Analyzing the relationship between housing and social engagement among the elderly

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Abstract:
Utilizing a large-scale public health survey in Sweden, this paper analyzes the relationship between the fraction of elderly above the age of 80 who live in various tenure forms, and their social engagement. Social engagement is a measure of both social interaction with others, and overall engagement in society. This measure has an established relationship with mental and physical health, even as the causal mechanism are still understudied.

Across 130 municipalities, we find that a higher fraction of elderly living in elderly housing is associated with a lower fraction of elderly classified as having a low level of social engagement. We also find that a higher fraction of elderly living in single-family houses is associated with a higher fraction of elderly classified as having a low level of social engagement. The results support that closer proximity to neighbors, and potentially the engagement offered through services in elderly care, increases overall social engagement among the elderly, thereby also assumably promoting better mental and physical health. The findings can inform housing policies towards elderly populations.

Keywords: Elderly; Housing; Mental Health; Social Engagement; Social Interactions; Well-Being

JEL-codes: J14, J26, I31
1. Introduction

The relationship between housing and health is well established (Baker et al., 2016; Thomson et al, 2009) and has been studied from a wide variety of perspectives, such as cardiovascular health (Clinch and Healy, 2000), respiratory health (Lloyd et al., 2008) and obesity (Schoeppe and Braubach, 2007). In this context, mental health has received less attention (Evans, 2003). Prior research has established relationships between aspects of housing such as pollution, noise, and crowding on mental health (Halpern, 1995; Gomez-Jacinto and Hombrados-Mendieta, 2002; Leventhal and Brooks-Gunn, 2003). Housing characteristics can also exacerbate existing mental health conditions (Evans, 2003).

This paper brings together the literature on housing and health, with studies relating to housing and the elderly. Specifically, the relationships between mental well-being, housing, and community among the elderly, above the age of 80. We analyze 130 municipalities in Sweden, were we have data on housing status among the elderly, in addition to survey data with respondents above the age of 80 being asked about their social interactions. This allows us to explore the relationship between the level of social interaction and housing type among the elderly, i.e. living in elderly care, or in a single-family house. We specifically analyze social engagement, which is a measure of an individual’s engagement with others, and investment in society. Survey respondents are asked a number of questions relating to activities during the last year, such as having attended a party, religious gathering or visited the cinema or theater. If someone has attended less than two types of activities, they are defined as having a low-level of social engagement.

Social networks, social interactions, and participation in organizations are established to impact overall health (Hamrin, 2022; Wolf and Bruhn, 1993; Rogers, 1996), and there is theoretical reason to believe that housing and neighborhood characteristics have a significant effect on how individuals engage with others. Social networks provide social support, identity, and perception of control (Cohen and Syme, 1985; Brown and Harris, 1978). Surroundings matter in this context, and previous research establishes the importance of neighborhood on individual social capital and overall well-being (Cattell, 2001; Evans, 2003). Several studies note the importance of social support, examples include finding that individuals in high-rise buildings tend to experience alienation to a greater extent (Amick and Kviz, 1974), something that has also been established for elderly residents in high-rises who report lower levels of social interaction compared to those living in lower multi-family buildings (Husaini et al., 1991).

This paper specifically adds understanding to the mechanisms in which housing impacts social engagement and mental health, something that is still under-researched (Bonnefoy 2007; Evans et al., 2003). We also add understanding to the health of the elderly, who comprise an increasingly large proportion of populations across the developed world (Kulander and Wilhelmsson, 2022). This understanding is especially important given the fiscal burden associated with dedicated housing for the elderly, which has resulted in governments evaluating policies in terms of encouraging the elderly to live in their own homes with added support, versus elderly homes (Coleman, 1995). In Sweden, public policies for elderly care are in large decided at the municipal level, and there is considerable variation in the proportion of individuals above the age of 80 living in elderly homes – ranging from 3.7% to 21.3%. This variation allows us to analyze the relationship between housing and social engagement.

The impact of housing on both mental and physical health, and especially social connections with others, is especially important for the elderly who are more dependent on their home-environment (Bonnefoy, 2007). The elderly have smaller social networks (Cornwell et al., 2018), and are at a greater risk of loneliness (Taylor et al., 2018). The elderly are also less likely to travel on a daily basis compared to younger individuals that have access to social interactions at work. Interactions with local communities and neighborhood amenities are also more important for the elderly (Hamrin, 2022), compared to younger individuals who are more likely live in larger households e.g. with children and or a spouse while elderly will be more likely to live alone. Similarly, younger individuals will have more social engagements (e.g. religious organizations, school, or sports activities) outside of their immediate surroundings, while the elderly are less mobile and more dependent on community for social interactions.
We hypothesize that housing types can be viewed upon as on a continuum of proximity to others, with suburban single-family homes being on one end, and multi-family elderly homes with organized activities at the other. Thus, among the elderly, it is to be expected that social engagement increases with proximity to others, proximity to gatherings and activities, and other amenities.

Overall, even as prior research tells us that geographical context matters in relation to mental health, studies often lack sufficient control for confounding factors (e.g. wealthier individuals tend to live differently than lower-income individuals, while also being healthier) (Evans et al., 2003).

Methodologically, this study contributes through the analyzed outcome measure, as health-related outcomes are often self-assessed, and respondents are notably bad at reliably determining the status of their own health. The measure of social engagement analyzed in this paper has the benefit of being based on answers on active activities that someone has taken part in over the last year, it is not based on any self-assessment of social interactions or engagement.

The remainder of this paper is structured as follows: section 2 provides a brief summary of prior research, followed by section 3 that describes the data and methodology. Section 4 covers the results and section 5 concludes.

2. Literature Review

At the most basic level, a home provides refuge from the outside world, a sense of identity and attachment—so any characteristic of a home that limits these factors will negatively affect mental well-being (Bonnefoy, 2007). Below, a selection of prior research that has aimed to identify the how housing relates to well-being is summarized and categorized in one of two broad categories: research on housing and health, and research on housing among the elderly.

Research on Housing and Health

The relationship between housing and physical health has received substantial attention from researchers (Bonnefoy et al., 2003; Fuller-Thompson et al., 2000, Thompson et al., 2001; Mackenbach and Howden-Chapman, 2002; Evans, 2003; Shaw 2004). The most direct type of impact of housing on health is that of reduced CO2 emissions associated with higher quality housing. Shindell et al. (2018) analyzed this effect on a localized level and estimated that local benefits associated with less emissions are upwards of 200 million fewer premature deaths worldwide, during the next 40 years.

Urge-Vorsatz et al. (2009) makes the case that there are two primary types of impact from improved building quality; 1) reduced CO2 emissions, and 2) ancillary benefits such as an impact on health and well-being. In terms of the latter, a number of studies have found a positive relationship between indoor air quality and health outcomes (Jones, 1999; Sundell, 2004).

Such ancillary health impacts of building quality can be broken down further, in terms of different types of impact such as physical health, mental health or social engagement. Similarly, research can aim to create a better understanding of the attributes of housing that have an impact (building quality, suitability for the household or neighborhood amenities, among other housing attributes).

Community aspects of housing are likely to be important for the elderly, and in relation to how housing impacts social engagement. Bonnefoy (2007) notes that community, social cohesion, education, and ethnic composition impacts inhabitants’ ability to form connections with others. Neighborhood quality can impact these factors, through the provision of public places and facilities (Pemberton et al., 2016; Stafford and Marmot, 2003; Basolo and Strong, 2002; Cattell, 2001). Living in socially deprived neighborhoods negatively impacts physical and mental health. The effect was most noted for low-income individuals, who are more dependent on the collective resources of the neighborhood (Stafford and Marmot, 2003). Similarly, neighborhood quality impacts individual satisfaction with one's home (Basolo and Strong, 2002). Cattell (2001) analyzes the role of social capital in relation to neighborhood through interviews in two U.K.
neighborhoods. The author found that neighborhood characteristics influence network patterns and social capital, and that participation in local organizations were found to be beneficial. However, as neighborhoods are increasingly heterogenous, local efforts to bridge gaps are necessary.

Leventhal and Brooks-Gunn (2003) also explored the relationship between neighborhood characteristics and mental health, through a quantitative analysis of families in impoverished neighborhoods across the U.S. The authors find a positive impact on mental well-being among families moving from low-income neighborhoods to more affluent areas.

Evans et al. (2003) conducted an extensive review of research on the relationship between housing and mental health across a category of impact that have been analyzed by prior research; the type of dwelling (apartment and house), floor level, and housing quality. In relation to housing type, results are mixed, a few studies note worse mental health among apartment dwellers compared to those living in houses, but as noted by the authors, many research papers lack controls for confounding factors.

Singh et al. (2015) also reviewed prior literature on housing disadvantage and mental health, concluding that housing disadvantage is associated with subsequent mental health challenges. This tells us that the effects of inadequate housing have longer-term consequences.

What constitutes good housing will be vary across individuals, and it is likely that what is deemed good housing for a young family is not necessarily good for the elderly. Thus, housing needs to be analyzed from the perspective of household characteristics such as income, size, and age(s).

Mallett et al. (2011) found that that living in housing deemed precarious i.e., either unaffordable (costly in relation to income), unsuitable (in terms of size, location, or condition) or insecure (insecure tenure form and potential for forced moving) had negative effects on mental well-being. In Australia, half of those over the age of 64 were deemed to live in precarious housing, and negative effects were found both in terms of physical and mental health. The relationship was also found to increase with the level of precariousness, so that worse housing conditions resulted in lower levels of health. Even as the authors identify a relationship between health and all aspects of precariousness, the finding that individuals with the lowest levels of mental health are twice as likely to live in precarious housing compared to individuals with good mental health is most relevant to this study.

A substantial literature has found that unaffordable housing either through rent, mortgages or other expenses negatively impacts mental health (Holding et al., 2020; Pollack et al., 2010; Bentley et al., 2012; Kavanaugh et al., 2016).

A study that relates to levels of social engagement is provided by Glaeser and Sacerdote (2000) who analyzed the relationship between social connection and housing. Notably, the authors find that residents of large apartments are more socially connected with their neighbors than residents of single-family homes. This finding supports indicates that living in elderly care or housing with closer distances to neighbors will be beneficial for the elderly, compared to living in single-family homes.

Research on Housing and the Elderly

Andersson et al. (2019) asked individuals above the age of 55, about their housing preferences, finding that preferences in terms of both housing characteristics and location (living in a peripheral area or in a city center) are age related. Younger households showed a greater preference for access to nature, a garden while the elderly prioritized functional design and accessibility (e.g. elevators). Similarly, Abramson and Andersson (2015) quantified the effect of the elderly moving closer to city centers as they age (closer to amenities), finding a significant relationship between age and distance to city center. Socio-economic status also plays a role, in terms of what kind of housing the elderly move to in terms of renting versus owning. Abramson and Andersson (2016) further analyzed the preferences among the elderly, concluding that elderly individuals often prefer to age in place, meaning that moving is typically triggered by shifting needs caused by old age.
In relation to mental health, Breyesse et al. (2015) found a positive relationship between mental well-being and building quality, when analyzing health outcomes among elderly in Minnesota. The authors found a positive and statistically significant impact on mental health, although no significant impact on physical health.

Loneliness is closely related to both ageing and housing. Yeh et al. (2004) analyzed the impact of living alone among the elderly in Taiwan, finding that living alone is related to decreased levels perceived social support and feeling lonely. Taylor et al. (2018) provides a short review of the literature relating to loneliness among the elderly, noting mixed results even as most studies find that loneliness increases with age.

A study similar to this one is provided by Nyqvist et al. (2013), who compared the prevalence of loneliness among the elderly that either live at home or in an institutional setting. The study was set in northern Sweden and in Finland and found that 55% percent of those living in institutional settings experience loneliness, while 45% of those living in their own homes do so. It was found that loneliness was closely related to living alone, depression, and region (northern Sweden). Similarly, Prieto-Flores et al. (2011) found that elderly living in institutionalized living in Spain where lonelier than those living at home.

An additional study in the Swedish context, by Hamrin et al. (2022) analyzes the impact of activities in the Church of Sweden on the overall well-being of churchgoers above the age of 65. The results from the interviews show that events organized by the Church substantially decreases feelings of isolation and loneliness among the elderly and play a key social function.

Anxiety is another aspect of mental health that is influenced by housing. Kang et al. (2016) analyzed elderly in Korea in a two-year longitudinal study and found that living in rented housing (in contrast to owned) was associated with higher levels of anxiety. Among other risk factors associated with anxiety was low levels of physical activity.

Last, in terms of policy, there is considerable variation across countries, ranging from extensive support for the elderly in their existing homes to institutional long-term care. Riedel et al. (2016) conducts a review across the European Union, finding that policies are in large context dependent.

3. Data and Methodology

Since 2016, The Public Health Agency of Sweden conducts a national health survey every other year, by sending out a questionnaire to a randomly selected sample of adults. However, during the Covid-19 pandemic, an exemption to the routine of conducting the survey bi-annually was made and a survey was conducted in 2021, despite one also taking place in 2020.

In the national health survey, a large number of questions are asked to respondents, regarding their overall physical and psychological well-being. Notably, it asks respondents about their level of social engagement and participation, which functions as a measure of loneliness/isolation and societal engagement. Social engagement an established risk-factor for both health and mortality (The Swedish Public Health Agency, 2023). There is however limited knowledge about the mechanisms behind the relationships between social engagement and health outcomes.

A challenge in this field of research is the accuracy of self-reported measures of health, that are often inaccurate. Examples of inaccuracy range from weight estimates (Stunkard and Albaum, 1981), health related behaviors (Newell et al., 1999), healthcare utilization (Short et al., 2009), and frequency of usage of mental health services (Rhodes et al., 2002).

The way social engagement is defined in the Swedish national health survey has the benefit of being an objective, in contrast to self-assessed measures of well-being. Specifically, a survey respondent is categorized as having either low social engagement, or not. The former is the case if they respond yes to having participated in less than two out of a list of fifteen activities during the preceding 12 months.
Specifically, each respondent is asked if they have engaged in any of the following activities:

1. A study circle or course at your workplace or on your free time
2. A union meeting or other association meeting
3. Gone to the theater or cinema
4. Visited an art exhibition or museum
5. Participated in a religious gathering
6. Watched a sports event
7. Written in a blog or letter to the editor in a newspaper or magazine
8. Participated in a demonstration of any kind
9. Attended a public event, e.g., dance event, market visit, or similar
10. Participated in a larger family gathering
11. Attended a private party
12. Followed social networking sites on the internet
13. Written posts, participated in discussions, or played with others on the internet

Beyond additional reliability compared to self-assessed health measures, a benefit is that the variable is binary, a respondent is either noted to have a low-level of social engagement, or not. This simplifies interpretability and simplifies identification of significant relationships between housing and social engagement.

As publicly available data from The Public Health Agency of Sweden does not break down survey results both by age-categories and municipality, we ordered this data. The oldest age-bracket recorded by The Public Health Agency are 80- to 84-year-old respondents, which constitute our analyzed group.

As the sample size was very small in some municipalities, when breaking down the responses by age, we only received data for municipalities with more than 30 respondents as it was deemed that there was a risk for identification when the number of respondents was lower. Consequently, we received results for 132 municipalities, out of 290 municipalities in Sweden. The responses are based on surveys conducted in 2020, 2021 and 2022. Due to missing values for income levels and the fraction of the population living in special living, the final sample consists of data for 130 municipalities.

It is important to note that the survey period of 2020 to 2023 covers the Covid-19 pandemic, during which social interactions—and therefore also social engagement—declined. Thus, it is reasonable to expect that the overall level of social engagement is depressed due to the pandemic. This does not prohibit our analysis, under the condition that the pandemic impact was similar across Sweden (after we control for type of municipality in terms of rural vs urban, and income).

As seen in Table 1, the number of respondents in relation to the health survey on social engagement ranges between 31 and 1241 with an average of 75.7. In terms of percentages of individuals between 80 and 84 who are classified as having low levels of social engagement, the average is 62%, ranging from a smallest value of 36.8% to a high of 90.6%. The high average statistic indicates that low social engagement among the elderly is a concerning issue in Sweden.

The data is merged with official statistics from Statistics Sweden on population, income-levels, and housing statistics for the year 2022. This tells us the average income-level for individuals above the age of 80 and the percentages of individuals above 80 years of age living in apartments, single-family homes, and special housing which predominantly entails retirement homes (even as the category encompasses other types of homes, such as homes for disabled, retirement homes are the predominant category, especially within the category of individuals above 80 years of age).

The average value for the municipalities is that 8.7% of all inhabitants above the age of 80 live in special housing. There is however a substantial variation across municipalities as illustrate d by the range between the smallest value of 3.7% and the highest of 21.3%.
Last, using official definitions, if a municipality is defined as urban, semi-urban or rural. An urban municipality is defined as municipalities where more than 80% of the population lives in an urban setting, and the total population exceeds 500,000 people when including adjacent municipalities. Semi-urban municipalities are those where more than 50% of the population lives in an urban setting. Rural municipalities are the remainder, where more than 50% of the population lives in a rural setting (Swedish Association of Local Authorities and Regions, 2021; The Swedish Growth Agency, 2021)

In Sweden as a whole, there are 29 urban municipalities, 131 semi-urban municipalities, and 130 rural municipalities. The sample of 130 municipalities is fairly representative, as it includes 9 urban municipalities, 72 semi-urban municipalities, and 49 rural municipalities. The average population in the sample is 54,603, ranging between 2,372 and 984,748.

Table 1: Descriptive statistics for the sample of municipalities included in the econometric analysis. Income, population, and housing statistics for the year 2022. Municipality categorization based on 2021 definitions and social engagement based on survey data from 2020, 2021 and 2022.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Low Social Engagement (80 to 84 Years of Age)</td>
<td>62.01</td>
<td>12.02319</td>
<td>36.8</td>
<td>90.6</td>
</tr>
<tr>
<td>No. of Respondents</td>
<td>75.69231</td>
<td>113.9875</td>
<td>31</td>
<td>1241</td>
</tr>
<tr>
<td>Population</td>
<td>54,603.12</td>
<td>10,809.36</td>
<td>2,372</td>
<td>984,748</td>
</tr>
<tr>
<td>% of 80+ of Age Living in Special Housing</td>
<td>.0866531</td>
<td>.0271871</td>
<td>.0373444</td>
<td>.2130435</td>
</tr>
<tr>
<td>% of 80+ of Age Living in Single-Family Houses</td>
<td>.4694279</td>
<td>.1261027</td>
<td>.1099704</td>
<td>.7800338</td>
</tr>
<tr>
<td>Urban Municipality</td>
<td>.0692308</td>
<td>.2548282</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Semi-Urban Municipality</td>
<td>.5538462</td>
<td>.4990151</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Rural Municipality</td>
<td>.3769231</td>
<td>.4864901</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Median Income (Population 80+ of Age), in thousands of Swedish Crowns</td>
<td>196,073</td>
<td>15.134</td>
<td>171.6</td>
<td>274</td>
</tr>
</tbody>
</table>

4. Results

To identify the causal relationship between the fraction of elderly individuals (above 80 years of age) living in special housing and the fraction of elderly individuals with low levels of social engagement, the regression model (1) below:

\[ Y = X\beta + \varepsilon \]  

Where \( Y \) denotes an \( n \times 1 \) dependent variable vector of the fraction of elderly individuals with low-levels of social engagement, \( \beta \) is a \( k \times 1 \) vector of unknown parameters associated with the explanatory variables, and \( X \) is \( n \times k \) matrix of explanatory variables. The \( n \times 1 \) vector \( \varepsilon \) consists of regression disturbances.

Beyond the fraction of elderly living in special housing (which predominantly indicates elderly homes), the list of explanatory variables includes the median income for households above the age of 80, as income is likely correlated with social engagement (we hypothesize an inverse relationship, that higher income levels are associated with more social interactions and higher levels of social engagement). We also control for
the population density of the municipality. However, the relationship between population density and social engagement is not entirely intuitive as more dense areas are likely to have access to cultural and social events such as movie theaters and political gatherings which would indicate that levels of social engagement should be higher in urban areas. Contradicting forces are provided by the fact that levels of social trust tend to be lower in urban environments and that inhabitants in suburban and rural areas are more likely to know their neighbors and feel invested in their communities. Levels of religious engagement are also higher outside of urban areas. Thus, even as the relationship between population density and social engagement among the elderly is theoretically unclear, it is important to control for variation between urban, semi-urban, and rural areas. We include binary variables indicating if a municipality is urban, or semi-urban, so that rural becomes the default for purposes of interpretation.

Table 2 shows the econometric results. Model 1 has an explanatory power of 0.1417. This is fairly low, but to be expected given the level of analysis (municipal, rather than individual). As expected, we find that income is negatively associated with the fraction of elderly that have low levels of social engagement, and statistically significant at the 1% level. The variable of primary interest, the fraction of elderly who live in special housing, also shows the expected sign: a higher fraction of elderly in special housing is associated with a lower fraction of elderly with low social engagement. The variable is significant at the 5% level (P = 0.041).

In model 2, we control for the fraction of elderly that live in single-family houses. This increases the explanatory power to 0.1799. We also find that variable is associated with a higher fraction of elderly with low levels of social engagement and is statistically significant at the 10% level (although just shy of the 5% level with P=0.054). The estimated relationship between the fraction of elderly in single-family houses and the fraction of elderly with low social engagement is consistent with the hypothesis that living closer to one’s neighbors, and in an elderly home, is associated with higher levels of social engagement while living farther away from one’s neighbors such as in a single-family house, is associated with lower levels of social engagement.

The fraction of elderly living in special housing is still associated with a lower fraction of elderly with low levels of social engagement but is only significant at the 10% level in model 2 (P=0.075).

Overall, both models support the hypothesized relationship; that social engagement among the elderly increases in settings where such individuals live in elderly homes. Consistent with this pattern, social engagement declines in settings where the elderly live in single-family houses. Thus, the results show a relationship between density and likely engagement with neighbors (which is less in single-family houses compared to apartments), and the services offered in elderly homes which also provide a setting for social engagement (e.g. dining services, activities, or just engagement with service staff).

It is important to keep in mind that the variable indicating elderly home (defined as all types of “special housing”) includes elderly homes with varying levels of service and admissions criteria. Thus, the interpretation of the variable assumes that variation in health and needs of elderly (which is likely to be correlated with social engagement) is captured by the model. As we control for both income and population density, this assumption is motivated. It is also worth noting that health and socio-economic outcomes do not vary considerably in Sweden across municipalities (see table 1, and the fairly small standard deviation of 15 thousand Swedish Crowns around the median income of 196 thousand Swedish Crowns).
Table 2: Regression results. Dependent variable is the fraction of 80- to 84-year-olds with low levels of social engagement. Coefficient estimates with T-values in parenthesis.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Income, Residents 80+</td>
<td>-.2565331</td>
<td>-.2860993</td>
</tr>
<tr>
<td></td>
<td>(-3.29)</td>
<td>(-3.36)</td>
</tr>
<tr>
<td>% Special Housing, Residents 80+</td>
<td>-84.70264</td>
<td>-73.55771</td>
</tr>
<tr>
<td></td>
<td>(-2.06)</td>
<td>(-1.80)</td>
</tr>
<tr>
<td>Urban Municipality</td>
<td>-2.197645</td>
<td>4.471342</td>
</tr>
<tr>
<td></td>
<td>(-0.50)</td>
<td>(0.85)</td>
</tr>
<tr>
<td>Semi-Urban Municipality</td>
<td>.7611517</td>
<td>4.931918</td>
</tr>
<tr>
<td></td>
<td>(0.32)</td>
<td>(1.46)</td>
</tr>
<tr>
<td>% Single-Family Houses, Residents 80+</td>
<td>N/A</td>
<td>25.01164</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>(2.40)</td>
</tr>
<tr>
<td>R²</td>
<td>0.1417</td>
<td>0.1799</td>
</tr>
<tr>
<td>No. of Obs.</td>
<td>130</td>
<td>130</td>
</tr>
</tbody>
</table>

5. Conclusion

The results of this study show, that on the municipal level, overall social engagement among the elderly is positively associated with the fraction of elderly living in some sort of care facility, and that there is a negative relationship between social engagement and living in a single-family house. We know of no other study that analyzes the measure of social engagement—a measure of interactions with others, and engagement in society at large—in relation to housing among the elderly.

The results support the notion that proximity to others and amenities that promote social interactions are important to promote social engagement among the elderly—something that is established to be associated with overall physical and mental health. The results also support that housing can be viewed upon as on a continuum of proximity to others, with single-family houses on one end of the spectrum and multi-family apartments with added amenities (such as elderly care) on the other end.

A drawback of the study is that our measure of elderly care encompasses several types of tenure forms and institutions—spanning multi-family buildings with some additional service and activities to care facilities for those that are very ill—as overall health impacts social interactions with others, care facilities are a measure of bad health rather than a limiting factor on social interaction by themselves. Prior research relating to housing and health outcomes has established that controlling for confounding factors is challenging. The research design of this study should efficiently control for these effects, as variation in the fraction of elderly living in some form of elderly care facility are consequences of local policies rather than variations in health.

Our results contrast to previous research that has found higher levels of loneliness among elderly living in institutionalized homes compared to living at home. As controls for confounding factors such as health and income are a key challenge in this field of research, it is likely that in prior studies, bad health was heavily associated with living in elderly care. Similarly, there is also a broad spectrum of meaning to what elderly care entails in terms of levels of care. For future research, better defined housing types, and improved research design to control for confounding factors would be beneficial.

From a policy perspective, the results support that public agencies should focus on social engagement among the elderly and specifically those who live alone and in single-family homes as such housing is associated with a higher prevalence of low social engagement.
6. References


