Living alone in mid-life – socioeconomic patterns and pathways into living alone in Finland, 1970–2018 Introduction

Despite the increasing diversity of living arrangements, most middle-aged women and men – those in their forties and fifties – live with their family members: married or cohabiting partner and/or children. Those who live alone, either due to union dissolution or continuous solo-living, tend to be a minority. Even though living alone in mid-life has become more common across Europe, particularly in the Northern countries (Chandler et al., 2004; Fokkema & Liefbroer, 2008; Jamieson & Simpson, 2013; Demey et al., 2013; Cámara et al., 2021), living alone at an age that usually involves sharing a household with a partner and having a family life may still be considered non-normative (Thomson et al., 2013). Although some authors like Klinenberg (2012), highlight the attractiveness of solo-living in contemporary society, living alone is associated with greater risks for various financial and social problems (Demey et al., 2013). Given that those living alone have no one to share living costs with, and may receive less social support, they are likely to be more vulnerable when facing unemployment, health problems or other financial and social distress. Accordingly, earlier studies show that living alone is associated with poorer mental health (Joutsenniemi et al., 2006), more risky health behaviours (Joutsenniemi et al., 2007), higher use of hospital care (Hu et al., 2019), worse survival following myocardial infarction (Kilpi et al., 2015) as well as excess suicides (Shaw et al., 2021) and overall mortality (Koskinen et al., 2007; Zueras et al., 2020; Knop et al., 2023) compared with those living with a partner.

Low socioeconomic position has been associated with living alone in contemporary high income societies (Demey et al., 2013; Sandström & Karlsson, 2019; Liu et al., 2020). In a European cross-country comparison living alone was more commong among those with low education especially among men in the most gender equal countries, whereas in the least gender equal countries living alone was more common among the higher educated, especially for women (Sandström & Karlsson, 2019). Indeed, changes in the prevalence and patterns of living alone in mid-life are likely to be gendered. For the UK, the prevalence of living alone has increased more rapidly among men (Chandler et al., 2004), and men aged 45-54 years who lived alone had a slightly lower level of education and were more likely to be nonemployed than men of similar age who lived with a partner (Demey et al., 2013). Solo-living women were also found to be less educated and more often non-employed, but on the other hand, more likely to be full-time employed than those who lived with a partner (Demey et al., 2013). European studies indicate that men living alone in mid-life are often never married, while women in most cases have been married, but divorced, separated or widowed at some point (Demey et al., 2013; Jamieson et al., 2009). For most countries there is currently little data on the partnership histories of middle-aged people living alone, but the studies of Demey et al. (2013) and Jamieson et al. (2009) suggest that roughly half of solo-living never married women and men had been in a cohabiting union.

Moreover, not much is known about how the marital and partnership histories of those who live alone in mid-life differ between socioeconomic groups. According to Demey et al. (2013), socioeconomic differences in pathways into living alone differ for men and women: never partnered 45–49-year-old men who lived alone were more likely to have no educational qualifications and to be non-employed than those who had ever partnered. Never partnered women, on the other hand, were more highly educated than ever partnered women. A Finnish study has also documented notable differences by educational attainment in family trajectories between ages 18–39, suggesting that solo-living in mid-life is likely to be socially patterned (Jalovaara & Fasang, 2015).

Context and aims of the study

This study examines living alone among middle-aged Finnish men and women. We aim to find out whether and how the association between socioeconomic position and living alone in mid-life has changed during nearly five decades since 1970, and whether the associations differ between women and men. Living alone in mid-life is more common in Finland and other Nordic countries than elsewhere in Europe (Iacovou & Skew, 2011; Jamieson et al., 2009). One reason for this difference is likely to be the Nordic social security system which enables individuals to live on their own even at relatively low levels of income. We focus on mid-life as much of previous research has concentrated on living alone among

the elderly, or young people (Demey et al., 2013; Esteve et al., 2020). We also examine whether the marital status of women and men living alone at ages 45–49 years has changed between 1970 and 2018. Finally, we assess the pathways into living alone in more detail among the youngest cohorts in our study who reached age 49 in 2016–2018. We aim to assess typical living arrangement trajectories into living alone in mid-life – how common it is to end up living alone in mid-life through continuous solo-living, union dissolution (with or without children), or other living arrangements – and whether these pathways into living alone differ according to midlife socioeconomic position?

Data and methods

We compare the educational attainment and income of those living alone and those living with others among women and men aged 45–49 years at the end of years 1970, 1980, 1990, 2000, 2010 and 2018, i.e. cohorts born in early 1920s up to early 1970s. We focus on people in their late-forties because that age usually involves being partnered and/or raising children, and both men and women are economically active, which facilitates the definition of socioeconomic attributes for both sexes. Pathways into living alone based on living arrangements between ages 20 and 49 were analyzed among birth cohorts who reached age 49 in 2016–2018. Our analyses use individual-level total population data based on census and other administrative registers maintained by Statistics Finland. All the analyses were restricted to the native-born non-institutionalised population, except for the analyses of pathways into living alone, where we excluded individuals with gaps in the data due to emigration during the follow-up years between ages 20 and 49 (n=7775, 4%), but included individuals who had lived outside households at some point prior to the end of follow-up.

Living alone and other living arrangements

Living arrangements are based on individuals' permanent place of residence. Using information on household size, household composition, and marital status, we formed the following categories of living arrangements: living alone, cohabiting with/without children, married with/without children, single parent, parental home, and other. In the analyses of pathways into living alone, we combined the married and cohabiting into childless couples and couples with children. It is important to note that we focus on living arrangements; we do not take into account non-resident partners or children. In the analyses, those living alone are compared to those living with others, including people living with married or cohabiting partners, children, or in other shared living arrangements. The marital status of those living alone was classified into married, divorced, widowed, and never married.

Socioeconomic position

Socioeconomic position was measured by education and annual personal income. Educational attainment was based on the highest completed degree or certificate and classified into three categories: basic, upper secondary, and tertiary. Annual personal income, based on the Tax Administration's database, consists of wages and salaries, entrepreneurial income, and pensions, unemployment benefits, and some of the other social security benefits. Annual income was converted into 2018 Euros using the Consumer Price Index of Statistics Finland. For the analyses of pathways into living alone, income at age 49 was divided into quartiles with the middle 50% combined.

Methods

We used descriptive methods (means, percentage distributions) to examine the associations between socioeconomic position and living alone in 1970–2018 and the marital status of those living alone in 1970–2018. Box-and-whiskers plots of income were employed to examine the differences in income distributions among those living alone and those living with others. Pathways into living alone were visualized with relative frequency sequence (RFS) plots (Fasang & Liao, 2014) that illustrate the typical pathways into living alone in different income groups. The method of plotting representative medoid sequences instead of individual sequences helps to solve the problem of "overplotting" that arises in visualizing large sequence data sets such as ours that is based on total population data with thousands of

observations in each group. Each income group was plotted separately. The sequence analyses use R package TraMineR (version 2.2-1) and seqplot.rf function in TraMineRextra (version 0.6.0).

Preliminary results

Changes in living arrangements in mid-life

Living alone increased among both women and men, but not at the same pace. In 1970 around 7% of women and only 5% of men lived alone (Table 1). In 1980 and 1990, solo-living was almost equally common for both sexes: around 8% in 1980 and 11% in 1990. However, between 1990 and 2010 the proportion of men living alone doubled to 22%, whereas the respective increase was only to 14% among women. Living alone increased modestly among both sexes in 2010–2018. Whether married or cohabiting, the proportion living with a partner and children has clearly decreased, although it is still by far the most common mid-life living arrangement (about 52% in 2018) among both sexes. Being a single parent has become more common among both sexes (with a notch in 1990 for women), but is considerably more prevalent among women. Around 4% of middle-aged men lived with their own parents, but the proportion of living with others has become marginalized among both sexes.

Socioeconomic position of people living alone and living with others in mid-life

The average level of education has increased markedly among both women and men, whether living alone or with others (Figure 1). Among women, the association between educational attainment and living alone reversed between 1970 and 2018: in 1970, 1980 and 1990 those who lived alone were on average more highly educated than those who lived with others, in 2000 the educational distributions were fairly similar, and in 2010 and 2018 those who lived with others were more highly educated than those who lived alone. Among men, those who lived with others were at all times more highly educated than those who lived alone. In 2018, 19% of men and 11% of women living alone had only basic education in contrast to 12% and 6% among those living with others.

Similar associations emerge in terms of personal income (results not shown). Among women, median income was higher among those who lived alone in 1970-1990, while in 2010-2018 those who lived alone had lower median income. Among men, those living alone had consistently lower median income. The income distributions were also mostly wider among women living alone than among those living with others whereas for men the relation is reversed. Moreover, widening of the income distributions across time suggests increasing heterogeneity among those living alone in mid-life.

Pathways into living alone in mid-life

Among both women and men, the living arrangement pathways differed between the highest and lowest earning individuals who were living alone at age 49. Among solo-living women, leaving the parental home and living with a partner and/or children was more common at earlier ages among those in the lowest income quartile in mid-life. In contrast, the proportion living alone increased somewhat more rapidly in the highest income quartile and living as a single parent was also less common. Among men, the differences were even more apparent between the highest and lowest income quartiles. The proportion living alone increased more rapidly in the lowest income quartile while living with a partner and/or children was more common particularly at 30s and early 40s among solo-living middle-aged men with the highest income.

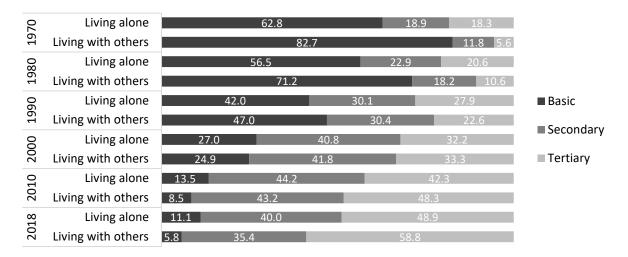
On average, solo-living women with higher socioeconomic position in mid-life spent a longer time of their adulthood living alone (Figure 2). Overall, for women, never living with a partner was a more common pathway to living alone in mid-life among those with higher socioeconomic position, whether measured by education that is usually attained in early adulthood or personal income in mid-life. Among solo-living men in mid-life, never living with a partner was more common in the highest education group, but, in contrast to women, more common among those with lowest income (results not shown). Similarly, on average, time spent living alone was highest among solo-living men with the lowest income in mid-life.

Table 1. Living arrangements (%) of 45–49-year-old women and men in Finland, 1970–2018. A) Women

	1970	1980	1990	2000	2010	2018
Living alone	6.9	8.3	11.0	13.4	14.2	14.6
Married, no children	12.7	13.2	17.5	15.6	11.9	11.4
Cohabiting, no children	-	-	3.6	6.1	6.3	6.4
Married, with children	61.7	60.5	52.5	45.9	43.0	42.1
Cohabiting, with children	0.2	0.4	2.4	5.0	8.5	9.3
Single parent	10.3	11.7	9.8	11.5	14.0	14.1
Parental home	2.6	1.7	1.2	1.1	1.0	1.0
Other	5.5	4.3	1.9	1.6	1.2	1.0
Total	100	100	100	100	100	100
N	146 472	130 952	158 180	191 914	174 949	136 394
B) Men						
	1970	1980	1990	2000	2010	2018
Living alone	4.7	8.0	11.4	17.5	21.6	23.1
Married, no children	11.4	10.3	13.0	10.9	9.1	9.1
Cohabiting, no children	-	-	3.7	5.8	6.2	6.2
Married, with children	71.2	67.7	58.7	48.2	43.8	42.6
Cohabiting, with children	0.2	0.5	3.2	6.0	9.5	10.0
Single parent	1.6	2.1	2.3	2.9	3.2	3.5
Parental home	3.6	3.9	3.8	4.9	4.2	3.6
Other	7.3	7.5	4.1	3.7	2.5	1.9
Total	100	100	100	100	100	100
N	128 084	128 685	161 158	193 933	177 225	139 909

Figure 1. Educational attainment among 45–49-year-old women (A) and men (B) living alone and living with others, 1970–2018.

A) Women



B) Men

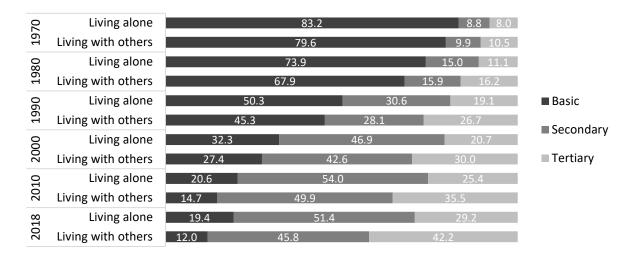
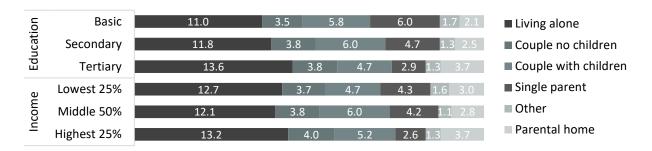


Figure 2. Mean time (years) in each living arrangement between ages 20–49 by educational attainment and personal income, women and men living alone at age 49 in 2016–2018.

A) Women



B) Men



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