**Sensitivity analyses**

Sensitivity analyses were performed to test the effect of changing the number of dependency levels as well as the potential time contribution of ego’s relatives. In the following figures we compare the 1968 birth cohort results shown in the article with those corresponding to three different sets of alternate hypotheses:

* *1968s1* is a run of the model supposing that there are only two dependency levels: the first being the low level as defined in the article and the other one corresponding to the intermediary level without the possibility to transition to level 3, maintaining the weekly demand of care to 30 hours.
* *1968s2* is based on the same hypothesis that there are only two dependency levels, a low one and one corresponding to the high level of our model, with the weekly demand of care equal to 80 hours, thus exceeding the theoretical supply of 60 hours a relative can provide to ego. Contrarily to before, we set the value of the risk of transitioning from dependency level 2 to 3 to one.
* *1968s3* corresponds to an intermediate situation, with also two dependency levels, but with a demand of care required by dependents that equals to 50 hours for the higher dependency level.

As Supplementary Figure 1 shows, the deficit of family care also exists for each alternative hypothesis, even when the needs of dependent egos are low (1968s1) and could, theoretically, be fulfilled by just one adult. While under this assumption informal caregivers cover approximately 10% more of the total care required than according to the results shown in the article (1968) when ego is aged between 50 and 70, we nonetheless observe that the demand for formal care increases after age 65, i.e. at a similar age as our main model, although at a slower rate, particularly after age 70, causing age-differences to increase. On the contrary, when the demand of care is high for all dependents (1968s2), the deficit is consistently higher, but with a similar age pattern as in our main model. This difference in the age pattern of informal care coverage is due to the increase the risk of being highly dependent as egos become older. This is confirmed by the results of the intermediate hypothesis (1968s3), which shows a pattern that is halfway between the two preceding ones.

Supplementary Figure 1. Proportion of the care demand of dependent egos covered by *informal* *care* (i.e. by the partner and children), according to their sex, age and year of birth, for birth cohort 1968



Note: 1968 corresponds to the results of the paper. 1968s1 only has one dependency level with a positive demand of family care, but with a low level of dependency (demand of care of dependent egos equals 30 hours). 1968s2 has also only one dependency level with a need for family care, but with a high level (demand of 80 hours). 1968s3 also has only one high dependency level but with a care demand of 50 hours.

Even when egos have a low demand of care (1968s1), the contribution of children is needed as ego’s partner is not able to fulfil the demand of dependent egos even when most of them are still alive (Supplementary Figure 2). When that demand is high (1968s2), the contribution of ego’s children is indispensable, although the partner is still the first source of care until ego is approximately 75 years old, confirming the results of the model presented in the article.

Supplementary Figure 2. Proportion of care needed by dependent egos, covered by the partner and children, according to their age and year of birth, for birth cohort 1968



Note: see Supplementary Figure 1

Lastly, supplementary Figure 3 confirms that the deficit of informal care exists for egos who have a partner and at least one child, even when their demand is low (1968s1). Our results are therefore not determined by the hypothesis of having highly dependent egos with a demand of care exceeding the amount that an adult kin can provide.

Supplementary Figure 3. Proportion of the total demand of care by dependent egos corresponding to *formal* care, function of the presence or lack of partner and/or children, according to their age and year of birth, for birth cohort 1968



Note: see Supplementary Figure 1