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ORIGINAL PAPER

Effects of sickness absence on disability pension in two ethnolinguistic groups: register-based evidence from Finland

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Abstract

The Swedish-speaking ethnolinguistic minority in Finland has a health advantage over the Finnish-speaking majority in terms of lower levels of sickness allowance and disability pension receipt. We examine whether this differential has consequences within the social security system by analysing the long-term risk for disability pension after sickness allowance receipt. With longitudinal population-register data covering the period 1989–2010, we observed 110,390 individuals aged 16–40 years at baseline. Using discrete-time hazard models, we estimated how first observed receipt of sickness allowance relates to disability pension receipt in the Finnish- and Swedish-speaking groups. Receipt of sickness allowance was found to be an important predictor for future disability pension receipt, but there were no systematic differences between the two ethnolinguistic groups in this respect, and the results were highly similar for men and women. These findings suggest that the social security system in Finland is non-discriminatory and provides equal treatment of both ethnolinguistic groups despite their overall health differential.

Keywords Sickness allowance · Disability pension · Ethnolinguistic groups · Register data · Finland

Abbreviations

DP	Disability pension
HR	Hazard ratio
KELA	Social Insurance Institution of Finland
SA	Sickness allowance

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Background

Health differences between population groups are usually studied in terms of the health disadvantage of ethnic minorities or immigrants versus the native population (Leaune et al. 2019; Nielsen and Krasnik 2010). The term "ethnic minority" usually refers to immigrants or indigenous groups whose health is negatively impacted by many different factors, such as working below their skill levels and downward intergenerational mobility (Das-Munshi et al. 2012; Espinoza-Castro et al. 2019). Indigenous ethnic minorities are often in a particularly disadvantaged socioeconomic and health position, such as the Roma in Europe (Babinska et al. 2013; Usera-Clavero et al. 2019) or the indigenous populations of Australia, Canada, New Zealand, and the USA (Moore et al. 2015; Vasilevska et al. 2012).

Finland is a Nordic country which provides an exception to the rule. The majority of its 5.5 million inhabitants speak Finnish as their mother tongue, but about 5.5% of the population, or about 300,000 persons, speak Swedish as their mother tongue (Finnish Institute for Health and Welfare 2020). Both groups are native, enjoy equal constitutional rights, and live under largely equal and comparable circumstances. Yet, unlike most ethnic minorities, the Swedish-speaking Finns are not marginalized but rather show an advantage in most health outcomes.

Life expectancy at birth of Swedish-speaking men exceeds that of Finnish-speaking men by about 3 years, while the difference among women is about 1 year (Saarela and Finnäs 2006). The risk for disability pension (DP) is 25 and 15% lower (Saarela and Finnäs 2002), while the risk for receiving sickness allowance (SA) is 30 and 15% lower (Reini and Saarela 2017). There are also distinct differences in labor market-related outcomes, such as a higher share of workforce employment among Swedish speakers (Saarela and Finnäs 2005a), a lower risk of unemployment (Saarela and Finnäs b), and a higher chance of returning to work after a period of sick leave (Reini and Saarela 2019).

These differences are partly explained by the Swedish-speaking population living geographically concentrated on the Western and Southern shorelines where mortality, as well as rates of DP and receiving SA, are lower than elsewhere in the country (Reini and Saarela 2019; Saarela and Finnäs 2005a, b, 2009). There are also some differences in socioeconomic and demographic characteristics which work in favor of the Swedish-speaking population (Koskinen and Martelin 2003; Sipilä and Martikainen 2009). However, these factors explain only a portion of the health differential, and previous research has argued that ethnolinguistic affiliation should be considered as a proxy variable for variation in cultural practices (Reini and Saarela 2019; Saarela and Finnäs 2016; Saarela and Rostila 2019). Arguably, Swedish speakers attach stronger norms and values on the role of the family as an institution (Saarela and Finnäs 2018).

Conceptual framework

We use this unique setting of two native population groups in which the minority group is not marginalized to investigate whether there are any consequences within

the social security system by studying an otherwise well-established association, namely how SA receipt relates to DP receipt.

DP is usually preceded by some receipt of SA during the prior decade; but only one quarter of disability pensioners exhibit a rising number of sickness days leading up to the DP decision (Laaksonen et al. 2016). Within the time span of a few years, the number of SA days received increases the risk of becoming a disability pensioner (Gjesdal and Bratberg 2003). However, over the course of 20 years, any amount of SA received is associated with a heightened risk for DP (Klein et al. 2021). Therefore, the first observed SA receipt is an important indicator for future DP receipt, as the latter is almost always a permanent exit from the labor market (Laaksonen and Gould 2015; Saarela and Finnäs 2002).

Men and women have been found to exhibit different risks for DP following the receipt of SA (Gjesdal and Bratberg 2002). Different diagnoses for a sickness spell translate into differing risks for DP (Alexanderson et al. 2012; Kivimäki et al. 2007). There are also sex differences in the frequency of diagnoses for sick leave (Karlsson et al. 2008) as well as differences in the risk for DP following the same sick leave diagnosis (Gjesdal et al. 2011). Occupational groups differ in length of sickness spells, diagnoses, and subsequent risk for DP (Helgadóttir et al. 2011; Salonen et al. 2018). Socioeconomic position is also inversely related to the risk of becoming a disability pensioner (Klein and Saarela 2019a; Madsen 2020; Wallmann et al. 2009).

Aim

This is the first study investigating whether there are differences in the association of DP receipt following SA receipt that compares two ethnic or, more specifically, ethnolinguistic groups in a setting in which the minority population is not marginalized. The overall lower risks of SA and DP in the Swedish-speaking population does not necessarily imply that their risk for DP, conditional on SA receipt, is also lower. If a difference between the two ethnolinguistic groups exists, it is presumably not the result of socioeconomic inequalities, but rather related to different treatment of each group within the social security system. We quantify the risk of receiving DP after first observed SA receipt with a follow-up that covers up to 15 years, comparing the risk of both ethnolinguistic groups on a year-to-year to year basis. This population-based approach enables us to observe whether there are differences between the ethnolinguistic groups and, if they occur, to determine when.

Methods

Data

The data are from Statistics Finland's longitudinal employment statistics files (used with permission number TK-53-768-12). They contain annual records for the years 1989–2010, represent individuals residing in Finland throughout any of these years, and allow for individual follow-up during this period. In these administrative data,

each person has a unique ethnolinguistic affiliation, or "mother tongue". The data used here consist of a 5% random sample of the Finnish-speaking population and a similarly constructed 20% random sample of the Swedish-speaking population.

The data are restricted to persons between 16 and 40 years of age in 1989, or who turned 16-years-old in 1990 or 1991, as 16 is the lowest age at which SA and DP can be claimed. The observation ends at age 60 as half of the population has already permanently left the labor market by this age (Klein and Saarela 2019a). The analytic data include 46,281 Finish-speaking men and 44,741 women, respectively, and 9829 Swedish-speaking men and 9539 women, respectively (Table 1).

Sickness allowance

In Finland, SA is paid by the Social Insurance Institution of Finland (KELA) after a waiting period of ten consecutive working days. It requires a medical certificate of work incapacity from a physician. The SA amount is based on the average income over the 2 years prior to the sickness spell with a replacement rate of 70%. SA is paid for a maximum of 300 working days for the same diagnosis over a period of two calendar years. If work incapacity remains, DP may be applied for (KELA 2020a).

For each ethnolinguistic group, we approximated the total length of sickness absence per calendar year based on the annual information of income and amount of SA received per calendar year. As a sickness period can stretch over the turn of a calendar year, SA receipt of two consecutive calendar years was summed up to obtain the total length of sickness absence.

We only examined the first SA receipt recorded in our data in order to focus on time since first exposure and its long-term association with disability pension. Of all observed SA periods, only one fifth of occurrences are longer than 2 months (Table 2).

Disability pension

When a physical or mental condition restricts the working capacity of a person aged under 65, he or she may be eligible for DP. The benefit is granted for a fixed period or indefinitely until age 65 (KELA 2017). DP is usually preceded by a sickness spell, but it may be granted without a preceding SA period.

At the end of every calendar year, labor market status was measured and provides information on whether a person received DP. Time under risk for DP was measured

Table 1 Data description by sex and ethnolinguistic group

	Men		Women	
	Finnish-speaking	Swedish-speaking	Finnish-speaking	Swedish-speaking
N individuals	46,281	9829	44,741	9539
N person years	946,572	202,284	933,359	195,396
N SA recipients	18,747	3242	18,184	3431
N DP recipients	4928	628	4261	706

Table 2 Distribution of variables by sex and ethnolinguistic group

Variables	Men				Women			
	Finnish-speaking		Swedish-speaking		Finnish-speaking		Swedish-speaking	
	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)
Sickness absence								
No sickness absence	78.2	1.0	82	0.5	77.9	1.0	80.1	1.0
Max 2 months	17.5	11.0	15.2	7.0	18.3	11.0	16.4	9.0
Over 2 months	4.3	64.0	2.8	58.0	3.8	52.0	3.5	45.0
Time after sickness absence								
No sickness absence	78.2	1.0	82	0.5	77.9	1.0	80.1	1.0
Year 0	2.1	23.0	1.7	15.0	2.0	21.0	1.8	22.0
Year 1	1.9	76.0	1.6	62.0	1.9	54.0	1.7	53.0
Years 2–4	4.7	16.0	4.0	11.0	4.8	14.0	4.4	12.0
Years 5–9	6.2	14.0	5.1	9.0	6.3	13.0	5.6	10.0
Years 10–14	4.2	15.0	3.5	10.0	4.4	10.0	3.9	13.0
Years 15–21	2.7	19.0	2.1	10.0	2.7	20.0	2.5	13.0
Age group								
16–19	3.3	1.0	3.5	0.3	3.2	1.0	3.4	0.0
20–24	7.7	1.0	8.0	0.5	7.6	1.0	7.9	1.0
25–29	12.0	2.0	11.8	1.0	11.8	1.0	11.9	1.0
30–34	16.3	3.0	15.8	1.0	16.1	2.0	15.7	2.0
35–39	18.5	3.0	17.9	2.0	18.3	2.0	18.1	2.0
40–44	17.5	5.0	17.1	3.0	17.5	4.0	17.2	3.0
45–49	12.8	8.0	12.9	4.0	13	7.0	12.9	5.0
50–54	8.2	14.0	8.7	9.0	8.5	12.0	8.7	11.0
55–59	3.7	24.0	4.3	13.0	4	25.0	4.2	16.0

Table 2 (continued)

Variables	Men				Women			
	Finnish-speaking		Swedish-speaking		Finnish-speaking		Swedish-speaking	
	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)
Education								
Primary	23.8	9.0	25.2	0.6	19.6	8.0	19.6	6.0
Secondary	49.1	5.0	41.1	0.3	43.7	5.0	40.1	4.0
Tertiary	27.1	2.0	33.7	0.2	36.7	3.0	40.4	2.0
Family situation								
With partner	64.3	4.0	67.3	3.0	69.2	4.0	70.3	3.0
Single	20.2	9.0	16.3	5.0	23.1	7.0	20.1	5.0
Other	15.5	4.0	16.4	2.0	7.7	3.0	9.6	2.0
Region of residence								
Helsinki area	17.7	4.0	21.5	3.0	20.1	4.0	22.2	3.0
Rest of Uusimaa	8.0	5.0	24.9	4.0	8.1	4.0	25.3	4.0
Varsinais-Suomi	8.3	5.0	9.0	3.0	8.5	5.0	9.0	4.0
Satakunta	4.8	4.0	0.3	3.0	4.6	4.0	0.3	2.0
Kanta-Häme	3.4	5.0	0.2	8.0	3.3	5.0	0.2	3.0
Pirkanmaa	9.2	5.0	0.4	2.0	9.2	4.0	0.6	1.0
Päijät-Häme	4.1	5.0	0.2	3.0	4	4.0	0.2	3.0
Kymenlaakso	3.9	6.0	0.5	8.0	3.7	5.0	0.6	3.0
Etelä-Karjala	2.7	6.0	0.1	5.0	2.6	5.0	0.0	0.0
Etelä-Savo	3.3	7.0	0.1	8.0	3.2	5.0	0.1	5.0
Pohjois-Savo	5.4	7.0	0.1	0.0	4.9	6.0	0.1	0.0
Pohjois-Karjala	3.6	5.0	0.0	0.0	3.2	5.0	0.1	0.0

Table 2 (continued)

Variables	Men				Women			
	Finnish-speaking		Swedish-speaking		Finnish-speaking		Swedish-speaking	
	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)
Keski-Suomi	5.5	6.0	0.2	3.0	5	5.0	0.2	3.0
Etelä-Pohjanmaa	3.9	6.0	0.2	0.0	3.8	5.0	0.3	7.0
Pohjanmaa	1.7	4.0	31.4	3.0	1.7	4.0	29.7	3.0
Keski-Pohjanmaa	1.2	5.0	2.5	3.0	1.2	5.0	2.3	3.0
Pohjois-Pohjanmaa	7.4	6.0	0.1	9.0	7.2	5.0	0.3	4.0
Kainuu	1.9	7.0	0.0	0.0	1.8	5.0	0.0	15.0
Lappi	3.9	6.0	0.0	0.0	3.8	6.0	0.1	12.0
Ahvenanmaa	0.03	6.0	8.3	3.0	0.04	12.0	8.5	3.0
Population density								
Rural	25.3	6.0	30.6	3.0	23.0	5.0	29.2	4.0
Semi-urban	33.7	5.0	31.9	4.0	33.7	5.0	31.6	4.0
Urban	40.9	5.0	37.5	3.0	43.3	4.0	39.2	3.0
Region of birth								
Southern Finland	23.8	4.0	60.4	3.0	23.8	4.0	60.6	4.0
Western Finland	35.3	5.0	35.8	3.0	35	4.0	35.3	3.0
Northern Finland	16.3	6.0	0.3	4.0	16.7	5.0	0.2	9.0
Eastern Finland	23.8	6.0	1.0	4.0	23.9	5.0	1.2	3.0
Abroad	0.7	4.0	2.5	2.0	0.6	3.0	2.7	2.0
Job industry								
Manufacturing	31.6	4.0	26.4	2.0	10.5	3.0	8.1	3.0
Primary industries	5.3	4.0	8.3	2.0	2.9	5.0	3.9	3.0

Table 2 (continued)

Variables	Men				Women			
	Finnish-speaking		Swedish-speaking		Finnish-speaking		Swedish-speaking	
	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)
Trade, hotel and restaurants	10.4	2.0	13.2	2.0	11.9	3.0	10.8	3.0
Transport and communications	8.2	4.0	11.7	3.0	3.4	4.0	4.9	2.0
Financial and business services	9	3.0	10.0	2.0	10.2	4.0	9.1	2.0
Public and other services	12.8	3.0	13.3	2.0	35.8	4.0	41.5	3.0
Not economically active	9.8	21.0	10.0	9.0	14.7	10.0	14.9	6.0
Unemployed	13.0	4.0	7.1	6.0	10.6	4.0	6.7	4.0
Income quintiles								
1st	19.7	10.0	17.1	5.0	23.0	6.0	21.8	4.0
2nd	15.5	6.0	13.7	4.0	26.5	4.0	25.6	4.0
3rd	17.1	5.0	16.2	3.0	23.5	4.0	23.2	4.0
4th	21.8	4.0	21.5	3.0	16.8	4.0	17.7	3.0
5th	25.9	3.0	31.4	2.0	10.2	3.0	11.7	2.0
Home ownership								
Homeowner	71.6	5.0	76.0	3.0	70.2	4.0	74.3	4.0
Rented or other	28.4	7.0	24.0	4.0	29.8	5.0	25.7	4.0
Time period								
1989–1992	23.8	2.0	23.6	2.0	23.4	1.0	23.7	1.0
1993–1995	14.3	3.0	14.2	2.0	14.2	2.0	14.2	2.0
1996–2001	27.8	5.0	27.7	3.0	27.8	4.0	27.7	3.0
2002–2005	17.7	8.0	17.8	5.0	17.9	7.0	17.8	6.0
2006–2008	12.6	10.0	12.8	6.0	12.8	10.0	12.7	6.0

Table 2 (continued)

Variables	Men				Women			
	Finnish-speaking		Swedish-speaking		Finnish-speaking		Swedish-speaking	
	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)	Distribution %	DP, risk rate (‰)
2009–2010	3.9	9.0	3.9	3.0	3.9	9.0	3.9	8.0

in years and started at the beginning of the year a person entered the observation window. For both ethnolinguistic groups, the time under risk ended at the end of the calendar year in which DP was recorded. Right-censoring occured at the end of 2010, when a person reached age 60, at death, or at emigration.

Control variables

All control variables are time varying and refer to the situation at the end of a calendar year (Table 2). Age was categorised into nine groups. Family situation distinguished between people living with a partner, alone, and other. Region of residence separated 20 regions according to the NUTS3 classification, with Helsinki separated from the rest of Uusimaa. Population density of the municipality of residence has been found to be associated with SA and DP rates (Salonen et al. 2018) and distinguished between rural, semi-urban, and urban areas corresponding with Statistics Finland's definition. Region of birth correlates with health (Saarela and Finnäs 2005a, b, 2009) and differentiated between Southern, Western, Eastern, and Northern Finland, and persons born abroad. Education was categorised as basic, secondary, and tertiary level. Job industry has eight categories and also separated persons outside the labor force, as well as unemployed individuals. Income refered to taxable income in quintiles. Homeownership, which is an important socioeconomic indicator in Finland (Laaksonen et al. 2008), distinguished persons who live in self-owned accommodation from others. Observation year was also controlled for.

Analysis

In order to study differences between the ethnolinguistic groups, the risk for DP receipt since time of first observed SA receipt was studied using discrete-time hazard models. Observations with no recorded SA receipt constituted the reference category for the exposure variable, that is, a person stayed in the reference group until observed receiving SA. The unit of follow-up time was (calendar) years. In the results displayed, zero on the time-axis refers to the same calendar year SA was first recorded. Separate analyses were undertaken for men and women of each ethnolinguistic group, as they generally differ in SA and DP receipt (Karlsson et al. 2008; Salonen et al. 2018). The results are presented as hazard ratios (HRs) for the respective ethnolinguistic group, with a follow-up time up to 15 years. We calculated whether estimates for each ethnolinguistic group, within each sex, were statistically different using t tests ($p < 0.05$). For the sake of readability, the graphs presented have a logarithmic scale because the DP risk 1 year after first recorded SA greatly exceeded the risk in all other years. We present the estimates adjusted for effects of all the control variables. The statistical software SPSS 23 was used to conduct the analyses.

Results

In the same year that the first SA receipt was recorded (year 0), men of both ethnolinguistic groups had a HR for receiving DP of 34, as compared to non-recipients of SA (left-hand part of Fig. 1). One year after, there was a notable peak in the risk for receiving DP, which is a simple reflection of the eligibility rules for when SA recipients (with very poor health) may become DP recipients after having exhausted their 300 SA days. In year 1, the HR was notably higher for Swedish-speaking men than for Finnish-speaking men, 80 vs. 116. Thereafter, in years 2–15, the estimates for each ethnolinguistic group were not statistically different and the HR was relatively stable at a level that decreased from 20 to 12.

Among women, the overall pattern was similar to men, with a peak in the HR of DP receipt 1 year after the first SA receipt (left-hand part of Fig. 2). Thereafter, the HRs of Finnish-speaking women decreased from 20 to 13, whereas those of Swedish-speaking women decreased somewhat more. These slightly diverging trends resulted in statistical differences between the two ethnolinguistic groups in years 8, 11, 13, and 14 after first SA receipt, but no other differences between the two ethnolinguistic groups.

Dividing the overall occurrence of SA into short SA receipt (maximum of 2 months) and long SA receipt (longer than 2 months) revealed that the peak in the HR of DP receipt in the first year after SA receipt was driven primarily by people who received SA for longer than 2 months (right-hand part of Fig. 1). For men with a short SA receipt, the HR for DP receipt ranged between 10 and 20 during the entire 15-year period. There were no significant differences between the two ethnolinguistic groups, except for in the first year after SA receipt. Differences for men

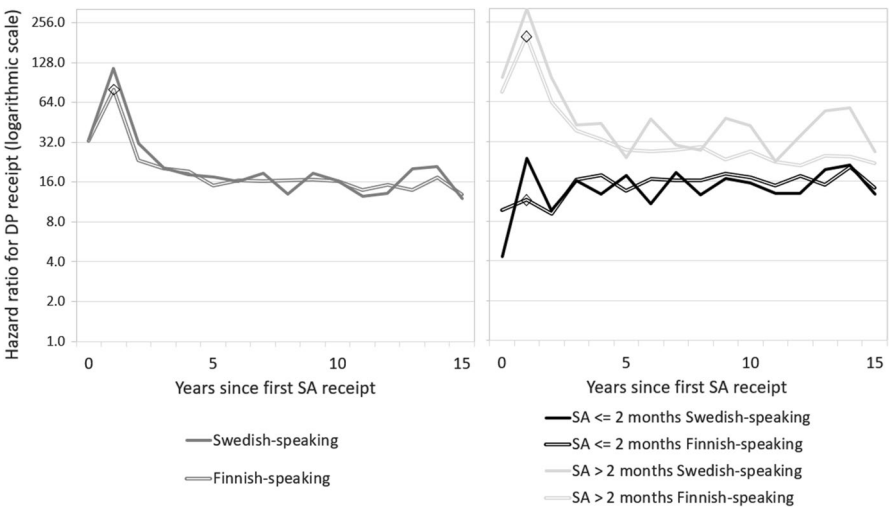

Fig. 1 Risk of DP receipt after first SA receipt among men. The left panel presents the overall risk for DP, the right panel additionally stratifies by length of SA receipt. Additional markers indicate that estimates between the two ethnolinguistic groups are statistically different at the 5% level

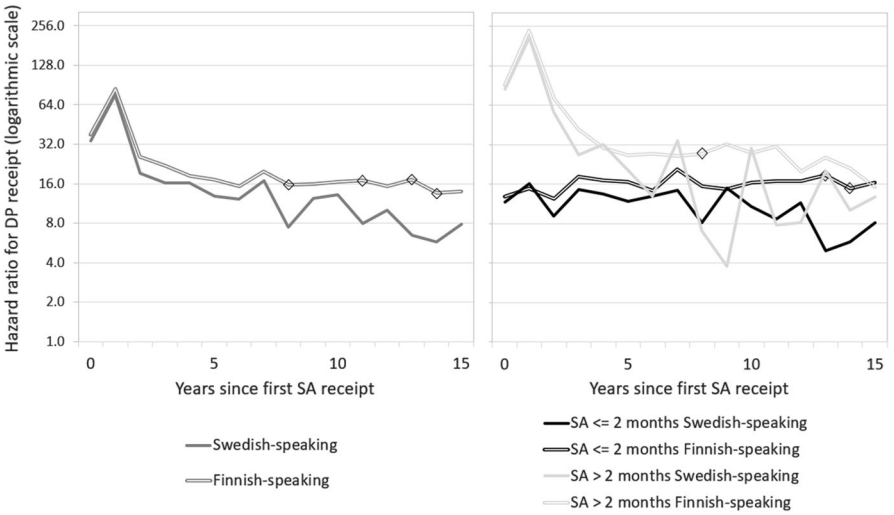

Fig. 2 Risk of DP receipt after first SA receipt among women. The left panel presents the overall risk for DP, the right panel additionally stratifies by length of SA receipt. Additional markers indicate that estimates between the two ethnolinguistic groups are statistically different at the 5% level

with long SA receipt were not found either between the two ethnolinguistic groups, except for in the first year after SA receipt.

The overall picture among women was again similar to that for men (right-hand part of Fig. 2), although displaying a less stable pattern due to fewer events. Short SA receipt was associated with a lower risk for DP in the short- and long-term as compared with long SA receipt, with HRs between 12 and 20 for Finnish-speaking women and somewhat lower for Swedish-speaking women. Long SA receipt was associated with a much higher risk for DP in the first 5 years as compared to short SA receipt, and a notable peak in the first year after SA receipt. Despite the HRs of Finnish-speaking women being generally slightly higher than those of Swedish-speaking women, few statistically significant differences between the two groups were found, and none before several years after first SA receipt.

Discussion

The objective of this study was to investigate whether Finnish- and Swedish-speaking Finns differ in their risk of becoming disability pensioners, conditional on previous SA receipt. Our results show that the risk for DP is highly dependent on previous SA receipt, especially in the first year after SA was first observed and among those who received SA for longer than 2 months. This association is highly similar, not only for both ethnolinguistic groups, but also between men and women. From the perspective of Swedish-speaking Finns having lower risks of SA and DP than Finnish-speaking Finns in general, the absence of an ethnolinguistic difference in the interrelation between SA and DP receipt is perhaps somewhat surprising. However,

this finding suggests that the DP pension system in Finland is non-discriminatory with respect to a person's ethnolinguistic affiliation and provides equal opportunities for exiting the labor market in the case of prolonged or permanent health deterioration. This case for equity also supports previous research, which finds that disability pensioners of both ethnolinguistic groups have equally raised mortality risks (Klein and Saarela 2019b).

Nevertheless, two exceptions were found, and we can only speculate about the mechanisms behind these anomalies. First, Swedish-speaking men had a higher risk of becoming disability pensioners than Finnish-speaking men in the first year after SA receipt, both among those with both short and long sickness periods. This might be caused by a higher likelihood among Finnish-speaking men to drop out of the labor market due to unemployment (Reini and Saarela 2019). Differences in the underlying health conditions may also be at play. We do not have information on the diagnoses for SA or DP, but comparing the composition of main diagnoses for all DP decisions with those for earnings-related DP, that is, those who held a job before receiving DP, shows that the latter had a higher proportion granted due to musculoskeletal disorders and a lower proportion due to mental disorders (Finnish Centre for Pensions 2019, 2020). Therefore, a higher share of Swedish speakers in employment may potentially imply that those eligible for DP in the very short term have particularly poor physical health.

Second, in the long term, that is, several years after first SA receipt, Swedish-speaking women had a lower risk of becoming disability pensioners than Finnish-speaking women. It is possible that they have other means of providing for themselves when health is impaired, such as relying on their partner's income. An indication would be the higher union stability among Swedish-speaking couples (Saarela and Finnäs 2018), alongside a slightly higher percentage of women outside of the labor market (Saarela and Finnäs 2005a, b). Differences in diagnoses may also be at play, particularly a lower prevalence of mental issues among Swedish-speaking women due to tighter family relations and social networks (Nyqvist et al. 2008).

This study covered a time frame close to half a working life and was based on high-quality register data with large sample sizes and basically no attrition. However, we had no information on the underlying diagnoses for SA or DP, which would have greatly deepened the analysis. We also did not have information regarding whether these benefits were paid in full or partial. However, part time benefits have not been widely used until the end of the observation period (Finnish Centre for Pensions 2022; Kausto et al. 2010; KELA 2020b).

Conclusions

Finland is in the process of undergoing a health care reform and is currently evaluating all benefits in order to adjust them to budget constraints while providing maximum equity. The current DP system seems to be able to provide equity for both ethnolinguistic groups. However, there are indications that population groups defined by other characteristics are at a disadvantage. In fact, employment status might be a

more decisive factor than ethnolinguistic affiliation. Unemployed people lack access to occupational health services and are not subject to an equally well provided evaluation of their working capacity, in contrast to their employed counterparts. At the same time, persons with a weaker employment history have higher DP application rates, but also higher application rejection rates, as they seem to seek financial security via a permanent pension (Perhoniemi et al. 2020).

The absence of ethnolinguistic group differences in DP following SA receipt shows that group differences in outcomes in advanced and persistent states of ill health, that is, DP, are highly conditional on factors that seemingly involve minor and transient states of ill health, that is, SA. This is especially important as the return to the labor market from DP is a rare event, also among those whose initial DP decision is temporary. In order to promote health and avoid the need for future DP, very early interventions targeting people on sick leave should be favored, and special attention should be given to vulnerable groups, such as those having incomplete work history.

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Data availability The data were obtained from Statistics Finland's longitudinal employment statistics files, but restrictions apply to their availability as they were used under the license for the current study (Permission number TK-53-768-12). The data can be obtained from Statistics Finland by other researchers, however, service fees apply.

Declarations

Conflict of interest None declared.

Ethical approval The data used was register based and anonymized which means that there was no need to seek ethical approval for this study explicitly. Statistics Finland's guidelines for handling data were followed.

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