:OR=1.03; p=.57(barriers to walking **0**)Neighbourhood aesthetics:OR=0.96; p=.27(aesthetics **0**)Traffic safety: OR=0.95; p=.17(traffic safety **0**)Crime safety: OR=0.88; p=.01(personal/crime-related safety **-**)*Main effects with possible depression (incidence)*Walking/cycling facilities:OR=0.86; p=.30(barriers to walking **0**)Neighbourhood aesthetics:OR=0.93; p=.46(aesthetics **0**)Traffic safety: OR=1.10; p=.47(traffic safety **0**)Crime safety: OR=0.82; p=.10(personal/crime-related safety **0**) |  |
| 9 | Chicago Health and Aging Project (CHAP);Everson-Rose et al., 2011 | N = 5770 (urban);Mean age = 73 years;62% female;79% response rate;Community dwellers;Chicago, USA;74% black, 26% non-black (Largely African-American or non-Hispanic white, <1% reported another race category or Hispanic ethnicity) | Cross-sectional;Cluster: census block group (purposive);Individual: all;Stratification: none;Neighbourhood definition: census block groups | Age, gender, race, years in neighbourhood, education, income, marital status, chronic health conditions | Depressive symptoms;CES-D (10 item version);validated;continuous | *Objective*Neighbourhood SES (SES, P); continuous | None | Generalised linear mixed models (negative binomial error structure with log link) | *Main effects with depressive symptoms*Neighbourhood SES:β = -0.078, p<.05(SES **-**) | Institutionalised persons were eligible, 2 nursing homes agreed to participate (Bienias et al 2003). Can’t determine how many, if any institutionalised people participated. Most participants likely to be community dwellers |
| 10 | CHAP;Kelley-Moore et al., 2016 | N = 5625 (urban);Mean age = 74 years;61% female;Response rate = unknownCommunity dwellers;Chicago, USA;73% black, 27% non-black  | Cross-sectional;Cluster: census block group (purposive);Individual: all; Stratification: none;Neighbourhood definition: census block groups | Age, gender/race, education, years in neighbourhood, marital status, chronic health conditions, ADL disability, number of friends, number of neighbours known by name | Depressive symptoms;CES-D (10 item version);validated;continuous | *Objective*Mean neighbourhood-level income (SES, S),Mean neighbourhood-level number of visiting neighbours (social connectedness, S)  | Gender, race | Generalised linear mixed models (accounted for skewed distribution of outcome; formally tested for moderating effects) | *No moderating effects of gender and race.**Main effects with depressive symptoms*Mean neighbourhood-level income:b = -0.105, p<.001(SES **-**)Mean neighbourhood-level number of visiting neighboursb = -0.001, p>.05(social connectedness **0**) |  |
| 11 | China Health and Retirement Longitudinal Study (CHARLS);Li et al., 2015 | N = 3824 (rural);Mean age = 69 years;49% female;Subset of national representative sample with response rate = 81%;Community dwellers;China;Chinese | Cross-sectional;Cluster: county (purposive), village (probability-proportional-to-size), household (random);Individual: random;Stratification: county (GDP), village (probabilities proportional to size); Neighbourhood definition:village | Age, gender, marital status, living arrangements, education, health insurance, financial support from children, household luxury items, housing quality, chronic conditions, physical disability; + other environmental variables for models of elderly activity centre, health facility and income support provided by village | Possible depression;CES-D (10 item scale) (score 12+);validated;categorical (yes/no) | *Objective* Infrastructure deficiency (availability of essential amenities, P) No income support provided by village (collective efficacy, S) Health facility (access to/availability of health/well-being related services, P)Elder activity centre (access to/availability of entertainment/culture services, P) | None | Multilevel logistic regression | *Main effects with possible depression*Infrastructure deficiency:OR=1.040, p<.001(availability of essential amenities **-**)No income support provided by village:OR=1.281, p<.05(collective efficacy **-**)No health facility:OR=1.246, p>.05(access to/availability of health/well-being related services **0**)No elderly activity centre:OR=1.188, p>.05(access to/availability of entertainment/culture services **0**) | Note that characteristics were assessed via village leaders (observers/raters) |
| 12 | CHARLS ;Li et al., 2016 | N =5130 (urban, rural);Mean age = 69 years;50% female;Subset of national representative sample with response rate = 81%;Community dwellers;China;Chinese | Cross-sectional;Cluster: county (random), village/neighbourhood (probability-proportional-to-size), household (random);Individual: random; Stratification: region, urban/rural, GDP;Neighbourhood definition:neighbourhood (urban), village (rural) | Combinations of age, gender, education, pension benefits, household assets, partnership, children nearby, social participation | Depressive symptoms;CES-D (10 item scale);validated;continuous | *Objective*Urban/rural (urbanisation, P)Infrastructure deficiency (availability of essential amenities, P)Elderly activity centre (access to/availability of entertainment/culture services, P)  | None | Linear mixed models(outcome distributional assumptions cannot be verified) | *Main effects with depressive symptoms*Rural-urban: (urban as reference)b = 2.549, p<.001(urbanisation **-**)Infrastructure deficiency:p<.05(availability of essential amenities **-**) Elderly activity centre:b = -1.478, p<.001(access to/availability of entertainment/culture services **-**) | Note that some characteristics were assessed via village leaders (observers/raters) |
| 13 | CHARLS;Tian et al., 2015 | N =6630 (urban, rural);Mean age = 68 years;% female not stated;Response rate not stated;Community dwellers;China;Chinese | Cross-sectional;Cluster: county (random), village/neighbourhood (probability-proportional-to-size), household (random);Individual: random;Stratification: region, GDP; Neighbourhood definition:not specified | Age, gender, marital status, education, physical disability, social activity, smoking, drinking, chronic disease, assets, employment | Depressive symptoms;CES-D (10 items)validated;continuous Possible depression;CES-D (10 items) (score 10+)categorical (yes/no) | *Objective*Urban/rural (urbanisation, P)Air pollution - SO2 drainage and square of SO2 drainage (air pollution, P)  | None | Tobit regression model (continuous outcome)Probit regression model (categorical outcome)(sampling design / clustering not accounted for; no SE or 95% CIs) | *Main effects with depressive symptoms*Urban/rural:b = -1.43, p<.001(urbanisation **-**)Air pollution - SO2 drainage:linear b = -0.174, p<.001quadratic b=0.003, p<.001(air pollution positive curvilinear - J shaped)*Main effects with possible depression*Urban/rural:b = -0.233, p<.001(urbanisation **-**)Air pollution - SO2 drainage:linear b = -0.035, p<.001quadratic b=0.0007, p<.001(air pollution positive curvilinear - J shaped) | “the effect of SO2 drainage on [depression] presents a positive J-shaped curve” |
| 14 | Dynamics Among the Oldest Old (AHEAD);Wight et al., 2009 | N = 3442 (T1), 2632 (T2), 1871 (T3) (urban);Mean age = 77 years;64% female;Response rate = 80% (T1);Community dwellers;USA;Non-Hispanic White (75-77%), African American (16-17%), Hispanic (6%) & other (1%), proportion across T1 to T3  | Longitudinal;Clusters: multi-stage cluster design, census tracts (all), household (random);Individual: systematic random;Stratification: none;Neighbourhood:census tract | T1 depressive symptoms, education, household income, household wealth, gender, age, ethnicity, marital status, religion, ADL, heart problems, stroke, other major medical conditions, cognitive function | Depressive symptoms;CES-D (8 items);validated;continuous | *Objective*Socioeconomic disadvantage (SES, S), Affluence (SES, S) % African American (social/demographic heterogeneity, S)% Hispanic (social/demographic heterogeneity, S)Residential stability (residential stability, S) Proportion aged ≥65 years (proportion of older adults, S) | None | Linear mixed models(with robust standard errors) | *Main effects with depressive symptoms* (T1 – T2) & (T1 – T3) same results, values for (T1 – T3) reportedSocioeconomic disadvantage:b = 0.01, p>.05(SES **0**)Affluence:b = 0.01, p>.05(SES **0**)% African American: b = -0.11, p>.05(social/demographic heterogeneity, **0**)% Hispanic:b = -0.03, p>.05(social/demographic heterogeneity, **0**)Residential stability: b = 0.04, p>.05(residential stability **0**) Proportion aged ≥65 years:b = 0.03, p>.05(proportion of older adults **0**) | SES disadvantage (+) and % African American (+) both Sig in unadjusted model  |
| 15 | English Longitudinal Study of Ageing (ELSA) – Wave 1;Marshall et al., 2014 | N = 10,644 (mixed);Mean age ≈ 66 years55% female;Response rate = 67-70%;Community dwellers;England;White (97%) & Non-White (3%) | Cross-sectional;Cluster: postcode sector (unknown), household (systematic – may not be random);Individual: random;Stratification: postcode sectors (health authority & proportion of households in the non-manual socio-economic groups);Neighbourhood definition:Middle Super Output Area (MSOA) | Age, aged squared, gender, individual wealth, education, employment, ethnicity | Possible depression;CES-D (8 item scale) (score 4+);validated;categorical (yes/no) | *Objective*Neighbourhood inequality (socio-economic inequality, S)Median neighbourhood house price (wealth) (SES, S)Neighbourhood deprivation (SES, S) | None | Generalised linear mixed models (logistic)  | *Main effects with possible depression*Neighbourhood inequality:p=<.05(socio-economic inequality **-**) Median neighbourhood house price (wealth):OR=0.93; p<.05(SES **-**)Neighbourhood deprivation:OR 1.09; p<.05(SES **-**) |  |
| 16 | ELSA;Stafford et al., 2011  | N = 11392 (wave 1), 8781 (wave 2) (mixed);Mean age (wave 2) ≈ 66 years;54 % female (wave 1);Response rate 74%.Community Dwellers;England;British | Longitudinal;Cluster: postcode sector (unknown), household (systematic – may not be random);Individual: random;Stratification: postcode sectors (health authority & proportion of households in the non-manual socio-economic groups);Neighbourhood definition:Participant perceived | Gender, age, employment, marital status, wealth | Depressive symptoms;CES-D (8 items);validated;continuous | *Subjective*Neighbourhood social cohesion (collective efficacy, S)Neighbourhood perceived safety (personal/crime-related safety, S) | None | Structural equation modelling(clustering at the postcode sector level not accounted for; no information on distribution of outcome) | *Main effects with depressive symptoms*Neighbourhood social cohesion:β = -0.070, p<.05(collective efficacy **-**)Neighbourhood perceived safety:β = -0.019, p=0.30(personal/crime-related safety **0**) |  |
| 17 | Epidemiological Study of the Elderly (EPESE) – Duke;Hybels et al., 2006 | N = 2998 (urban, rural)Mean age = 75 years;65% female;Stratified multistage probability sample – no response rate stated;Community dwellers;central North Carolina, USA;Black (35%) other not stated | Cross-sectional;Cluster: county (all); Individual: random (multistage area probability sampling);Stratification: urban/rural;Neighbourhood definition:census tract | Age, gender, race, marital status, education, income, one or more limitations in physical functioning | Depressive symptoms;CES-D (20 item version - modified);validated;continuous | *Objective*% residents in census tract living in poverty (SES, S)% black households (social/demographic heterogeneity, S)% persons in census tract living in same house 5+ years (residential stability, S)% persons in census tract age 65+ (proportion of older adults, S)% families in census tract, with an annual income of $75,000+ (SES, S) | None | Linear mixed models(p value set at 0.01; outcome positively skewed) | *Main effects with depressive symptoms*Percent residents living in poverty: t = -0.83, p=.408(SES **0**)Percent black residents:t = -1.62, p=.106(social/demographic heterogeneity **0**)Percent residential stability:t = -0.23, p=.819(residential stability **0**)Percent individuals age 65+: t = -0.76, p=.445(proportion of older adults **0**)Percent affluent families:t = 1.61, p=108(SES **0**) |  |
| 18 | EPESE (Wave 5) – Hispanic Established Population;Gerst et al., 2011  | N = 1857 (nationwide);Mean age = 82 years;62% female;90% response rate;Community dwellers;Five Southwestern states (Texas, California, Arizona, Colorado & New Mexico), USA;Mexican Americans | Cross-sectional;Cluster: state (purposive), county, census tract, household (multistage area probability sampling);Individual: random; Stratification: none; Neighbourhood definition: census tract | Immigrant, marital status, education, age, any activity of daily living, chronic disease | Depressive symptoms;CES-D (20 item version);validated;continuous | *Objective*% Mexican Americans in the neighbourhood (social/demographic heterogeneity, S)% poor in neighbourhood (SES, S)  | Gender | Linear mixed models(outcome variable transformed to normalise distribution; formally tested for moderating effects of gender) | *Moderating effects with depressive symptoms*% Mexican Americans in the neighbourhood:Males β = -0.07, p<.01(social/demographic heterogeneity **+\*0.3834**)Females β = -0.04, p>.05(social/demographic heterogeneity **0\*0.6166**)% poor in the neighbourhood:No moderating effects with gender[Males: β = 0.03, p>.05; Females: β = 0.01, p>.05**]***Main effect with depressive symptoms*: (SES **0**)  | Wave 5: added an additional probability sample of 902 Mexican Americans from the regionFractional weights needed to account for moderating effects (subgroup of sample). |
| 19 | EPESE (Wave 1) – Hispanic;Ostir et al., 2003 | N = 2710 (mixed)Mean age ≈ 73 years;58% female;Multi-stage area probability cluster sample.Community dwellers;5 SW states (Texas, California, Arizona, Colorado & New Mexico), USA;Mexican American | Cross-sectional;Cluster: county (purposive), census tract (probability-proportional to size), block (random), household (all) (multistage area probability cluster sampling);Individual: purposive; Stratification: none;Neighbourhood definition: census tract | Age, gender  | Depressive symptoms;CES-D (20 item);validated;continuous | *Objective*% Mexican-American (social/demographic heterogeneity, S)% neighbourhood poverty (SES, S) | Age, gender, medical conditions, ADL | Linear mixed models | *No moderating effects of age, gender, medical conditions and ADL.**Main effects with depressive symptoms*% Mexican-American: b=-2.20; p=.19 (social/demographic heterogeneity **0**)% neighbourhood poverty:b=2.03; p=.48(SES **0**)  | Note that both effects were significant in models including both environmental variables. |
| 20 | EPSE – New Haven; Kubzansky et al., 2005 | N = 2109 (urban)Mean age = 75 years;66% female;Response rate = 82%;Non-institutionalized community dwellers;New Haven, Connecticut, USA;Non-Hispanic black (16%) & non-Hispanic White | Cross-sectional;Cluster: household (purposive);Individual: random;Stratification: community housing, age-restricted private housing & age & income restricted public housing;Neighbourhood definition: census tracts | Gender, race/ethnicity, marital status, education, household income, disability, age | Depressive symptoms;CES-D (20 item scale);validated;continuous | *Objective*percentage of people living in poverty (SES, S),affluence (SES, S)% of individuals in home longer than 2 years (residential stability, S)% of black residents (social/demographic heterogeneity, S)% of individuals aged over 64 (proportion of older adults, S)services promoting social engagement e.g. beauty parlour, cafe (overall access to/availability of destinations/services, P)services providing care (access to/availability of health/well-being related services, P)“undesirable” amenities (personal/crime-related safety, S),  | None | Linear mixed regression models(some exposures non-optimally dichotomized based on median split; positively skewed outcome) | *Main effects with depressive symptoms*Neighbourhood poverty:b = 6.51, p=.01(SES **-**)Neighbourhood affluence:b = -34.23, p=.09(SES **0**)Residential stability:b = -4.48, p=.39(residential stability **0**)Racial/ethnic heterogeneity:b = 1.12, p=.12(social/demographic heterogeneity **0**)Elderly concentration:b = -13.55, p=.02(proportion of older adults **-**)Services promoting social engagement (e.g., beauty parlour, café, library):(overall access to/availability of destinations/services **0**)Services providing care:(access to/availability of health/well-being related services **0**)Undesirable services:(personal/crime-related safety **0**) | Note that there are multiple measures per environmental construct that need to be summed. |
| 21 | Étude sur la Santé des Ainés (ESA);Mechakra-Tahiri et al., 2009 | N = 2670 (urban, rural);Age: ≥ 65 years;60% female;Response rate = 67%;Community dwellers;Quebec, Canada;Canadian (94% French-speaking; ethnicity not stated)  | Cross-sectional;Cluster: administrative region (purposive), household (proportional); Individual: random;Stratification: metropolitan/urban/rural; Neighbourhood definition:not specified | Age, gender, education, income, health  | Possible (major and/or minor) depression;ESA Diagnostic Questionnaire (ESA-Q);validated;categorical (yes/no) | *Objective*Metropolitan/urban/rural (urbanisation, P) | None | Logistic regression(bivariate and multiple)(no indication of consideration of multi-stage sampling design) | *Main effects with possible (major and/or minor) depression*Metropolitan vs urban:OR=1.55; p<.001Metropolitan vs rural:OR=1.77; p<.001(urbanisation **-**) | Bivariate and multiple logistic regression yielded same conclusion. |
| 22 | Health and Retirement Study (HRS);Choi et al., 2015 | N = 70,773, PSM sample = 35008 (urban, rural); Mean age ≈ 68 years;58% female;Sample is representative;Community dwellers;USA;White (79%), Hispanic (10%) & others (11%), PSM sample: White (88%), Hispanic (5%) and others (7%) | Cross-sectional;Cluster: county (purposive); Individual: propensity score matching (purposive);Stratification: low or high income inequality;Neighbourhood definition:county | Used in propensity score matching: age, gender, race/ethnicity, marital status, education, wealth, income, years living in/around current address | Possible depression:CES-D (8 item version) (score 4+);validated;categorical (yes/no) | *Objective*Income inequality (socio-economic inequality, P) | Years at current address | Propensity matching & multivariate logistic regression(accounting for clustering at the county level) | *No significant moderating effects.**Main effects with possible depression*High-income inequality:≥ 0 years at current address: OR = 1.05 (0.97, 1.14)≥ 5 years at current address: OR = 1.06 (0.97, 1.16)≥ 15 years at current address: OR = 1.09 (0.98, 1.21)≥ 30 years at current address: OR = 1.06 (0.94, 1.20)(socio-economic inequality **0**) |  |
| 23 | Georgia Centenarian Study;Clayton et al., 1994 | N = 84 (urban, rural);100 – 106 years;77% female;Response rate: 39%;Community dwellers;Georgia, USA;Black (26%) and White (74%) | Cross-sectional;Cluster: none;Individual: random (proportional to distribution of race and gender in the state)Stratification: urban/rural;Neighbourhood definition:not specified | None (gender and race included as moderators) | Depressive symptoms:GDS (30 items);validated;continuous | *Objective*Urban/rural (urbanisation, P) | Race, gender | 3-way analysis of variance (urbanisation, race & gender) | *Moderating effects with depressive symptoms*Urban/rural:No moderating effects with gender.Moderating effects with race:Whites:(urbanisation **0\*0.7381**)Blacks:(urbanisation **+\*0.2619**) | Fractional weights needed to account for moderating effects (subgroup of sample). |
| 24 | Gerontological Regional Database and Resource Centre (GERDA) project; Forsman et al., 2012 | N = 6838 (urban, rural)Mean age = 71 years;54% female;Response rate = 64%;Community dwellers;Bothnia region, Sweden & Finland;Swedish (55%) & Finnish (45%) | Cross-sectional;Cluster: regions (purposive);Individual: all (rural) and systematic (urban);Stratification: urban/rural;Neighbourhood definition: participant delimitation | Combination of gender, age, marital status, education level, study region, structural social capital variables | Possible depression;GDS-4 (score +2);validated;categorical (yes/no) | *Subjective*Social contact with neighbours (social connectedness, S),interpersonal trust in neighbours (neighbourhood trust, S) | None | Logistic regression(adjusted for region) | *Main effects with possible depression*Social contact with neighbours: OR=1.48 (1.15, 1.90), p=0.0297(social connectedness **-**)Interpersonal trust in neighbours:OR=1.16 (0.89, 1.52) p>.05(neighbourhood trust **0**) | Note that there are multiple measures per environmental construct that need to be summed. |
| 25 | Hatoyama Cohort Study; Murayama et al., 2013  | N = 681 (suburban);Mean age = 72 years;42% female;Response rate = 22% (stratified sampling)Community dwellers;Hatoyama, Japan;Japanese | Longitudinal;Cluster: residential areas (purposive); Individual: random and convenience;Stratification: residential area of town (traditional & newly developed) & age;Neighbourhood definition:participant delimitation | Age, gender, marital status, education, long-term occupation, smoking status, BMI, comorbidity, IADL | Possible depression;GDS-15 (score 6+)validated;categorical (yes/no) | *Subjective*Neighbourhood bonding social capital - perceived neighbourhood homogeneity (social/demographic heterogeneity, S) | None | Logistic regression(not accounting for clustering at the residential area level) | *Main effects with possible depression*Neighbourhood bonding social capital – perceived neighbourhood homogeneity:OR=0.61; p<0.05(social/demographic heterogeneity **+**) |  |
| 26 | Hatoyama Cohort Study; Murayama, Nishi et al., 2015 | N = 655 (suburban);Mean age = 72 years;42% female;Response rate = 18.3% -27.1% (stratified sampling – 4 groups)Community dwellers;Hatoyama, Japan;Japanese | Longitudinal;Cluster: residential area (purposive)Individual: random & convenience;Stratified: residential area of town (traditional & newly developed) & age; Neighbourhood definition:participant delimitation & postal district | For neighbourhood cohesion: age, gender, Baseline GDS scoreFor other environmental variables: age, gender, years of residence, marital status, education, employment, financial stability, comorbidities, functional capacity, socially isolated, stress, baseline GDS score, neighbourhood cohesion  | Possible depression;GDS-15 (score 6+)validated;categorical (yes/no) | *Subjective*Neighbourhood cohesion (collective efficacy, S)*Objective*District-level aging rate (proportion of older adults, S)District-level stability (residential stability, S)District-level education (SES, S) | Age, years of residence (moderators of neighbourhood cohesion) | Multilevel logistic regression model | *No moderation effect of age and years of residence.**Main effects with possible depression*Neighbourhood cohesion:(High as reference)Low: OR = 1.91; p<.05; Moderate:OR = 1.77; p<.05(collective efficacy **-**)District-level aging rate:OR = 1.02; p>.05(% of older population **0**)District-level stability:OR = 0.75; p>.05(residential stability **0**)District-level education:OR = 0.62; p<.01(SES **-**) |  |
| 27 | Health in Men Study (HIMS);Saarloos et al., 2011 | N = 5218 (urban);Age = 65 -79 years;0% female;Response rate unknown;Community & nursing home dwellers;Perth, Australia;Australian | Cross-sectional;Cluster: postcode of residence (purposive);Individual: random;Stratification: age & postcode of residence;Neighbourhood definition:census collection district  | Age group,, high school education, migrant, living alone, housing type, social support, family & friends, sense of community, Charlson comorbidity, smoking | Possible depression;GDS-15 (score 7+);validated;categorical (yes/no) | *Objective*Walkability (walkability, P)Street connectivity (street connectivity, P)Residential density (population/residential density, PS)Land use mix – diversity (overall access to/availability of destinations/services, P)Land use availability – retail (access to/availability of retail/office/business services , P)Land use availability – other retail (access to/availability of retail/office/business services, P)Land use availability – offices/ businesses (access to/availability of retail/office/business services, P)Land use availability – health, well-being, community services (access to/availability of health/well-being related services, P)Land use availability – entertainment, recreation, culture (access to/availability of entertainment/culture services, P)Relative socioeconomic disadvantage (SES, S) | None | Logistic regression(clustering at the postcode or census collection district levels not accounted for; categorisation of exposure variables into tertiles) | *Main effects with possible depression*Walkability:p>.05(walkability **0**)Street connectivity:p>.05(street connectivity **0**)Residential density: p>.05(population/residential density **0**)Land use mix - diversity:p<.05(overall access to/availability of destinations/services **+**)Land use availability – retail: OR=1.46; p<.05(access to/availability of retail/office/business services **+**)Land use availability – other retail:OR=1.28; p>.05(access to/availability of retail/office/business services **0**)Land use availability – offices/ businesses:OR=11.21;p>.05(access to/availability of retail/office/business services **0**)Land use availability – health, well-being, community services:OR=1.22;p>.05(access to/availability of health/well-being related services **0**)Land use availability – entertainment, recreation, culture:OR=1.08;p>.05(access to/availability of entertainment/culture services **0**)Relative socioeconomic disadvantage:p>.05(SES **0**)  | Note that there are multiple measures per environmental construct that need to be summed. |
| 28 | Healthy Aging Research Network walking study (HAN);Ivey et al., 2015 | N = 870 (urban, suburban, rural);Age: ≥ 65 years;77% female;Multi-level stratified, random sample, no response rate stated;Community dwellers;4 geographic sites, USA | Cross-sectional;Cluster: counties (unknown), recruitment point – senior organisations (stratified random); Individual: convenience; Stratification: housing density;Neighbourhood definition:participant perceived and 400-m buffer | Site, age, gender, race, education, financial resources, number of people close to, general health, marital status | Possible depression;CES-D (10 item version) (score 10+);validated;categorical (yes/no) | *Objective*Destinations within 400-m buffer (overall access to/availability of destinations/services, P)CPHHD SES index (SES, S)*Subjective*Crime safety (personal/crime-related safety, S), Traffic safety (traffic safety, P), people in my neighbourhood know each other (social connectedness, S)People in my neighbourhood would assist someone they didn’t know who needed help (collective efficacy, S) | None | Generalised estimating equations(correct specification) | *Main effects with possible depression*Destinations within 400-m buffer : p>.05 (destinations **0**) CPHHD SES index: p>.05(SES **0**)Crime safety:OR -, p=.02(personal/crime-related safety **-**)Traffic safety:OR -, p=.04(traffic safety **-**)People in my neighbourhood know each other:p>.05(social connectedness **0**)People in my neighbourhood would assist someone they didn’t know who needed help:OR -, p=.002(collective efficacy **-**) |  |
| 29 | Hispanic Elders’ Behavioral Health Study; Brown et al., 2009  | N = 273 at baseline, 192 at 36 month follow-up (urban);Mean age = 79 years at baseline;59% female at baseline;52% response rate;Community dwellers;Miami, Florida USA;Hispanic immigrants | Longitudinal;Cluster: block (purposive);Individual: random;Stratification: none;Neighbourhood definition:participant delimitation | Age, gender & education at baseline, marital status, financial strain, functional status & moves at each time point  | Depressive symptoms;CES-D (20 item version);validated;continuous | *Subjective*Neighbouring behaviour(collective efficacy, S) | None | Structural equation modelling with a cross-lagged panel design(models not accounting for clustering at the census block level) | *Main effects with depressive symptoms*Neighbouring behaviour:Baseline to 12 month: β = -.10, p=.00112 month to 24 month: β = -.09, p=.00124 month to 36 month: β = -.11, p=.001(collective efficacy **-**)Note: Cross-lagged effect of depressive symptoms predicting neighbouring behaviour not significant (no indication of reverse causation) | Fractional weights not needed to account for effects estimated at 3 different time points because the direction of the effects is the same. |
| 30 | Korean Community Health Survey (KCHS);Lee & Park, 2015 | N = 68,803 (urban & rural);Mean age = ≥ 65 years;54% female;Response rate unknown;Community dwellers;Nationwide, Korea;Korean | Cross-sectional;Cluster: province, city, community, household (multi-stage & random sampling);Individual: random;Stratification: unknown demographic factors; Neighbourhood definition:local community | Education, family income, living arrangement, number of illnesses | Possible depression;CES-D (20 item scale) (score 16+);validated;categorical (yes/no) | *Objective*Community mean income (SES, S)Gini coefficient (socio-economic inequality, S)  | Gender | Multilevel logistic regression(no formal testing of gender as a moderator) | *No significant moderating effects of gender.**Main effects with possible depression*Community mean income:Male: OR = 1.352 – 1.559; p<.05Female: or = 1.498-1.638; p<.05(SES **+**)Gini coefficient:Male: OR = 0.911 – 1.081; P>.05Female: OR = 0.957 – 1.047; p>.05 (socio-economic inequality **0**) |  |
| 31 | Kwangju (study 1);Kim et al., 2002 | N = 1134 (urban, rural);Mean age = 72 years;60% female;Response rate = 71%;Community dwellers;Kwangju, South Korea;Koreans | Cross-sectional;Cluster: two geographical areas (purposive);Individual: all;Stratification: urban/rural;Neighbourhood definition:not specified  | None | Possible depression;Korean GDS (30 items from several scales) (score 18+);validated;categorical (yes/no) | *Objective*Urban/rural (urbanisation, P) | None | Logistic regression(areas representing urban/rural) | *Main effects with possible depression*Urban/rural:OR = 1.02 (0.80, 1.31) p=.900(urbanisation **0**) |  |
| 32 | Kwangju (study2);Kim et al., 2004 | N = 1204 (urban, rural);Mean age = 72 years;62% female;Response rate = 77%;Community dwellers;Kwangju, South Korea;Koreans | Cross-sectional;Cluster: area (purposive);Individual: allStratification: urban/rural; Neighbourhood definition:not specified | Age, gender, marital status, education, housing, employment, health problems, social support | Possible depression;Geriatric Mental State Schedule (GMS);validated;categorical (yes/no) | *Objective*Urban/rural (urbanisation, P) | None | Logistic regression(unadjusted and adjusted for socio-demographics and health status) | *Main effects with possible depression*Urban/rural:OR = 2.83 (2.01, 3.97) p=<.001(urbanisation **+**) | Both co-variate unadjusted and adjusted models yielded same conclusion |
| 33 | Longitudinal Aging Study Amsterdam (LASA); Knipscheer et al., 2000  | N = 2712 ( no to very high urbanisation);Mean age = 70 years;51% female;Response rate = 62%Community dwellers;Netherlands;Dutch | Cross-sectional;Cluster: municipality (purposive);Individual: random;Stratification: municipalities representing differences in culture, religion, urbanisation & ageingNeighbourhood definition:1 km radius (degree of urbanisation), postcode (% persons 65+ years), participant perceived 15 minutes travelling time (feeling safe in one’s own neighbourhood) | Gender, age, partner, education, heavy household tasks, general self-efficacy, voluntary organisations, in/formal help,% network in neighbourhood | Depressive symptoms;CES-D (20 item scale);validated;continuous | *Objective*Urbanisation (urbanisation, P)Proportion of people age 65 years and older in their neighbourhood (proportion of older adults, S)*Subjective*Safe in one’s neighbourhood (personal/crime-related safety, S) | Functional limitations | Linear regression models(clustering at the municipality level not accounted for; outcome positively skewed; no SE or 95% CIs reported) | *Main effects with depressive symptoms*Urbanisation(do not count as same direction of effects):Functional limitation: b=0.12; p<.01No functional limitations: b=0.06; p<.05(urbanisation **+**)% 65+ in neighbourhood:b=0.02; p>.05(proportion of older adults **0**)*Moderating effects with depressive symptoms*Feeling safe in one’s own neighbourhood(do not count as same direction of effects):Functional limitation (ADL): b=-0.09; p<.01No functional limitations: b=-0.10; p<.01(personal/crime-related safety **-**) |  |
| 34 | Long-Term Care and Social Support: American Indian Aged Project; Curyto et al., 1998 | N = 296 (urban, rural, reservation);Mean age ≈ 67 years;64% female;73% response rate;Non-institutionalized community & reservation dwellers;Michigan, USA;American Indians | Cross-sectional;Cluster: reservation area (purposive);Individual: random & convenience;Stratification:rural/reservation/urban;Neighbourhood definition: not specified | Age, gender, education level, marital status | Depressive symptoms;CES-D (20 item version);validated;continuousPossible depression;CES-D (20 item version) (score 16+);categorical (yes/no) | *Objective*Area of residence: urban/rural/reservation (urbanisation, P) | None | Multiple regression (forced entry, hierarchical)(no adjustment for reservation areas clustering; associations with possible depression not adjusted for socio-demographics; no information on distribution of continuous outcome) | *Main effects with depressive symptoms*Urban/reservation b = 2.68, p<.05Rural/reservation:b = -1.74, p>.05(urbanisation **+**)*Main effects with possible depression*Urban/reservation/rural chi-square = 7.46; p<.05 (urbanisation **+**) |  |
| 35 | Manitoba Study on Health and Aging (MSHA) (1991/92 sample);St John et al., 2006 | N = 1382 (urban, small town, rural);Mean age = 75 years60% female;Response rate not stated;Community dwellers;Manitoba, Canada;Canadian | Cross-sectional;Cluster: none;Individual: random;Stratification: none;Neighbourhood definition:not specified | Gender, age, education, living arrangements, perceived adequacy of income, self-rated health, functional impairment, number of companions | Possible depression;CES-D (20 items) (score 16+);validated;categorical (yes/no) | *Objective*Urban/small town/rural (urbanisation, P) | None | Logistic regression | *Main effects with possible depression*Urban/small town/rural:Urban vs small townOR=1.35; p>.05Urban vs predominately ruralOR=0.84; p>.05(urbanisation **0**) |  |
| 36 | MSHA (1996/97 sample);St John et al., 2009;  | N = 807 (urban, rural);Mean age = 74 years;60% female;Response rate not stated;Community dwellers;Manitoba, Canada;Canadian | Cross-sectional;Cluster: regions (all);Individual: random;Stratification: region, age & gender;Neighbourhood definition: not specified | Gender, age, education, income adequacy, self-rated health, functional impairment, number providing companionship | Possible depression;CES-D (20 items) (score 16+);validated;categorical (yes/no) | *Objective*Urban/rural (urbanisation, P) | None | Logistic regression(no adjustment for clustering at the region level)  | *Main effects with possible depression*Urban/rural:OR=0.62; p>.05(urbanisation **0**) |  |
| 37 | Medical Research Council Trial;Walters et al., 2004 | N = 13349 (urban, rural);Age: ≥ 75 years;61% female;Response rate; unknownRepresentative sample of community dwellers;Britain;British | Cross-sectional;Cluster: family practices (representative sample); Individual: all;Stratification:family practices (medical) were stratified by mortality experience (standardised mortality ratio) & Jarman index (area deprivation); Neighbourhood:census enumeration district | Age, gender (neighbourhood deprivation) or none (population density) | Possible depression;GDS-15 (score 6+);validated;categorical (yes/no) | *Objective* Population density (population/residential density, PS)Neighbourhood deprivation (SES, S) | None | Logistic regression (with adjustment for sampling design and clustering)(continuous exposures categorized into quartiles) | *Main effects with possible depression*Population density: p=.018(population/residential density **+**)Neighbourhood deprivation:p=.17(SES **0**) |  |
| 38 | Medical Research Council Ageing in Liverpool – Health Aspects (MRC-ALPHA);Wilson et al., 1999 | N = 3298 (urban); Age: ≥ 65 years;% female not stated;Response rate ≈ 85%;Community dwellers;Liverpool, UK;British | Longitudinal & cross-sectional;Cluster: none; Individual: random;Stratification: age & gender;Neighbourhood:postcode | Age, gender | Clinical depression [neurosis (Dn)]GMS-AGECAT;validated;categorical (yes/no) | *Objective*Social deprivation (Townsend index) (SES, S) | None | Logistic regression(odds ratios not presented for prevalence models) | *Main effects with clinical depression (prevalence)*Social deprivation:Cases vs well subjects: 🡩 prevalence in areas with 🡩 social deprivation p=.019(SES -)*Main effects with clinical depression (incidence)*Social deprivation:Cases vs well subjects: 🡩 incidence in areas with 🡩 social deprivationp=.021(SES **-**) |  |
| 39 | Mobilize Boston Study; Wang et al., 2014 | N = 732 (urban);Mean age = 78 years;64% female;Response rate not stated;Community dwellers;Boston, USA;Non-Hispanic White (78%) & others | Longitudinal;Cluster: none; Individual: simple random; Stratification: none;Neighbourhood:residential distance to nearest major roadway & ambient monitoring site  | Distance to nearest major roadway: age, gender, race, ethnicity, visit, season, day of the week, household income, education, neighbourhood SES, Pollutants: age, gender, race/ethnicity, visit, ambient and dew point temperatures, barometric pressure, day of the week, season, long term temporal trends | Depressive symptoms;CES-D (20 items)validated;continuousPossible depression;CES-D (score 16+)categorical (yes/no) | *Objective*Residential distance to nearest major roadway (air pollution, P)PM2.5 (air pollution, P)SO42- (air pollution, P)BC (air pollution, P)UFP (air pollution, P)O3 (air pollution, P)CO (air pollution, P)NO (air pollution, P)NO2 (air pollution, P n) | None | Generalised estimating equations (categorical outcome)Linear mixed models (continuous outcome)(outcome positively skewed; used quantiles to examine associations of individual pollutants with outcomes) | *Main effects with depressive symptoms*Residential distance to nearest major roadway: p=.87(air pollution **0**)PM2.5:(air pollution **-**)SO42-: (air pollution **0**)BC: (air pollution **0**)UFP: (air pollution **0**)O3: (air pollution **0**)CO: (air pollution **0**)NO: (air pollution **0**)NO2: (air pollution **0**)*Main effects with possible depression*Residential distance to nearest major roadway: p=.27(air pollution **0**)PM2.5:OR=0.67; p=.037(air pollution **-**)SO42-:OR=0.89; p=.48(air pollution **0**)BC:OR=1.00; p=.98(air pollution **0**)UFP:OR=1.04; p=.87(air pollution **0**)O3:OR=0.71; p=.12(air pollution **0**)CO:OR=1.14; p=.28(air pollution **0**)NO:OR=1.30; p=.092(air pollution **0**)NO2:OR=1.32; p=.055(air pollution **0**) | Authors stated that results for depressive symptoms (continuous measure of CES-D) were not substantively different from those related to possible depression (categorical CES-D measure).  |
| 40 | Multi-Ethnic Study of Atherosclerosis (MESA); Moore et al., 2016 | N, mean age = 5475, 62 years (Exam 1); 5149, 65 years (Exam 3); 4771, 67 years (Exam 4); 3790, 70 years (Exam 5);Response rate: not stated; “Population based sample”;6 US cities;Non-Hispanic white,Non-Hispanic black, Non-Hispanic Chinese, Hispanic  | Cross-sectional and longitudinal;Cluster: region & census tract (purposive), household (random);Individual: random (can be multiple people within household);Stratification: mix of regions, gender, race, ethnicity;Neighbourhood definition:1-mile buffers (objective), 20-minute walking distance (subjective). | Baseline age, education, years lived in neighbourhood, race/ethnicity, study site and gender interactions with time; time-varying income, marital status, moving status, and population density | Depressive symptoms;CES-D (20 item scale);validated;continuous | *Objective*Social engagement destinations (overall access to/availability of destinations/services, P) *Subjective*Neighbourhood safety (personal/crime-related safety, S)Social cohesion (collective efficacy, S) | Gender  | Linear mixed modelsand econometric fixed effect models (multi-stage sampling strategy does not appear to have been accounted for; outcome positively skewed: not considered in cross-sectional analyses) | *No moderating effects of gender on neighbourhood social cohesion & neighbourhood safety in cross-sectional and longitudinal models.**Moderating effects with (baseline) depressive symptoms*Social engagement destinations:Female: diff =- 0.48 p<.05(overall access to/availability of destinations/services **-\*0.53**)Male: diff:-0.08; p>.05(overall access to/availability of destinations/services **0\*0.47**)*Main effects with (baseline) depressive symptoms*Neighbourhood safety:diff = -0.40; p<.05(personal/crime-related safety **-**)Neighbourhood social cohesion:diff = -0.33; p<.05(collective efficacy **-**)*Moderating effects with (changes in) depressive symptoms*Social engagement destinations:Moderating effect of gender but direction the sameFemale: diff =0.17 p>.05; 0.31; p>.05; Male: diff:-0.26; p>.05; -0.38; p>.05(overall access to/availability of destinations/services **0**)*Main effects with (changes in) depressive symptoms*Neighbourhood safety:diff = 0.23; p>.05diff = -0.01; p>.05(personal/crime-related safety **0**)Neighbourhood social cohesion:diff = 0.25; p>.05diff = 0.11; p>.05(collective efficacy **0**) | Longitudinal study included as population mean age was ≥65 years for all assessments except baseline. As reported cross-sectional data was from the first exam (baseline), it has not been included in this review. As depression was not measured in Exam 2, Exam 2 was not included in the article.Fractional weights needed to account for moderating effects (subgroup of sample).IMPORTANT: report cross-sectional (baseline data) analyses separately from longitudinal analyses in the meta-analyses. Longitudinal analyses use fractional weights: 0.50 for cumulative neighbourhood exposures and 0.50 for within-person changes in exposures. |
| 41 | National Social Life Health and Aging Project (NSHAP);Upenieks et al 2016 | N = 2261 (urban & rural);Mean age = 73 years;52% female;Wave 1 response rate: 75.5%, wave 2 response rate: 88.7% of those who were in Wave 1 (Nationally representative sample); Community dwellers;USA;White (95%), Black (17%), Latino (10%) and other race/ethnicity (2%)  | Cross-sectional;Cluster: none;Individual: purposive(oversampled Black & Latino older adults);Stratification: screened household;Neighbourhood definition: interviewer delimitation (for neighbourhood disorder only) & census tract | Gender, race, education, age, marital status, social resource, physical activity, health problems, self-rated health, functional impairment, employment | Depressive symptoms;CES-D (20 items)validated;continuous | *Objective*Neighbourhood disorder (aesthetics, P)Tract population below the poverty line (SES, S)% renting (residential stability, S),% non-white (social/demographic heterogeneity, S)Log of population density (population/residential density, PS)  | Household disorder, gender (with neighbourhood disorder) | Linear regression models(outcome positively skewed) | *No moderating effects of gender and household disorder on neighbourhood disorder.**Main effects with depressive symptoms*Neighbourhood disorder: b=0.04; p<.05 (aesthetics **-**)Neighbourhood % poor: b=-0.00, p>.05 (SES **0**)Neighbourhood % renting: b=0.00, p>.05 (residential stability **0**)Neighbourhood % non-white:b=-0.001, p<.05(social/demographic heterogeneity **0**)Log neighbourhood population density: b=0.01, p<.05 (population/residential density **+**) | Wave 2 (as neighbourhood measure was available only at this wave) |
| 42 | Nationwide Survey on Dementia in Korea (NaSDeK);Park et al., 2012 | N = 6018 (urban, rural);Mean age = 73 years;60% female;Response rate = 73%;Community Dwellers;South Korea;Koreans | Cross-sectional;Cluster: hospital/district (purposive), village (random);Individual: systematic & random;Stratification: urban/rural;Neighbourhood definition:not specified | Age, gender, marital status, economic status, cohabitant, education, illiteracy, smoking, alcohol, exercise, head trauma, MMSE-KC | Possible depression;SGDS-K validated;categorical (normal /possible depression/ probable depression) | *Objective*Residence - urban/rural (urbanisation, P) | None | Polytomous logistic regression models | *Main effects with possible depression*Residence (urban/rural):OR=0.86; p<0.05(urbanisation **+**) |  |
| 43 | New York Social Environment Study Ahern et al., 2011;  | N = 690 (urban)Age: ≥ 65 years;% female unknown;49% response rate (total sample, 18 + years);Community dwellers; New York, USA;White, African-American, Asian, Hispanic, other and missing (ethnicity proportion unknown for subgroup >=65) | Cross-sectional;Clusters: none;Individual: random;Stratification: none;Neighbourhood definition:community districts | Age, race, sex, marital status, birthplace, education level, income, years lived in current neighbourhood, interview language, individual perception of collective efficacy;reports within the last year of illness or injury starting or worsening, financial problems or unemployment | Clinical depression (major);Patient Health Questionnaire-9;validated;categorical (yes/no) | *Subjective*Neighbourhood collective efficacy (collective efficacy, S); | None | Logistic generalised estimating equation regression models with a marginal modelling approach | *Main effects with clinical depression (major)*Neighbourhood collective efficacy:diff=6.2% (95% CI: 0.1, 17.5), p<.05 (collective efficacy **-**) | In >=65, low and high collective efficacy were defined by 5th minus 95th percentile value (Table 4)  |
| 44 | Sacramento Area Latino Study on Aging (SALSA); Kwag et al., 2012 | N = 1267 (urban);Mean age = 71 years;58% female;Response rate = 82%;Community dwellers;Sacramento area, CA, USA;Hispanic | Cross-sectional;Cluster: household (all);Individual: all;Stratification: none;Neighbourhood definition:participant delimitation | Age, gender, marital status, education, income | Depressive symptoms;CES-D (20 item scale);validated;continuous | *Subjective*perceived density of Hispanics in neighbourhood (social/demographic heterogeneity, S) | Acculturation | Linear regression models(outcome positively skewed; no adjustment for clustering at the household level; no indication of SE of regression coefficients in analysis of moderator) | *Moderating effects with depressive symptoms*Perceived density of Hispanics in neighbourhood:Mean - SD acculturationp<.05(social/demographic heterogeneity **+\*0.20**)Mean and Mean + SD acculturationp>.05(social/demographic heterogeneity **0\*0.80**) | No mention of analytical methods in the method section.Fractional weights needed to account for moderating effects (subgroup of sample). |
| 45 | Shimane CoHRE Study; Hamano et al., 2016 | N = 876 (rural town);Mean age = 66 years;59% female;Response rate not stated;Community dwellers;Ohnan, Japan;Japanese | Cross-sectional;Cluster: none;Individual: convenience;Stratification: none;Neighbourhood definition:objective but not specified | None | Possible depression; Zung Self Rating Depression Scale (SDS) (score 40+);validated;categorical (yes/no) | *Objective*High/low elevation (divided by median)(barriers to walking, P) | None | Chi-square test | *Main effects with possible depression*Elevation: p=.052(barriers to walking **0**) |  |
| 46 | Taiwan Old Age Depression Study (TOADS);Chong et al., 2001 | N = 1350 (urban, semi-urban, rural);Mean age = 73 years;50% female;90% response rate;Community dwellers;Nan-hwa, Alian, Kaohsiung, Taiwan;Taiwanese (89%) & Chinese (11%)  | Cross-sectional;Cluster: Multi-stage sampling: area (purposive), random/probability-proportional-to-size (Urban: district then district subdivision; semi-urban & rural: communities);Individual: random with probability-proportional-to-size;Stratification: urban/semi-urban/rural; Neighbourhood definition:not specified | None (included gender as a moderator) | Clinical depression: (major & neurotic)GMS-AGECAT;validated;categorical (yes/no) | *Objective*Urban/semi-urban/rural (urbanisation, P) | GenderCannot assess the moderating effects of gender as model is not correctly specified. | Univariate logistic regression(no indication they accounting for multistage sampling design; stated they conducted logistic regression but did not present OR of univariate analyses; state that there is a gender by urbanisation interaction effect but model possibly invalid due to missing urbanisation main effect term)  | *Main effects with clinical depression (major & neurotic combined)*Urban/semi-urban/rural: χ2 = 6.357, p<.05(urbanisation **+**)*Moderating effects with clinical depression (major & neurotic combined)*Cannot assess the moderating effects of gender as model is not correctly specified. |  |
| 47 | None;Abe et al., 2012 | N = 2152 (urban, rural);Mean age: 77 years; 46% female;86% response rate;Community dwellers;Kumamoto Prefecture, Japan,Japanese | Cross-sectional;Clusters: multi-stage random sampling: area (purposive), census tract (all);Individual: random; Stratification: urban/rural; Neighbourhood definition:census tract | None | Depressive symptoms;GDS-15;validated;continuousPossible depression;GDS-15 (6+)categorical (yes/no) | *Objective*Urban/rural (urbanisation, P) | None | Student’s t-test(did not consider positively skewed data & multistage sampling procedure; inaccurate conclusions) | *Main effects with depressive symptoms*Urban/ruralp=.025 (urbanisation **+**)*Main effects with possible depression*Urban/ruralp=.067 (urbanisation **0**) |  |
| 48 | None;Bastos et al., 2015 | N = 162 (urban);Age = 75 years;54% female;Response rate unknown;Community dwellers;Viana do Castelo, Portugal;Portuguese | Cross-sectional;Clusters: parish (purposive);Individual: convenience, snowball samplingStratification: none;Neighbourhood definition: parish | Age, gender, education, marital status, occupation  | Depressive symptoms;GDS-15;validated;continuous  | *Objective*Physical resources (elder facilities, health facilities, resources for childhood/adolescence, resources for education, cultural/sports/recreational facilities) (overall access to/availability of destinations/services, P)Social resources (sports/cultural groups, health support associations/groups, educative associations/groups, local/professional groups) (overall access to/availability of destinations/services, P),Dependency index (proportion of older adults, S)*Subjective*Neighbourhood relationships (social connectedness, S)Difficulty in outdoor mobility (barriers to walking, P) neighbourhood stability (residential stability, S) | None | Linear regression models (no consideration of clustering effect of parish level; did not present SE or 95% CIs) | *Main effects with depressive symptoms*Physical resources:p>.05 (overall access to/availability of destinations/services **0**)Neighbourhood relationships: p>.05 (social connectedness **0**)Neighbourhood stability: p>.05 (residential stability **0**)Social resources: p<.05 (overall access to/availability of destinations/services **-)**Dependency index:p>.05 (proportion of older adults **0**)Difficulty in outdoor mobility:p>.05(barriers to walking **0**) | Note that there are multiple measures per environmental construct that need to be summed. |
| 49 | None;Carpiniello et al., 1989 | N = 302 (urban, rural);Mean age = 74 years;61% female;95% response rate; Community dwellers;Sardinia, ItalyItalian | Cross-sectional;Cluster: area (purposive);Individual: random;Stratification: urban/rural;Neighbourhood definition: not specified | None | Clinical depression;Beck Depression Inventory & Present State Examination;no mention of validation generally or for Italian;categorical: clinical depression (yes/no) | *Objective*Urban/rural (urbanisation, P) | Gender | Chi-squared test(not possible to account for clustering of villages as only 2 villages included)(no description of analytical plan / statistical methods used; no SE or 95% Cis; no formal testing for moderators) | *No significant moderating effects.* *Main effects with clinical depression*Urbanisation:(do not count as moderation as same direction of effects)Male: OR = 1.23, p>.05Female: OR = 1.68, p>.05(urbanisation **0**)  |  |
| 50 | None;Chiu et al., 2005 | N = 1005 (urban, rural);Mean age = 73 years;47 % female;90% (urban) & 97% (rural) response rate;Community dwellers;Koahsiung City & San-Lin, Taiwan;Taiwanese | Cross-sectional;Cluster: Multi-stage sampling: area (purposive), administration district/village (random);Individual: random with probability-proportional-to-size;Stratification: urban/rural;Neighbourhood definition: not specified | None | Possible depression;GDS-15 (Chinese version) (score 8+);validated;categorical (yes/no) | *Objective*Urban/rural (urbanisation, P) | None | Univariate logistic regression analysis(no indication that clustering was accounted for in the analyses) | *Main effects with possible depression*Urbanisation:OR = 0.59, p=.005(urbanisation **+**) |  |
| 51 | None;Evans, 2009 | N = 140 (urban, rural)Mean age = 80 years;69% female;Response rate not presented;Community dwellers;Iowa, USA;American | Cross-sectional;Cluster: senior centres/sites (purposive);Individual: convenience;Stratification: urban/rural;Neighbourhood definition: not specified | None | Depressive symptoms;GDS-15;validated;continuous | *Objective*Urban/rural (urbanisation, P) | None | t-test(outcome positively skewed; did not account for clustering at the recruitment point level) | *Main effects with depressive symptoms*Urban/rural: t(120) = -2.81, p=.006(urbanisation **+**) |   |
| 52 | None;Goins et al., 1999 | N = 1911 (urban, rural);Mean age = 72 years;65.3% female;Representative sample;Community dwellers;33 counties of eastern North Carolina, USAWhite (70%) & African American (30%)  | Cross-sectional;Cluster: county (unknown), CEDs (random), household (random sampling proportionate to size within racial strata);Individual: random;Stratification: urbanisation & race;Neighbourhood definition:census enumeration districts (CEDs) | Age, gender, race marital status, income, social support, education | Depressive symptoms;GDS-15;validated;continuous | *Objective*Less rural (5 levels 🡪 dichotomous variable)(urbanisation, P) | None | OLS regression(not indicated whether weights were used to account for the multi-stage sampling design; no indication of outcome distributional assumptions) | *Main effects with depressive symptoms*Less rural: β = -0.46, p<.01(urbanisation **-**)  |  |
| 53 | None;Kim et al., 2013 | N = 377 (urban);Mean age = 76 years;68% female;Response rate = 83%;Community dwellers;Los Angeles County, USA;Chinese immigrants (46%); Korean immigrants (54%) | Cross-sectional;Cluster: health care/senior centres – recruitment points (convenience)Individual: convenience;Stratification: none;Neighbourhood definition: participant delimitation | Age, gender, marital status, income, norm, trust, partnership in the community, political participation | Depressive symptoms;GDS-SF (15 items);validated;continuous | *Subjective*Information sharing (social connectedness, S)  | Race/ethnicity | Multiple regression models(distributional assumptions possibly acceptable)(no formal testing of moderation; no adjustment for clustering) | *Moderating effects with depressive symptoms*Information sharing:Chinese: b = -0.09, p>.05(social connectedness **0\*0.4562**)Korean b = -0.14, p<.05(social connectedness**-\*0.5438**); | Fractional weights needed to account for moderating effects (subgroup of sample). |
| 54 | None;Kim & Lee, 2015 | N = 949 (urban);Mean age = 78 years;84% female;Stratified random sampling method – no response rate stated;Community dwellers living alone;Busan, South Korea;Korean | Cross-sectional;Cluster: district (unknown);Individual: random;Stratification: districts, gender & age;Neighbourhood definition:‘dongs’ (towns, smallest administrative unit) | Age, gender, widowed, education, income, housing quality, ADL, IADL, chronic diseases, family network, friend network, social participation, use of care services | Possible depression;Korean version of the GDS-Short Form (SGDS-K, 15 items) (score 8+);validated;categorical (yes/no) | *Objective*Proportion of older adults (proportion of older adults, S)Community poverty (SES, S)Ratio of senior facilities to older adults (access to/availability of health/well-being related services, P)  | None | Multilevel logistic regression | *Main effects with possible depression*Proportion of older adults:OR = 1.12, p<.05(proportion of older adults **+**)Community poverty:OR = 0.10, p>.05(SES **0**)Ratio of senior facilities to older adults:OR = 0.95, p<.05(access to/availability of health/well-being related services **-**) |  |
| 55 | None;Kwag et al., 2011 | N =567 (urban);Mean age = 70 years;57% female;Variety of recruitment sources to target Korean immigrant population, response rate not stated;Community dwellers;Tampa & Orlando, Florida USA;Korean American | Cross-sectional;Cluster: none;Individual: convenience;Stratification: none;Neighbourhood definition: census blocks | Age, gender, gender, marital status, education, length of stay in US, chronic conditions, functional conditions, health perceptions | Depressive symptoms;GDS-SF (15 items);validated;continuous | *Objective*proportion of individuals living below the poverty line (SES, S)Proportion of individuals 65 years and older (proportion of older adults, S)Proportion of racial/ethnic minorities (social/demographic heterogeneity, S),  | None | Linear mixed models(outcome positively skewed) | *Main effects with depressive symptoms*Proportion of individuals living below the poverty line:b = 0.41, p>.05(SES **0**)Proportion of individuals 65 years and older:b = 0.58, p>.05(proportion of older adults **0**)Proportion of racial/ethnic minorities:b = -0.63, p>.05(social/demographic heterogeneity **0**) |  |
| 56 | None;La Gory et al., 1992 | N =725 (urban);Mean age = 69 years;65% female;Representative cluster design with random selection between clusters, response rate not stated;Community Dwellers;Alabama, USA;White & black | Cross-sectional;Cluster: county (purposive);Individual: random;Stratification: county;Neighbourhood definition:census tract | Race, gender, age, education, income, retired, widowed, functional health, social support, environmental dissatisfaction, racial congruence | Depressive symptoms;CES-D (20 item scale);validated;continuous | *Objective*Neighbourhood poverty (SES, S)Age density (% aged 55and older) (proportion of older adults, S)Age segregation (social/demographic heterogeneity, S), Neighbourhood resource accessibility (availability of automobile transportation) (mobility resources, P)  | Functional health | Linear regression models(no consideration of clustering at county level; positively skewed outcome; did not provide regression coefficients – and SE – at values of moderator) | *Main effects with depressive symptoms*Neighbourhood poverty:β= -.011; p>.05(SES **0**)% aged 55 and older:β= .008; p>.05(proportion of older adults **0**)Age segregation:β= .015; p>.05(social/demographic heterogeneity **0**) *Moderating effects with depressive symptoms*Neighbourhood resource accessibility(availability of automobile transportation):Mean – SD and Mean functional healthβ=-2.00, p<.01; β=-1.093, p<.05(mobility resources **-\*0.8**)Mean + 1 SD functional healthβ=-1.00, p>.05(mobility resources **0\*0.2**) | Analytical methods are in the results section.Fractional weights needed to account for moderating effects (subgroup of sample). |
| 57 | None;Leggett et al., 2012 | N = 600 (urban, rural);Mean age = 70 years;50% female;Stratified sample, response rate not stated;Community dwellers;Da Nang, Vietnam;Vietnamese | Cross-sectional;Cluster: area (purposive);Individual: convenience;Stratification: urban/rural, gender & age;Neighbourhood definition:not specified | Gender, age, material hardship, education, marital status  | Depressive symptoms;CES-D (20 item scale);validated;continuous\*Only 19 of the scale items were administered – one was inadvertently omitted!  | *Objective*Urban/rural (urbanisation, P) | None | Linear regression models(likely clustering at the area level not accounted for) | *Main effects with depressive symptoms*Area (rural/urban):β = -0.04, p>.05(urbanisation **0**) |  |
| 58 | None;Li et al., 2011 | N = 1921 (urban, rural);Mean age = 71 years;50% female;response rate not stated;Community dwellers;Beijing, China;Chinese | Cross-sectional;Cluster: area (purposive);Individual: random;Stratification: urban/rural, proportion of older adults in each district or county, street or town & neighbourhood committee or village;Neighbourhood definition:not specified | Gender, age, marital status, education, religion, economic status, nationality, party member, employment status, health, physical functionality, health-related lifestyle behaviours, feeling old, offspring’s piety | Possible depression;GDS-SF (15 items) (score 8+);validated;categorical (yes/no) | *Objective*Urban/rural (urbanisation, P) | None | Logistic regression(bivariate and multiple) | *Main effects with possible depression*Residence (urban/rural):OR 2.14 (1.61, 2.84), p<.001(urbanisation **-**) | Bivariate and multiple logistic regression yielded same conclusion. |
| 59 | None;Lim et al., 2012 | N = 537 (urban);Mean age = 71 years;74% female;Response rate not stated;Community dwellers;Seoul, Korea;Koreans | Longitudinal;Cluster: areas surrounding pollution monitoring site;Individual: convenience; Stratification: noneNeighbourhood definition:environmental measure based on readings from nearest monitor to participants’ residential address | Age, gender, education, BMI, alcohol consumption, regular exercise, daily mean temperature, creatinine, systolic blood pressure triglyceride, day of the week, follow-up time | Depressive symptoms;Korean version of the GDS-Short Form (SGDS-K, 15 items);validated; continuous | *Objective*Daily mean values of PM10, SO2 and NO2 and daily maximum values of CO and O3 between 0900 and 1800 hours (air pollution, P) | None(health parameters examined as possible moderators of pollutants by lag interaction effects on depressive symptoms) | Generalised estimating equations(no adjustment for cluster – monitoring site; may not be as critical due to investigating changes across time and time lag effects) | *Main effects with depressive symptoms*Changes in PM10 (daily mean): p<.05(air pollution **+**)SO2 (daily mean):p>.05(air pollution **0**)NO2 (daily mean):P<.05(air pollution **+**)CO (daily maximum): p>.05(air pollution **0**)O3 (daily maximum):p<.05(air pollution **+**) |  |
| 60 | None;Mamplekou et al., 2010 | N = 1190 (urban, rural);Mean age = 74 years;54% female;Response rate = 75 - 89%;Community dwellers;Cyprus + 7 Greek islands;Greek | Cross-sectional;Cluster: purposive (area);Individual: random;Stratification: age & gender;Neighbourhood definition:not specified | Age, gender, BMI, living alone, financial status, sedentary/active, smoking, MedDietScore, hypertension, diabetes, hypercholesterolemia, education, alcohol, retired | Possible (severe) depression:GDS (15 items) (score 11+);validated;categorical (yes/no) | *Objective*Urban/rural (urbanisation, P) | None | Logistic regression(no indication that the multi-stage sampling design was accounted for)  | *Main effects with possible (severe) depression*Rural-urban:OR= 0.64, p=0.03(urbanisation **+**) |  |
| 61 | None;Menec et al., 2010 | N = 77930 (urban);Age: ≥ 65 years;59% female;Response rate = 100%; Community dwellers;Winnipeg, Canada;Canadian | Cross-sectional;Cluster: none;Individual: all;Stratification: none;Neighbourhood definition:neighbourhood clusters -residential postcode | Age, gender, marital status | Clinical depression;≥ one hospitalization with ICD-9-CM code of 296.2-296.8, 300.4, 309, 311, and 300 or ≥ one physician visits with ICD-9-CM code of 296, 309, or 311, 300, plus a prescription for an antidepressant or mood stabilizer (excluding the antianxiety drugs paroxetine, citalopram, and venflaxamine) for more than 3 years;validated;categorical (yes/no)  | *Objective*Percent aged 65 and older (proportion of older adults, S)Percentage moved in last 5 years (residential stability, S)Neighbourhood SES (average household income) (SES, S) | Age (younger vs older) | Multilevel logistic regression(sometimes 95% CI or SE missing) | *No significant moderating effects of age.**Main effects with clinical depression*Percent aged 65 and older:b = 0.024 p<.05(proportion of older adults **+**) Percentage moved in last 5 years:b = -0.007 p<.05(residential stability **0**)Neighbourhood SES:OR (Q1\_poorest vs Q5) = 1.19; p<.05(SES **-**) |  |
| 62 | None;Murayama, Nofuji et al., 2015 | N = 6416 (rural);Mean age = 76 years57% femaleResponse rate = 88%Community dwellersYabu, Japan;Japanese | Cross-sectional;Cluster: none;Individual: random;Stratification: administrative neighbourhoods;Neighbourhood definition:participant delimitation | Combinations of age, marital status, years of residence in neighbourhood, education, income, smoking BMI, comorbidities, BADL, independence, neighbourhood population size and ageing rate , individual bonding social capital, individual bridging social capital, individual general trust | Possible depression;GDS-15 (score 6+)validated;categorical (yes/no) | *Subjective*Neighbourhood bridging social capital -perceived heterogeneity (social/demographic heterogeneity, S)General trust- % people who have strong general trust in their neighbourhood (neighbourhood trust, S)Neighbourhood bonding social capital - perceived homogeneity (social/demographic heterogeneity, S), ,  | Gender, individual bonding social capital | Multilevel logistic regression | *No significant moderating effects of gender.**Main effects with possible depression*Neighbourhood bridging social capital:OR=1.07; p>.05(social/demographic heterogeneity **0**) General trust:OR=1.03; p>.05(neighbourhood trust **0**) *Moderating effects with possible depression*Neighbourhood bonding social capital:Weak to average individual bonding social capital:OR<1.00; p<.05(social/demographic heterogeneity **+\*0.60**)Stronger individual bonding social capital:OR=ns; p>.05(social/demographic heterogeneity **0\*0.40**)  | Note that there are multiple measures per environmental construct that need to be summed.Fractional weights needed to account for moderating effects (subgroup of sample). |
| 63 | None;Norstrand et al., 2012From the Public Health Management Corporation’s Community Health Data Base | N = 3219 (mixed);Mean age = 71 years;68% female;Response rate = 22%;Community dwellers;5 counties in South Eastern Pennsylvania, USA;White (75%) & Minority (25%) | Cross-sectional;Cluster: household (random);Individual: random;Stratification: none;Neighbourhood definition:participant delimitation | Age, gender, education, race, poverty, participate in groups, sense of belonging, talk to friends & relatives, see friends and family | Possible depression;CES-D (10 item) (score 4+); validated;categorical (yes/no) | *Subjective*Neighbours willing to help (collective efficacy, S)Trust in neighbours (neighbourhood trust, S) | None | Binary logistic regression | *Main effects with possible depression*Neighbours willing to help:OR=0.81, p<.01(collective efficacy **-**)Trust in neighbours: OR=0.78, p<.001(neighbourhood trust **-**) |  |
| 64 | None;Okwumabua et al., 1997 | N = 96 (urban, rural);Mean age ≈ 74 years;50% female;Response rate = 87%;Community dwellers;west Tennessee, USA;African Americans | Cross-sectional;Cluster: none;Individual: convenience & random;Stratification: urban/rural;Neighbourhood definition:not specified | None | Possible depression;CES-D (20 item) (score 16+);validated;categorical (yes/no) | *Objective*Urban/rural (urbanisation, P) | None | Chi-square test | *Main effects with possible depression*Urban/rural:χ2 NS(urbanisation **0**) |  |
| 65 | None;Roh et al., 2011 | N = 420 (urban);Mean age = 72 years;58% female;Response rate unknown;Community dwellers;New York City, USA;Korean American | Cross-sectional;Cluster: none;Individual: convenience; Stratification: none;Neighbourhood definition:participant delimitation | Age, gender, marital status, education, acculturation, chronic conditions, functional disability | Depressive symptoms;CES-D (10 items);validated;continuous | *Subjective*Ethnic density of Koreans (social/demographic heterogeneity, S)Neighbourhood safety (personal/crime-related safety, S)Neighbourhood social cohesion (collective efficacy, S)  | None | Linear regression models | *Main effects with depressive symptoms*Neighbourhood ethnic density:β = -0.04, p>.05(social/demographic heterogeneity **0**)Neighbourhood safety:β = -0.10, p<.05(personal/crime-related safety **-**)Neighbourhood social cohesion:β = -0.04, p>.05(collective efficacy **0**) |  |
| 66 | None;Schieman & Meersman, 2004 | N = 1167 (not stated, probably urban & rural);Age: ≥ 65 years;50% female;65% response rate;Community dwellers;DC & Maryland, USA;Black (50%) & White (50%) | Cross-sectional;Cluster: counties (purposive);Individual: random;Stratification: 3 localities, race & gender;Neighbourhood definition:participant delimitation | Race, age, marital status, number of people in household, taking care of grandchildren, in caregiving role, education, income | Depressive symptoms;un-named instrument;not validated;continuous | *Subjective*Neighbourhood problems (personal/crime-related safety) | Gender, received social support, donated social support, mastery  | Linear regression models(no adjustment for county; outcome positively skewed) | *No moderating effects of donated social support and mastery**Moderating effects with depressive symptoms*Neighbourhood problems:3-way with gender by received social supportMales: b = -0.095, p<.05Received social support not a moderator (personal/crime-related safety -**\*0.495**)Females:Low received social support (-1SD): b = 0.211, p<.05(personal/crime-related safety **-\*0.101)**High/average received social support: p>.05(personal/crime-related safety **0\*0.405**) | Fractional weights needed to account for moderating effects (subgroup of sample). |
| 67 | None;Schulman et al., 2002 | N = 117 (urban, rural);Age: ≥ 65 years;81% female;100% of eligible participants based on data availability in clinic records;Community dwellers;Kentucky, USA;American | Cross-sectional;Cluster: none;Individual: convenience;Stratification: urban/rural;Neighbourhood definition:not specified | Gender, living arrangements, marital status, education, age, self-reported chronic medical conditions, number of children living within one hour, ADLs, IADLs, number of social activities | Possible depression;GDS (30 items) (score 11+);validated;categorical (yes/no) | *Objective*Urban/rural (urbanisation, P) | None | Logistic regression (backward selection) | *Main effects with possible depression*Urban/rural:OR=3.8; p=.0054(urbanisation **+**) |  |
| 68 | None;Sengupta & Benjamin, 2015  | N = 3038 (urban, rural);Mean age ≈ 68 years;54% female;Response rate not stated;Community dwellers;India;Indian | Cross-sectional;Cluster: none;Individual: not stated;Stratification: none;Neighbourhood definition:not specified | Gender, age, marital status, type of family, education, occupation, income, functional impairment, cognitive impairment | Possible depression;GDS-15 (score 6+);validated;categorical (yes/no) | *Objective*Rural/urban (urbanisation, P) | None | Logistic regression | *Main effects with possible depression*Urban/rural:OR=1.67; p=.002(urbanisation **+**) |  |
| 69 | None;Su et al., 2012 | N = 809 (urban, rural);Mean age = 70 years;49% female;Response rate = 95%;Community dwellers;Hunan, China;Chinese | Cross-sectional;Cluster: villages & residential quarters (random cluster sampling);Individual: random proportional to population of older adults; Stratification: location & population density;Neighbourhood:villages (rural) & residential quarters (urban) | None | Depressive symptoms;Chinese GDS-30;validated;continuous | *Objective*Urban/rural (urbanisation, P) | None | t-test(did not account for sampling design/clustering; not reported mean difference and its SE) | *Main effects with depressive symptoms*Urban/rural:t-test p<.01(urbanisation **-**) |  |
| 70 | None;Tanaka et al., 2016  | N = 108 (urban);Mean age = 77 years;100% female;Response rate not stated;Community dwellers;Nagasaki, Japan;Japanese | Cross-sectional;Cluster: community centres (recruitment points, convenience);Individual: convenience;Stratification: none;Neighbourhood:not specified | Comorbidities, FEV1  (forced expiratory volume in 1 second), handgrip force, quadriceps force, activity counts, activity times | Possible depression;CES-D (20 items) (score 16+)validated;categorical (yes/no) | *Objective*Slope/non-slope (barriers to walking, P) | None | Logistic regression(no adjustment for clustering – recruitment point) | *Main effects with possible depression*Slope/non-slope:OR=1.093; p=.044(barriers to walking **+**)  | More sloped = higher rates of depression |
| 71 | None;Wee et al., 2014 | N = 559 (urban);Mean age > 68 years55% female;No response rate; Community dwellers;Singapore;Singaporean | Cross-sectional;Cluster: site (purposive);Individual: all;Stratification: housing estate; Neighbourhood: block (~165 households) | Marital status, comorbidities, employment, household income | Possible depression;GDS-15 (score +5) or self-reported medical diagnosis;validated;categorical (yes/no) | *Objective*Public rental housing block/owner-occupied housing block (SES, S), Neighbourhood unemployment score (SES, S)Neighbourhood disadvantage score (SES, S)  | None | Multilevel logistic regression | *Main effects with possible depression*Public rental housing block/owner-occupied housing block:OR=1.68; p=.049(SES **-**)Neighbourhood unemployment score:OR=0.94; p=.798(SES **0**)Neighbourhood disadvantage score:OR=1.62; p=.03(SES **-**) | Neighbourhood disadvantage score (SES) significant in unadjusted model (Table 2)No adjustment for age, gender, ethnicity or education as they were not significantly associated with depression on univariate analysis |
| 72 | None;Wilcox et al., 2003 | N = 102 (rural);Mean age = 71 years;100% female;Response rate not stated, multiple methods of recruitment;Community dwellers; South Carolina, USA;African American (41%) & White (59%) | Cross-sectional;Cluster: none;Individual: convenience;Stratification: none;Neighbourhood definition:Participant delimitation | None | Depressive symptoms;GDS-5;validated;continuous | *Subjective*Neighbourhood safety (personal/crime-related safety, S)Sidewalks in immediate neighbourhood (barriers to walking, P)Motorized traffic (traffic safety, P)Street lighting (barriers to walking, P)Problems of unattended dogs (personal/crime-related safety, S)Walking distance to park (access to/availability of parks/recreational facilities, P),  | None | Pearson correlation coefficient | *Main effects with depressive symptoms*Neighbourhood safety:r = -.08, p>.05(personal/crime-related safety **0**)Sidewalks in immediate neighbourhood: r = .11, p>.05(barriers to walking **0**)Motorized traffic:r = -.13, p>.05(traffic safety **0**)Street lighting:r=-.03, p>.05(barriers to walking **0**)Problems of unattended dogs:r = .06, p>.05(personal/crime-related safety **0**)Walking distance to park:r = -.01, p>.05(access to/availability of parks/recreational facilities **0**) |  |
| 73 | None;Yen et al., 2008check sample with other Taiwan papers | N = 301 (urban, suburban, rural);Mean age = 69 years;41% female;Response rate = 61%;Community dwellersChia-Yi county, Taiwan;Taiwanese | Cross-sectional;Cluster: three-level stratified sampling strategy to select subjects from households;Individual: systematic random;Stratification:urban/suburban/rural;Neighbourhood:township  | age, education, marital status, household income, occupation, cognitively impaired, cerebrovascular diseases, heart diseases, hypertension, diabetes, number of chronic diseases, total cholesterol, HDL, LDL, triglycerides,  | Possible depression;TDQ (score 19+);validated;categorical (yes/no) | *Objective*Population density (population/residential density, PS)Elderly concentration (proportion of older adults, S)Proportion of people living in poverty (SES, S)Residential stability (residential stability, S)Density of physician population (access to/availability of health/well-being related services, P), Household disposable income (SES, S)Homeownership (SES, S)Government welfare expenditure (SES, S) | APOE genotype | Multilevel logistic regression(only 4 neighbourhoods used to obtained estimates of inter-neighbourhood variance; analysis of moderating effects unclear) | *Moderating effects of APOE genotype with* *possible depression;* Population density:No APOE ε2 or ε4:p>.05(population/residential density **0\*0.8173**)APOE ε2: OR=0.89; p>.05(population/residential density **0\*0.0526**)APOE ε4:OR 3.27; p<.05(population/residential density **+\*0.1301**)No moderating effects of APOE genotype for any other exposure variables.*Main effects with* *possible depression*Elderly concentration:OR 1.09; p>.05(proportion of older adults **0**) Proportion of people living in poverty:OR 1.09; p>.05(SES **0**)Residential stability:OR 1.27; p>.05(residential stability **0**)Density of physician population:OR 1.15; p>.05(access to/availability of health/well-being related services **0**)Household disposable income:OR 0.85; p>.05 (SES **0**)Homeownership:OR 1.07; p>.05 (SES **0**)Government welfare expenditure:OR 1.00; p>.05 (SES **0**) | Inappropriate way to test moderating effects |