Table S1: Pearson, Nonparametric and partial correlation between household size and each cancer variable and confounder

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| --- | --- |
|  | All countries, n=58 |
|  | Pearson |  | Nonparametric |  | Partial |
|  | r | n |  |  rho | n |  |  r | df |
| All cancers excl. non-melanoma skin cancer (C00-97, but C44) - all ages: total | -0.635\*\*\* | 58 |  | -0.720\*\*\* | 58 |  | -0.492\*\*\* | 50 |
| All cancers excl. non-melanoma skin cancer (C00-97, but C44)- all ages: female  | -0.624\*\*\* | 58 |  | -0.720\*\*\* | 58 |  | -0.482\*\*\* | 50 |
| All cancers excl. non-melanoma skin cancer (C00-97, but C44) - all ages: male | -0.593\*\*\* | 58 |  | -0.671\*\*\* | 58 |  | -0.429\* | 50 |
| All cancers excl. non-melanoma skin cancer (C00-97, but C44) – 0-49: totalǂ | -0.629\*\*\* | 58 |  | -0.711\*\*\* | 58 |  | -0.493\*\*\* | 50 |
| All cancers excl. non-melanoma skin cancer (C00-97, but C44) – 0-49: femaleǂ | -0.586\*\*\* | 58 |  | -0.700\*\*\* | 58 |  | -0.422\*\* | 50 |
| All cancers excl. non-melanoma skin cancer (C00-97, but C44) – 0-49: maleǂ | -0.617\*\*\* | 58 |  | -0.673\*\*\* | 58 |  | -0.486\*\*\* | 50 |
| Bladder (C67), all ages | -0.482\*\*\* | 58 |  | -0.593\*\*\* | 58 |  | -0.303\* | 50 |
| Breast(C50), all ages  | -0.489\*\*\* | 58 |  | -0.672\*\*\* | 58 |  | -0.305\* | 50 |
| Cervix uteri (C53), all ages | 0.260\* | 58 |  | 0.331\* | 58 |  | 0.010 | 50 |
| Colorectum (C18-21), all ages  | -0.508\*\*\* | 58 |  | -0.583\*\*\* | 58 |  | -0.278\* | 50 |
| Corpus uteri (C54), all ages | -0.493\*\*\* | 58 |  | -0.499\*\*\* | 58 |  | -0.324\* | 50 |
| Lung (C33-34), all ages | -0.380\*\* | 58 |  | -0.425\*\*\* | 58 |  | -0.059 | 50 |
| Melanoma of skin (C43), all ages | -0.646\*\*\* | 58 |  | -0.778\*\*\* | 58 |  | -0.564\*\*\* | 50 |
| Ovary (C56), all ages  | -0.374\*\* | 58 |  | -0.456\*\*\* | 58 |  | -0.239 | 50 |
| Stomach (C16), all ages | -0.104 | 58 |  | 0.002 | 58 |  | 0.133 | 50 |
| GDP PPP 2010 | -0.463\*\*\* | 58 |  | -0.505\*\*\* | 58 |  | ^ | ^ |
| Urbanization 2010 | -0.388\*\* | 57 |  | -0.578\*\*\* | 57 |  | ^ | ^ |
| Life expectancy (e60, 2005-2010)  | -0.346\*\* | 58 |  | -0.269\* | 58 |  | ^ | ^ |
| Biological State Index (Ibs) | -0.400\*\* | 56 |  | -0.581\*\*\* | 56 |  | ^ | ^ |
| Note: Pearson, Nonparametric and partial correlation reported. Significance level: \*\*\* p<0.001, \*\* p<0.01, \* p<0.05 ^ Partial correlations were calculated when GDP, Urbanization, Life expectancy (e60) and Biological State Index (Ibs) were kept statistically constant. ǂ Life expectancy (e50) was not controlled for as it is not relevant in population segment aged 0-49 years old.Data sources and variable meanings: The International Agency for Research published cancer incidence rates (per 100,000 in 2012) of all cancers incidence rate by sex (total, male and female, 0-49 years and all ages respectively); bladder, breast, cervix uteri, colorectum, corpus uteri, ovary and stomach. The World Bank data: GDP PPP (per capita purchasing power parity in current international $ in 2010) and Urbanization (the percentage of total population living urban areas in 2010) The United Nations data: Life expectancy (e60, 2005-2010), the total population in households and the number of households for calculating household size. Household size is expressed as total number of persons in a household.United Nations published (2008) country specific fertility data and WHO published (2012) life table were used for calculating the Biological State Index (Ibs). All variables were log-transformed for analysis in SPSS. |