**Supplementary Table 1:** Questionnaire and scale measuring positive and negative experiences of social support/exchanges.

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| --- | --- | --- |
|  | **Items** | **Original scale** |
| 1(a lot) | 2(some) | 3(a little) | 4(not at all) |
| **Reverse coded scale** |
| 4(a lot) | 3(some) | 2(a little) | 1(not at all) |
| **Positive experiences of support** | (a) How much do they really understand the way you feel about things? |  |  |  |  |
| (b) How much can you rely on them if you have a serious problem? |  |  |  |  |
| (c) How much can you open up to them if you need if you need to talk about your worries? |  |  |  |  |
| **Negative experiences of support** | (a) How much do they criticise you? |  |  |  |  |
| (b) How much do they let you down when you are counting on them?  |  |  |  |  |
| (c) How much do they get on your nerves |  |  |  |  |

**Supplementary Table 2:** Sensitivity analysis 1 (excluding dementia cases between waves 1 and 2) - interval censored proportional hazard (PH) regression analysis of the effect of positive or negative social support on risk of developing dementia. There were 292 dementia incidences during wave 3 to 6. Number of events included in the analyses varied (from 171 to 292) due to missing data in positive/negative scores and the covariates (age, sex, and net wealth). Statistically significant associations involving the positive or negative support scores are shown in bold.

|  |  |  |
| --- | --- | --- |
| **Exposure variable\* (score type)** | **Positive scores** | **Negative scores** |
| *HR (SE)* | *p-value* | *95% CI* | *HR (SE)* | *p-value* | *95% CI* |
| **Overall score** | 0.84 (0.09) | 0.110 | (0.68, 1.04) | **1.30 (0.16)** | **0.035** | **(1.02, 1.65)** |
| **Spouse+children+other family scores** | 0.89 (0.09) | 0.244 | (0.74, 1.08) | **1.25 (0.14)** | **0.049** | **(1.00, 1.56)** |
| **Spouse + children scores** | 0.83(0.09) | 0.084 | (0.68, 1.02) | 1.22 (0.14) | 0.073 | (0.98, 1.52) |
| **Other family + friends score** | **0.83 (0.07)** | **0.031** | **(0.70, 0.98)** | 1.22 (0.14) | 0.092 | (0.97, 1.53) |
| **Spouse score** | 0.86 (0.11) | 0.208 | (0.67, 1.09) | 1.06 (0.14) | 0.417 | (0.87, 1.41) |
| **Children score** | 0.83 (0.08) | 0.056 | (0.68, 1.00) | 1.15 (0.12) | 0.186 | (0.93, 1.43) |
| **Other family score** | **0.87 (0.06)** | **0.041** | (0.76, 0.99) | **1.21(0.12)** | **0.049** | **(1.00, 1.47)** |
| **Friend score** | 0.88 (0.07) | 0.110 | (0.75, 1.03) | 1.13 (0.13) | 0.314 | (0.89, 1.42) |

**\***All models were adjusted for age, sex, and net wealth**.**

**Supplementary Table 3:** Sensitivity analysis 2 (excluding dementia diagnosis based on IQCODE) - interval censored proportional hazard (PH) regression analysis of the effect of positive or negative experience of social support on risk of developing dementia. There were 284 dementia incidences excluding those diagnosed using IQCODE during wave 1 to 6. Number of events included in the analyses varied (from 164 to 284) due to missing data in positive/negative scores and the covariates (age, sex, and net wealth). Statistically significant associations are shown in bold.

|  |  |  |
| --- | --- | --- |
| **Exposure variable\* (score type)** | **Positive scores** | **Negative scores** |
| ***HR (SE)*** | ***p-value*** | ***95% CI*** | ***HR (SE)*** | ***p-value*** | ***95% CI*** |
| **Overall score** | 0.87 (0.09) | 0.188 | (0.70, 1.07) | 1.21 (0.15) | 0.128 | (0.95, 1.56) |
| **Spouse + children +other family scores** | 0.93 (0.09) | 0.476 | (0.77, 1.13) | 1.23 (0.14) | 0.704 | (0.98, 1.54) |
| **Spouse + children scores** | **0.79 (0.08)** | **0.024** | **(0.64, 0.97)** | **1.25 (0.14)** | **0.050** | **(1.00,1.56)** |
| **Other family + friend score** | 0.91 (0.08) | 0.284 | (0.77, 1.08) | 1.06 (0.13) | 0.611 | (0.84, 1.35) |
| **Spouse score** | **0.78 (0.09)** | **0.043** | **(0.62, 0.99)** | 1.18(0.15) | 0.182 | (0.92, 1.52) |
| **Children score** | **0.79 (0.08)** | **0.017** | **(0.65, 0.96)** | 1.20 (0.13) | 0.097 | (0.97, 1.48) |
| **Other family score** | 0.95 (0.07) | 0.502 | (0.83, 1.10) | 1.11(0.11) | 0.316 | (0.91, 1.36) |
| **Friend score** | 0.87 (0.07) | 0.090 | (0.74, 1.02) | 1.03 (0.13) | 0.822 | (0.81, 1.31) |

**\***All models were adjusted for age, sex, and net wealth**.**

**Supplementary Table 4:** Sensitivity analysis 3 (analysis using standard Cox regression) – replication of the primary analysis using Cox regression model. Analysis assumed that exact time-to-events are known for dementia incidences. Statistically significant associations are shown in bold.

|  |  |  |
| --- | --- | --- |
| **Exposure variable\* (score type)** | **Positive scores** | **Negative scores** |
| *HR (SE)* | *p-value* | *95% CI* | *HR (SE)* | *p-value* | *95% CI* |
| **Overall score** | 0.88 (0.09) | 0.186 | (0.72, 1.06) | **1.31 (0.15)** | **0.019** | **(1.05, 1.64)** |
| **Spouse + children+ Other family scores** | 0.93 (0.08) | 0.448 | (0.78, 1.11) | **1.27 (0.13)** | **0.021** | **(1.04, 1.56)** |
| **Spouse + children scores** | 0.83(0.08) | 0.053 | (0.68, 1.00) | **1.23 (0.13)** | **0.045** | **(1.01,1.51)** |
| **Other family + friend score** | 0.89 (0.07) | 0.136 | (0.76, 1.04) | **1.25 (0.13)** | **0.034** | **(1.02, 1.55)** |
| **Spouse score** | 0.84 (0.09) | 0.111 | (0.67, 1.04) | 1.07 (0.13) | 0.541 | (0.85, 1.35) |
| **Children score** | **0.83 (0.08)** | **0.044** | **(0.69, 0.99)** | 1.19 (0.12) | 0.080 | (0.98, 1.45) |
| **Other family score** | 0.92 (0.06) | 0.216 | (0.81, 1.05) | **1.26(0.11)** | **0.012** | **(1.05, 1.50)** |
| **Friend score** | 0.89 (0.07) | 0.133 | (0.77, 1.04) | 1.14 (0.12) | 0.239 | (0.92, 1.40) |

 **\***All models were adjusted for age, sex, and net wealth**.**