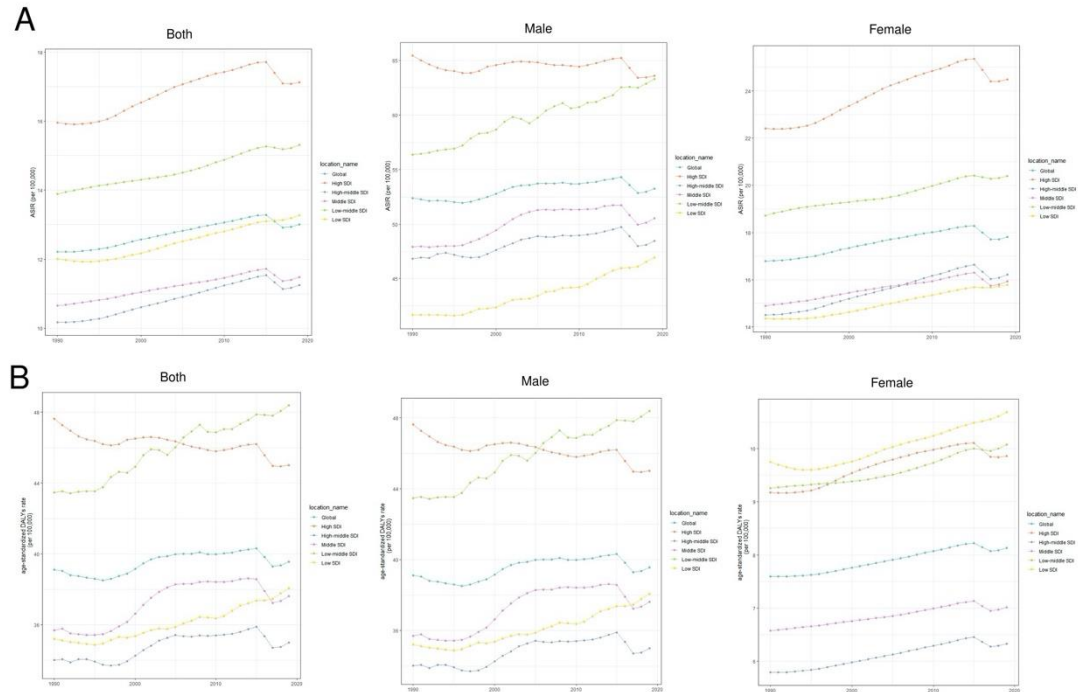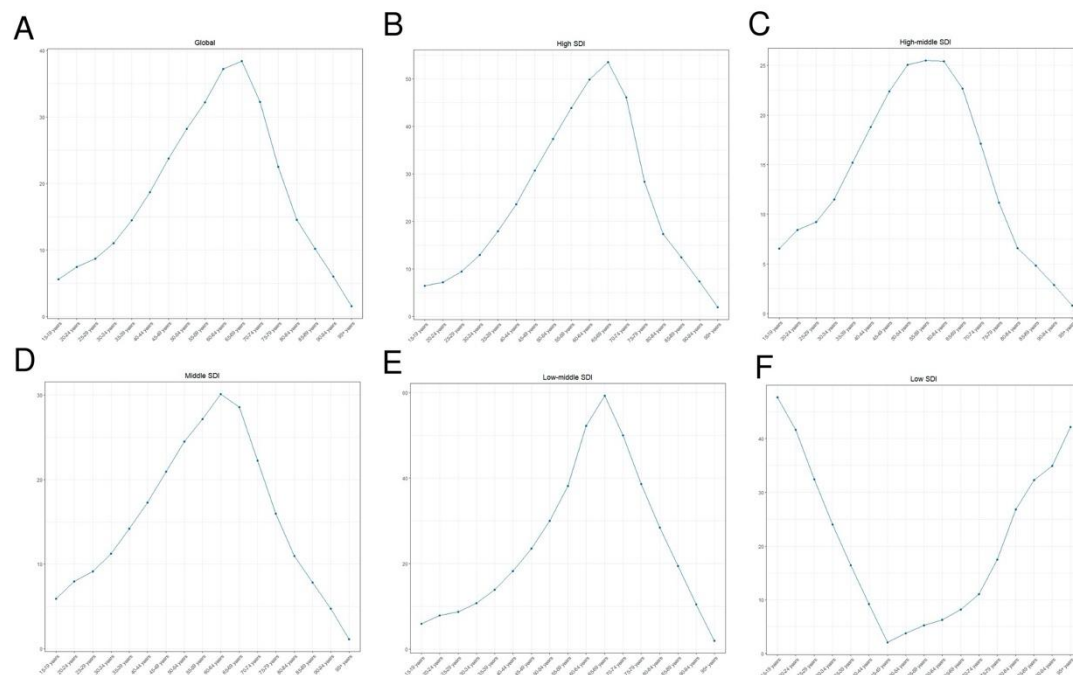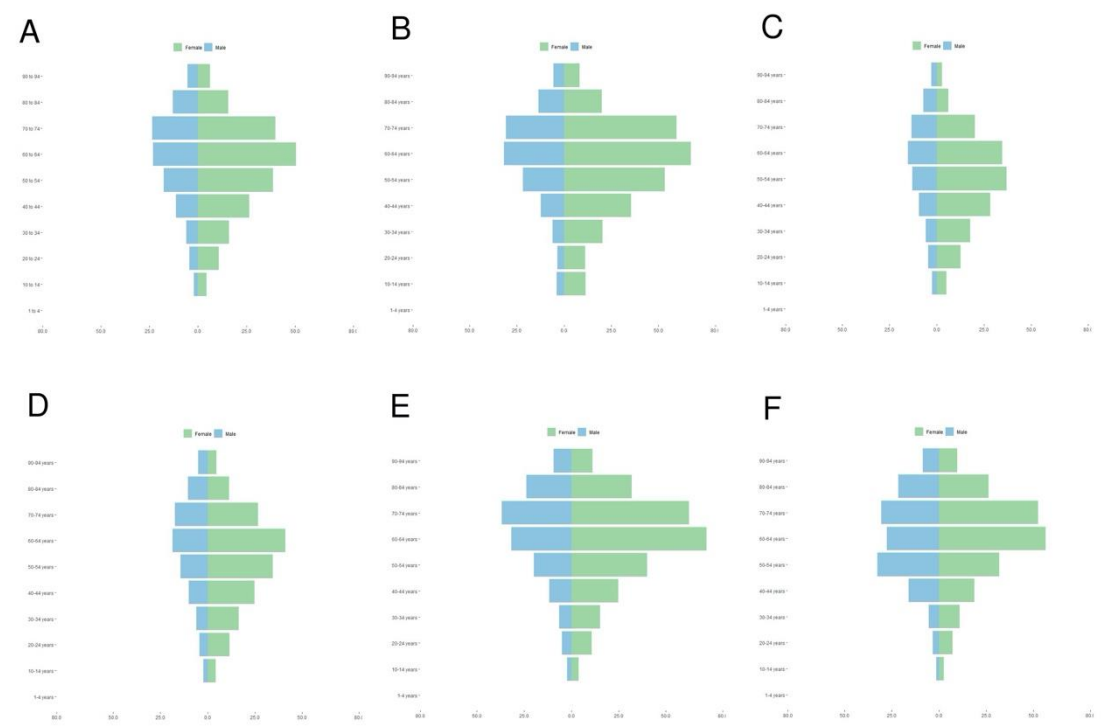**Supplementary Figure S1.** The change trends of age-standardized rheumatoid arthritis incidence, and DALY rate among different SDI quintiles and gender from 1990 to 2019. A – ASIR, age standardized incidence rate. B – age-standardized DALY rate
ASIR – age standardized incidence rate, DALY – disability adjusted life-year.

Supplementary Figure S2. The ratio of male to female incidence among different age groups in 2019. A – Global. B – High SDI. C – High-middle SDI. D – Middle SDI. E – Middle-low SDI. F – Low SDI

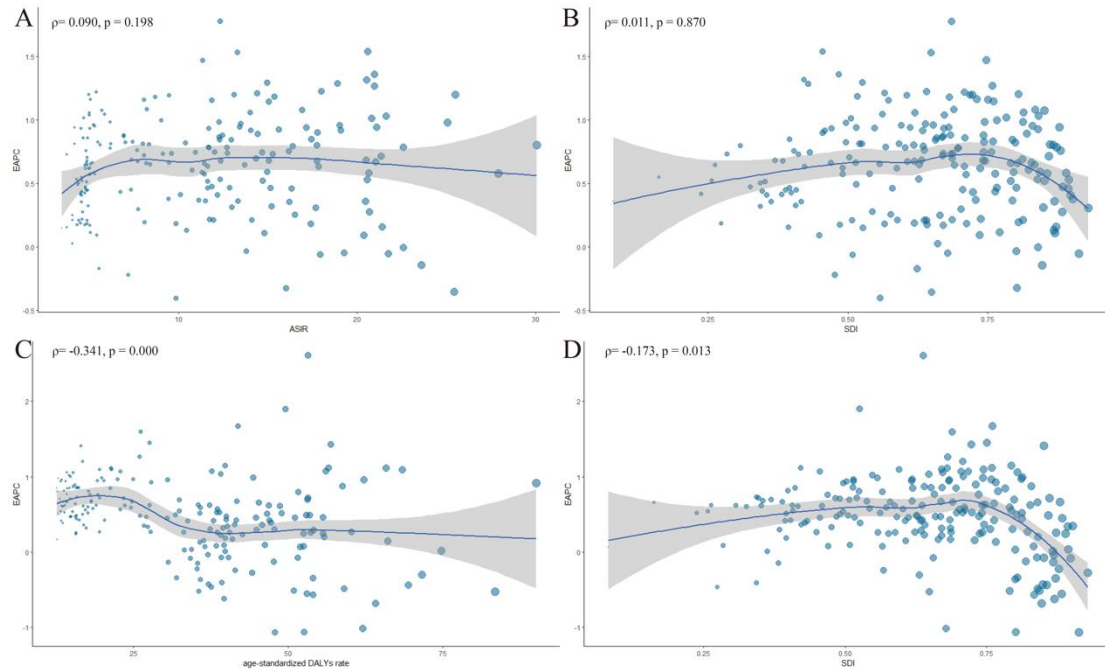SDI – socio-demographic index.

Supplementary Figure S3. Distribution of different ages in rheumatoid arthritis incidence in global (A), high SDI (B), high-middle SDI (C), middle SDI (D), middle-low SDI (E), low SDI (F) SDI – socio-demographic index.
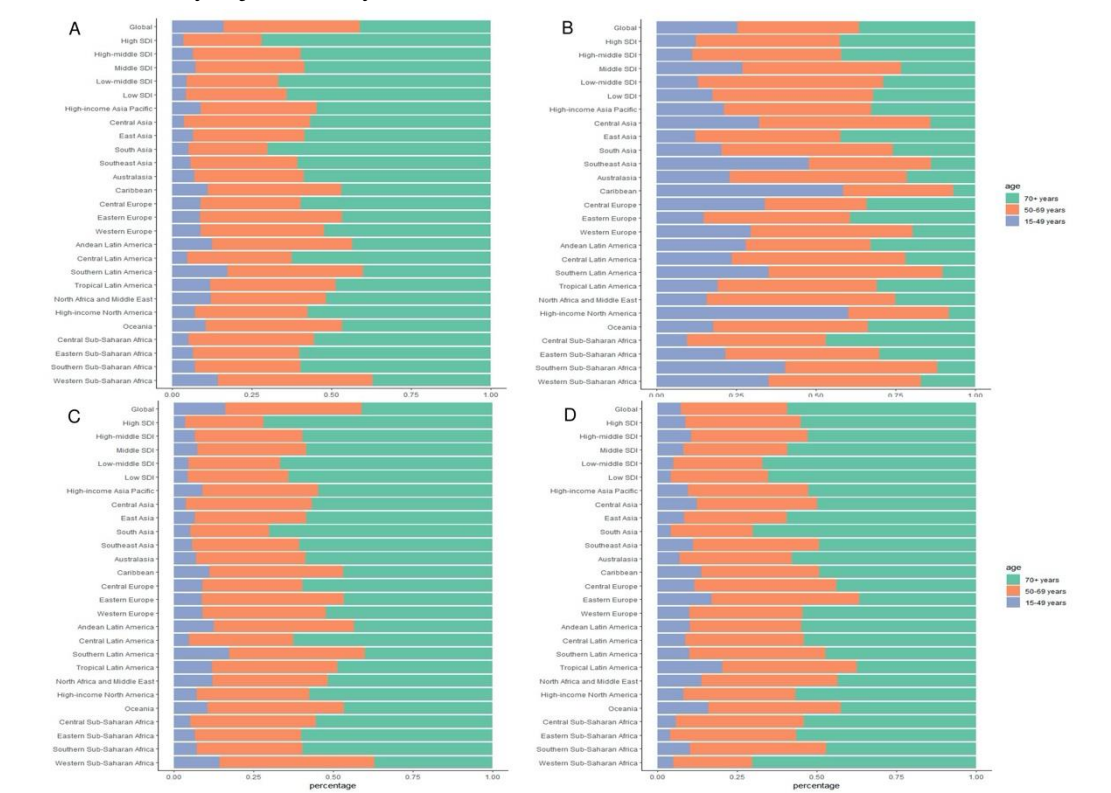
Supplementary Figure S4. The correlation between EAPC and rheumatoid arthritis age-standardized rates in 1990 and SDI in 2019. The circles represent countries that were available on SDI data. The size of circle is increased with the cases of rheumatoid arthritis. The ρ indices Pearson's correlation coefficient and p values were derived from Pearson's correlation analysis. A – EAPC and ASIR. B – EAPC and SDI in incidence. C – EAPC and age-standardized DALY rate. D – EAPC and SDI in DALYs

EAPC – estimated annual percentage change, SDI – socio-demographic index, ASIR – age standardized incidence rate, DALY – disability adjusted life-year.
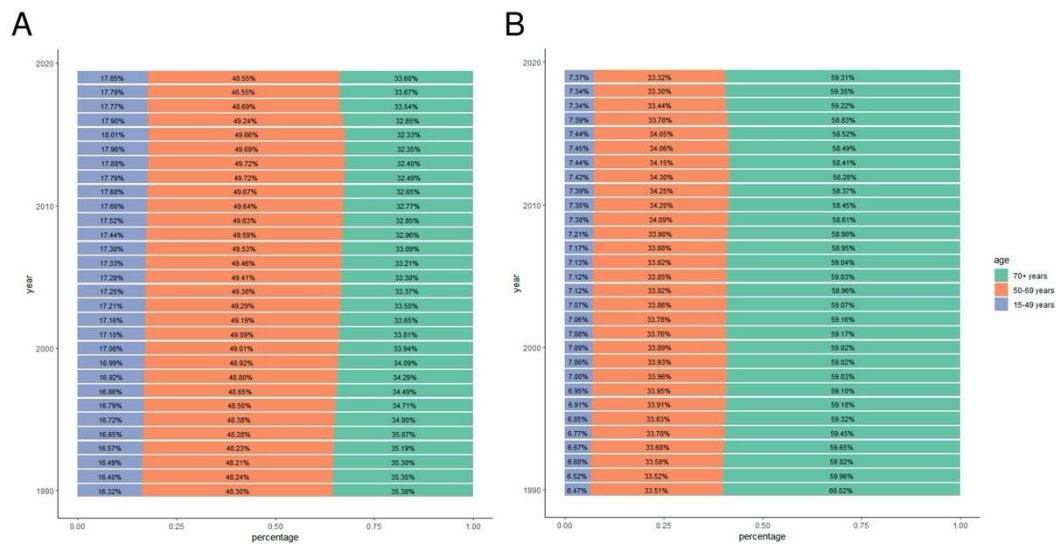
Supplemental Figure S5. The incidence and DALY rates of rheumatoid arthritis in different age groups. A – Incidence in 1990, B – incidence in 2019, C – DALY rate in 1990, D – DALY rate in 2019

DALY – disability adjusted life-year.

Supplementary Figure S6. The proportion of different ages in rheumatoid arthritis incidence (A) and age-standardized DALY (B) by years

DALY – disability adjusted life-year.

Supplementary Figure S7. The ratio of male to female age standardized DALY rate among different age groups in 2019. A – Global. B – High SDI. C – High-middle SDI. D – Middle SDI. E – Middle-low SDI. F – Low SDI

SDI – socio-demographic index.

Supplementary Figure S8. Distribution of different ages in rheumatoid arthritis DALYs in global (A), high SDI (B), high-middle SDI (C), middle SDI (D), middle-low SDI (E), low SDI (F)

SDI – socio-demographic index.