



Volunteering, providing informal care and paid employment in later life: Role occupancy and implications for well-being

Future of ageing: evidence review

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Volunteering, providing informal care and paid employment in later life: Role occupancy and implications for well-being

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Executive summary

- This report reviews evidence on involvement in paid work, volunteering and informal care provision in the years leading up to and around State Pension Age (SPA).
- It also examines the interrelationships between these roles and the implications of occupying these roles for well-being and health.
- It draws on evidence from the international literature, placing emphasis on nationally representative and recent data, and paying attention to national variation.
- Data from England reveal significant involvement both in volunteering (more than a fifth of 50 to 69 year olds volunteered at least once a month) and in the provision of informal care (almost one in six men and more than a quarter of women aged 50 to 69 provided care for someone in the past week).
- Involvement in paid work declines rapidly with age, but a significant proportion of both men and women remain in paid work roles after SPA (more than a quarter of men in the age group 65 to 69 and more than a third of women in the age group 60 to 64).
- Evidence on the co-occurrence of volunteering and paid work roles suggests that they are complementary, although there is some evidence that as time spent volunteering increases time spent involved in paid work decreases.
- In contrast, the provision of informal care is associated with withdrawal from paid work, which can be full or partial, or permanent or temporary.
- Evidence on the relationship between involvement in paid employment, volunteering
 and informal caring roles, and health and well-being, is ambiguous, perhaps as a
 result of the difficulty of drawing conclusions from observational studies where strong
 selection effects are likely to operate, that is, levels of health and well-being might be
 both a cause and a consequence of role occupancy.
- Ambiguous findings on the relationship between role occupancy and health and wellbeing might also result from variations in the quality of these roles, with low-quality roles leading to reductions in health and well-being and high-quality roles leading to increases in health and well-being.
- An overall conclusion is that involvement in paid work and volunteering roles is likely
 to have a positive impact on well-being if these roles are of good quality. But,
 particularly in the case of paid work, involvement in these roles may well have a
 negative impact on well-being if they are of low quality.
- Similarly, providing informal care is likely to have a negative impact on well-being, but this is only the case if the informal care role is of low quality.
- Volunteering and paid work appear to be complementary roles, so volunteering is not taken up at the expense of paid work, and volunteering relates to improved wellbeing, through a range of mechanisms. This suggests that there is some value in promoting volunteering.

- Volunteering post-retirement appears to be related to volunteering experiences prior to retirement. This suggests that the promotion of volunteering should begin during working life, but also that it might be worth exploring opportunities for promoting opportunities for volunteering post-retirement, including for those who have had no prior experience of volunteering.
- Informal caring roles are likely to have a negative impact on both participation in paid
 work and on well-being. There is also the possibility that these roles will become an
 increasingly important complement to formal care. It is essential to understand the
 mechanisms behind the physical, psychological, social and financial problems that
 can be experienced by those providing informal care.
- Flexible work arrangements for caregivers might be a solution to some of the
 difficulties they face. For example, allowing carers access to unpaid leave, paid
 short-term leave for emergencies, entitlement to regular paid days off work, flexible
 hours to accommodate hospital visits, direct payments to carers, access to formal
 care services to allow temporary relief from caring responsibilities, and providing
 opportunities for flexible sources of formal care provision to complement the informal
 care provided.
- Such supports may allow continued engagement in paid work and facilitate a return
 to paid work for those who have left, or reduced their hours of work. However, also
 important is specific support to facilitate transitions back into work for those who
 chose, or were forced, to leave paid work to fulfil what are often temporary care
 duties.
- It is also worth emphasising the implications of caring roles for gender inequalities. The higher rates of informal caring for women compared with men means that women disproportionately bear the financial costs of informal care.
- It is important to recognise that the literature in this area is limited and has generated ambiguous and even contradictory evidence. It is significant that there are no systematic studies of the relationships between involvement in these three broad roles, and no systematic studies that take into account the influence of policy, demographic and economic variation. There is a need to build the evidence base, giving a consideration of each activity alongside the others, the dynamic relationships between them as individuals move towards and past SPA, and how these relationships relate to policy, institutional and economic variation.
- Finally, it is important to place existing evidence within the context of rapid demographic changes, changes in employment structures and practices, and changes in the funding of and provision of health and social care. The extent of later life involvement in paid work, informal care provision and volunteering, and the consequences of involvement in these roles for both individuals and society, will change as these contexts change and is an important factor when considering policy responses to these changes.

I. Introduction

As policy discussion has developed in response to the ageing of populations one dominant feature has been an expressed concern with extending working lives. This has focused on reducing 'early exit' from work (i.e. before State Pension Age, SPA), delaying entitlements to the state pension to later ages, and involvement in paid work after SPA. Alongside this has been consideration of the broader social contribution of older people, a contribution in part reflected in the provision of informal care (to older parents, spouses, grandchildren, other relatives and friends) and in more formal volunteering (although social contributions do, of course, involve more than the provision of informal care and volunteering). The aspiration in these policy discussions is to explore ways of maximising such roles, with the consequence of older people providing a greater economic contribution through paid work and also being more engaged in social productivity, with the supposition that this would reduce any dependency crisis that occurs as a consequence of ageing populations.

This can, of course, be discussed in both positive and negative terms. Positively this can be seen to promote the contribution of older people, with returns for both society and individuals. So greater involvement in paid work, volunteering and informal care provision might lead to enhanced social engagement for individuals and might offer meaningful, valued and rewarding roles and activities that enhance well-being. However, it can also be seen negatively, with some of these roles being a significant burden on older people, and the promotion of these roles in later life being considered a consequence of the need to compensate for reductions in the public provision of social care and welfare, and community services more generally.

It is also worth considering the possibility that roles such as paid employment, volunteering and providing care might work in competition with each other, so one is sacrificed for others. This may be particularly the case where a role has limited flexibility in the level and timing of the commitment needed to fulfil the role. This might lead to exiting from roles that have personal, or broader social and economic, value. And role overload, or roles that do not provide reward, may lead to a deterioration in well-being.

The overarching focus for this Evidence Review is on the interplay between roles related to paid work, volunteering and informal care provision in later life, and how these activities relate to health and well-being. It will examine evidence on the prevalence of informal care provision, volunteering and paid work in later life, and demographic factors that relate to these roles (Section 2). Given the focus on these three role domains, the review will draw on evidence for those age groups leading up to, around and just after retirement, so where possible will be restricted to ages 50 to 69. The review will then examine evidence on how these roles relate to each other in later life, focusing on the combination of paid work with either volunteering or the provision of informal care (Section 3). It will then go on to examine evidence on how participation in these activities relates to health and well-being in later life, with a focus on the need to consider how varied these roles are (Section 4). Section 5 will review theoretical contributions and empirical evidence on why role occupancy might relate to health and well-being in later life and how this varies across activities. Section 6 will draw broader conclusions.

The review is based on a critical examination of existing literature. Standard search methods were used to identify relevant literature. This involved using keyword searches within established databases, with the search terms revisited as the search progressed, a revisiting that involved both broadening and narrowing search terms. As relevant publications were identified these were then used to also identify other relevant

publications and key authors working in these fields, so allowing the search to extend into the grey literature. Throughout, the quality of the evidence reported in publications was taken into account and contradictory findings between publications were examined. It should be noted that a systematic review was not undertaken, so not all literature in the field is included in the report, although all key publications were considered for inclusion.

It is worth stating up front that although the following provides a narrative through this large and complex literature, the literature does not offer clear conclusions. The research base relies on analysis of observational and largely cross-sectional data, produces contradictory findings, and fails to deal with selection effects, varying contexts, and interactions between different types of activity. The implications of this will be revisited in the conclusion of this review.

One point worth spelling out in advance, however, is the heterogeneous nature of the roles incorporated under the broad terms volunteering, informal care and paid work. Of course this heterogeneity is obvious – providing pre-school or after-school care for a grandchild is not equivalent in any way to providing care for a physically or cognitively dependent spouse. Similarly, undertaking paid work in a routinized job with little or no control over the nature and pace of work demands is very different from undertaking a professional job with a high degree of autonomy. It is important to pay attention to such variation in experience. It is also important to be both clear about what we mean by volunteering, and how the nature of volunteering is highly context dependent. Wilson and Musick (1997) usefully define volunteer work as "unpaid work provided to parties to whom the worker owes no contractual, familial or friendship obligations". However, Musick and Wilson (2008) also note that the nature of volunteering has changed over time, becoming more institutionalised and with a growth of opportunities to volunteer in both public and private sectors (although these are often targeted at young volunteers building their CVs). So volunteering has become more formalised. More broadly, Erlinghagen and Hank (2006) note that volunteering should be considered within its social, cultural and economic context, as part of the way in which society is organised and the way in which society organises welfare provision.

The key point, then, is that if we do not pay attention to such heterogeneity when examining evidence it will be very hard to draw conclusions. Sections 4, 5 and 6 of this review pay particular attention to the topic of the heterogeneity of roles relating to volunteering, informal care provision and paid work.

2. Pattern of informal care provision and volunteering in the years leading up to and around State Pension Age

Estimates of the prevalence of both providing informal care and of volunteering are highly dependent on the instrument used. The most comprehensive estimates can be obtained from survey data, however these depend on both the adequacy of the sample design (most surveys do not contain sufficiently large samples of those at older ages) and how the notions of volunteering and providing care are framed by the types of questions asked. Those questions that are designed to systematically capture all dimensions of the activity can be considered to be both more valid (assuming they follow a robustly predefined concept) and reliable. In the case of volunteering and informal care, such an inclusive approach may also be likely to provide higher estimates than less precisely defined questions, particularly those that do not prompt the respondent to include all relevant activities.

The English Longitudinal Study of Ageing (ELSA) (Steptoe *et al.*, 2013) provides an appropriate sample design (it is nationally representative and has a large sample covering relevant age ranges) and has good coverage of relevant topics, with recent and ongoing data collection. This makes it particularly suitable to investigate informal care provision and volunteering, so ELSA will be the primary data source for the description contained in this section of the report.

2.1 Prevalence of informal care provision

Estimates of involvement in informal care provision among those aged 50 and older can be obtained from ELSA, which asks respondents whether they have looked after anyone in the past week, who they looked after, and the number of hours they spent providing care (Hyde and Janevic, 2003).

Focusing on those below and around SPA (ages 50-69) reveals important gender differences in the provision of informal care – overall 15.5% of men and 26% of women provided care for someone (see Figures 1 and 2). (See also Fagan, 2010, who summarises evidence on important gender difference in the prevalence of caring, hours spent caring, and the provision of personal or intimate care.) For men the provision of informal care was roughly equally balanced across the categories of spouse (with higher levels for this form of care at older ages), children/grandchildren, and parent/parent-in-law (with lower levels at older ages). Rates of providing informal care by men were lower for other relatives and friends. For women rates varied substantially across these categories of relationship and across age groups. Most notable were relatively high rates of caring for parent/parent-in-law in the 50-59 age group of women (more than 10%), the increasing prevalence of caring for children/grandchildren with increasing age, and the increasing prevalence of caring for a spouse with increasing age, with slightly higher levels than those for men. Despite these changes in the provision of care for different types of recipient, the overall levels of caring did not vary across age groups for either men or women.

In terms of hours spent providing care there were only small gender differences. At the age of 50 to 54 men were less likely than women to be providing 20 or more hours of care per week (34% compared with 44%), but over the ages of 55–59 to 65–69 this difference compared with women narrowed.

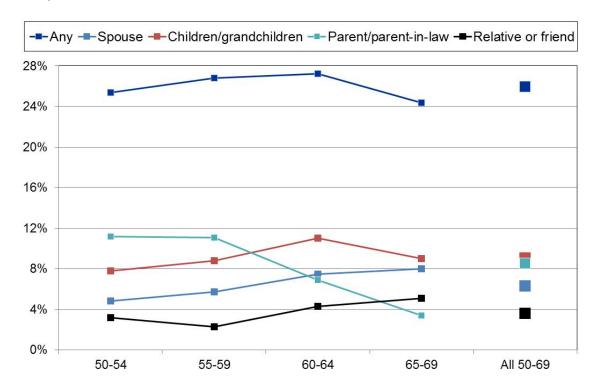


Figure 1: Provision of care by age and relationship with person cared for, women only

Source: Adapted from Hyde and Janevic (2003), data from ELSA.

More recent analyses of ELSA data (Matthews and Nazroo, 2014) give an indication of movements into and out of a caring role over an 8-year period of observation. Of those not providing informal care when first observed, around one in ten of men aged 50–64 and one in five of women aged 50–59 were caring for someone 2 years later.

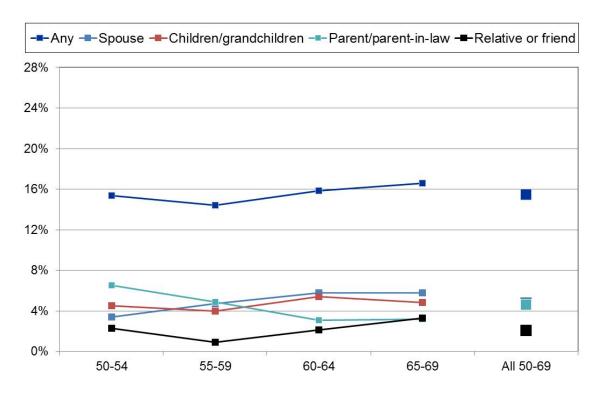


Figure 2: Provision of care by age and relationship with person cared for, men only Source: Adapted from Hyde and Janevic (2003), data from ELSA.

Findings from ELSA suggest that there was no relationship between socioeconomic position and provision of care (Hyde and Janevic, 2003). However, over the ages of 50–59, both providing any care and number of hours of care provided were strongly related to economic activity for both men and women. Those not economically active were more likely to provide care and to spend more time providing care (Hyde and Janevic, 2003). Of course this cross-sectional relationship does not help us identify causal processes at an individual level – those who provide care may be those who have fewer other commitments, including to paid work. However, if we consider this in terms of a pool of available carers, this association suggests that those who are not economically active are more likely than those who are economically active to be drawn into contributing in this way.

2.2 Prevalence of volunteering

ELSA also provides us with estimates of the proportion of people who are engaged in volunteering activities (Matthews and Nazroo, 2014). Respondents are asked how often they do voluntary work, with response options ranging from never to twice a month or more. (There are also more detailed questions on which organisations are volunteered for, etc.) The prevalence of volunteering once a month or more is shown in Figure 3. For the 50 to 69 year old age group, around 22% of both men and women volunteered at least once a month, with about 70% of both men and women not volunteering at all. This pattern showed some interesting age relationships that are, perhaps, related to economic activity. The rate of volunteering once a month or more was six percentage points higher for men and five percentage points higher for women in the age group 5 years post-SPA (65–69 for men and 60–64 for women), compared with the 5 years before SPA (60–64 for men, 55–59 for women).

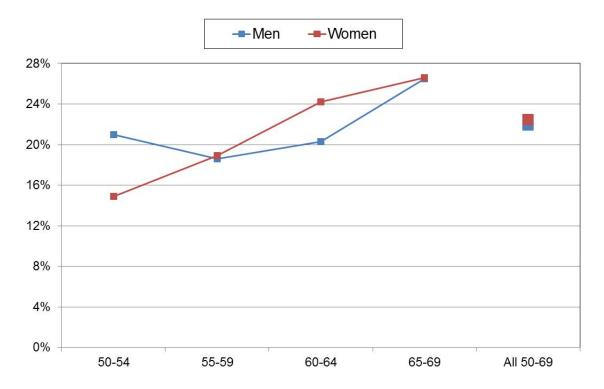


Figure 3: Volunteering once a month or more by gender and age

Source: Matthews and Nazroo (2014), data from ELSA.

More detailed analysis of the longitudinal data from ELSA suggests considerable variation in an individual's volunteering over time (Matthews and Nazroo, 2014). For example, over a 2-year period a third of men who were initially volunteering (at any level of frequency) stopped, with the rate of stopping higher for those in the years pre-retirement age compared with those in the years post-retirement age. There was a similar, although less marked, pattern for women. Similarly, just over 10% of those who were not volunteering at a particular time point were volunteering (at any level of frequency) 2 years later, although the pattern for starting volunteering was not clearly related to age group.

The prevalence of volunteering is strongly related to socioeconomic position (see Figure 4) (Matthews and Nazroo, 2014). For example, among the total ELSA population (aged 50 or greater), 31% of men in the highest wealth quintile volunteered once a month or more, compared with 26% in the next quintile, then 18%, 14% and 10%. For women the prevalence of volunteering once a month or more is similarly graded by wealth, 33% in the highest wealth quintile, then 27%, 19%, 14% and 13%.

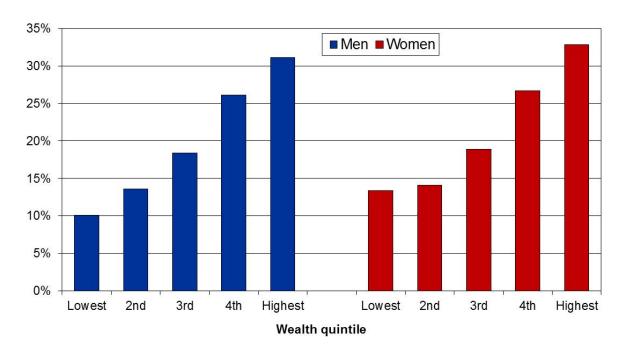


Figure 4: Volunteering once a month or more by gender and wealth

Source: Matthews and Nazroo (2014), data from ELSA.

2.3 Prevalence of paid work

Not surprisingly, participation in paid work declines with age. Data collected over the period 2012/13 (Oldfield, 2014) show that for men, rates of working either full- or part-time reduce from 84% among those aged 50–54 to 73% for those aged 55–59, 56.5% for those aged 60–64, and 25% for those aged 65–69. For women the figures are 76% for those aged 50–54, then 69% for those aged 55–59, 37% for those aged 60–64, and 16% for those aged 65–69 (see Figure 5). For both men and women these declines in rates of overall employment are mirrored by more rapid declines in full-time employment. There is also a larger step-down in rates of employment around SPA for both men (65 and older) and women (60 and older), which is clearly visible in Figure 5 alongside the general decline with age. Despite this step-down, however, Figure 5 also shows that a meaningful proportion of both men and women are working in the years post-SPA, and that among those working in these age groups, part-time employment is much more common.

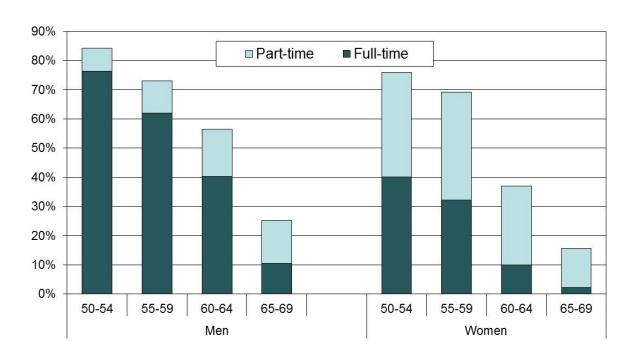


Figure 5: Full- and part-time paid work by gender and age

Source: Oldfield (2014), data from ELSA.

3. The relationship between volunteering, providing informal care and remaining in employment

Both paid work and volunteering offer forms of productive activities in formal contexts. While there is a significant literature that separately considers volunteering and paid employment in later life, there is very little that considers the interrelationship between the two activities and the ways in which they might interact with and impact on one another (nor how they might jointly impact on aspects of the health and well-being of older people). It is possible that paid employment and volunteering draw on the same forms of social and cultural capital, and consequently are likely to co-occur, or that one provides the resources and connections to facilitate the other, or, on the other hand, that one detracts from the time for involvement in the other (Carr and Kail, 2012).

Several recent studies have shown that those who volunteer in later life are more likely to be those who are also still working. Chambré (1984) showed that belonging to the workforce in later life was associated with a greater likelihood of also volunteering. And Caro and Bass (1997) found that older people were no more likely to volunteer after leaving the workforce than they were before, although among volunteers those out of the workforce contributed greater amounts of time to volunteering than those who were still in it. The higher likelihood of volunteering among older workers may be due to the fact that compared with those who are not working, older adults who are still working are younger, healthier, already socially integrated and in receipt of a regular income, all of which provide a favourable basis for volunteering (Choi, 2003). Direct comparisons of those working full-time and part-time suggest that part-time workers, or those who consider themselves to be partially retired, are more likely to concurrently volunteer than those working full-time (Herzog and Morgan, 1993; Choi 2003). Similarly, Gerteis *et al.* (2004) found a correlation between the extent to which older people reduced hours of paid employment and concurrently increased hours of volunteering.

In contrast, Foster-Bey *et al.* (2007) found older people who left the workforce were also more likely to stop volunteering, or reduce their hours of volunteering, and Sugihara *et al.* (2008) found older adults who volunteered were less likely to leave the workforce than those who did not. Similarly, Carr and Kail (2012) found that those who volunteered were more likely to remain in part-time work than to not work at all following retirement. Finally, Chambré and Einolf (2008) found the most important factor in influencing rates of volunteering among older adults making the transition into retirement from work was volunteering behaviour in the years prior to workforce exit, with those who had volunteered for the longest periods before retirement being the most likely to continue volunteering thereafter. The broad conclusion seems to be that volunteering and paid work are complementary, although time constraints may lead to more hours spent volunteering as hours spent engaged with paid work reduce.

In contrast to the literature on the relationship between volunteering and paid work, there is more research examining the relationship between providing informal care and paid work in later life. The evidence suggests that caring responsibilities do lead to withdrawal from economic activity, whether it is a full or partial, or permanent or temporary, withdrawal (Leigh, 2010; Michaud *et al.*, 2010; Kotsadam, 2011; Carr and Kail, 2012; Ciani, 2012; Van Houtven *et al.*, 2013). For example, carers are less likely to be employed, tend to work

fewer weeks per year and fewer hours per week, and earn lower hourly wages (Leigh, 2010; Van Houtven *et al.*, 2013). Similarly Michaud *et al.* (2010) show a negative relationship between co-residential caregiving on future employment and Carr and Kail (2012) show that taking on caring responsibilities around retirement reduces the likelihood of involvement in part-time work after retirement. However, Michaud *et al.* (2010) and Mentzakis *et al.* (2009) also find a negative effect of employment on future likelihood to provide care both within and without the home, suggesting some selection effects – those who work are less likely to take on caring roles – although this is not confirmed in the work of Van Houtven *et al.* (2013).

A number of factors are relevant to this relationship. First, moving into a caregiving role might involve considerable transaction costs, making a move back into paid work unlikely. even when caring responsibilities diminish or end (Michaud et al., 2010). Second, the movement into providing informal care and out of paid work might well be a consequence of the lack of availability of formal care provision that is complementary to the paid work role (Michaud et al., 2010). For example, Ciani (2012) found that the lower levels of employment found among those providing informal care, compared with those who were not, were greater in Southern European countries compared with Northern European countries. Kotsadam (2011) found that informal carers in Northern Europe provided fewer hours of care than those in Southern Europe and that the marginal effect of providing an hour of care on employment outcomes was lower in Northern Europe than in Southern Europe. More specifically, country differences in the effect of grandparenthood on the timing of retirement suggest that country variation in the availability of formal childcare provision plays a role: in countries with higher childcare coverage rates, retirement tends to be later (Van Bavel and De Winter, 2013). However, this effect is not specific to people who have become a grandparent, suggesting that the relationship is more than a simple economic trade-off between roles and reflects broader social and cultural preferences. Nevertheless, these findings perhaps reflect the fact that welfare systems in Southern Europe are more reliant on informal sources of care and have fewer compensatory mechanisms for those providing such care.

Third, what seems crucial to maintaining employment is being able to maintain a network of formal and informal care provision that provides the flexibility to enable informal caregivers to maintain their work roles (Da Roit and Naldini, 2010). Fourth, also important is having a relatively flexible working environment, which helps accommodate caring responsibilities and limits the consequences of providing informal care on work responsibilities (Da Roit and Naldini, 2010). Being responsible for the provision of care has significant potential to disrupt participation in paid work. Caregivers experience daily disruptions, such as arriving late to work, leaving early, missing work, and experiencing frequent interruptions at work because of their caregiving responsibilities. In the longer term, caregivers may switch to part-time employment, or change jobs, to allow them more time for caregiving responsibilities (Gordon and Rouse, 2011). Arksey and Glendinning (2008) found that flexible working hours were critical to successfully combining work and caregiving, whether these were negotiated formally with line managers (such as flexible start or finish times), or informally with colleagues (such as swapping shifts and weekend working).

So, it seems that without sufficiently flexible sources of formal care, flexible work places, and the support of other informal carers, those taking on informal caring responsibilities are likely to face some degree of withdrawal from paid work.

4. The relationship between role occupancy and health and well-being

4.1 Paid work

Research findings on the effects of paid work on health and well-being in later life are contradictory, even for studies that aim to account for potential selection biases (that those who are less healthy are less likely to remain in work). Some studies suggest paid employment among older people is beneficial for health and well-being (Adam et al., 2007; Rohwedder and Willis, 2010; Behnke, 2012; Bonsang et al., 2012; Calvo et al., 2013), some suggest that it is detrimental (Coe and Zamarro, 2011) and some that there is no significant or meaningful relationship (Coe and Lindeboom, 2008; Coe and Zamarro, 2011; Behnke, 2012; Calvo et al., 2013). A recent systematic review (reported in Matthews and Nazroo, in press) that focused on the impact of paid work post-SPA/retirement identified 17 studies showing a negative effect, 14 studies showing a positive effect and 9 studies showing no effect. This is likely to be a result both of different studies using different definitions of what constitutes later life work and retirement (with some studies including all adults aged 50 or older) and of studies failing to account for the varying nature of work, that work is a heterogeneous experience with positive and negative influences on health. Indeed a meta-analysis suggests great heterogeneity in the populations and work experiences covered (Matthews and Nazroo, in press).

4.2 Volunteering

Research into volunteering consistently finds it to be beneficial to health and well-being (Wahrendorf *et al.*, 2008; McMunn *et al.*, 2009; Choi and Kim, 2011; Nazroo and Matthews, 2012). Health and well-being outcomes are also observed to be better among those who contribute the most time to volunteering activities (Van Willigen, 2000; Luoh and Herzog, 2002; Morrow-Howell *et al.*, 2003; Baker *et al.*, 2005; Nazroo and Matthews, 2012), or who participate in the greatest number of different volunteering activities (Baker *et al.*, 2005; Nazroo and Matthews, 2012). Interestingly, Sugihara *et al.* (2008) found that being involved in volunteering attenuated the detrimental effects of job loss on mental health and Li (2007) found that starting volunteering after the death of a spouse was associated with a lower risk of depression. These findings suggest that volunteering provides a positive role and one that compensates for losses in other domains of life.

4.3 Volunteering alongside paid work

When considering the impact of the combination of later life paid work and volunteering, evidence typically suggests that participation in both of these activities is more beneficial for well-being than participation in just one or the other (Hao, 2008). Adelman (1994) found that participation in a greater number of socially productive activities (including paid work and volunteering) was associated with fewer symptoms of depression than participation in single or no socially productive activities, and Hinterlong *et al.* (2007) found engagement with a higher number of productive roles (again inclusive of paid work and volunteering) was associated with better self-rated health and reduced functional impairment. Similarly, Van Willigen (2000) found employed people aged over 60 who simultaneously volunteered had better life satisfaction than those who did not and furthermore that this relationship was stronger at higher rates of volunteering.

4.4 Informal care provision

The provision of informal care is typically found to result in reduced quality of life and poorer health (Broe *et al.*, 1999; Cannuscio *et al.*, 2002; Lee *et al.*, 2003; Hirst, 2005; Tooth *et al.*, 2008; Breeze and Stafford, 2010). Providing informal care can be both physically and emotionally demanding, but these negative health effects may be greater if the carer is also involved in paid work, although the evidence on this is not strong. Stroka and Schmitz (2013) found that those who provide care and were also in full-time work were more likely to be prescribed antidepressant drugs and tranquillisers than those who are working only, and that the extent of this appears to be related to the level of care provision engaged in. However, caregiving can be experienced as a positive, satisfying and productive activity, especially when it is done voluntarily, is of short duration, and can be carried out alongside other productive roles (Hinterlong, 2006).

4.5 The quality of paid work, volunteering and caring roles

The research evidence summarised in Sections 4.1 to 4.4 leads to the overall conclusion that a balance between paid work and volunteering is beneficial to well-being for those in later life, and that informal care provision might have a negative impact on well-being in later life. However, the evidence is ambiguous in many cases and points to the possibility that these relationships might depend on the quality of such paid work, volunteering and caring roles.

Studies that have focused on aspects of the quality of paid work and voluntary work, such as reciprocity and effort-reward balance, have shown important differential effects. Nazroo and Matthews (2012) found volunteering was only positively associated with several wellbeing outcomes when people felt well reciprocated for the tasks they carried out. Similarly, several studies have demonstrated that paid employment among older populations is only beneficial to health outcomes when it is well reciprocated in terms of effort and reward (Kuper et al., 2002; Niedhammer et al., 2004). Additionally, those in later life who are in poorer employment conditions, such as physically demanding or manual work, or work that is characterised by low reciprocity, have significantly poorer well-being (Jorm et al., 1998; Chandola et al., 2007; Seitsamo et al., 2007). Dingemans and Henkens (2014) explore the impact of 'bridge jobs' for those moving into retirement age (that is, continuing to remain in paid work while moving into the position of receiving a pension) and show that those who either look for and fail to find a bridge job, or who take up a bridge job out of financial necessity, have lower levels of life satisfaction than those who fully retire, or who continue into bridge employment for other reasons. They point to the importance of the voluntary nature of role occupancy when considering the impact on well-being. And there is some evidence that those working post-retirement place more value on some dimensions of work than those who are working prior to retirement – for example McNamara et al. (2013) show that workers who consider themselves retired are less concerned than those who are not retired by economic security and more concerned by their relationship with their supervisor.

More fundamentally, there is evidence suggesting that older people are more likely to remain in the workforce if they are in good-quality employment that is characterised by good levels of reciprocity and low levels of physical and mental stress (Phillipson and Smith, 2005). McMunn *et al.* (2009) examined these relationships for each of paid work, volunteering and caring and found that for paid work and volunteering the association with improved depression, quality of life and life satisfaction was only present when respondents felt well reciprocated for their efforts, and that the negative association

between caring and these well-being outcomes was not present when respondents felt well reciprocated for their efforts.

Some caution should be used when interpreting the findings reported above. All of the relevant studies use observational data, not surprisingly, and most do not employ methods that directly assess causality. This means that the observed associations could be a product of selection effects. For example, those who participate in both employment and volunteering are likely to be healthier than those who do not (Li and Ferraro, 2005) and are likely to have better social and employment circumstances, leading to better social integration (Li and Ferraro, 2005; Tang, 2006; Minkler and Holstein, 2008). This could all be, perhaps, because such health, social and economic resources open up opportunities to engage in rewarding paid work and volunteering roles (Fischer et al., 1991; Herzog and Morgan, 1993). Butrica et al. (2009), for example, found that changes in health, work and marital status altered perceptions of the costs and benefits of volunteering and, subsequently, participation in volunteering. On the other hand, there is evidence of selection effects occurring in the form of 'compensation' (Li and Ferraro, 2005) whereby individuals with poorer well-being participate in volunteering in order to improve their wellbeing, suggesting that selection effects might also lead to an underestimation of the strength of these associations.

Recent work, reported in Matthews and Nazroo (in press) and shown in Figure 6, attempts to deal with such selection/endogenous effects in relation to later life work by using propensity score matching. This uses modelling to predict the conditional probability to be in the treatment group (in this case later life work) and then compare those in and not in the treatment group with similar propensity to be in work (propensity scores from the model predicting being in work, thereby dealing with selection effects). The result of this analysis was that for three health and well-being outcomes there were no differences on average for those in later life work compared with those who were retired (the left-hand side of Figure 6). However, when levels of reciprocity were taken into account, those in good-quality work showed improvements in outcome compared with those in poor-quality work (the right-hand side of Figure 6). While such analyses deal with variations in the experience of paid work roles, they do not account for the complexity of the retirement process and, particularly, how far retirement might be involuntary. Existing evidence suggests that the impact of retirement on well-being can be positive for those who actively choose to retire and negative for those who are forced out of work (Dingemans and Henkens, 2014; Matthews and Nazroo, in press).

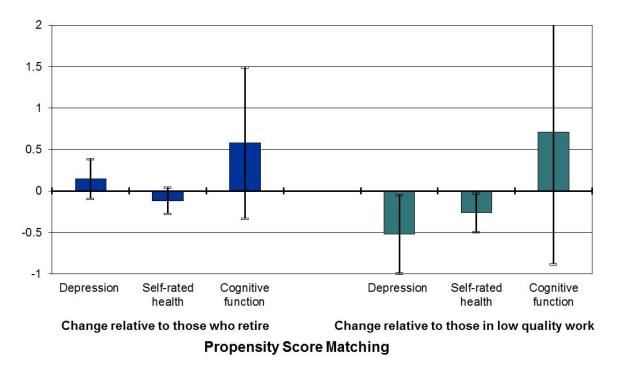


Figure 6: The relationship between later life work, quality of later life work role, and health and well-being – findings from propensity score matching

Source: Matthews and Nazroo (in press), data from ELSA.

The overall conclusion from existing evidence, then, is that involvement in paid work and volunteering, or indeed in both roles, is likely to have a positive impact on well-being if these roles are of good quality. But, particularly in the case of paid work, roles may well have a negative impact on well-being if they are of low quality. Similarly, providing informal care is likely to have a negative impact on well-being, but only if it is a role of low quality. The implication is that as well as focusing on role occupancy we should also focus on role quality.

5. Why do volunteering, paid work and informal care roles relate to well-being?

Sections 3 and 4 of this review demonstrate consistent evidence on the complementary relationships between paid work and volunteering roles in later life, and that involvement in informal care provision reduces involvement in paid work in later life. They go on to explore the relationship between these roles and well-being in later life and show the overall positive relationship between volunteering and well-being (those who volunteer have higher well-being), the overall neutral relationship between paid work and well-being, and the overall negative relationship between informal care provision and well-being. Further consideration of the evidence suggests that both the quality of roles – the extent to which they are rewarding roles with reciprocity – and the balance between roles, particularly in terms of paid work and the provision of informal care – are important for their relationship with well-being.

Having summarised these findings, it is worth considering what might be driving the relationship between role occupancy and health and well-being, and particularly how this might be operating in later life. While volunteering has been shown to have beneficial effects on health and well-being across the life course, Musick and Wilson (2003) have found effects to be particularly pronounced among older populations. One possible reason for this is captured by continuity theory (Atchley, 1989), which points to the importance of maintaining roles, particularly those that are rewarding and socially productive, in later life. Volunteering following retirement might allow such continuity, and the finding that not only volunteering, but higher levels and intensity of volunteering, is associated with higher levels of well-being, is consistent with continuity theory. And it may be that attempts to maintain some form of role continuity is reflected in the findings that time spent volunteering increases as time spent working decreases and that those who volunteered prior to retirement were more likely to participate in volunteering after retirement. Establishing socially productive and integrated roles through activities such as volunteering prior to retirement, is likely to lessen any negative effects suffered through the loss of the role as a paid worker (Moen, 1996) and help avoid the possibility of occupying an irreversible 'roleless' position that subsequently leads to poorer well-being (Rosow, 1976).

This theoretical approach suggests that such roles are important in maintaining continuities, but it does not point to the additional health and well-being benefits such roles may produce. The suggestion of an additional beneficial effect of paid work in conjunction with volunteering is consistent with theories of role enhancement and role accumulation (Sieber, 1974; Moen *et al.*, 1992), where it is proposed that a greater range of role identities increases well-being as a result of a greater sense of control and greater access to economic and social resources, in part brought about by a higher frequency of social interactions. Also crucial here are the positive identity and status returns that might be obtained from involvement in productive activities, including paid work, caregiving and volunteering (Hinterlong, 2006).

As well as the benefits brought about in terms of maintaining a sense of usefulness and productivity, involvement in multiple roles also offers the opportunity for a higher frequency of social contacts and support networks that are often of particular value to the well-being of older people. As well as helping to maintain social networks after retirement, which is potentially a time when social networks related to work are lost, such roles can also

provide access to support in relation to other life events. For example, as described earlier, Li (2007) showed that being involved in volunteering reduced the risk of depression following the death of a spouse.

In contrast to these perspectives, it has also been suggested that multiple role occupancy might lead to 'role strain', particularly in the context of the provision of informal care. Here it is argued that many face a 'time crunch', with time spent engaging in personal and family life and other rewarding activities sacrificed, or at least under threat (Da Roit and Naldini 2010; Michaud *et al.*, 2010). In addition, the time demands of competing paid work and caring obligations might result in a conflict in performing each role and this might lead to role strain and declines in well-being, particularly when one or more of the roles are an important source of identity (Gordon and Rouse, 2011). Of course, it is possible that at least some of the negative impact of providing informal care on well-being is a direct result of the fact that a loved one is ill and dependent (Stroka and Schmidz, 2013).

As described above, several studies have shown that the association between well-being and work and social roles strongly depends on the quality of those roles (McMunn *et al.*, 2009; Siegrist and Wahrendorf, 2009; Nazroo and Matthews, 2012). Siegrist (1996) identifies such roles as essential in maintaining self-esteem and in this he also raises the possibility that such positive effects require adequate exchange, or reciprocity, in the performance of the role. So when the level of effort given to the role is perceived to be greater than the reward received in return, a state of emotional distress occurs. Siegrist's (1996) model of effort—reward imbalance has been applied to many studies concerning productive activities in later life, including paid work, caring and volunteering, and studies have consistently demonstrated beneficial associations between sufficient reciprocity and a range of physical and mental well-being outcomes (Jorm *et al.*, 1998; Kuper *et al.*, 2002; Niedhammer *et al.*, 2004; Chandola *et al.*, 2007; Seitsamo *et al.*, 2007; McMunn *et al.*, 2009; Nazroo and Matthews, 2012).

So, overall the evidence suggests that involvement in social and economic roles in later life that are complementary with each other, that contain an element of reciprocity, and provide social connections and affirmation of identity and status, are likely to enhance well-being and health.

6. Conclusions and recommendations

Section 2 of this report reviewed evidence on the prevalence of involvement in paid work, volunteering and informal care provision in the years leading up to and around SPA. Drawing on evidence reported by studies that used national representative English data covering the period 2002 to 2013, it revealed significant involvement both in volunteering (more than a fifth of 50 to 69 year olds volunteered at least once a month) and in the provision of informal care (almost one in six men and more than a quarter of women aged 50 to 69 provided care for someone in the past week). And, while involvement in paid work declines rapidly with age, a significant proportion of both men and women remain in paid work roles after SPA (more than a quarter of men in the age group 65 to 69 and more than a third of women in the age group 60 to 64). Sections 3 and 4 of this report reviewed evidence on the co-occurrence of these roles and on their relationship with health and well-being outcomes in later life. The broad conclusions from these reviews are that volunteering and paid work are complementary roles, although there is some evidence that time spent volunteering increases as time spent involved in paid work decreases. However, the provision of informal care leads to withdrawal from paid work, whether that is full or partial, or permanent or temporary. Evidence on the relationship between involvement in these roles and health and well-being is ambiguous, perhaps as a result of the difficulty of drawing conclusions from observational studies where strong selection effects are likely to operate and perhaps because these roles are very varied in content. as discussed in the introduction to this report. Nevertheless, an overall conclusion is that involvement in paid work and volunteering, or indeed in both roles, is likely to have a positive impact on well-being if these roles are of good quality. But, particularly in the case of paid work, roles may well have a negative impact on well-being if they are of low quality. Similarly, providing informal care is likely to have a negative impact on well-being, but only if it is a role of low quality.

Alongside this conclusion, however, it is important to recognise that the literature in this area is small and of varying quality. This means that in many cases the review produced ambiguous and often contradictory findings. Perhaps a little more frustrating is that there are no systematic studies of the relationships between involvement in these three broad categories of activity, and no systematic studies that take into account policy, demographic and economic variation (across countries and over time). There is a need for research that considers each activity alongside the others, that considers the dynamic relationships between them as individuals move towards and past SPA, and that considers how these relationships relate to policy, institutional and economic variation.

Nevertheless, we can draw some conclusions regarding the importance of volunteering for individuals and, presumably, for society. Volunteering and paid work appear to be complementary roles, so volunteering is not taken up at the expense of paid work, and volunteering relates to improved well-being, through a range of mechanisms. This suggests that there is some value in promoting volunteering. Important evidence in this regard is that volunteering post-retirement appears to be related to volunteering experiences prior to retirement. The implication is that the promotion of volunteering should begin during working life, but also that it might be worth exploring opportunities for promoting opportunities for volunteering post-retirement, including for those who have had no prior experience of volunteering.

The implications of taking on informal caring roles are worth discussing at more length, given their likely negative impact on both participation in paid work and on well-being, and

the possibility that they will become an increasingly important complement to formal care. Here, understanding the mechanisms behind the physical, psychological, social and financial problems that can be experienced by those providing informal care is crucial. Flexible work arrangements for caregivers might be a solution to some of these difficulties. For example, allowing carers access to unpaid leave, paid short-term leave for emergencies, entitlement to regular paid days off work, flexible hours to accommodate hospital visits, direct payments to carers, access to formal care services to allow temporary relief from caring responsibilities, etc. Such supports may allow continued engagement in paid work and facilitate a return to paid work for those who have left, or reduced their hours of work. However, also important is providing opportunities for flexible sources of formal care provision to complement the informal care provided, and specific support to facilitate transitions back into work for those who chose, or were forced, to leave paid work to fulfil what are often temporary care duties.

It is also worth emphasising the implications of caring roles for gender inequalities. The higher rates of informal caring for women compared with men are now well recognised. This means that women disproportionately bear the financial costs of informal care through reduced earnings and pension contributions, as well as the emotional and psychological pressures of caring (Fagan, 2010). However, women's life-course trajectories and expectations have changed across generations, not least in relation to labour market participation and career aspirations. This might mean that expectations around women's provision of informal care could lead to greater role strains and conflicts than are currently apparent.

This leads to a final comment. It is important to place existing evidence within the context of rapid demographic changes, changes in employment structures and practices, and changes in the funding of and provision of health and social care. The extent of later life involvement in paid work, informal care provision and volunteering, and the consequences of involvement in these roles for both individuals and society, will change as these contexts change and is an important factor when considering policy responses to these changes.

References

Adam, S., Bonsang, E., Germain, S., Perelman, S., Unit, N. and Crepp, H. (2007) Retirement and cognitive reserve: A stochastic frontier approach applied to survey data. *CREPP Working Paper 2007/04*. HEC-ULg. Available at: www2.ulg.ac.be/crepp/papers/crepp-wp200704.pdf (accessed 9 June 2015).

Adelmann, P. (1994) Multiple roles and psychological well-being in a national sample of older adults. Journal of Gerontology: Social Sciences 49(6), 277–285.

Arksey, H. and Glendinning, C. (2008) Combining work and care: carers' decision-making in the context of competing policy pressures. Social Policy and Administration 42(1), 1–18.

Atchley, R. C. (1989) A continuity theory of normal aging. The Gerontologist 29(2), 183–190.

Baker, L. A., Cahalin, L. P., Gerst, K. and Burr, J. A. (2005) *Productive activities and subjective well-being among older adults: The influence of number of activities and time commitment*. Social Indicators Research 73(3), 431–458.

Behncke, S. (2012) Does retirement trigger ill health? Health Economics 21(3), 282–300.

Bonsang, E., Adam, S. and Perelman, S. (2012) *Does retirement affect cognitive functioning?* Journal of Health Economics 31(3), 490–501.

Breeze, E. and Stafford, M. (2010) Receipt and giving of help and care. In: Banks, J., Lessof, C., Nazroo, J., Rogers, N., Stafford, M. and Steptoe, A. (eds). *Financial Circumstances, Health and Well-being of the Older Population in England. The 2008 English Longitudinal Study of Ageing.* The Institute for Fiscal Studies: London, pp. 254–274.

Broe, G., Jorm, A., Creasy, H., Casey, B., Bennett, H., Cullen, J., Edelbrock, D., Waite, L. and Grayson, D. (1999) *Carer distress in the general population: results from the Sydney older persons study*. Age and Ageing 28(3), 307–311.

Butrica, B. A., Johnson, R. W. and Zedlewski, S. R. (2009) *Volunteer dynamics of older Americans*. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 64(5), 644–655.

Calvo, E., Sarkisian, N. and Tamborini, C. R. (2013) Causal effects of retirement timing on subjective physical and emotional health. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 68(1), 73–84.

Cannuscio, C., Jones, C., Kawachi, I., Colditz, G., Berkman, L. and Rimm, E. (2002) Reverberations of family illness: a longitudinal assessment of informal caregiving and mental health status in the nurse's health study. American Journal of Public Health 92(8), 1305–1311.

Carr, D. C. and Kail, B. L. (2012) *The influence of unpaid work on the transition out of full-time paid work.* The Gerontologist 53(1), 92–101.

Caro, F. G. and Bass, S. A. (1997) Receptivity to volunteering in the immediate postretirement period. Journal of Applied Gerontology 16(4), 427–441.

Chambré, S. M. (1984) Is volunteering a substitute for role loss in old age? An empirical test of activity theory. The Gerontologist 24(3), 292–298.

Chambré, S. and Einolf, C. (2008) *Is Volunteering Work, Prosocial Behavior, or Leisure? An Empirical Study*. Working Paper Series, Center for Non-profit Strategy and Management. School of Public Affairs, The City University of New York: New York. Available from: https://www.baruch.cuny.edu/spa/centers-and-institutes/center-for-nonprofit-strategy-and-management/documents/Chambre_Einolf_IsVolunteeringWork.pdf (accessed 22 May 2015).

Chandola, T., Ferrie, J., Sacker, A. and Marmot, M. (2007) Social inequalities in self reported health in early old age: follow-up of prospective cohort study. British Medical Journal 334(7601), 990.

Choi, L. H. (2003) Factors affecting volunteerism among older adults. Journal of Applied Gerontology 22(2), 179–196.

Choi, N. G. and Kim, J. (2011) The effect of time volunteering and charitable donations in later life on psychological wellbeing. Ageing and Society 31(4), 590–610.

Ciani, E. (2012) *Informal adult care and caregivers' employment in Europe*. Labour Economics, 19(2), 155–164.

Coe, N. B. and Lindeboom, M. (2008) *Does Retirement Kill You: Evidence from Early Retirement Widows*. Discussion Paper 10/2008 – 038. Network for Studies on Pensions, Aging and Retirement. Available from: http://arno.uvt.nl/show.cgi?fid=92578 (accessed 22 May 2015).

Coe, N. B. and Zamarro, G. (2011) *Retirement effects on health in Europe*. Journal of Health Economics 30(1), 77–86.

Da Roit, B. and Naldini, M. (2010) Should I stay or should I go? Combining work and care for an older parent in Italy. South European Society and Politics 88(3), 286–309.

Dingemans, E. and Henkens, K. (2014) *Involuntary retirement, bridge employment, and satisfaction with life: A longitudinal investigation*. Journal of Organizational Behavior 35, 575–591.

Erlinghagen, M. and Hank, K. (2006) *The participation of older Europeans in volunteer work*. Ageing and Society 26(4), 567–584.

Fagan, C. (2010) Elderly Care in the UK: Provisions and Providers. External Report Commissioned by and Presented to the EU Directorate-General Employment and Social Affairs, Unit G1 'Equality between women and men'. The University of Manchester: Manchester.

Fischer, L. R., Mueller, D. P. and Cooper, P. W. (1991) *Older volunteers: A discussion of the Minnesota senior study*. The Gerontologist 31(2), 183–194.

Foster-Bey, J., Dietz, N. and Grimm, R. (2007) *Keeping Baby Boomers Volunteering: A Research Brief on Volunteer Retention and Turnover*. Corporation for National and Community Service: Washington, DC. Available at: www.nationalservice.gov/pdf/07_0307_boomer_report.pdf (accessed 4 June 2015).

- Gerteis, M., Winston, J. A., Stanton, F., Moses, S., Grodner Mendoza, T. and Roberts, M. (2004) *Reinventing Aging: Baby Boomers and Civic Engagement*. Harvard School of Public Health-MetLife Foundation Initiative on Retirement and Civic Engagement: Cambridge, MA.
- Gordon, J. R. and Rouse, E. D. (2011) *The relationship of job and elder caregiving involvement to work-caregiving conflict and work costs*. Research on Ageing 35(1), 96–117.
- Hao, Y. (2008) *Productive activities and psychological well-being among older adults*. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 63(2), S64–S72.
- Herzog, A. R. and Morgan, J. N. (1993) Formal volunteer work among older Americans. In: Caro, F. G., Bass, S. A. and Chen, Y. (eds). *Achieving a Productive Aging Society*, Auburn: Westport, CT, pp. 119–142.
- Hinterlong, J. E. (2006) Race disparities in health among older adults: examining the role of productive engagement. Health and Social Work 31(4), 275–288.
- Hinterlong, J. E., Morrow-Howell, N. and Rozario, P. A. (2007) *Productive engagement and late life physical and mental health findings from a nationally representative panel study*. Research on Aging 29(4), 348–370.
- Hirst, M. (2005) Carer distress: a prospective, population-based study. Social Science and Medicine 61(3), 697–708.
- Hyde, M. and Janevic, M. (2003) Social activity. In: Marmot, M., Banks, J., Blundell, R., Lessof, C. and Nazroo, J. (eds). *Health, Wealth and Lifestyles of the Older Population in England: The 2002 English Longitudinal Study of Ageing.* The Institute for Fiscal Studies: London, pp. 167–206.
- Jorm, A. F., Rodgers, B., Henderson, A. S., Korten, A. E., Jacomb, P. A., Christensen, H., and Mackinnon, A. (1998) *Occupation type as a predictor of cognitive decline and dementia in old age*. Age and Ageing 27(4), 477–483.
- Kotsadam, A. (2011) Does informal eldercare impede women's employment? The case of European welfare states. Feminist Economics 17(2), 121–144.
- Kuper, H., Singh-Manoux, A., Siegrist, J. and Marmot, M. (2002) When reciprocity fails: effort—reward imbalance in relation to coronary heart disease and health functioning within the Whitehall II study. Occupational and Environmental Medicine 59(11), 777–784.
- Lee, S., Colditz, G., Berkman, L. and Kawachi, I. (2003) *Caregiving and risk of coronary heart disease in US women*. American Journal of Preventive Medicine 24(2), 113–119.
- Leigh, A. (2010) *Informal care and labour market participation*. Labour Economics 17, 140–149.
- Li, Y. (2007) Recovering from spousal bereavement in later life: Does volunteer participation play a role? The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 62(4), S257–S266.

Li, Y. and Ferraro, K. F. (2005) Volunteering and depression in later life: Social benefit or selection processes? Journal of Health and Social Behavior 46(1), 68–84.

Luoh, M. C. and Herzog, A. R. (2002) *Individual consequences of volunteer and paid work in old age: Health and mortality*. Journal of Health and Social Behavior 43(4), 490–509.

Matthews, K. and Nazroo, J. (2014) Social domain tables. In: Banks, J., Nazroo, J. and Steptoe, A. (eds). *The Dynamics of Ageing: Evidence from the English Longitudinal Study of Ageing 2002–12*. The Institute for Fiscal Studies: London, pp. 209–240.

Matthews, K. and Nazroo, J. (in press) Later-life work, health and wellbeing: enduring inequalities. In: Scherger, S. (ed.) *Paid Work Beyond Pension Age: Comparative Perspectives.* Palgrave: London.

McMunn, A., Nazroo, J., Wahrendorf, M., Breeze, E. and Zaninotto, P. (2009) *Participation in socially-productive activities, reciprocity and wellbeing in later life: baseline results in England*. Ageing and Society 29(5), 765–782.

McNamara, T. K., Brown, M., Aumann, K., Pitt-Catsouphes, M., Galinsky, E. and Bond, J. T. (2013) *Working in retirement: A brief report*. Journal of Applied Gerontology 32(1), 120–132.

Mentzakis, E., McNamee, P. and Ryan, M. (2009) Who cares and how much: Exploring the determinants of co-residential informal care. Review of Economics of the Household 7(3), 283–303.

Michaud, P.-C., Heitmueller, A. and Nazarov, Z. (2010) A dynamic analysis of informal care and employment in England. Labour Economics 17(3), 455–465.

Minkler, M. and Holstein, M. B. (2008) From civil rights to civic engagement? Concerns of two older critical gerontologists about a "new social movement" and what it portends. Journal of Aging Studies 22(2), 196–204.

Moen, P. (1996) A life course perspective on retirement, gender, and well-being. Journal of Occupational Health Psychology 1(2), 131–144.

Moen, P., Dempster-McClain, D. and Williams Jr, R. M. (1992) Successful aging: A life-course perspective on women's multiple roles and health. American Journal of Sociology 97(6), 1612–1638.

Morrow-Howell, N., Hinterlong, J., Rozario, P. A. and Tang, F. (2003) *Effects of volunteering on the well-being of older adults*. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 58(3), S137–S145.

Musick, M. A. and Wilson, J. (2003) *Volunteering and depression: The role of psychological and social resources in different age groups*. Social Science & Medicine 56(2), 259–269.

Musick, M. A. and Wilson, J. (2008) *Volunteers. A Social Profile*. Indiana University Press: Bloomington and Indianapolis.

Nazroo, J. and Matthews, K. (2012) 'The Impact of Volunteering on Wellbeing in Later Life', Invited Seminar, Women's Royal Voluntary Service, London, May 2012.

Niedhammer, I., Tek, M. L., Starke, D. and Siegrist, J. (2004) *Effort–reward imbalance model and self-reported health: cross-sectional and prospective findings from the GAZEL cohort.* Social Science & Medicine 58(8), 1531–1541.

Oldfield, Z. (2014) Economics domain tables. In: Banks, J., Nazroo, J. and Steptoe, A. (eds). *The Dynamics of Ageing: Evidence from the English Longitudinal Study of Ageing* 2002–12. The Institute for Fiscal Studies: London, pp. 214–258.

Phillipson, C. and Smith, A. (2005) *Extending Working Life: A Review of the Research Literature (Vol. 299)*. Corporate Document Services: Leeds.

Rohwedder, S. and Willis, R. J. (2010) *Mental retirement*. Journal of Economic Perspectives 24(1), 119–138.

Rosow, I. (1976) Status and role change through the life span. In: Binstock, R. H. and Shanas, E. (eds) *Handbook of Aging and the Social Sciences*. Van Nostrand Reinhold: New York, pp. 457–482.

Seitsamo, J., Tuomi, K. and Martikainen, R. (2007) *Activity, functional capacity and well-being in ageing Finnish workers*. Occupational Medicine 57(2), 85–91.

Sieber, S. D. (1974) *Toward a theory of role accumulation*. American Sociological Review 39(4), 567–578.

Siegrist, J. (1996) Adverse health effects of high-effort/low-reward conditions. Journal of Occupational Health Psychology 1(1), 27–41.

Siegrist, J. and Wahrendorf, M. (2009) *Participation in socially productive activities and quality of life in early old age: findings from SHARE*. Journal of European Social Policy 19(4), 317–326.

Steptoe, A., Breeze, E., Banks, J. and Nazroo, J. (2013) *Cohort profile: The English Longitudinal Study of Ageing (ELSA)*. International Journal of Epidemiology 42, 1640–1648.

Stroka, M. A. and Schmitz, H. (2013) *Health and the double burden of full-time work and informal care provision* – *evidence from administrative data*. Labour Economics 24, 305–322.

Sugihara, Y., Sugisawa, H., Shibata, H. and Harada, K. (2008) *Productive roles, gender, and depressive symptoms: evidence from a national longitudinal study of late-middle-aged Japanese*. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 63(4), P227–P234.

Tang, F. (2006) What resources are needed for volunteerism? A life course perspective. Journal of Applied Gerontology 25(5), 375–390.

Tooth, L., Russell, A., Lucke, J., Byrne, G., Lee, C., Wilson, A. and Dobson, A. (2008) *Impact of cognitive and physical impairment on carer burden and quality of life*. Quality of Life Research 17, 267–273.

Van Bavel, J. and De Winter, T. (2013) *Becoming a grandparent and early retirement in Europe*. European Sociological Review 29(6), 1295–1308.

Van Houtven, C. H., Coe, N. B. and Skira, M. M. (2013) *The effect of informal care on work and wages*. Journal of Health Economics 32(1), 240–252.

Van Willigen, M. (2000) *Differential benefits of volunteering across the life course*. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 55(5), S308–S318.

Wahrendorf, M., Ribet, C., Zins, M. and Siegrist, J. (2008) *Social productivity and depressive symptoms in early old age – results from the GAZEL study*. Aging and Mental Health 12(3), 310–316.

Wilson, J. and Musick, M. (1997) Who cares? Towards an integrated theory of volunteer work. American Sociological Review 62, 694–713.



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