Illness in Marital or Cohabiting Partners: Implications for Welfare Uptake and Labor Market Efforts

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Abstract

Background: Increased attention is paid to the long-term productivity and work ability of individuals with serious illnesses. Less is known of possible consequences for close family members, and we examine possible effects for cancer-free married and cohabiting persons who experience cancer in a partner.

Methods: We use rich Norwegian register data (2011-2019) comprising 1.6 million Norwegian-born persons (10 million person-years) in prime working age (25-60 years). We identified 57,000 partners (54% women) to persons diagnosed with cancer 2013-2015. Cancer affected couples represent 4% of individuals (2% of person-years).

We apply time-to-event models, controlling for unobservable individual characteristics constant across time, and compare labor market efforts and welfare uptake before and after a cancer diagnosis in partners. We focus on gender differences and changes over time as the initial period of *crisis* becomes the *new normal*. Sub-analyses pay particular attention to social inequalities at the family level.

Results: Partners' labor market efforts were affected by cancer, particularly in the short-term. Partners who experience cancer were around 16% less likely to be employed, and sickness benefit uptake was clearly elevated around diagnosis. The uptake of longer-term benefits was evident, but smaller. Across all measures, female partners were more adversely affected than male partners.

Conclusion: Cancer has spill-over effects to partners and influences their labor efforts, income, and uptake of health-related benefits. The impact of illness in family members is not reflected in current public policies or compensatory economic mechanisms. Results may thus be of value to patient organizations and policy makers.

Keywords: Benefits; Cancer; Family; Health; Labor market; Partner; Policy; Welfare

Extended Abstract (2-4 pp.)

Topic

Public policy repeatedly stresses the importance of improving both labor market participation and public health (1-5), but there is scarce research on how illness among close family members affects the welfare of those *indirectly* affected as next-of-kin. More chronic disease, demographic changes (e.g., longer life expectancy) and a relative reduction in the prime working age population due to ageing populations (6), will put pressure on public spendings and the formal health and welfare system (7), and are likely to markedly impact next-of-kin's overall care burdens.

In Norway, nearly 40,000 are diagnosed with cancer annually (8). The incidence increases with age, but half of cancer patients get the disease *before* age 70 (ibid). Due to a combination of earlier diagnosis and more adept treatment methods, nearly 3 in 4 now survive for at least 5 years. Indeed, the number of cancer survivors has increased from 226,000 in 2012 to almost 330,000 today. Clearly, far more people are *indirectly* affected by cancer as next-of-kin, including many in prime working age. There are, however, few reliable estimates of these numbers and potential consequences. Understanding who experiences the greatest burdens, and what these burdens are, is crucial for formulating policies that safeguard next-of-kins' coping skills and ability to work and grasping impacts in terms of productivity loss and costs.

Recent national (9-11) reports suggest that today's measures are inadequate. While 40% of family caregivers report that they need facilitation and special arrangements at work (e.g., flexibility) (12), only one in four employers have measures in place to cater to such needs (9). Unless employers provide paid welfare leave or ensure facilitation that makes work compatible with caregiving, few formal options exist for partners in Norway (13), unlike those that exist for children. The only option is *care benefits*, a rigid 60-day period applicable to active care for very sick family members near time of death. Thus, in practice, people tend to use their own health-related benefits instead (14). Annual sickness absence and informal care among next-of-kin with cancer in the family have been estimated to cost NOK 6 billion (11). This is a conservative estimate assuming one caregiver per cancer patient and is based on a very small sample (N=88) (ibid). Estimates covering a wider range of diseases suggest that 20-80 000 next-of-kin rely on self-reported sickness benefits each year, of which employers and the state share the total costs of leaves amounting to around 40-150,000 million Euros per year (9, 14). Gross production losses attributed to care-providing next-of-kin amounts to 1-15 billion Euros per year, which equates 9-18,000 lost man-years (10). Expected demographic shifts mean these losses will increase substantially (ibid).

At the individual level, having a partner with cancer can be a major burden, and may have consequences for one's own health, education, ability to work and financial situation. Nevertheless, most research and policies that exist are aimed only at the individuals diagnosed. This leaves a marked knowledge gap concerning how poor health affects family members. The scarce knowledge that exists, reveals partly conflicting findings, albeit most indicate that cancer in the family tends to have adverse effects across many life domains. The aim of this paper is thus to compare labor market efforts and welfare uptake before and after a cancer diagnosis in partners. We focus on gender differences and changes over time as the initial period of *crisis* (0-1 year) becomes the *new normal* (2-5 years), and in sub-analyses we pay particular attention to possible social inequalities in effects.

Theoretical focus

The theoretical framework draws on the linked lives perspective of Elder (15), in combination with other aspects of life course theory (16). The life course perspective emphasizes the

interdependence of human lives and the ways in which people are reciprocally connected at several levels. Life paths are embedded in and transformed by conditions and events occurring within the family, and our framework facilitates an assessment of the implications of *links between family members* to understand how illness in families affects the health and 'life plans' of otherwise healthy family members at different points along the life course. A life course perspective also demands that we consider *links to the wider social and institutional contexts* (17), with the characteristics, behaviors and outcomes of family members all conditioned by the various 'systems' that they engage with before, during and after a family member becomes ill. Gender is a cross-cutting issue as men and women have distinct health, morbidity and mortality patterns, and take on different roles in terms of economic activity and caregiving tasks (18, 19), in part affected by men's and women's current as well as historical structural positions within society and families (20). Socioeconomic characteristics are also likely to play a role, as research points to the differing ability of individuals and family networks to bear the burden of illness and care (21).

It is well known that a cancer diagnosis impacts individuals' labor market outcomes and uptake of health-related benefits, but with marked variations across cancer and sociodemographic characteristics (22). In Norway, health-related benefits compensate for much of the decline in earnings (23), but they do not extend to encompass partners, and cancer in a spouse has been shown to negatively impact on both partners' earnings (24). Other studies, including a scoping review (25), document significant declines in employment and earnings among both sexes (26-28), suggesting that time is (rather) spent providing care and joint leisure with the sick partner (27). Furthermore, caregivers often experience high levels of burdens due to the efforts and costs of care time (25). Overall, these papers suggest that cancer in a family member can have negative impacts on labor market outcomes, including lost income and reduced productivity, and we pose the following hypothesis:

H_1. Cancer in individuals affects the labor market engagement of the cancer-free partners, but more for women than men, and more for persons with fewer sociodemographic resources.

As stated, the Norwegian welfare system does not have benefits tailored to caring for a next-of-kin. Own health-related benefits could thus be used to facilitate the caring for a sick partner, and we pose the following hypothesis:

H_2. Cancer in individuals increases the uptake of health-related benefits of cancer-free partners, but the effects are short-lived and do not translate into an increase in long-term benefit uptake.

Data and Methods

We take advantage of full-population registry data, including family identifiers, combining data on important life domains (employment, welfare uptake and family) and cancer, cf. Table 1. As is evident from the table, we have detailed information on possible confounders and/or mediators, as well as detailed cancer information from time of diagnosis. The Regional Committee for Medical and Health Research Ethics approved the study (REK#2018/434).

Table 1. Variables (outcomes, sociodemographic and cancer information) and data sources.

Outcome variables	**Data sources**
Earnings/employment	Tax directorate (1967→)
Health-related benefits	NAV (2006→)
Sociodemographic information	**Data source**
Sex, age, family composition, immigrant characteristics, education, income, housing, etc.	Statistics Norway (1967→)
Cancer information	**Data sources**
Cancer form and stage. Also grouped by 'random' vs 'not random' incidence and 'favorable' vs 'unfavorable' prognosis	Cancer Registry of Norway (CRN) (1953→) Norwegian Patient Register (NPR) (2008→)

The total sample comprises 1.6 million Norwegian-born persons (10 million person-years) in prime working age (25-60 years). We identified 57,000 partners to persons diagnosed with cancer 2013-2015. Cancer affected couples represent 4% of individuals (2% of person-years).

We apply time-to-event models[1] (29), controlling for unobservable individual characteristics constant across time, and compare labor market efforts (employment/earnings) and welfare uptake (sickness benefits (SB), work assessment allowance (WAA) and disability pension (DB)) of the family member before and after a cancer diagnosis in the partner. The (at the time) population without cancer in a partner serves as a comparison group. We focus on gender differences and changes over time as the initial period of *crisis* becomes the *new normal*. Sub-analyses pay particular attention to possible social inequalities of cancer at the family level. This approach mean we get closer to identifying causal effects of having a partner with cancer.

Preliminary findings

Results: More women (54%) than men (46%) experienced cancer in a partner. Figure 1 shows preliminary results for the uptake of sickness benefits among partners. The use of sickness benefits was clearly elevated around the time of diagnosis, but the effects appeared relatively acute and short-lived.

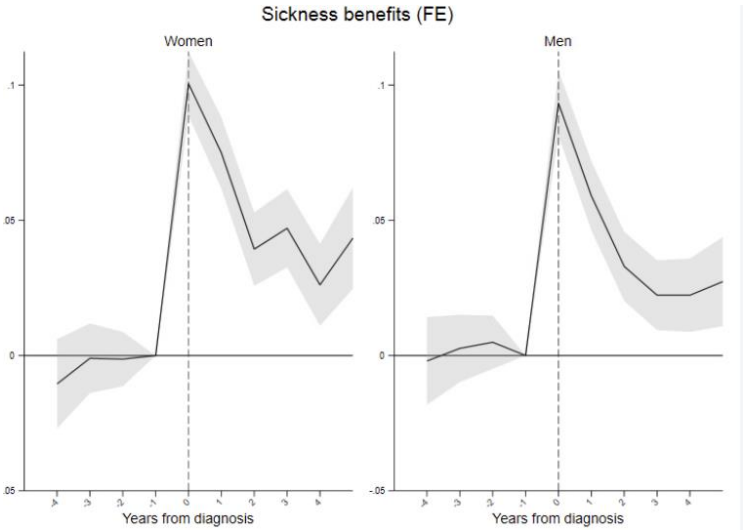

Figure 1. Sickness benefit uptake for partners to persons with cancer around diagnosis.

Similar figures will be made for earnings, employment and long-term benefits prior to the conference. Preliminary analyses show that partners' labor market efforts were affected by cancer, particularly in the short-term. Those who experience cancer in a partner were around 16% less likely to be employed, and their earnings dipped in the first few years following diagnosis. Preliminary results also show that the effect for longer-term benefits was much smaller (only 10% for disability pension). However, we found a clear gender difference: Female partners were more adversely affected than male partners across all measures.

[1] Event study models (or time varying fixed effects models), allow us to estimate how outcomes change in the years around the cancer diagnosis of a partner. Focusing on within-individual change means that we control for all time-invariant unobserved factors that affect both the outcome and the cancer risk of the partner, and thus could confound estimates. This approach requires a comparison group, which will be individuals who have a partner that is never diagnosed with cancer or diagnosed later. Causal identification hinges on trends in outcomes being independent of whether and when cancer is diagnosed in the family (absent the cancer diagnosis). We test this assumption indirectly, by assessing if trends in outcomes are parallel prior to diagnosis.

Discussion and preliminary conclusion

We will show that a diagnosis of cancer has spill-over effects to partners and influences their labor efforts and uptake of health-related benefits. Furthermore, the changes vary by gender and time since diagnosis. Consequently, whole families may be adversely affected economically, but the impact of illness in partners (or other family members) is not reflected in public policies or compensatory economic mechanisms in Norway as these are limited to only sick individuals. Our results may thus provide important insights for policy development and practice among agencies working to ensure a healthy and productive population while also providing knowledge that (ultimately) will benefit families struggling with cancer and/or other chronic diseases.

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