| Author/Year | Definition/measure of socio-economic status (e.g. deprivation, SES) | Total sample size | Sample size (lowest SES) | Comparator/control sample size | Ethnicity of sample (if available) | Education data (if available) | Disease activity measure(s) | Association between SES and disease activity? | Key conclusions |
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| Alarcón 2014 (33) | ADIMARK index of socioeconomic status | 189 | 126 | 63 | Mapuche and non-Mapuche | . | DAS28, HAQ | Yes | RA patients with low SES are almost three times more likely to have moderate to high disability, independent of ethnicity, gender or place of residence. |
| Andersson 2013 (19) | Occupations coded according to SES designation (Socioekonomisk indelning, SEI) in Sweden, recorded as blue-collar worker, upper or lower white-collar worker, other, or self-employed. Group "other" in the SEI consisted of students, housewives and other people with no occupation | 1460 | 511 (blue-collar) | 949 | . | . | DAS28, EULAR response, HAQ | No | Immigrants scored worse in pain, function and TJC for up to 2 years of follow-up; did not differ from non-immigrants in objective measures of inflammation or EULAR outcome. SES had no effect on treatment or outcome, and this could be due to the relatively egalitarian society in Sweden. |
| Baldassari 2014 (27) | 1. Education: high and low (depending on high school completion) 2. Occupation: high SES and "service occupations," "farming, fishing, and forestry occupations," and "production, transportation, and material moving occupations" were categorized as low SES 3. Household incomes ≥$30,000/year=high SES, otherwise low SES. 4. Homeownership high SES for respondents owning their own home; low SES otherwise. | 937 | 1. 223 education less than high school 2. 709 low household income 3. 521 non-homeowner 4. 529 low SES occupation | 1. 714 education above high school 2. 228 high household income 3. 416 homeowners 4. 408 high SES occupation | African American | As per sample size data | DAS28-CRP, CRP, VAS, HAQ, RAI, count scores | Yes | Significant socioeconomic disparities in self-reported physical and mental health and clinical disease activity measures in African Americans with RA not explained by differences in demographics, medication use, and health behaviours. |
| Barton 2011 (28) | 1. Education level (less than high school, high school graduate, and any college education) 2. Race/ethnicity 3. Nativity/immigrant status | 498 | 158 | 240 | 33% non-Hispanic White, 34% Hispanic, 23% Asian/Pacific Islander, 10% African American, 1% American Indian. A majority | 32% less than high-school, 21% high school, 48% any college education | DAS28, HAQ | Yes, at university hospitals | The relationship between social determinants and RA disease activity varied significantly across clinic setting with pronounced variation at the university, but not at the county clinic. Disparities may be due to events that preceded access to subspecialty care, poor adherence, or healthcare delivery system differences. |

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| | | | | | (56%) were immigrants | | | | |
| Berkanovic 1996 (29) | 1. Education 2. income | 118 | . | . | non-Hispanic white | Mean education attainement 13.09 years | HAQ | Yes for HAQ | Data do not show that poorer health status explains the link between SES and disability and depressive symptoms. Although, at baseline, the psychosocial effects of early RA are more severe for those with lower SES, the disease does not appear to be more severe. |
| Brekke 1999 (20) | Patients living in a less well-off area of Oslo categorized as "deprived" and patients in an affluent area as "wealthy" | 247 (respondents); 133 assessed in clinic | 106 (living east of city) | 141 (living west of city) | . | . | DAS28, ESR, CRP, number of deformed joints, number of damaged joints, Pain VAS, fatigue VAS, HAQ, AIMS2, SF36 | Yes for HAQ | Patients with RA in two socioeconomically different areas in Oslo were found to be equal regarding disease process and joint damage measures. However, in the measures reflecting physical and psychosocial health status, patients in the less affluent area seemed to be more seriously ill. |
| Callhoff 2017 (21) | 1. Household monthly income categories defined as low (< €1500), medium (€1500–3200), or high (> €3200). 2. Formal education, corresponding to ≤ 8/9–10/> 10 years of school | 1492 | 403 (based on both household income and education) | 1089 | . | 27.1% </= 8 years; 48% 9-10 years; 25% >10years | RAID, Hannover functional status questionnaire (FFbH), SJC, TJC | Yes | The association of low income with a higher disease burden, more functional disability and higher rates of work loss emphasizes the need to focus on these outcomes when choosing treatment strategies for patients in lower income groups. |
| Camacho 2012 (15) | Index of Multiple Deprivation 2007 | 553 | 67 | 486 | . | . | DAS28, HAQ | Yes, due to learned helplessness | Learned helplessness is associated with cross-sectional disease outcome and appears to mediate the relationship between SES and disease outcome. |
| Chandrashekara 2018 (37) | 1. Educational status, illiterate/no formal education, high school or less, college or graduate, post-graduate and doctorate; 2. Family income (₹ per annum): < 50 000, 50–100 000, 100–500 000 and > 500 000 | 1990 | 1180 | 810 | . | 52.3% high school or less; 25.9% graduate; 1% PhD; 9% no formal education | DAS 28–3 ESR | Yes (education) | Educational status positively influences the number of patients achieving remission. |
| Clave-Testino 1994 (34) | Educational level | 128 | 68 | 60 | . | 53% primary; 20% high school; 17% college; 7% post-grad | HAQ, ESR, VAS | Yes | Lower formal educational level associated with more severe disease. |
| Gamboa-Cardenas 2019 (35) | Graffar scale | 498 | . | . | 47.8% Mestizo; 28.7% Caucasian, 19.7% | . | DAS-28 ESR, HAQ | Unclear | No comment on SES status and association with disease activity. |

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| | | | | | African, 2.8% indigenous | | | | |
| Gong 2016 (38) | 1. Employment status (1 = employed; 2 = unemployed) 2. Residence (1 = rural area; 2 = urban area) 3. Education level (1 = below primary school; 2 = primary school; 3 = junior high school; 4 = senior high school or equivalent; 5 = college and above) 4. Household monthly income (1 = lower than 1,000 yuan; 2 = 1,000–1,999 yuan; 3 = 2,000–2,999 yuan; 4 = higher than 3,000 yuan) | 207 | 134 unemployed; 25 eduational level below primary; 42 lowest income level | 73 employed; 182 above primary level education; 165 above lowest income bracket | . | As per sample sizes | HRQoL, HAQ | Yes | All areas of SES predict HRQoL. |
| Hallert 2015 (22) | 1. Educational level (primary school, secondary school, and college/university) 2. Employment status: working, being on sick leave, or having disability pension | Cohort 1 (1996-98): 317; Cohort 2 (2006-9) 436 | Primary education: Cohort 1- 58; Cohort 2- 52 | Cohort 1- 42; Cohort 2- 48 (not all participants filled out whole questionnaire) | . | As per sample size | DAS28 | Unclear | Early RA patients in Cohort 2 were on average slightly older and better educated. Sick leave was lower and disability pension was higher in Cohort 2 compared to Cohort 1. However, all changes were similar to contemporary changes in the general population. |
| Harrison 2009 (16) | 1. Index of Multiple Deprivation 2004 2. Patients with no occupation were allocated to a social class category on the basis of their partner's occupation, where the information was available. This system categorizes an individual into 1 of 6 class codes (I = professional, II = managerial, IIINM = non-manual skilled, IIIM = manual skilled, IV = partly skilled, and V = unskilled) | 1393 | 149 | 1244 | . | . | DAS28, HAQ | Yes | Person- and area-level inequalities modify outcomes for RA. A person's social circumstance and residential environment have independent effects on outcomes. |
| Harrison 2005 (1) | Townsend Index score (a measure of social deprivation based on area of residence) | 466 | 81 | 385 | . | . | DAS28, HAQ, SF36, EQ5D | Yes | Area of residence (as a marker of social deprivation) is a predictor of response in terms of disease activity in clinical trials, and add to the literature reporting trends of poorer clinical status in RA patients from areas of greater social deprivation. |
| Jacobi 2003 (4) | Education: low SES, including patients with no education or primary school level; medium | 869 | 220 | 649 | . | As per sample size | DAS28, HAQ | Yes | Patients with low SES have worse health outcomes than patients with high SES, but during the course of the disease the |

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| | SES, including patients with secondary school level; and high SES, including patients with college or university level. | | | | | | | | differences in health outcomes between SES groups decrease. Patients with a low SES used considerably less care than patients with a high SES. |
| Jiang 2015 (41) | Education (with and without university degree) | 3021 | 2310 | 711 | . | As per sample size | DAS28, HAQ, VAS | (No) | RA patients with a high education level experienced less pain and less functional disability. These patients achieved pain remission more often during the first year receiving standard care. Education background affected neither time to referral to rheumatologists, disease activity nor anti-rheumatic treatments. |
| Kearsley-Fleet 2018 (17) | Index of Multiple Deprivation | 13502 | 2082 | 11420 | . | . | ESR, DAS28, HAQ, SF-36 | Yes | Patients from lower socioeconomic areas were more likely to develop bDMARD refractory disease. |
| Linde 2009 (24) | Education | 3156 | . | . | . | Not described in text | HAQ, SF-12 | No | SES was not significantly associated with HAQ. Education level was used as an indicator for SES, whereas other studies have used specific measures, such as the Carstairs score, and this may have contributed to the different results. |
| Massardo 2012 (36) | Graffar method, takes into account occupation, education level, main income source, housing, and neighborhood quality | 1093; 1059 when excluding those with missing ethnic data | 518 | 441 | 473 Mestizos (43.5%), 342 Caucasians (31.5%), 205 ALA (18.9%), 39 Amerindians (3.6%), 28 other ethnicities (2.6%) | 23% had >12 years of education | DAS-28 ESR, HAQ | Yes | Low/low-middle SES is important in determining disease activity. SES is associated with disease activity in very early disease, irrespective of ethnicity or education. |
| McEntegart 1997 (2) | 1. Carstairs deprivation score | 440 in 1980s cohort; 374 in 1993 cohort | 163 in first cohort | 277 | . | . | ESR, CRP, HAQ, morning stiffness | Yes | Patients from deprived areas have significantly poorer function at outset and at five years as defined by the HAQ. This is not attributable to differences in disease duration in patients from the most deprived regions or compliance with treatment. |
| Molina 2015 (30) | Nam and Powers, using years of formal education, inflation-adjusted monthly household income, and current or past occupation to calculate an SES score on an ascending scale between 0 and 100 | 1209 | 406 | 922 | Hispanic (60.5%) and non-Hispanic | . | DAS-28 ESR, HAQ | Yes | Low SES was associated with delay in DMARD initiation, and both were independently associated with worse clinical measures in RA. |

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| Moufarrej 2015 (31) | Ability/inability to afford biologics | 182 | . | . | DAS28</=3.2: South Asian 55.3%, Arab 11.8%, Caucasian 23.5%, other 9.4%; DAS28>/=3.2: South Asian 50.5%%, Arab 10.3%, Caucasian 30.9%, other 8.2% | . | DAS-28 ESR, HAQ | Yes | 40 % of the resistant disease group unable to afford biologics. |
| Putrik 2016 (40) | Level of educational achievement (primary, secondary or university) | 3920 | 1411 | 2509 | Not recorded, but data from 17 countries | Highest level of education: 36% primary; 40% secondary; 25% degree | DAS28 | Yes | Lower individual or country SES were independently associated with DAS28. The association between lower individual SES (education) or lower country welfare (GDP) with higher DAS28 was partially mediated by uptake of bDMARDs. |
| Roodenrijs 2020 (25) | Level of highest education: none, primary, secondary, university | 152 (52 D2T) | 1 none; 5 primary school | 146 secondary or university | . | As per sample size | DAS-28 ESR, VAS-GH | Yes | Lower SES at RA onset was found to be an independent risk factor for developing D2T RA. |
| Vlieland 1994 (26) | Highest level of formal education achieved (eight categories varying from lowest: primary school to highest: university) | 127 | 78 | 49 | . | As per sample size | erosion score, HAQ score, number of swollen joints, Ritchie score | Yes | Patients with low and medium levels of education had higher initial erosion and HAQ scores compared with patients with high levels of education. |
| Yang 2015 (32) | 1. Educational level: low education (high school diploma and lower) and high education (postsecondary education and higher). 2. Annual income: low income [≤ 50,000 (all dollars Canadian) below the median income] or high income (greater than $50,000) | 2023 | Low education: 869; low income 747 | 1122; 1243 | . | As per sample size | DAS28-ESR, HAQ-DI, pain, ESR, PtGA, SDAI, CDAI, SF-12 | Yes | Low SES was initially associated with higher disease activity, pain, and PtGA, and poorer function. At 1 year, outcomes were similar to those with high SES, with the exception of HAQ-DI. |
| Yates 2021 (18) | Index of Multiple Deprivation | 7455 | . | . | 86.8% white; 13.2% BAME | . | DAS28 | Yes | SES predicts low disease activity at baseline, three and 12 months follow-up |
| Young 2000 (3) | 1. Carstairs deprivation score of his or her enumeration district of residence (postcode) 2. educational attainment | 869 | 177 | 692 | . | 10.8% university degree; 30.7% A Level; 18.5% GCSE; 40% none | HAQ, ESR, joint score, pain score, grip strength | Yes | Socioeconomic deprivation was associated with a worse clinical course of RA; effect apparent at presentation, but not with systematic differentials in treatment. |

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| Zou 2020 (39) | 1. Education level: “none or primary”, “secondary or vocational” and “tertiary” | 213 | 47 | 166 | 58.2% Chinese, 16.4% Malay, 21.6% Indian, 3.8% other | . | DAS28-ESR, mHAQ, EQ5D | Yes | Sociodemographic characteristics were the main determinants of variable clinical outcome trajectories. |

**Supplementary table 2: Exposure and outcome variables in included studies, and associations with key conclusions**