

COSTS OF MULTIPLE SCLEROSIS IN DENMARK: INFORMAL CAREGIVER'S PERSPECTIVE

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Background

Multiple sclerosis (MS) has a major impact on societal costs in Denmark [1]. According to the Danish Sclerosis register 14,786 individuals lived with MS in Denmark in 2014. Of these, 8,033 (54%) patients had a history of Disease Modifying Treatment (DMT). The total costs of MS were 281,085 DKK (37,478€) per patient year, while costs attributable to the disease were 216,591 DKK (28,879€) per patient-year.

Patients without DMT had a higher mean age and a worse health state compared with patients with a history of MDT, as reflected in about 4.5 times higher nursing costs and a 6 times higher age-adjusted mortality.

Aim: The aim of the present study is to estimate the indirect costs of MS incurred by informal caregivers.

Methods

Using Danish health and social registers, 14,786 individuals with MS in 2014 were matched by age and gender with controls. The informal caregivers (ICs) were defined as persons sharing the household with MS patients and controls, respectively, and were ascertained, together with data on healthcare resource utilization, nursing care consumption and productivity loss during 2014. The estimated indirect costs were compared between the ICs of MS patients and ICs of their controls to identify the costs attributable to MS. The MS patients were stratified according to the duration of from debut to year 2014: 0-9; 10-19; 20-29; +30 years.

The healthcare costs were estimated based on registered DRG/DAGS visits, GP fees and prescribed pharmaceutical drugs; the nursing care costs were calculated based on the registered nurse home visits and help received in nursing home/own home; productivity losses were estimated as indirect societal costs using human capital approach. The analyses were stratified for duration of MS.

Results

Population characteristics

In 2014, there were 15,412 ICs (39% female) of MS patients and 96,818 ICs (41% female) of controls. The male and female ICs of the controls had a mean age of 37.7 and 30.2 years, respectively.

All results were age-adjusted except for the analysis of productivity loss due to limited number of individuals in some age-groups.

Healthcare costs

The total healthcare costs per person-year among ICs of patients with less than 20 years disease duration were on average lower than costs of ICs of controls. The healthcare costs among ICs of MS patients with 20-29 years MS duration were 18,679 DKK (2,491€) per person-year and 24,194 DKK (3,226€) with 30+ years of MS, being 5,225 DKK (697€) and 10,739 DKK (1,432€) higher compared to controls. On average, women had lower healthcare costs compared to men (Figure 2).

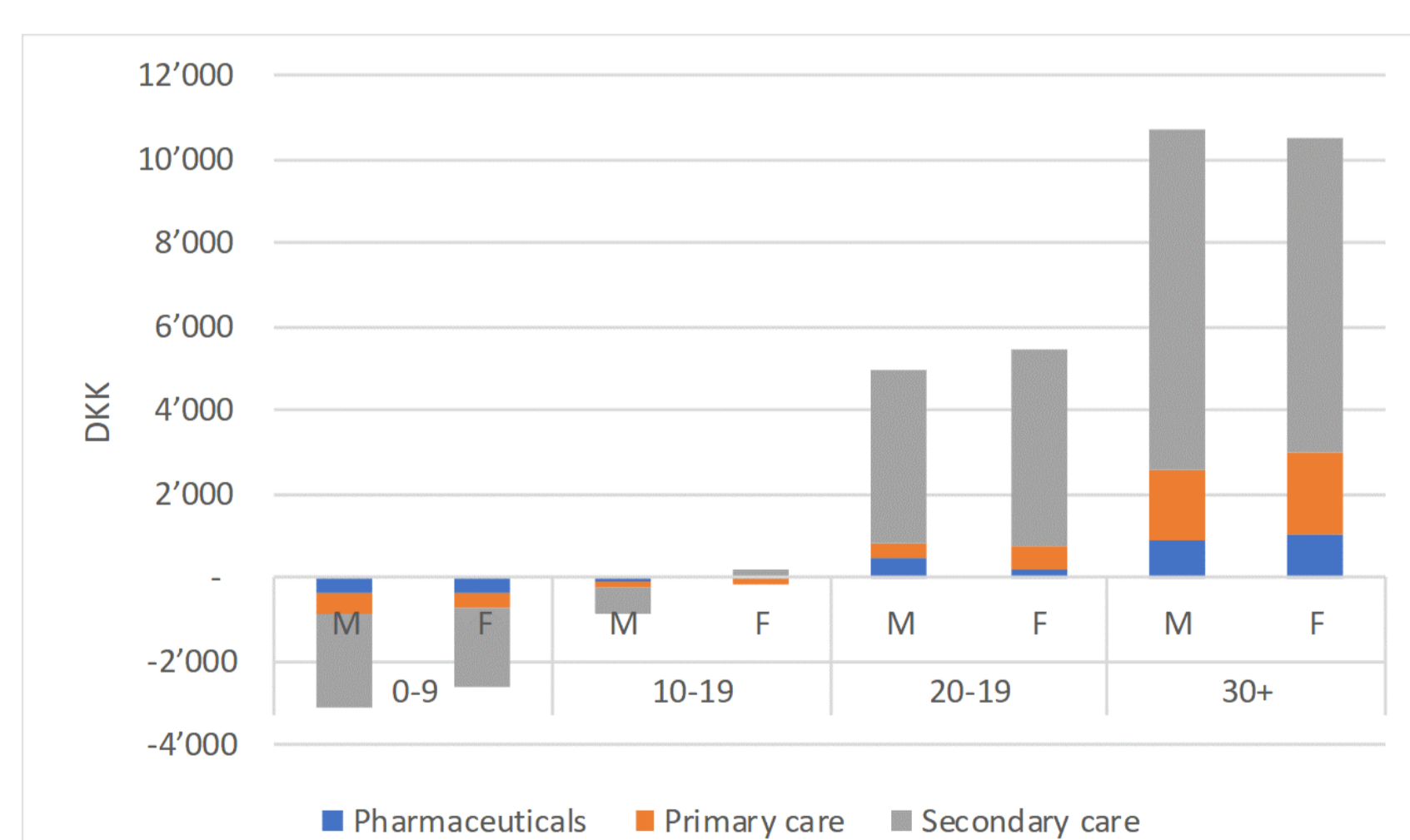


Figure 2 Attributable healthcare costs per person-year (DKK)

Nursing care

The MS attributable nursing care costs among ICs of patients with <10 years of disease duration were lower than of controls. Significant increase in nursing care is observed among male ICs of patients with 30+ year of disease duration, where total costs were 9,837 DKK (1,312€) which is 5,155 DKK (687€) higher than of controls (Figure 3).

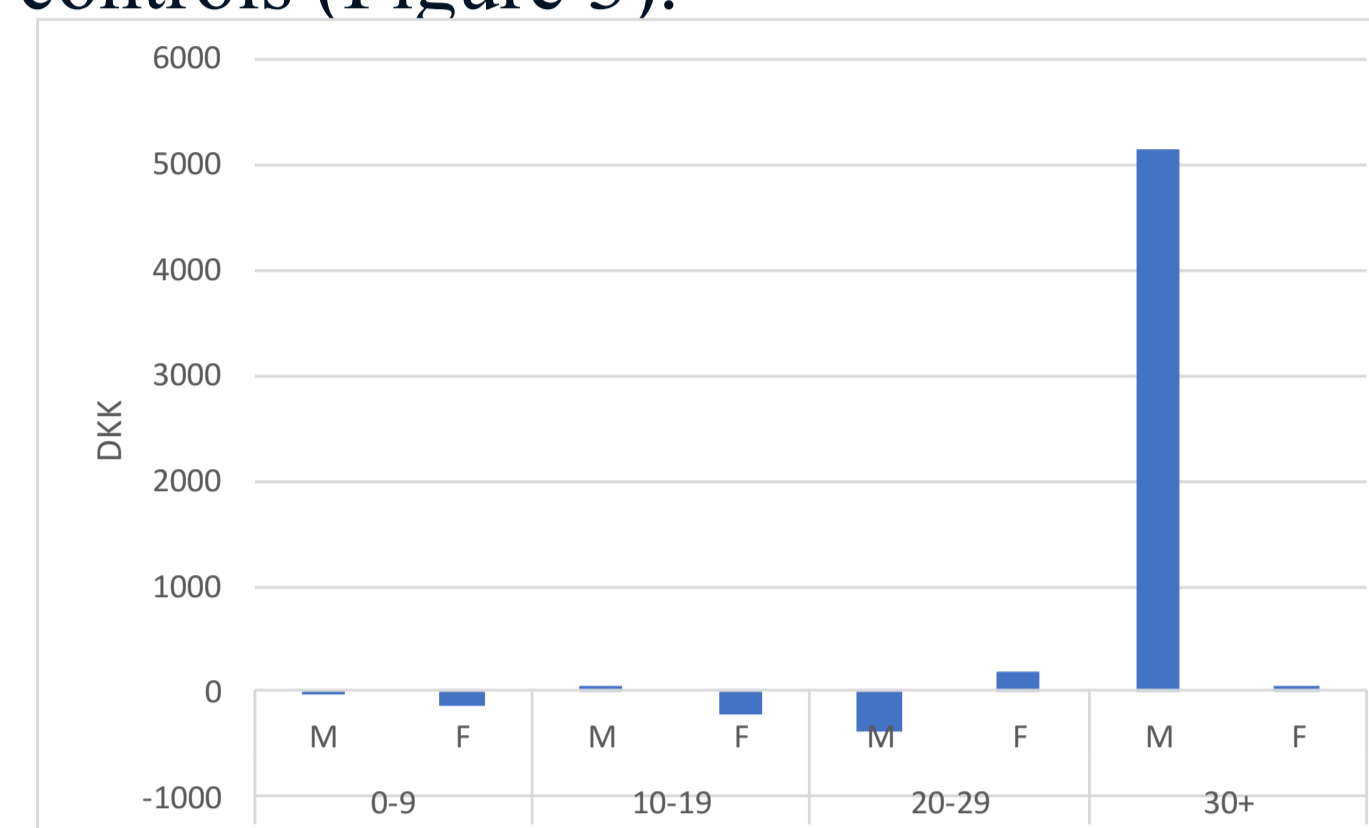


Figure 3 Attributable nursing costs per person-year (DKK)

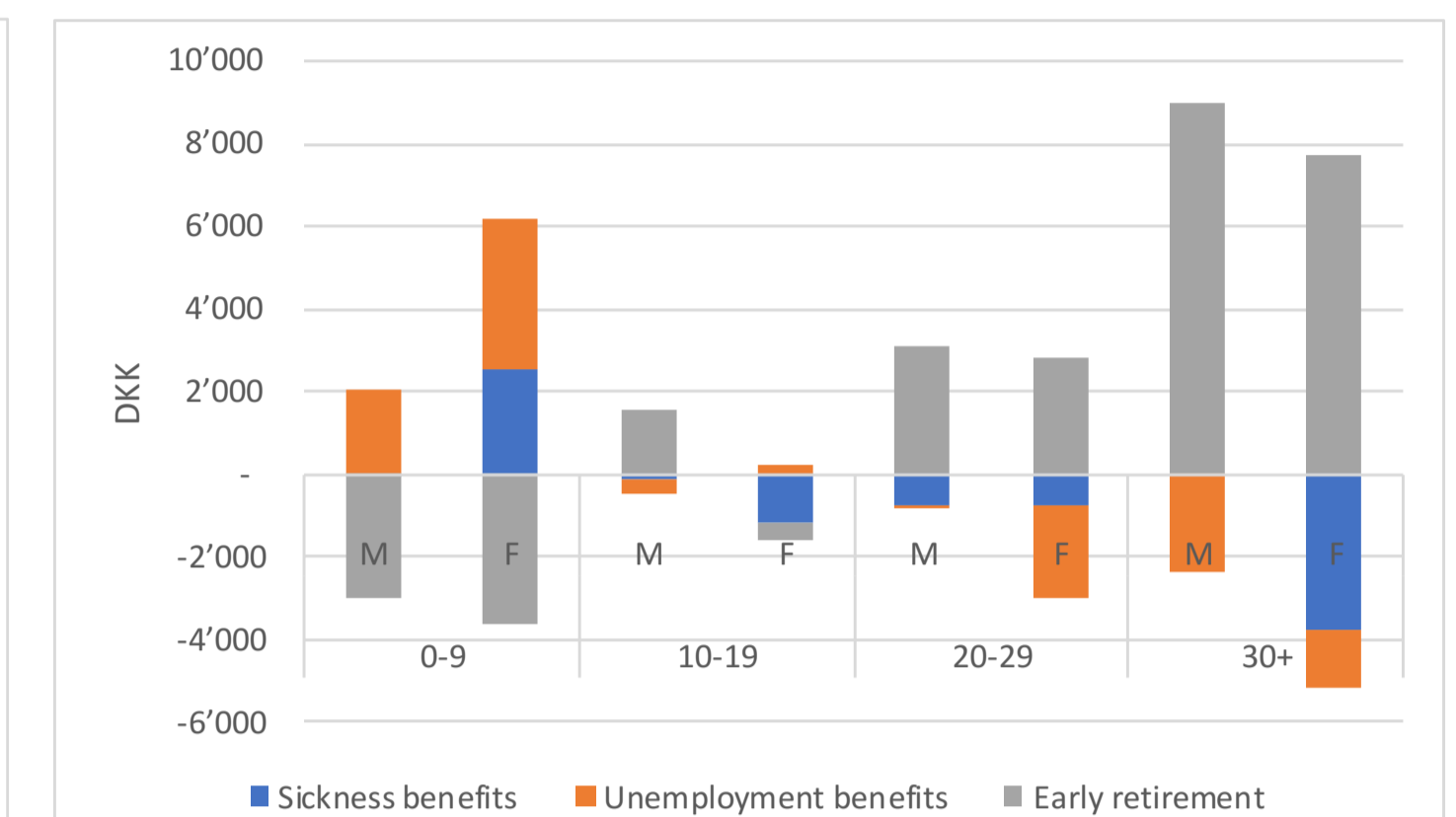


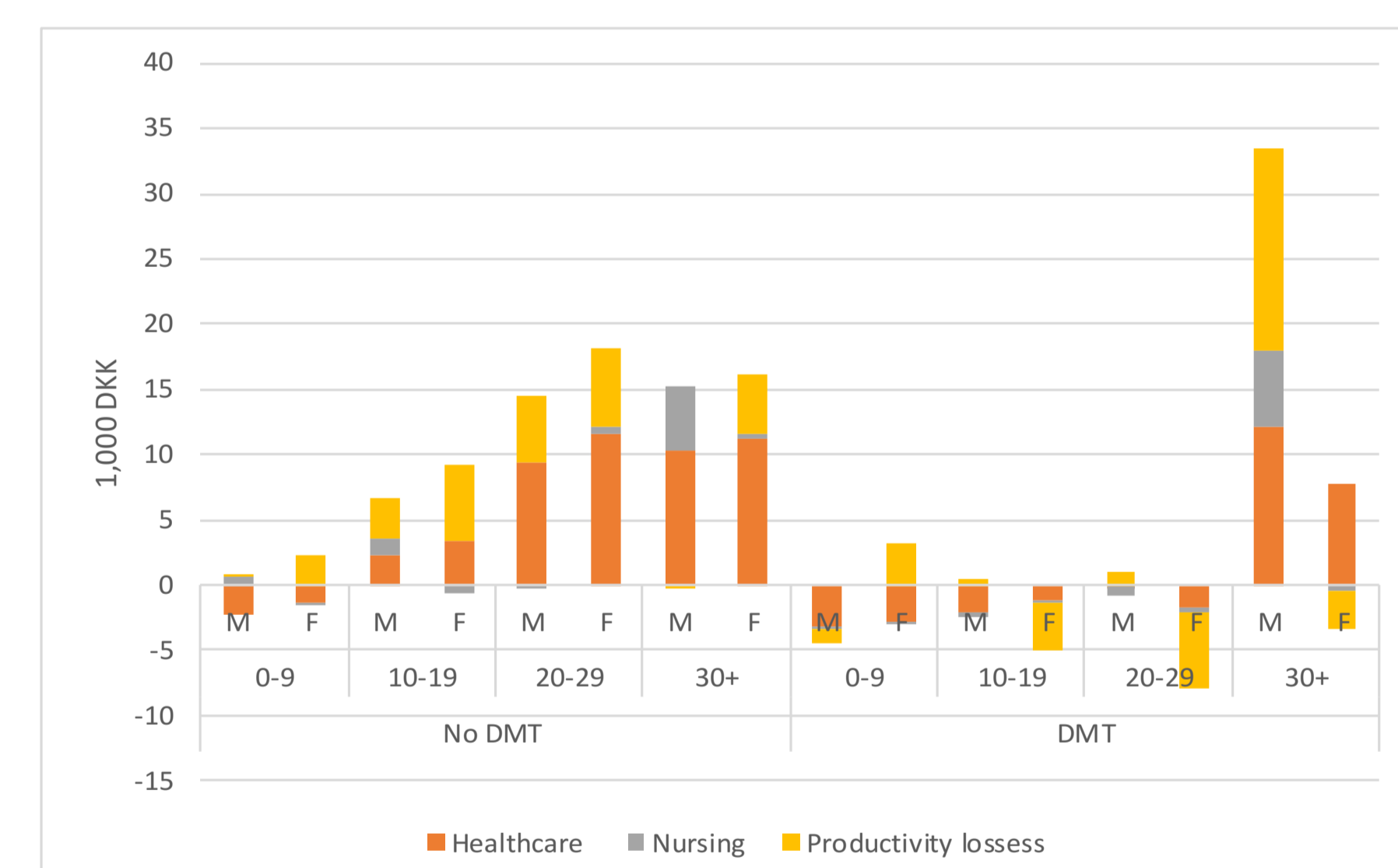
Figure 4 Attributable productivity loss per person-year (DKK)

Productivity loss

The highest productivity losses are observed among ICs of patients with 30+ years of MS, where total costs are 25,717 DKK (3,429€) among male ICs and 29,711 DKK (3,961€) among female ICs, being 6,604 DKK (881€) and 2,575 DKK (343€) higher than of controls, respectively (Figure 4).

Total attributable costs per person-year

The total and MS-attributable costs per IC's person-year without DMT stratified by disease duration show a significant increase over duration from 35,074 DKK (4,677€) and -2,950 DKK (-393€) within 0-9 years to 58,833 DKK (7,844€) and 21,004 DKK (2,801€) within +30 years. On average, ICs of patients in DMT had lower attributable costs, compared to ICs of patients without DMT. While female ICs of patients without DMT had higher total costs per person year, compared to men, male ICs of patients with history of DMT that had 30+ disease duration, had much higher attributable costs.



Discussion

A possible explanation for the lower attributable healthcare costs for ICs with short disease duration (0-9) (Figure 2) followed by the sharp increase with disease duration, could be that ICs in early on consume too little healthcare, compared to needs and thus accelerate health deterioration later on. Furthermore when comparing ICs in the DMT to non-DMT (Figure 5), it seems as ICs in DMT consume less healthcare. This could indicate that the burden for ICs in the DMT group is smaller, compared with the non-DMT group. This should be further investigated.

Conclusion

The attributable costs among ICs, increase with the duration of MS, primarily driven by healthcare costs and productivity loss. The higher attributable costs are on average observed for ICs. Moreover, ICs of patients without DMT have on average higher attributable costs, compared to ICs of MS patients with a history of DMT, except for male ICs of patients with 30+ years of MS duration.

References

[1] Emenus, M., Green, A., Sortso, C., Yssing, C. S., Steenstrup, N. Z., Fast, T., & Komkova, A. (2018). PND36-COSTS OF MULTIPLE SCLEROSIS IN DENMARK: A REGISTER BASED STUDY. *Value in Health*, 21, S335.

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