Caring, employment and health among adults of working age: evidence from Britain and Belgium

Maria-Isabel Farfan-Portet¹, Frank Popham², Richard Mitchell³, Christian Swine⁴, Vincent Lorant¹

Background: For those of working age, results are inconclusive when exploring the health impact of providing care. Moreover, population data is lacking and the impact of welfare policies on the caregivers’ health has not been yet analysed. Methods: Associations between general health and caregiving, adjusting for differences in employment and socio-economic position, were explored for working age adults using logistic regression models. Data came from the 2001 British census (n = 1 361 222, 5% sample) and from the 2001 Belgian census (n = 4 368 637). The final model was stratified by employment status, given the significant interaction between caregiving and employment status. Results: In both countries, when compared with those providing no care, men and women providing ≥20 h of care per week had an increased risk of poor health. This increased risk was attenuated after adjustment for socio-economic position and particularly after adjustment for differences in employment status. However after stratifying by employment status, a dose response relationship between time spent caring and poor health was observed for the employed and unemployed, but not for the economically inactive. Conclusions: Despite contrasting welfare systems, employment status plays an important role in the association between caring and health in both countries. For the economically active, providing more care increases the risk of poor health. Whilst formal employment may be good for general health, having to informally care whilst in formal employment may have a detrimental health impact.

Keywords: caregiver, self-reported health, socio-economic factors.

Introduction

In Organization for Economic Co-operation and Development (OECD) countries informal care provided by family members, friends or other individuals is recognized as essential to maintaining chronically ill patients, the elderly and people with disabilities at home.¹ The burden of care for informal caregivers, however, is not without consequences. Studies have shown that, compared with non-caregivers, caregivers are more likely to report poor subjective health² and display depressive symptoms,³ to adopt riskier health behaviours,⁴ to have poorer immune responses to influenza vaccines⁵ and even to have a higher risk of mortality.⁶ Furthermore, previous research indicates a dose-response relationship between caring and health, with more weekly hours of caring being associated with increased risk of poor health.⁷ Most of these studies have addressed specific groups, such as elderly women caregivers. Moreover, among middle-aged adults, who are most often the providers of care,⁸ the results are less consistent, with some studies showing no differences in health outcomes between caregivers and non-caregivers⁹ and others suggesting that caregiving activities have a negative¹⁰,¹¹ or even a positive effect on health.¹² This lack of consistency could be due to the complexity of the relationship between work, multiple family commitments and health.¹³,¹⁴ Indeed, because caring might interfere with employment, caregivers might be at risk of social exclusion or impoverishment.¹³ As a consequence, health inequalities between caregivers and non-caregivers, might arise because being a carer leads to low socio-economic position (SEP) and thus to poor general health.¹⁵

In this study, we use data from the 2001 Belgian and British censuses that included questions about health and caregiving activities. This provides an opportunity to analyse how different welfare state policies might influence the association of caregiving with health. Indeed, how welfare (income and services) is provided, either by the state, the market or the family, influences the extent into which individuals assume caring responsibilities.¹⁶–²⁰ For the health of carers of working age, the welfare regime type may reflect the degree to which the caring burden of the family/household is lessened by state provision and the degree to which it is financial feasible to informally care and maintain a healthy income independent of the formal labour market. Belgium has been classified as a corporatist welfare state, initially supporting the male breadwinner role and relying on the family for the provision of care.²¹,²² Yet, Belgium has generous levels of publicly provided (or financed) care services, fees are income related and organization depends largely on the French and Flemish communities.²³–²⁵ Britain is classified as a liberal regime, where there is a market emphasis with initial supporting the male breadwinner role and relying on the family for the provision of care. ²¹,²² Yet, Belgium has generous levels of publicly provided (or financed) care services, fees are income related and organization depends largely on the French and Flemish communities.²³–²⁵ How the health of carers may vary in these two regime types is not clear, given for different ideological preferences, they rely heavily on the family for the provision of care. This research aims to inform the evidence base.
The aims of this article are therefore to: (i) analyse the association between poor health and caregiving for adults aged 25–59 years; (ii) explore whether combining caring and employment responsibilities has an impact on health and (iii) to explore whether these are different in the two countries.

**Methods**

The data for this study came from the 2001 censuses in Britain (England, Scotland and Wales) and Belgium. The census was carried out by a field force and postal returns in Britain and by the postal service in Belgium. The participation rates were 94% in Britain and 97% in Belgium. In Britain post-census imputation was used with the aim of achieving total population coverage. The datasets used in this study are a 5% sample of the British census (Sample of Anonymized Records) and the whole Belgian census. For the first time in both countries, the census provides information about who provides care and the time spent caring. Information on the British census questionnaire can be found at http://www.statistics.gov.uk/census2001/censusform.asp and an English version of the Belgian questionnaire can be found at http://www.sesa.ucl.ac.be/questionnaires. The analysis was restricted to residents of private households aged 25–59 years (n = 1,361,222 in Britain and n = 4,368,637 in Belgium).

**Definition of variables**

**Outcome variable**

Both censuses included a measure of global self-rated health. The British census included a three-item question (‘good’, ‘fairly good’ and ‘not good’) and the Belgian census a five-item question (‘very good’, ‘good’, ‘average’, ‘bad’ and ‘very bad’). Respondents who reported ‘not good health’ in Britain and ‘bad’ or ‘very bad’ health in Belgium were regarded as having poor health. In analysis we compared, using a binary variable, those in poor health to everyone else.

**Independent variables**

In both censuses, it was clearly stated that answers on informal care should only include activities not related to paid employment and related to other individuals’ health problems (excluding activities such as childcare). People who reported providing ≥20 h of care in Britain and those providing ‘over 2 h but < 4 h/day’ and ‘> 4 h/day’ in Belgium were regarded as heavy caregivers (see Supplementary Appendix 1). A series of questions was asked in both censuses to determine a person’s economic activity status, housing tenure and education. People were categorized as being employed, unemployed (out of work but seeking employment) or economically inactive (out of work but not seeking a job, because of retirement, sickness or looking after the family). A person’s housing tenure was categorized as owner-occupied, privately rented or socially rented. For education we used a modified version of the ISCED classification for both countries. More details can be found in the Supplementary Appendix 1).

Finally, age was categorized 25–29, 30–39, 40–49 and 50–59 years for both countries. These were the smallest age ranges available in the British SARs 5% sample. To meet the two aims of the analysis, we fitted a series of models using logistic regression. Separate analyses were carried out for men and women because of their different employment, caregiving and family commitment patterns.

To assess the magnitude of the association between caregiving status and poor health, we controlled for age and the various measures of socio-economic status one by one. The goal of this modelling strategy was to understand the extent to which SEP confounds the association between caregiving and poor health. We proceeded to explore whether any association between caring and health varied by employment status, modelling the interaction between employment and caring status. Having found evidence of significant interaction between caregiving and employment, we finally stratified the analysis by employment status.

**Results**

**Descriptive statistics**

In 2001, ~9 and 14% of all individuals in Belgium and Britain, respectively provided informal care. Among these, adults aged 25–59 years accounted for 61.8 and 66.4% of all caregivers in Belgium and Britain, respectively. Among men aged 25–59 years, 7.5% in Belgium and 11.3% in Britain were informal caregivers. Among women aged 25–59 years, the prevalence of caregiving was 11.7% in Belgium and 16.3% in Britain. Caring for <20 h was more frequent (men 8.4 and 6.5% and women 11.3 and 9.8% in Belgium and Britain, respectively) than caring for ≥20 h (men 2.9 and 2.5% and women 5.0 and 2.9%). Generally, caregivers were more likely to be older than non-caregivers (table 1). Those doing <20 h per week of caring were similar to non-caregivers regarding their housing tenure, employment status and education. In comparison with both of these groups, however, those caring for >20 h were more likely to be out of work, to be tenants, and to have a lower education level. Among those caring ≥20 h, 29.9% of British carers lived in social housing compared with only 9.4% in Belgium. Yet, the percentage of unemployed heavy carers in Britain (men 5.6% and women 2.1%) was much lower in Belgium (men 11% and women 10.7%).

Prevalence of poor health was lower in Belgium than in Britain, in all caregiving status groups (table 2). In both countries, those providing ≥20 h of care had the highest levels of poor general health. The prevalence of poor health among caregivers providing ≥20 h of care was higher among Belgian and British men (12.5 and 17.2%, respectively) than among Belgian and British women (7.9 and 14.8%, respectively).

**Dose-response association between hours spent caring and self-reported poor health**

Although ≥20 h of care were still associated with greater risk of poor health after age adjustment, <20 h of caring were associated with poorer health amongst Belgian men only (OR 1.3; 95% CI 1.28–1.34) (table 3). In fact, <20 h of caring was associated with a slightly reduced risk of poor health compared with those not caring for both men (OR 0.83; 95% CI 0.8–0.86) and women (OR 0.75; 95% CI 0.73–0.77) in Britain. In Belgium, however, this was only true for women (OR 0.82; 95% CI 0.8–0.84). Additionally controlling either for tenure or for education slightly reduced the association between caring and poor health. In contrast, adjusting for employment status greatly reduced the association of caring with poor health, with the odds ratios close to one. In the fully adjusted model, caring for ≥20 h a week for men and women in Britain was associated with a slightly reduced risk of poor health. In Belgium, caring for ≥20 h was associated with poor health only among men.

**Poor health and interaction between employment and caregiving responsibilities**

When the interaction between employment and caregiving was included in the fully adjusted models, the majority of interaction terms were significant (P < 0.05) and the model...
Table 1 Socio-demographic characteristics of British and Belgian women and men in the 2001 census by hours of caring per week: percentages and numbers

<table>
<thead>
<tr>
<th></th>
<th>Britain</th>
<th></th>
<th></th>
<th>Belgium</th>
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<tr>
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<td>Men</td>
<td></td>
<td>Women</td>
<td>Men</td>
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<tr>
<td></td>
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<td>≥20 h</td>
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<td>&lt;20 h</td>
<td>≥20 h</td>
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<tr>
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<td>77908</td>
<td>34759</td>
<td>594085</td>
<td>56113</td>
<td>19626</td>
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<tr>
<td>25–29</td>
<td>15.1</td>
<td>6.2</td>
<td>6.4</td>
<td>14.4</td>
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<td>30–39</td>
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<td>50–59</td>
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<td>39.1</td>
<td>37.7</td>
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<td>62.2</td>
<td>74.8</td>
<td>83.6</td>
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<td>7.9</td>
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<td>Social rented</td>
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<td>29.9</td>
<td>13.7</td>
<td>10.1</td>
<td>29.5</td>
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<td>Economic activity (%)</td>
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<tr>
<td>Employed</td>
<td>70.6</td>
<td>74.1</td>
<td>42.1</td>
<td>84</td>
<td>85.4</td>
<td>56.9</td>
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<td>2.1</td>
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<td>4.1</td>
<td>5.6</td>
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<td>Economically inactive</td>
<td>26.6</td>
<td>23.4</td>
<td>55.8</td>
<td>11.4</td>
<td>10.5</td>
<td>37.5</td>
</tr>
<tr>
<td>Education (%)</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Post-secondary</td>
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<td>12.7</td>
<td>24.9</td>
<td>25.6</td>
<td>13.7</td>
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<td>7.5</td>
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<td>5.6</td>
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<tr>
<td>Lower secondary</td>
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<td>40.2</td>
<td>34.4</td>
<td>36.3</td>
<td>36</td>
<td>31.1</td>
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<td>Less than lower secondary</td>
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<td>47.8</td>
<td>31.3</td>
<td>30.6</td>
<td>49.5</td>
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</table>

Table 2 Percentage of British and Belgian men and women of working age reporting poor health, by caring status

<table>
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<tr>
<th>Poor health (%)</th>
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<th></th>
<th></th>
<th>Belgian</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td></td>
<td>Women</td>
<td>Men</td>
<td></td>
<td>Women</td>
<td>Men</td>
<td></td>
</tr>
<tr>
<td>Non-carer</td>
<td>&lt;20 h</td>
<td>≥20 h</td>
<td></td>
<td>&lt;20 h</td>
<td>≥20 h</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>8.6</td>
<td>14.8</td>
<td>4.4</td>
<td>4.5</td>
<td>7.9</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>7.8</td>
<td>17.2</td>
<td>4.2</td>
<td>6.5</td>
<td>12.5</td>
<td></td>
</tr>
</tbody>
</table>

fit was improved (likelihood ratio test P < 0.05). Accordingly, we further stratified by employment status to explore the association between providing care and poor health; we present the results in Table 4. For the employed and the unemployed, caring was associated with poorer health compared with non-care. Amongst the economically inactive, however, providing care was generally associated with less risk of reporting poor health although this was not true for Belgium men.

Discussion

Although, this study was focused on the health impact of informal caring rather than the reasons for the level of informal caring, it was notable that rates of (full-time) informal caring were higher in Britain than in Belgium. This is consistent with recent changes in welfare policies, where some conservative countries (such as France and Belgium) have extended the coverage of long-term policies, while in Britain policies have shifted to provide more care to those more seriously dependent individuals. Thus, the need to rely on the family for the provision of care is less important in Belgium than in Britain. However, because there is some evidence that care is given in proportion to sickness, higher rates of caring in Britain with respect to Belgium, might reflect not only lower provision of services, but also higher levels of poor health and more income-related health inequalities. From a gender perspective, we found that more women than men provide care in both countries. This is in line with previous findings that women are still the main providers of care.

In terms of the health impact of informal caring this study adds to the literature, as it presents population-level information for adults of working age in two European countries on the association between caring and health. In age only adjusted models caring for ≥20 h per week was consistently associated with poorer general health in Britain and Belgium whilst <20 h was generally associated with slightly lower odds of poor health. However, our analysis showed that there were important differences in the socio-economic and employment profile of heavy carers and light and non-carers. When controlling for these differences, particularly employment status, in the full samples of men and women, the independent association of caring with health was much reduced. These results reflect both the overall importance of employment status for self-rated health, the absence of full time carers from the labour market, and the interaction between employment status, informal caring and health. Amongst the employed and the unemployed we found that, in general, there is a dose-response effect between the time spent caring and poor health. This was not the case for the inactive.

Overall, the pattern of results from the two countries in this study was broadly similar. The one important exception was that for Belgian economically inactive men there was little evidence of the protective association of caring seen amongst their British counterparts.

Previous studies have presented conflicting results when analysing the association between work, multiple family commitments and employment for those of working age. A study from the West of Scotland (Glasgow and surrounding areas) found no evidence of a negative impact of health of caring, no interaction with employment status and some evidence of better health amongst carers. A study from the West of Scotland (Glasgow and surrounding areas) found no evidence of a negative impact on health of caring, no interaction with employment status and some evidence of better health amongst carers.
found that caring was associated with poorer health, although it also found no evidence of an interactive effect between employment status and caring on health.10 Our results suggest that the association between caregiving and health is highly dependent on the time spent caring, and on the individual’s employment status. Amongst the employed, the negative dose-response association between the time spent caring and poor health supports the ‘scarcity’ hypothesis that assuming multiple roles as a caregiver and a worker might have a negative impact on general health.13 Among the unemployed, providing care is also associated with greater risk of poor health. For the unemployed who provide care, poorer health has been attributed to the accumulation of the effects of poverty and of the burden of being a caregiver.38 In addition, individuals in a low SEP might face a restricted choice between regaining employment and providing care if they cannot purchase formal care services.13 On the other hand, a positive effect on health is observed among the inactive population who have a caring responsibility, compared with those not involved in caring. This is in line with the ‘expansion’ hypothesis that caring might have positive effects relating to role gains and feelings of accomplishment.12 Yet another explanation may be related to the fact that, among the inactive, those not providing care are in worse health than those who provide it.

Our results raise important questions for policy and future research. First, it is important to recognize that full time carers are much more likely to live in poor socio-economic circumstances and to be economically inactive than part time and non-carers. Both poor socio-economic circumstances and economic inactivity are associated with poorer health, so that, for example, the economically inactive still have worse health than the employed or unemployed in this study despite the additional negative effects of caring being seen for the employed and unemployed only (results not shown but available from the lead author). One policy response may be to increase the employment levels amongst the economically inactive given the potential benefits for self-reported health and poverty alleviation. However, such employment policies may place a double burden on carers and thus there may still be negative consequences for their health. Hence, there is a tension between maximizing employment rates and its possible positive benefits for health, and the need for the provision of long-term care. Nevertheless, government policies are actively trying to find solutions to support employers to fulfil their caring responsibilities. In Britain, the government is seeking to increase employment amongst carers whilst also recognizing the dual burden of working carers by legislating for carers to claim flexible working patterns and by extending support in other ways, for example by providing holidays from caring for carers.16 In Belgium, there is current debate on how to allocate budgets enabling dependent individuals to stay at home without increasing the caregivers’ burden.39

Further work is needed to understand the difference in the rates of informal caring between countries and, in particular, the impact of providing care on health. Indeed, in social democratic welfare regimes, high availability of social care might not only reduce rates of full time care, minimize gender differences in the provision of care, but also reduce the caregivers’ burden.40,41

Limitations

There are some caveats to consider, when interpreting these results. First, the cross-sectional nature of these data cannot disentangle the causality between poor health, caregiving and SEP for adults of working age. Indeed, poor health among caregivers might be due to the fact that they are self-selected.
Models control for age, housing tenure and education from a group of individuals having low SEP and thus having a greater risk of poor health. Indeed, studies show that individuals of low SEP are more likely to assume caring responsibilities, because they have less access to formal care services and have less to gain from the formal labour market. In addition, individuals not working may engage in caring activities not only because they are more ‘available’ but also because they might face higher care demands: caregivers from low SEP may be more likely to care for people who are poorer and, thus, more likely to be in poorer health. Yet, increasing care demands from our aging societies, have a direct impact on the likelihood of becoming a caregiver in all socio-economic groups. Our results suggest that caregiving has an effect on health above and beyond SEP, given that we found a dose-response effect between caregiving and health.

Second, there was no information about the type of care given, that is, about those activities of daily life that determine the caring burden. Previous studies, however, have shown that the time spent caring is not only highly related to the range of difficulty of the caregiving activities but also directly affects caregivers’ health. Moreover, the dose-response effect supports the validity of our indicator.

Third, differences between the questions on self-rated health in different censuses might influence cross-national comparisons. Previous work, however, has shown that different self-rated measurements consistently assess subjective health and that items conform a continuum from poor to good health. Moreover, we used a dichotomous variable for both countries, which has been shown not to affect results in previous works.

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Conflicts of interest: None declared.

Key points
- Adults of working age are most often the providers of care. Yet, studies have report divergent results when considering the health consequences of providing informal care for this specific group.
- Few studies have used population data to examine the association between poor health and providing informal care. The findings suggest that employment status plays an important role in the association between caregiving activities and poor self-reported health.
- While there are positive benefits for general health of being in formal employment, policy needs to recognize and mitigate the possible negative health impact of providing informal care whilst also being in formal employment.

Table 4 ORs for poor health within strata of employment status for British and Belgian women and men in the 2001 census

<table>
<thead>
<tr>
<th>Country</th>
<th>Employment status</th>
<th>Men</th>
<th>Non-carer</th>
<th>&lt;20 h</th>
<th>≥20 h</th>
<th>Women</th>
<th>Non-carer</th>
<th>&lt;20 h</th>
<th>≥20 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Britain</td>
<td>Employed</td>
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<td>1.40 (1.34–1.47)</td>
<td>2.06 (1.91–2.22)</td>
<td></td>
<td>1.32 (1.26–1.37)</td>
<td>1.72 (1.61–1.84)</td>
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<tr>
<td></td>
<td>Unemployed</td>
<td>1</td>
<td>1.41 (1.23–1.61)</td>
<td>1.38 (1.14–1.66)</td>
<td></td>
<td>1.30 (1.11–1.53)</td>
<td>1.66 (1.32–2.08)</td>
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<tr>
<td></td>
<td>Inactive</td>
<td>1</td>
<td>0.70 (0.66–0.74)</td>
<td>0.52 (0.50–0.55)</td>
<td></td>
<td>0.67 (0.64–0.69)</td>
<td>0.71 (0.68–0.74)</td>
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<tr>
<td>Belgium</td>
<td>Employed</td>
<td>1</td>
<td>1.78 (1.72–1.85)</td>
<td>2.95 (2.73–3.18)</td>
<td></td>
<td>1.31 (1.26–1.37)</td>
<td>2.07 (1.89–2.27)</td>
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<tr>
<td></td>
<td>Unemployed</td>
<td>1</td>
<td>1.25 (1.17–1.33)</td>
<td>1.52 (1.35–1.70)</td>
<td></td>
<td>1.05 (0.99–1.12)</td>
<td>1.21 (1.08–1.36)</td>
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<td></td>
<td>Inactive</td>
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<td>0.90 (0.87–0.94)</td>
<td>1.02 (0.97–1.08)</td>
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<td>0.71 (0.69–0.73)</td>
<td>0.89 (0.85–0.93)</td>
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References

Supplementary data
Supplementary data are available at EURPUB online.

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Supplementary data are available at EURPUB online.


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