INTRODUCTION

Informal caregiving is arguably the most important component of social care in the United Kingdom (UK). There are currently seven million informal caregivers in the UK (approximately 10% of the population) and this is projected to increase by 3.4 million by 2030 (Carers Trust, 2018). The care provided by informal caregivers has been valued at £132 billion per year (Buckner & Yeandle, 2015). This figure is set to further increase due to population ageing, after years of increasing life expectancy, and slower increases in healthy life expectancy, partly due to survivorship from medical interventions leading to a higher proportion of the population living with a limiting longstanding illness (Raleigh, 2018). Alongside this increasing demand, care support provided by local authorities in England and Scotland has decreased between 2010 and 2014 (Buckner & Yeandle, 2015).

There has been a dramatic increase in care provision amongst those aged 50-64. Parents or parents-in-law (PiL) are by far the most common care recipients for caregivers below the age of 60, with about of half of caregivers under the age of 60 providing care to a parent and roughly another 10% providing care to a PiL (Vlachantoni, 2010; Yeandle & Buckner, 2017). Of course, people in this age group are also likely to be active in the labour market and so taking up caregiving responsibilities may conflict with employment responsibilities and have implications for participation, pay and progression in the workplace (Van Houtven, Coe & Skira, 2013; Vlachantoni, 2010). Gendered life courses, with women more likely than men to have spent periods out of employment and/or in part-time employment (author's own, 2015) with knock-on effects on pay and progression (Costa Dias, Joyce & Parodi, 2018), have resulted in working age women being more likely than working age men to take up care provision for parents or PILs, and to spend more hours providing care amongst those who do take up care provision (Vlanchantoni, 2010; Yeandle & Buckner, 2017). Given the UK's reliance on such forms of informal care provision and projected increases in the proportion of older people in need of care, ensuring an adequate supply of adult child caregivers is a pressing policy issue. Women's stronger life course attachment to paid employment and increasingly diverse and fragmented partnership life courses for both men and women (author's own, 2015) may have negative implications for the potential pool of

adult child caregivers. Indeed, Pickard (2015) has projected there will be a 160,000 shortfall in adult child caregivers in England by 2032.

Life Course Antecedents of Becoming an Adult Child Caregiver

That provision of care to someone within the household increases the likelihood that carers will leave employment is well-known (Carr et al., 2016; Evandrou & Glaser, 2003), and that providing long hours of care or daily care is particularly associated with labour market exits (Ciccarelli & Van Soest, 2018; Gomez-Leon, Evandrou, Falkingham & Vlachantoni, 2017; Kelle, 2018; Walsh & Murphy, 2018), including through retirement (Jacobs, Van Houtven, Laporte & Coyte, 2017) or a reductions in hours (Ciccarelli & Van Soest, 2018). The type of care provided also matters, with the provision of personal care more strongly associated with exits from employment than other types of care provision, particularly for women (Gomez-Leon et al., 2017). This may be due to greater care demands involved in personal care, but also because personal care tasks have been shown to be more 'time-bound' and less shiftable than other forms of care (Hassink & Van den Berg, 2011; Van Houtven et al., 2013). Some studies suggest that women are more likely than men to reduce work hours or exit labour market in response to caregiving (Carr et al., 2016; Ciccarelli & Van Soest, 2018) although others, in Australia and the UK, find that men and women are equally likely to leave employment in response to intense caregiving (Gomez-Leon et al., 2017; Nguyen & Connelly, 2014). In the US, employed women providing care have been shown to work fewer hours and received lower wages than non-caregiving female workers and the same was not true for men (Van Houtven et al., 2013). However, while we know that care responsibilities are likely to influence employment experiences, we know much less about how life course labour market attachment influences who takes up care provision for parents or PiLs when a care need arises.

Although gender differences in provision of adult care are not as great as for childcare, under the age of 70, women are more likely than men to provide care for parents (Breeze & Stafford, 2010; McMunn, Nazroo, Wahrendorf, Breeze & Zaninotto, 2009; Vlanchantoni, 2010), and amongst caregivers who are in their fifties, women spend more hours providing care than men (Vlanchantoni, 2010; Yeandle & Buckner, 2017). Gender expectations that

women will take up parental care responsibilities are part of a wider picture of gender inequality in provision of care activities across the life course with women remaining much more likely than men to reduce working hours or take breaks from employment upon becoming a parent (Author's own. 2015; Schober, 2003). It may be that spending long periods of the life course working reduced hours, or not in paid employment, explains some of the gender difference in the likelihood of taking up care of a parent or PiL. Occupational downgrading due to time out of paid work, or lack of career progression due to long periods of part-time employment, may put women at a disadvantage when negotiating who will provide care.

In addition to employment life courses, family life courses may influence the likelihood of taking up care of a parent or PiL when the need arises. For example, life courses characterised by longer periods of being single, through later transitions to partnership and marriage, but also after partnership separation, may influence the supply of adult children with capacity to provide care for parents or PiLs. Single people may also to be less able to reduce working hours or employment participation, and elderly parents with partnered children have the possibility of receiving care from both or either of a child and a child-in-law. Thus, those in long-term partnerships in mid-life may have a stronger family orientation and be more likely to take up parental care, and are certainly more likely to have in-laws to care for. On the other hand, single adult children may be seen as being free from alternative family responsibilities, and therefore most able to care for a parent.

Many of the social changes seen in recent decades in relation to family formation and women's labour market attachment may ultimately influence the availability of adult children available to provide care. Partnership life courses are increasingly diverse, with a greater number of partners and longer periods of living alone (author's own., 2015; Sobotka & Toulemon, 2008). Marriage rates are in decline (Morgan, 2011; Office for National Statistics, 2011, 2012), although the trend towards fewer and later marriages has been partly offset by rapid increases in the prevalence of non-marital cohabitation (Coleman & Glenn, 2009; Office for National Statistics, 2012). Moreover, partnership life courses may be associated with caregiving differently for men and women. For example, gender norms may predispose families to be more likely to turn to single childless women to provide care for a

parent more readily than to single, childless men, or generate greater expectations for partnered women to provide care for parents-in-law than partnered men. Finally, women's increasing labour market attachment may result in a smaller pool of women who feel willing or able to take up intensive parental care when the need arises.

Of course, alongside adult children's own life course characteristics, there are many other factors that influence their likelihood of providing care to a parent or parent-in-law, such as their own geographical proximity to their parents or parents-in-law, as geographic proximity has been shown to play a key role in intergenerational support across cultural contexts (Heylen, Mortelmans, Hermans & Boudiny, 2012). Parents' own demographic and health and living arrangements determine their care needs as well, and the presence, proximity and of siblings and other family members will determine whether there are alternative sources of family care provision available.

This study

Given the enormous social contribution made by informal caregivers, it is useful to understand the circumstances that lead people to take up parental care in mid-life in order to better target support. A life course perspective requires consideration of the links between multiple temporal dimensions within lives, and, as has been seen with later life employment (Stafford et al., 2018), work and family life courses have implications for later life activities. While the impact of caregiving on subsequent, work, health and relationships has been explored previously (Carr et al., 2016; Ciccarelli & Van Soest, 2018; Gomez-Leon et al., 2017; Kelle, 2018; Walsh & Murphy, 2018), to our knowledge only one previous study has investigated the impact of employment on subsequent uptake of care provision. In Australia, full-time employment reduced the likelihood of taking up care responsibilities for men and women, although only for resident care (living with the care recipient) for men (Nguyen & Connelly, 2017).

This study investigates the extent to which work and family life courses from age 16 to 55 years predict subsequent care provision to a parent or PiL at age 55, and whether these associations differ for men and women or by social class. Sequence analysis is used to characterise work and partnership life courses utilising prospective life course data on the

participants of the National Child Development Study (NCDS). We ask whether work or partnership life courses predict provision of care to parents or PiLs at age 55, whether this differs for men and women or by socioeconomic circumstances.

DATA, MEASURES & METHODS

Data

Our data are from the NCDS which recruited 17 415 babies born in 1 week of 1958 (98.2% of all births that week) in Great Britain (Powers & Elliott, 2005). Data on economic, medical, developmental and social aspects of participants' lives were collected at birth and ages 7, 11, 16, 23, 33, 42, 44/45, 46, 50 and 55. The NCDS data are publicly available and ethical approval for each wave of data collection was received from a UK Multi-Centre Research Ethics Committee.

Measures

Caregiving at age 55

Information was taken from the age 55 survey on caregiving for a parent or parent-in-law (PiL). Available information included caregiving status for parent (dead/yes/no), PiL (not applicable/dead/yes/no) and either parent or PiL (not applicable/yes/no), and number of hours provided per week (banded as <5 hrs/week; 5-9.5 hrs/week; 10+hrs/week). The combined 'parent or PiL' variable is shown here as associations were very similar for provision of care to a parent PIL. Information was also available on caregiving activities which were grouped into five types: 'Transport and shopping' (included giving lifts in a car and doing shopping), 'Housework' (included meal preparation, cleaning and DIY), 'Personal care' (included just a personal care variable), 'Financial and administrative' (included providing financial support and dealing with personal affairs), and 'Other'. Results for separate caregiving activities are shown in the Appendix of Supplementary Material.

Work and partnership life courses

Work and partnership life courses were derived using sequence analysis which creates a variable that uses the whole work or partnership life course as the unit of analysis (Barban & Billari, 2012). Using annual work and partnership status from age 16 to 54 (completed retrospectively at each adult data collection sweep at ages 16, 23, 33, 42, 44/45, 46, 50 and

55), each participant's sequence is compared to all others in the dataset to measure the distinctness (or similarity) of individuals' biographical sequences (Abbott & Tsay, 2000) by calculating a set of distance measures representing the "cost" (reflecting the number of substitutions and insertions or deletions needed) of converting one to another (MacIndoe & Abbott, 2004). Participants were categorised into the following work status groups for each year: 'full-time employed', 'part-time employed', 'full-time homemaker' or 'other not employed'. For partnership status participants were categorised as: 'married', 'cohabiting' or 'not living with a partner'.

An empirical sequence analysis (in which clusters are derived comparing sequences across participants in the data set rather than comparing to a conceptual typology) was done using the Dynamic Hamming algorithm (Lesnard, 2006) to derive distance measures separately for work and partnerships, and men and women. The distance measures were imported into a cluster analysis (Ward's linkage) to determine the number of clusters/groups. The Duda/Hart cluster stopping indices were used to determine the appropriate number of clusters.

Covariates

Covariates included the highest educational qualification achieved by age 23 (no qualifications; O-level/CSE equivalent; A-level equivalent; Higher/degree) and father's social class (RGSC) at age 16. All other covariates were taken from age 55 (the wave at which caregiving was measured). These were self-rated health (excellent/very good/good/fair/poor), presence of longstanding limiting illness (no/yes), own social class using NS-SEC (managerial and professional/intermediate/routine and manual/never worked or long-term unemployed or not classified), and the number of dependent children in the household including step-children (as a continuous variable). Work status at age 55 was included as a covariate in partnership models (full-time employment/part-time employment/ looking after home and family/other), partnership status at age 55 was included as a covariate in employment models (married/cohabiting/not living with a partner).

Missing Data and Analytic Sample

This study employed a two-stage imputation technique. Because we were interested in care provision to parents or parents-in-law (PiL) at age 55, the analytic sample was restricted to cohort members with at least one living parent or PIL. This resulted in a sample of n=6,879, 75.3% of the 9,172 responding to the age 55 survey, 6,261 of whom (91.0% of those with a living parent or PIL) had complete work and partnership information from age 16-54 years. In the first stage, missing data in work and partnership life courses were imputed using the STATA 'mict' command developed by Halpin (2012, 2013) for categorical time series data (Stata Journal, 2016, 16(3), pp. 590-612) for the 9% missing data on work or partnership life courses. Internal gaps of no more than 19 years (half of the 38 years of life course data) and initial and terminal gaps of no more than 10 years (just over half of the permitted internal gap) were imputed as recommended by Halpin.

Then a second stage of imputation was conducted to account for missing values on covariates. Missing data on covariates and caregiving variables were imputed using multiple imputation by chained equations. Twenty imputed datasets were created. The imputation was run separately for men and women, as the work and partnership life course variables were different for men and women (as described below), and all analyses were subsequently gender-stratified. Most missing data was driven by childhood social class (30% missing) and educational attainment (15% missing). Missing data on the remaining covariates ranged from 0-2%. The analyses for caregiving hours and activities was conducted on the sub-sample of those who provided care (N=4,099). Missing data on caregiving hours and activities ranged from 0-3%.

Statistical analyses

First the distribution of caregiving and covariates in the sample are shown. The unadjusted proportion of caregiving by the work and partnership life course groups is shown in the Appendix of Supplementary Material. Multivariate logistic regression was used for models predicting caregiving status or activities, and ordered logistic regression was used for models predicting caregiving hours.

Effect modification by father's social class and educational attainment were tested by including interaction terms, between the work life course cluster variable or the partnership

life course variable on the one hand and educational attainment or father's social class at age 16 on the other (all were tested). No interactions were found.

RESULTS

Work life courses

Sequence analysis resulted in four work life course groups for men (see Figure 1). Three of these groups were characterised by long-term full-time employment and differed by timing of entry into the labour market, generally from full-time education. The fourth group was characterised by weaker ties to the labour market across adulthood. Over two-thirds (67%) of men were in the group characterised by the earliest entry to full-time employment (at age 16), 14% were in the 'Late entry' group who entered full-time employment in their early twenties, 12% in the 'Mid entry' group who entered full-time employment over their late teens, and nearly 8% of men were in the group characterised by weaker ties to employment up to age 54.

Figure 1. About here

Unsurprisingly, there was much more variation in women's work life courses with empirical sequence analysis resulting in nine work life course groups for women (see Figure 2). Two of the women's nine groups were characterised by long-term full-time employment, one of the two differentiated by early exits from the labour market when women were in their late 40s to early 50s. Over a fifth (22%) of women were in the group characterised by continuous full-time employment, with 6% in the 'Full-time, early exit' group. A further two groups were characterised by transitions from full-time employment either to part-time employment or to looking after home and family full-time, followed by a return to full-time employment. These two groups were differentiated by the timing of the break from full-time employment, with a fifth of women in the 'Late break, FT returner' group (usually in their late twenties or thirties), and 14% in the 'Early break, FT returner' group who tended to take a break in their early or mid-twenties. In addition two groups were characterised exiting full-time employment (or full-time education) to look after the home full-time, followed by a return to part-time employment. One of these groups was characterised by entry into full-time homemaking over the late teens or early twenties, followed by transitions to part-time

employment over their thirties (6% of women). In the other women entered either full-time homemaking or part-time employment over their late twenties or thirties (10% of women). One group was characterised by longer term part-time employment (13% of women), and another by long-term full-time homemaking (6%), and, finally, a group characterised by other long-term weak ties to employment which could be long-term unemployment, or not working due to disability, for example (4% of women).

Figure 2. About here

Partnership life courses

Sequence analysis resulted in five partnership life course groups for men and three for women (see Figures 3 and 4). Three of the groups for men, and two for women, were characterised by timing of entry into long-term marriage. Both men and women had an 'Early entry marriage' group characterised by marriages over their late teens or early twenties (19% of men and 52% of women were in this group) and a 'Late entry marriage' group who married over their late twenties or early thirties, usually following a short period of cohabitation (25% of men and 26% of women were in this group). Men had an additional 'Mid entry' group who married in their mid-twenties and this was the most common pattern for men at 30%. The cluster solutions for both men and women also contained a group characterised by transitions to marriage followed by transitions to living along (or cohabiting) suggesting a separation, although for women this group had higher levels of living without a partner or cohabiting throughout. Twenty-two percent of women, but only 9% of men were in this group. Sixteen per cent of men were in an additional group characterised by high levels of cohabitation (or living alone) up to age 54.

Figure 3. About here

Figure 4. About here

In addition to the work and partnership life courses, measures of the number of years in each state (e.g. for work: total number of years full-time employed, part-time employed,

homemaking or other not employment) were derived as these summary measures may be associated with caregiving at age 55 differently from the sequential patterns captured in the life course variables. Tables showing the proportion in each of these summary variables by the work and partnership life course groups are shown in the Appendix of Supplementary Material.

Sample description

Table 1 shows the distribution of caregiving and covariates for men and women in the sample. Overall, a little over two-thirds of men (67%) and a little under for women (64%) provided some care to a parent or PiL. Levels of care provision were a little higher for parents (61% of men and 65 % of women with living parents) than for PiLs (52% of men and 40% of women with living PILs). Women were more likely than men to have provided care for a parent, but men were more likely than women to have provided care to a PiL. Amongst those who provided care to a parent, women spent many more hours than men providing care. For both parental and PILs, help with shopping and transport was the most common form of care, followed by help with finances or paperwork, and housework. Provision of personal care was much less common at 6% of men and 14% of women for parents, and 7% of men and 5% of women for PILs.

Table 1. About here

Associations between employment and partnership life courses and parental or PIL caregiving at age 55

Caregiving status and hours for men

Table 2 shows results for the fully-adjusted models predicting provision of care to a parent or PiL and caregiving hours for men.

Work life courses

The most common 'Early entry FT work' group who entered full-time employment prior to age 16 was the reference group in multivariate models. In comparison, men who entered

full-time employment later were significantly less likely to provide care to a parent or PiL. Similarly, on the summary work variables, increasing number of years spent in full-time employment was associated with a significantly greater likelihood of providing care to a parent of PiL, and increasing number of years spent out of employment was associated with a significantly lower likelihood of providing care to a parent or PiL for men. (Table 2)

Amongst those providing care, all of the work life course groups provided significantly fewer hours than men in the 'Early entry FT work' group and on the summary measures an increasing number of years spend out of employment was associated with significantly fewer hours spent providing care. (Table 2)

Because personal care might differ from other types of caregiving activities given its potentially more intensive and less flexible nature, we repeated our models for different types of caregiving activities. Associations seen between work life courses and care provision held true for helping with finances and administrative tasks, and for personal care in relation to PiLs, but not parents. Patterns for other individual care activities were inconsistent (see Table A1 in Appendix).

Partnership life courses

There were no significant associations between partnership life course groups and providing care to a parent or PiL at age 55 for men, but increasing number of years spent married was associated with a significantly greater likelihood of providing care to a parent of PiL at age 55 using summary measures and a greater number of years not living with a partner was associated with a lower likelihood of providing care, although this latter association only reached borderline significance (Table 2). This was equally true across care activity types, including personal care (see Table A1 in Appendix).

Amongst those providing care, compared with the most common 'Mid entry marriage' group who married in their mid-twenties, those entering marriage earlier ('Early entry marriage') provided significantly more hours care per week while each of the other partnership life course groups provided significantly fewer. Similarly, an increasing number

of years spent married was associated with significantly more hours spent providing care. (Table 2)

Table 2. About here

Caregiving status and hours for women

Table 3 shows results for the fully-adjusted models predicting provision of care to a parent or PiL, and caregiving hours, for women.

Work life courses

There were no significant associations between work life courses and the likelihood of providing care to a parent or PiL at age 55; a relatively high odds ratio of 1.34 for women in the 'Part-time' group (compared with women in the long-term 'Full-time' group) did not reach statistical significance. However, summary measures showed that an increasing number of years spent in part-time employment was associated with a significantly increased likelihood of providing care to a parent of PiL at age 55 (Table 3). This was particularly true for providing personal care to a PIL (see Table A2 in Appendix). Table A2 (in the Appendix) shows that associations between work life courses and personal care were much stronger for PIL care than for parental care for women.

Amongst those providing care, compared with women in the 'Full-time' group, those who took time out to look after the family full-time in their early and mid-twenties, and then returned to full-time employment ('Early break, FT return') spent significantly more hours providing care, while the later work break group ('Late break, FT return'), the full-time employed followed by an early labour market exit ('FT, early exit'), and long-term homemakers ('Homemaker') all spent significantly less time. The summary variables show that an increasing number of years spent in full-time employment is significantly associated with providing longer hours of care at age 55. (Table 3)

Partnership life courses

In comparison with the most common 'Early entry marriage' group characterised by marriages in their late teens or early twenties, both the 'Late entry marriage' group who

married over their late twenties or early thirties, and the group characterised by separation or living unmarried were both significantly less likely to provide care to a parent or PiL at age 55. Summary variables suggested that an increasing number of years spent in cohabiting partnership may be associated with a reduced likelihood of providing care to a parent or PiL, but this did not reach statistical significance (Table 3). This association was significant for providing personal care to a PiL or helping a PiL with housework (see Table A2 in Appendix).

Amongst caregivers, the group characterised by separation or long periods unmarried provided significantly fewer hours than women in the 'Early entry marriage' group. An increasing number of years spent in marriage was associated with providing significantly more hours while a greater number of years spent cohabiting or not living with a partner was associated with providing significantly fewer hours. (Table 3)

Table 3. About here

None of our associations varied by child socioeconomic circumstances or educational attainment (not shown).

DISCUSSION

This is the first study in the UK to investigate life course predictors of the uptake of care provision for parents or parents-in-law at age 55. Sequence analysis was used to derive entire work and partnership life courses as a unit of analysis and explored their association with care provision. We found strong life course ties to marriage were linked with a greater likelihood of providing parental care for both men and women. More years spent married was associated with an increased likelihood of providing care to a parent or parent-in-law for men, and an increasing number of hours spent caregiving amongst men and women providing care. Women in partnership life courses characterised by weak ties to marriage, or later entry to marriage were less likely to provide care to a parent or parent-in-law than women than women with life courses characterised by early entry to continuous marriage. While being married is a prerequisite for having a parent-in-law, this does not explain the associations seen as duration of marriage appeared to play an especially important role for parental care as well as that of in-laws. Perhaps these results suggest that, rather than single

adult children being seen as those with more available time, adult children with long-term marriages may be perceived as, and may perceive themselves as, being more appropriate candidates for parental care, perhaps due to having a greater family-centred orientation. In addition, single adult children may be less able to reduce working hours or employment participation in order to care for a parent.

While associations between partnership life courses and provision of parental care were very similar for men and women, there were gender difference in relation to work life courses along traditional lines. While men with stronger ties to paid work were more likely to provide care to a parent or parent-in-law, the longer women spent in part-time employment the more likely they were to provide care to a parent at age 55. This was even truer for care of in-laws for whom women with weaker labour market attachment were much more likely to provide personal care to a parent-in-law than women who maintained full-time employment. Perhaps this is because, for women, providing care to a parent is perceived as more obligatory, regardless of labour market attachment. Women who have spent long periods of the life course in part-time employment have probably spent many years combining paid work with childcare responsibilities as this is a common model for British mothers (Crompton, 2006; author's own., 2015), and it may be that these women find it 'makes sense' for them to pick up care. Our finding is similar to the one previous study to investigate the impact of employment on the uptake of caregiving, which found full-time employment reduced the likelihood of taking up care responsibilities for women (Nguyen & Connelly, 2017). A greater propensity for providing parental care amongst men with stronger life course ties to employment was less expected. Perhaps these results tap into gender stereotypes in which men with longer ties to paid work are perceived within their families as successful and competent in their male role as providers. In addition, it may be that men with strong, long-term ties to full-time employment are more likely to have contracts that allow for flexible working and leave entitlements that better enable them to combine work and care.

Given women's increasing life course labour market attachment across cohorts (author's own, 2015), our finding that women with strong life course ties to full-time employment are

less likely than long term part time workers to provide parental care may suggest a reduced future supply of adult child caregivers. Similarly, our finding that adult children with long-term marriages are more likely to provide parental/parent-in-law care, may suggest a reduced future supply of adult child caregivers given increasingly diverse and varied partnership life courses in more recent generations (author's own, 2015; Sobotka & Toulemon, 2008). Taken together, our results suggest that men and women who have adopted more traditionally-structured life courses are those that are more likely to help out when parents are in need. What are the implications, then, for subsequent generations amongst whom family forms are more diverse and men's and women's working lives are more similar? Will these social changes lead to greater gender equality in family care? Currently, evidence does not support this with adult daughters in the United States continuing to provide care to their parents and in-laws despite increases in women's labour market participation (Jacobs et al., 2015). This continued 'double burden' has potential implications for the longer term health and wellbeing of family caregivers going forward as evidence suggests combining fulltime work and adult care is linked with worse health and labour market exits for women in particular (Lacey, McMunn & Webb, 2018; Xue, Fleischmann, Head, McMunn & Stafford, 2018). While Carer's Allowance helps to moderate the financial impact of caregiving for carers who give up paid work to care, stringent means testing and low payment levels means the benefit is inadequate for preventing financial hardship amongst caregivers, with surveys in the UK suggesting that nearly a third of caregivers had seen a drop in income of £20,000 per year in annual income as a result of providing care and 39% reporting they struggle to make ends meet (Carers UK, 2019, 2014). Also, evidence suggests that Carer's Allowance only plays a small role in helping employed caregivers combine work and care (Yeandle & Buckner, 2017).

Our results implying a potentially reduced pool of informal caregivers amongst subsequent generations with more diverse family and living arrangements for whom women have much stronger life course labour market ties (author's own., 2015) just as the pool of potential care recipients is set to increase, have important implications for provision of adult social in the UK. It has been estimated that the annual care provided by informal caregivers is worth more than the entire NHS budget (Carers UK, 2015). Will a reduced pool of family caregivers necessitate a greater role for the state, or indeed the market, in UK adult social care

provision? Currently, formal care is mainly provided by the private sector, with public support for those with assets less than £23,000 to purchase this care (Bottery, 2019), but demand for care services already outstrips supply (Bottery, Ward, Fenney, 2019). This is just one important area that should be considered in the government's urgently needed Green Paper on Adult Social Care which was announced nearly three years ago.

Limitations of our study include a lack of information on the availability and characteristics of siblings which is likely to influence the uptake of parental care, nor was information available on the care needs (for example, whether they had dementia) of care recipients, nor the geographical proximity of parents, nor caregiving information for partners. While information on care intensity and activities was available, duration of caregiving was not. In addition, we only had information on care provision at age 55 and are unable to capture parental caregiving after this age when the likelihood of having a parent or parent-in-law in need of care is likely to increase. In addition, our results are based on the cohort of men and women born in 1958. The particular social context in which they formed their work and family lives means that associations with parental caregiving seen here may not be generalizable to other cohorts. However, the study benefits from the use of a national sample of prospectively collected life course information across multiple domains (albeit with retrospective collection of work and partnership information between adult sweeps).

Key messages:

- Strong life course ties to marriage were linked with a greater likelihood to provide parental care for both men and women.
- The longer women spent in part-time employment the more likely they were to provide care to a parent while stronger life course ties to full-time employment were linked with a greater likelihood of providing care to a parent for men.
- The importance of part-time employment amongst women and long-term marriage for both men and women for uptake of parental care may imply a reduced pool of potential informal caregivers amongst subsequent generations for whom women have much stronger life course labour market ties and life course partnerships have become more diverse.

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Data availability statement: The authors take responsibility for the integrity of the data and the accuracy of the analysis. The data are public available at the UK Data Service (https://www.ukdataservice.ac.uk/).

Conflict of interest statement: The Authors declare that there is no conflict of interest.

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